CCMTA Road Safety Report Series

ALCOHOL-CRASH PROBLEM IN CANADA: 2002

Prepared For

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

and

Transport Canada

By

Traffic Injury Research Foundation of Canada
171 Nepean Street, Suite 200
Ottawa, Ontario

October 2004

Canadian Council of Motor Transport Administrators
2323 St. Laurent Blvd.
Ottawa, Ontario
K1G 4J8
Telephone: (613) 736-1003
Fax: (613) 736-1395
E-mail: ccmta-secretariat@ccmta.ca
Internet: www.ccmta.ca

CANADIAN COUNCIL OF
MOTOR TRANSPORT ADMINISTRATORS

The *Canadian Council of Motor Transport Administrators* is a non-profit organization comprising representatives of the provincial, territorial and federal governments of Canada which, through the collective consultative process, makes decisions on administration and operational matters dealing with licensing, registration and control of motor vehicle transportation and highway safety. It also includes associate members from the private sector and other government departments whose expertise and opinions are sought in the development of strategies and programs.

The work of CCMTA is conducted by three permanent standing committees which meet twice a year. The mandates of the standing committees are as follows:

- The **Standing Committee on Drivers and Vehicles** is responsible for all matters relating to motor vehicle registration and control, light vehicle standards and inspections, and driver licensing and control.

- The **Standing Committee on Compliance and Regulatory Affairs** is concerned with the compliance activities of programs related to commercial driver and vehicle requirements, transportation of dangerous goods and motor carrier operations in order to achieve standardized regulations and compliance programs in all jurisdictions.

- The **Standing Committee on Road Safety Research and Policies** is responsible for coordinating federal, provincial and territorial road safety efforts, making recommendations in support of road safety programs, and developing overall expertise and strategies to prevent road collisions and reduce their consequences.

CCMTA's Board of Directors also meets twice per year to attend to the overall management of the organization, determine policy direction and provide overall guidance and direction to the standing committees. Recommendations of the standing committees are ratified by the CCMTA Board.

All CCMTA standing committee meetings are open to industry stakeholders. Associate membership further allows private organizations and other government bodies with an interest in matters dealing with motor vehicle transportation and highway safety to be kept apprised of CCMTA activities and have formal access to CCMTA meetings and proceedings.

For further information on CCMTA projects and programs or associate membership, please contact the Secretariat.

ABSTRACT

This report describes the magnitude and characteristics of the alcohol-crash problem in Canada during 2002 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 2002 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.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The Traffic Injury Research Foundation of Canada (TIRF) has compiled data on alcohol use among motor vehicle fatalities since 1974. Beginning in 1995, TIRF has also complied data on alcohol use in serious injury motor vehicle crashes. All aspects of this work - but, in particular, the development, maintenance, and extension of the *Fatality Database* and the *Serious Injury Database* - would have been impossible without the generous support and co-operation of sponsors and collaborating agencies.

The maintenance and extension of the *Fatality Database* and the *Serious Injury Database* are co-funded by the **Canadian Council of Motor Transport Administrators** (CCMTA) and the **Road Safety and Motor Vehicle Regulation Directorate of Transport Canada.**

We gratefully acknowledge the following individuals, their organizations and members of their staff for ensuring that complete and accurate data were made available to us:

J. Hancock
Senior Vice President
Insurance Corp. of British Columbia

T. Smith
Chief Coroner
Office of the Chief Coroner
British Columbia

J. Espie
Executive Director
Driver Safety and Research/
Transportation Safety Initiatives
Alberta Transportation

G. Dowling, M.D.
Chief Medical Examiner
Alberta Attorney General

D. McNaughton
Traffic Accident Information System
Saskatchewan Government Insurance

J. Nyssen, M.D.
Chief Coroner
Saskatchewan Justice

M. Zyluk
Asst. Deputy Minister/
Registrar of Motor Vehicles
Manitoba Department of Highways and
Government Services

T. Balachandra, M.D.
Chief Medical Examiner
Manitoba Justice

F. D'Onofrio
Assistant Deputy Minister
Safety and Regulation
Ontario Ministry of Transportation

Dr. J. Young
Chief Coroner for Ontario
Ontario Ministry of the Solicitor General

L. Vezina
Chef de Service, études et des stratégies en sécurité routière
Société de l'assurance automobile du Québec

M. Pierre Morin
Le coroner en chef
Bureau du Coroner
Quebec

M. Daigle
Registrar of Motor Vehicles
Department of Public Safety
New Brunswick

D. Kelly
Chief Coroner
Department of Public Safety
New Brunswick

G. Keefe
Registrar of Motor Vehicles
Service Nova Scotia & Municipal Relations
Nova Scotia

V. Bowes, M.D.
Chief Medical Examiner
Department of the Attorney General
Nova Scotia

D. Norman
Registrar of Motor Vehicles
Department of Government Services and Lands
Newfoundland

Dr. S. Avis
Chief Medical Examiner
Newfoundland

G. Walsh
Manager
Highway Safety Programs
Dept. of Transportation
Northwest Territories

P. Kinney
Chief Coroner
Department of Justice
Northwest Territories

F. Jennex
Deputy Registrar
Yukon Department of Motor Vehicles

S. Hanley
Chief Coroner
Yukon Department of Justice

G. Beaton
Director, Highway Safety
Department of Transportation and Public Works
Prince Edward Island

R. Henderson, M.D.
Director of Laboratory Medicine
Queen Elizabeth Hospital
Prince Edward Island

D. Buchan
Director, Motor Vehicle Division
Nunavut

C. Trainor, M.D.
Chief Medical Examiner
Prince Edward Island

T. Neily
Deputy Chief/Adm. Coroner
Nunavut

1.0 INTRODUCTION

This report describes the magnitude and characteristics of the alcohol-crash problem in Canada during 2002 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 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.

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 goes beyond fatal crashes to examine 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.

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)* targets reductions in both alcohol-related fatalities and serious injuries. 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 2002 as well as changes/trends in the problem.

The report is divided into the following fourteen 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 2002 as well as trends in the problem.

In subsequent sections (**4.0 through 15.0**), descriptive data on alcohol involvement in fatal and serious injury crashes in each province and territory are summarized. Trends in the problem are also examined.

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 the Traffic Injury Research Foundation 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 2002 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 2002, 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 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 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.

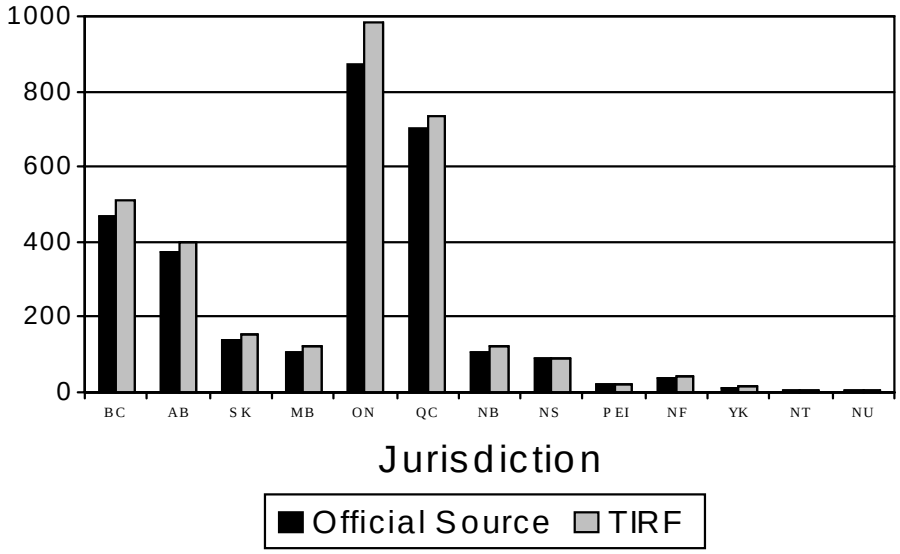
Police-reported data include characteristics of the victim (age and sex, position in the vehicle -- driver, passenger) and details of the crash (type of vehicle(s) and collision, time, date). Objective, toxicological data on alcohol use among victims are obtained from files in coroners' and medical examiners' 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 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 3,197 persons fatally injured in motor vehicle collisions in Canada during 2002. 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.

Figure 2-1
Number of Fatalities Reported by Official Sources and in Database: 2002



	Official Source	TIRF
BC	467	508
AB	372	400
SK	137	153
MB	109	122
ON	873	983
QC	703	736
NB	104	123
NS	88	88
PEI	19	20
NF	38	41
YK	12	14
NT	3	4
NU	3	5
Total	2928	3197

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 2002. For most of the jurisdictions, the number of cases in the database is higher than that officially reported by transportation agencies.

- **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, bicycles -- and off-road -- 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.

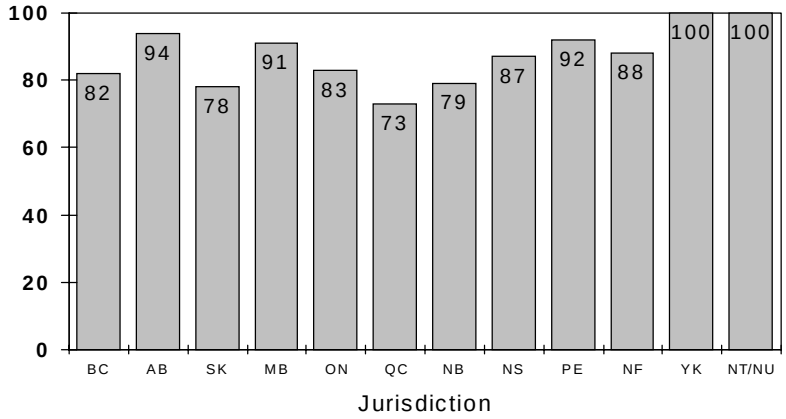
In Canada during 2002, 6 out of every 10 fatalities were operators of motor vehicles (61.8%); 25.0% were passengers; and 12.5% were pedestrians. From this perspective, vehicle occupants, particularly drivers, remain the major road-user group of concern for traffic safety.

- **Testing rates for alcohol**. The inclusion of objective data on the presence of alcohol among traffic victims represents the most 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 2002, fatally injured drivers were tested most frequently (81.9%), followed by pedestrians (59.9%) and passengers (27.8%). 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 (65.0% and 30.4%, 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 85.0%).

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

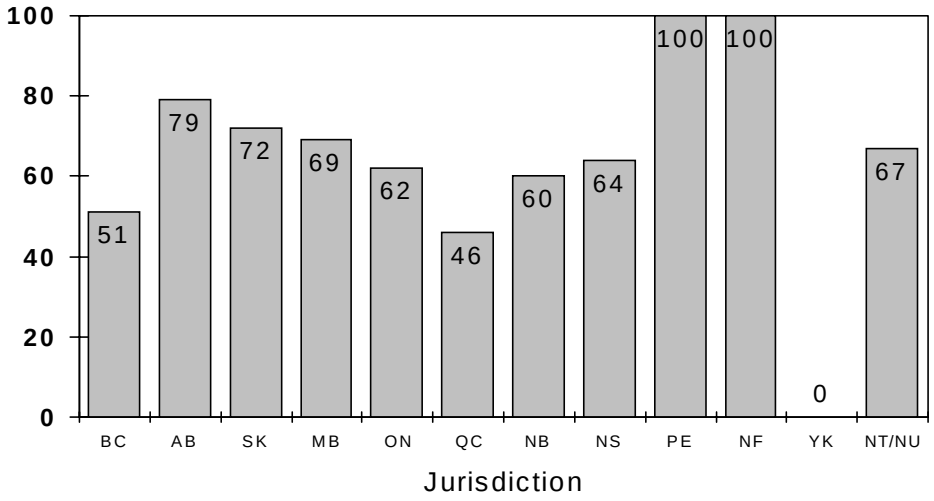
Figure 2-2
Percent of Fatally Injured Drivers
Tested for Alcohol: Canada, 2002



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 (excessive loss of blood), body fluids will 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 0.0% in the Yukon to 100.0% in Prince Edward Island and Newfoundland.

2.1.2 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, 2002



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*.

In the case of British Columbia, investigating police officers do not record on the police report form whether the crash involved a serious injury nor, at the person level, the severity of the injury a person sustained in the crash. Accordingly, it is not possible to identify persons who sustain a serious injury or drivers involved in serious injury crashes in that province. For this reason, the Canada data presented in Section 3.4 do not include data from British Columbia. However, in the British Columbia section of the report (Section 4.3), data are presented on drivers involved in alcohol-related injury crashes -- i.e., crashes that involve any severity of injury, from minimal to serious.

In the case of Manitoba, the Yukon, and the Northwest Territories/Nunavut, 6.4%, 3.1% and 5.6% of injuries are recorded as “unspecified”, so the number of drivers in serious injury crashes used in this report for these three jurisdictions might be underestimated.

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

- **Serious injury.** A serious injury crash is one that resulted in at least one person being admitted to 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 (excluding British Columbia) during 2002, 14,804 persons were seriously injured in motor vehicle crashes; 19,196 drivers were involved in these crashes.

Table 2-1 shows the number of drivers for each province and territory. Quebec accounts for the largest number of the drivers involved in serious injury crashes (7,114 drivers or 37.1% of the "national" total); the Yukon and the Northwest Territories/Nunavut each accounts for the lowest number of drivers in such crashes, 43 and 36 drivers respectively (or 0.2% of all drivers).

Table 2-1
Number and Percent of Drivers Involved in Serious Injury Crashes in Each Jurisdiction: Canada*, 2002

Jurisdiction	Number of Drivers	% of Total
Alberta	3,899	20.3
Saskatchewan	634	3.3
Manitoba	540	2.8
Ontario	5,732	29.9
Quebec	7,114	37.1
New Brunswick	457	2.4
Nova Scotia	411	2.1
Prince Edward Island	84	0.4
Newfoundland	246	1.3
Yukon Territory	43	0.2
NWT/Nunavut	36	0.2
TOTAL	19,196	100.0

* Total excludes British Columbia

- **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. Of all the drivers involved in serious injury crashes: more than half were automobile drivers (58.6%); over one-quarter were truck-van drivers (26.6%); 5.1% were off-road vehicle drivers (e.g., snowmobiles, dirt bikes); 4.6% were motorcycle riders, 3.0% were tractor-trailer drivers; and 0.9% were drivers of other types of highway vehicles (e.g., buses, emergency vehicles).

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

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

2.2 Indicators of the Problem

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

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

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 data 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 2002, it was possible to determine if alcohol was a factor in the crash in 91.7% 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 very high testing rate in Canada during 2002, with 81.9% of fatally injured drivers being tested for alcohol.

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 – 59.9% overall, which increases to 65.0% 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 15.0) 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. 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 2002. 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 2002. 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, 328 people age 16-19 were killed in road crashes in Canada during 2002. And, in 301 of these cases (91.8%) 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, 107 people age 16-19 died in alcohol-related crashes in Canada during 2002. The next column expresses this as a percentage – e.g., 35.5% 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 11.1% of all the people killed in alcohol-related crashes in Canada during 2002.

Table 3-1
Deaths* in Alcohol-Related Crashes: Canada, 2002

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	208	181	87.0	21	11.6	2.2
16-19	328	301	91.8	107	35.5	11.1
20-25	430	408	94.9	170	41.7	17.6
26-35	427	407	95.3	186	45.7	19.2
36-45	498	469	94.2	215	45.8	22.2
46-55	432	407	94.2	139	34.2	14.4
>55	874	759	86.8	129	17.0	13.3
Gender						
Male	2231	2067	92.6	774	37.4	80.0
Female	966	865	89.5	193	22.3	20.0
Type						
Driver/Operator	1977	1862	94.2	660	35.4	68.3
Passenger	799	717	89.7	196	27.3	20.3
Pedestrian	399	351	88.0	109	31.1	11.3
Unknown	22	2	9.1	2	100.0	0.2
Vehicle Occupied						
Automobiles	1544	1429	92.6	455	31.8	47.1
Trucks/Vans	728	684	94.0	255	37.3	26.4
Motorcycles	177	173	97.7	55	31.8	5.7
Tractor Trailers	62	61	98.4	8	13.1	0.8
Other Hwy. Vehs.	11	9	81.8	1	11.1	0.1
Off-road Vehicles	251	224	89.2	83	37.1	8.6
(Pedestrians)	399	351	88.0	109	31.1	11.3
Unknown	25	1	4.0	1	0.0	0.1
TOTAL	3197	2932	91.7	967	33.0	100.0

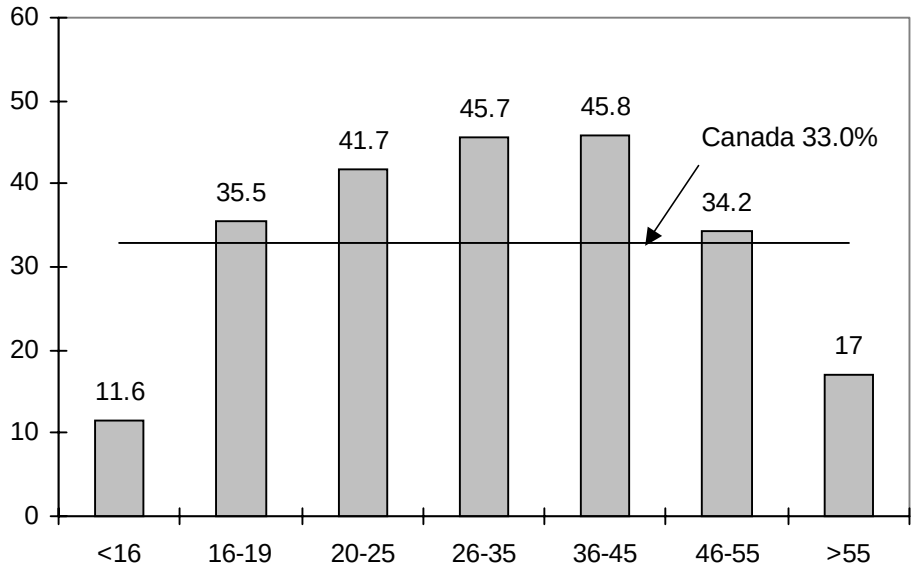
*persons dying within 12 months in collisions on and off public roadways

The totals at the bottom of the table provide a summary. As can be seen, 3,197 persons died in motor vehicle crashes in Canada during 2002. In 2,932 (91.7%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 967 (33.0%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (3,197 x .33) it can be estimated that *in Canada during 2002, 1,055 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), 22.2% were aged 36-45; 19.2% were aged 26-35; 17.6% were aged 20-25 and 14.4% were aged 46-55. The youngest (<16) group accounted for only 2.2% 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 36-45 and 26-35 died (45.8% and 45.7% respectively). The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 11.6% of persons under 16 and 17.0% of the fatalities over 55 years of age died in crashes involving alcohol.

Figure 3-1
Percent of Alcohol-Related Deaths
Within Each Age Group: Canada, 2002



3.1.2 Gender. Of all the people who died in alcohol-related crashes, 80.0% were males. The incidence of alcohol in crashes in which a male died (37.4%) was greater than the incidence of alcohol in crashes in which a female died (22.3%).

3.1.3 Victim type. Of all the people who died in alcohol-related crashes, 68.3% were drivers/operators of a vehicle; 20.3% were passengers; and 11.3% were pedestrians.

Within each of these victim types, there are some differences in alcohol involvement. The highest incidence of alcohol involvement (35.4%) occurred in the crashes in which a driver died. Alcohol was involved in 31.1% of the crashes in which a pedestrian died and in 27.3% of the crashes in which a passenger died.

3.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, almost half (47.1%) were in an automobile; 26.4% were in a truck/van; 8.6% were on an off-road vehicle (e.g., bicycle, snowmobile, all-terrain vehicle); and 5.7% were on a motorcycle.

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 (37.3% versus 31.8%). The incidence of alcohol involvement in which a person on a motorcycle vehicle died was also 31.8%.

3.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Canada during 2002. 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 (e.g., 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 146 drivers killed during 2002; 126 of these fatally injured drivers (86.3%) were tested for alcohol. Of those who were tested, 67.5% showed no evidence of alcohol, 7.1% had BACs (blood alcohol concentrations) below 50 mg%, 3.2% had BACs from 50 to 80 mg%, 10.3% had BACs from 81 to 160 mg%, and 11.9% had BACs over 160 mg%.

Table 3-2
Alcohol Use Among Fatally Injured Drivers: Canada, 2002

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	6	3	50.0	33.3	0.0	0.0	66.7	0.0
16-19	146	126	86.3	67.5	7.1	3.2	10.3	11.9
20-25	261	227	87.0	55.9	4.4	1.8	13.7	24.2
26-35	278	246	88.5	56.1	3.3	2.8	11.4	26.4
36-45	329	283	86.0	56.2	4.9	1.1	11.0	26.9
46-55	307	261	85.0	66.3	3.4	2.7	7.3	20.3
>55	417	314	75.3	84.7	1.9	1.6	3.2	8.6
Gender								
Male	1343	1134	84.4	61.0	4.5	2.3	10.1	22.0
Female	401	326	81.3	78.8	1.5	1.2	5.8	12.6
Vehicle Type								
Automobile	1031	845	82.0	65.3	3.9	2.1	10.3	18.3
Motorcycle	161	133	82.6	66.9	3.8	3.0	10.5	15.8
Tractor Trailer	54	44	81.5	90.9	4.5	2.3	0.0	2.3
Heavy Truck[1]	15	14	93.3	78.6	7.1	0.0	0.0	14.3
Van	132	112	84.8	74.1	2.7	0.0	3.6	19.6
Motorhome	1	1	100.0	0.0	0.0	0.0	0.0	100.0
Light Truck[2]	338	304	89.9	54.9	3.9	2.3	9.5	29.3
Other Truck[3]	5	5	100.0	100.0	0.0	0.0	0.0	0.0
Other Hwy. Vehicle[4]	7	2	28.6	100.0	0.0	0.0	0.0	0.0
Collision Type								
Single-Vehicle	770	659	85.6	46.7	3.9	2.4	13.7	33.2
Multiple-Vehicle	972	799	82.2	80.1	3.8	1.8	5.5	8.9
Unknown	2	2	100.0	50.0	0.0	0.0	0.0	50.0
TOTAL	1744	1460	83.7	65.0	3.8	2.1	9.2	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 section of this report.

The main findings are shown by the totals at the bottom of the table. As can be seen, there were 1,744 drivers fatally injured in traffic crashes in Canada during 2002. The overall rate of testing for alcohol in drivers was 83.7%, slightly lower the rate in 2001 – 84.3%.

Among tested drivers in Canada:

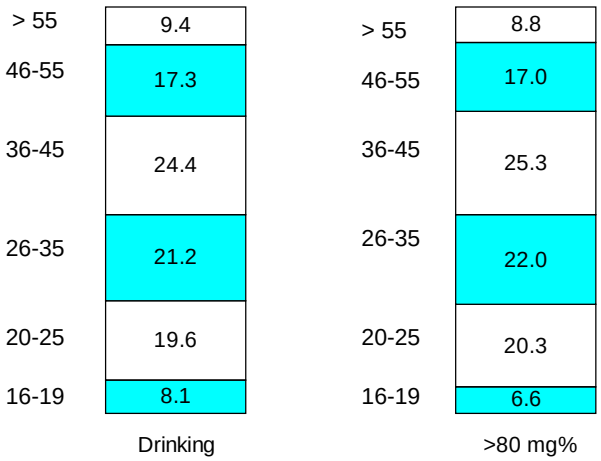
- 65.0% showed no evidence of alcohol – 35.4% had been drinking;
- 3.8% had BACs from 1-49 mg%;
- 2.1% had BACs from 50-80 mg%
- 9.2% had BACs from 81 to 160 mg%; and,
- 19.9% had BACs over 160 mg%.

Thus, 35.0% of fatally injured drivers in Canada had been drinking and most of these had illegal BACs – 83.2% of fatally injured drinking drivers had BACs > 80 mg%.

3.2.1 Age differences. Figures 3-2 and 3-3 summarize the data from Table 3-1 for the various age groups.

Figure 3-2 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 "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 3-2
Percent of All Fatally Injured Drinking and Legally Impaired Drivers Accounted for by Each Age Group: Canada, 2002



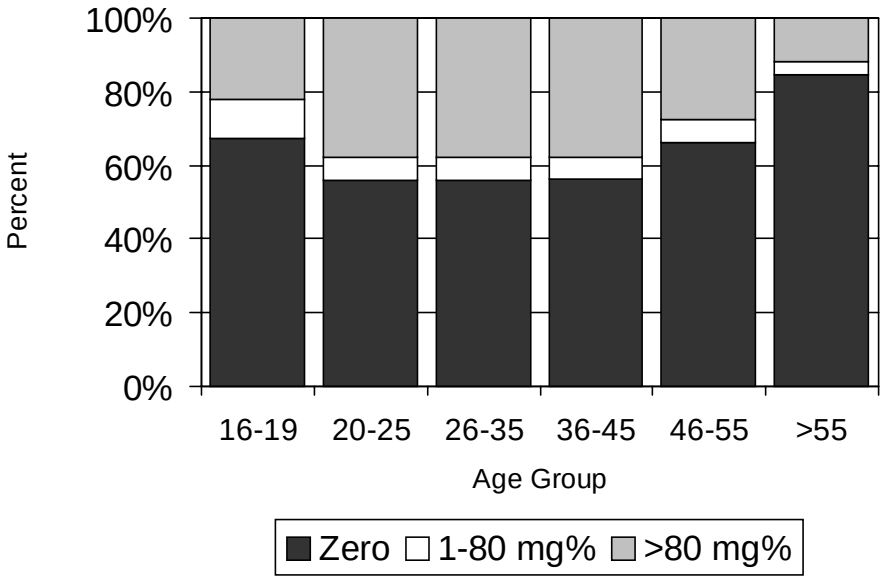
Of all the fatally injured drinking drivers, 24.4% were aged 36-45; 21.2% were aged 26-35; 19.6% were aged 20-25; 17.3% were aged 46-55; and 9.4% were over 55. Those aged 16-19 accounted for only 8.1% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 25.3% were aged 36-45; 22.0% were aged 26-35; 20.3% were aged 20-25; 17.0% were aged 46-55; and 8.8% were over age 55. Those aged 16-19 accounted for only 6.6% of fatally injured drivers who were over the legal limit.

Figure 3-3 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 20-25 were the most likely to have been drinking – 44.1% of drivers in this age group had been drinking. By contrast, only 15.3% of tested drivers over age 55 had been drinking.

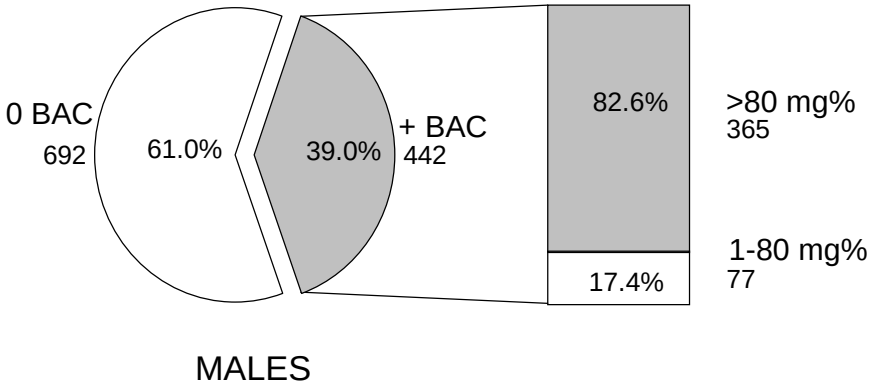
Figure 3-3
Percent of Drinking Drivers Within Each Age Group: Canada, 2002

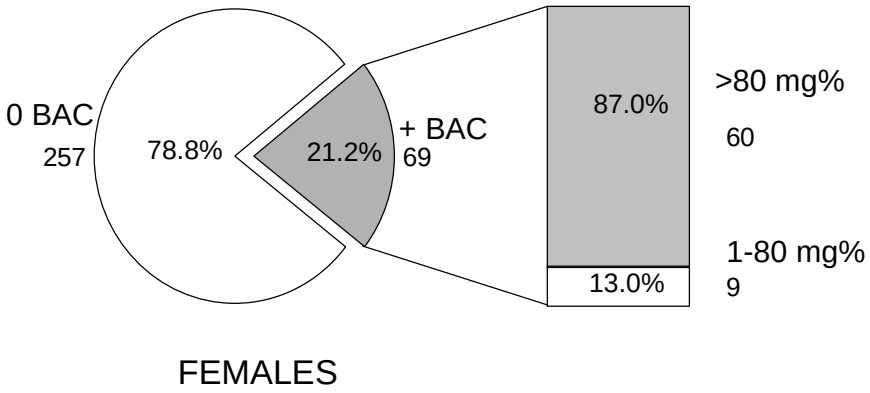


3.2.2 Gender differences. Males dominate the picture – they account for 86.5% of all the fatally injured drivers who had been drinking and 85.9% of all of the fatally injured drivers who were legally impaired. However, males dominate the picture largely because they account for 77.0% of the drivers who are killed (1,343 of the 1,744 fatalities are males).

Drinking drivers are also much more prevalent among fatally injured males than females. These results are shown in Figure 3-4. 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.

Figure 3-4
Alcohol Use Among Male and
Female Drivers: Canada, 2002





Fatally injured male drivers were considerably more likely to have been drinking than female drivers (39.0% and 21.2%, respectively). However, most of the male and female drivers who were drinking had BACs over the legal limit (82.6% and 87.0%, respectively).

***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), 57.3% were automobile drivers; 26.8% were light truck drivers; 8.6% were motorcycle riders; and 5.7% were van drivers.

Table 3-3

Number and Percent of Fatally Injured Drinking and Legally Impaired Drivers Accounted for by Drivers* of Different Vehicle Types: Canada, 2002

Vehicle Type	Number of Drinking Drivers	% of All Drinking Drivers	Number of Legally Impaired Drivers	% of All Legally Impaired Drivers
Automobile	293	57.3	242	56.9
Motorcycle	44	8.6	35	8.2
Tractor-Trailer	4	0.8	1	0.2
Heavy Truck[1]	3	0.6	2	0.5
Van	29	5.7	26	6.1
Light Truck[2]	137	26.8	118	27.8
Motorhome	1	0.2	1	0.2
TOTAL	511	100.0	425	100.0

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

[1] Trucks over 4500 kg.

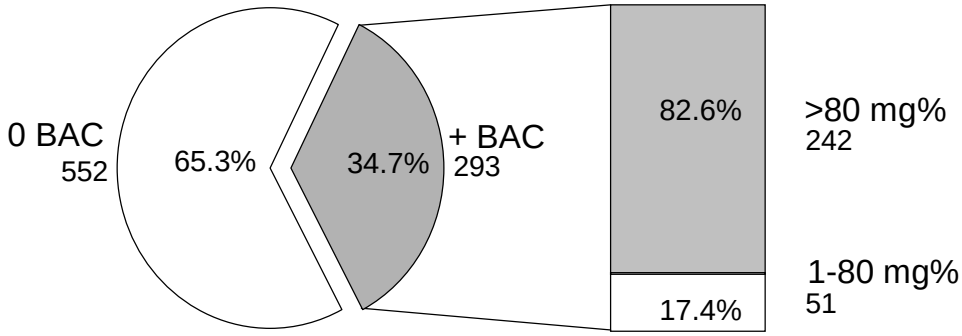
[2] e.g., pickup trucks.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 56.9% were automobile drivers; 27.8% were light truck drivers; 8.2% were motorcycle riders; and 6.1% were van drivers.

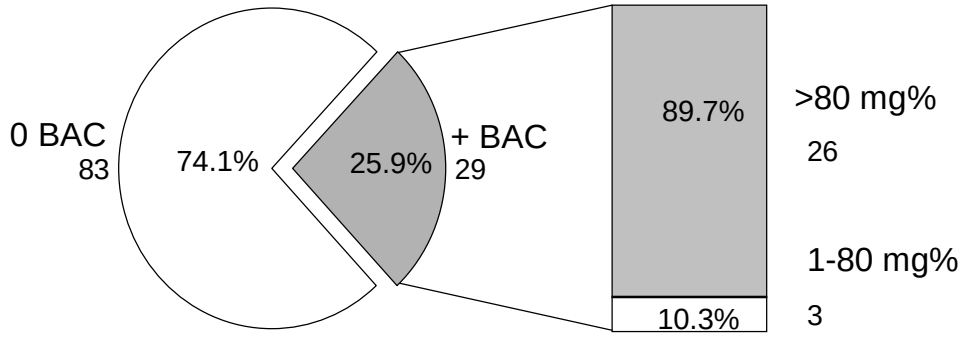
Figure 3-5a-c summarizes the results of alcohol tests for drivers fatally injured in 2002 according to the type of vehicle being operated: automobile drivers and drivers of vans (Figure 3-5a); motorcycle riders and drivers of light trucks (Figure 3-5b); and drivers of heavy trucks and tractor trailers (Figure 3-5c). 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.

Figure 3-5a
Alcohol Use Among Drivers of Different Vehicle Types: Canada, 2002

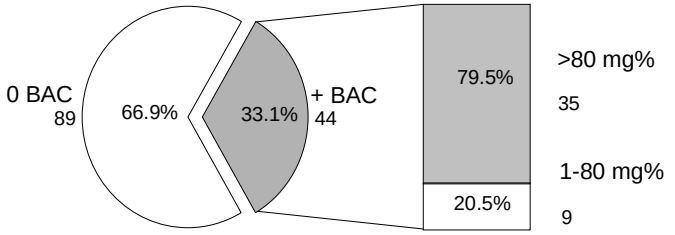


AUTOMOBILE DRIVERS

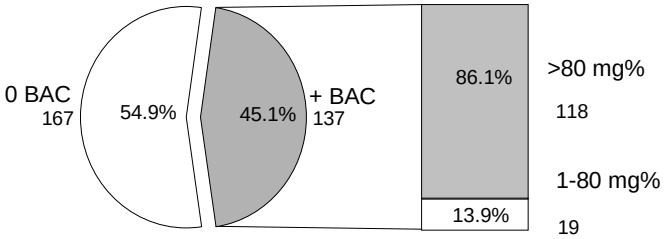


VAN DRIVERS

Figure 3-5b
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2002

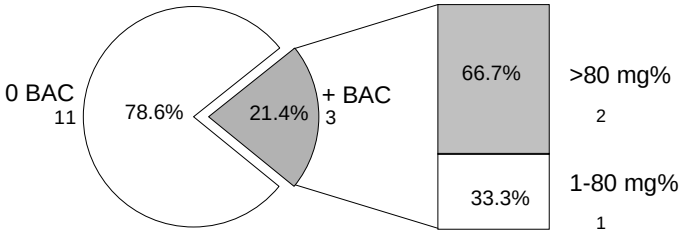


MOTORCYCLISTS

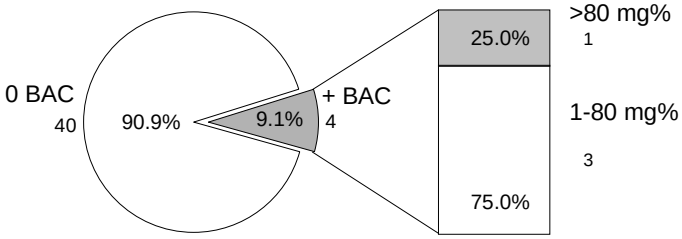


LIGHT TRUCK DRIVERS

Figure 3-5c
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2002



HEAVY TRUCK DRIVERS

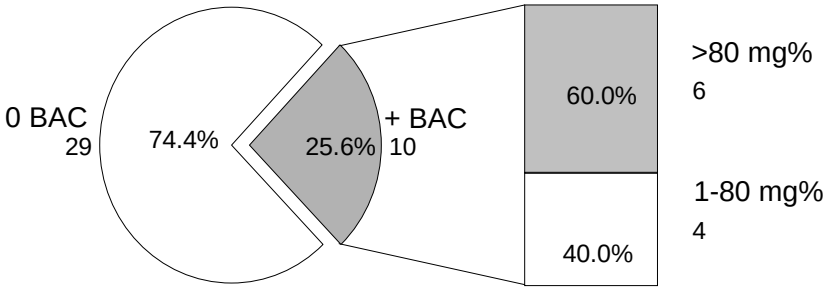


TRACTOR-TRAILER DRIVERS

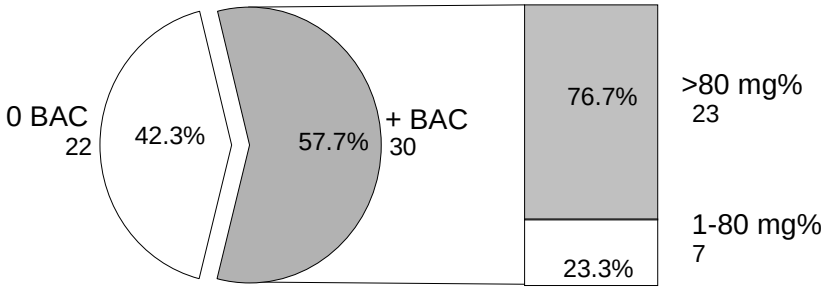
Among fatally injured automobile drivers, 34.7% had been drinking. Of those who were drinking, the vast majority (82.6%) had alcohol levels in excess of the legal limit. Among fatally injured van drivers, 25.9% had been drinking and most (89.7%) of these had BACs over the legal limit. Among motorcycle riders, 33.1% had been drinking and 79.5% of these had BACs over the legal limit. The highest incidence of drinking was found among drivers of light trucks – 45.1% had been drinking and 86.1% of these had illegal BACs. Heavy truck and tractor-trailer drivers have a much lower frequency of alcohol involvement. Indeed, only 21.4% of heavy truck drivers had been drinking. And, the lowest incidence of drinking is found among tractor-trailer drivers – only 9.1% had been drinking.

Figure 3-5d-e presents similar information on the incidence of drinking among drivers operating recreational vehicles (results for this vehicle type are not included in Tables 3-2 or 3-3). As can be seen, the lowest incidence of drinking was found among bicyclists – only 25.6% of fatally

Figure 3-5d
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 2002



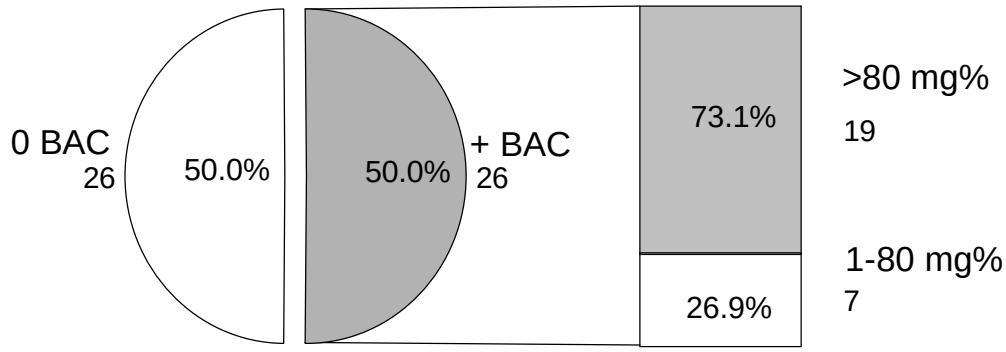
CYCLISTS



SNOWMOBILE OPERATORS

injured bicyclists had been drinking at the time of the collision. However, among those bicyclists who had been drinking, 60.0% had BACs over the legal limit. Among snowmobile drivers, 57.7% had been drinking, and 76.7% had BACs over the legal limit. Operators of off-road vehicles were slightly less likely than snowmobile drivers to have been drinking – 50.0% of them had been drinking and 73.1% of these drinking drivers had BACs over the legal limit.

Figure 3-5e
Alcohol Use Among Drivers of Different Vehicle Types: Canada, 2002

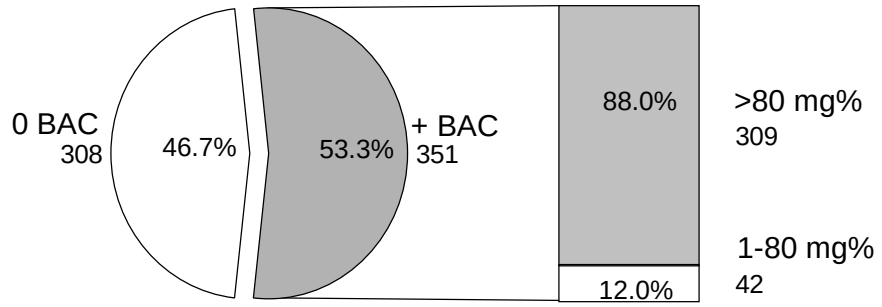


OFF-ROAD VEHICLE OPERATORS

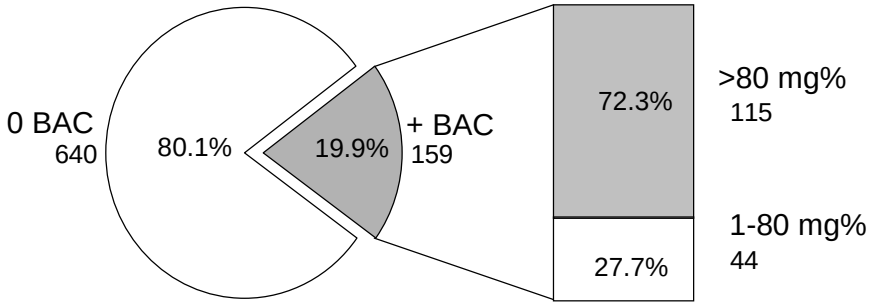
3.2.4 Collision differences. Less than half of all drivers killed (45.1%) were involved in single-vehicle collisions but these crashes accounted for over two-thirds of the drivers who had been drinking or were legally impaired (68.7% and 72.7%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. As shown in Figure 3-6, over half of the drivers involved in single-vehicle crashes (53.3%) were positive for alcohol, compared to only 19.9% of those involved in multiple-vehicle collisions. Most drinking drivers in single-vehicle crashes had BACs over the legal limit (88.0%). By contrast, among drinking drivers in multiple-vehicle crashes, 72.3% had BACs over the legal limit.

Figure 3-6
Alcohol Use Among Drivers by
Type of Collision: Canada, 2002



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 2002 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 blood alcohol concentration (BAC) levels.

Table 3-4
Alcohol Use Among Fatally Injured Pedestrians: Canada, 2002

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	39	5	12.8	60.0	0.0	0.0	20.0	20.0
16-19	34	26	76.5	30.8	11.5	7.7	7.7	42.3
20-25	26	23	88.5	43.5	4.3	8.7	21.7	21.7
26-35	29	23	79.3	52.2	4.3	0.0	4.3	39.1
36-45	48	35	72.9	37.1	2.9	0.0	8.6	51.4
46-55	30	26	86.7	69.2	0.0	0.0	7.7	23.1
>55	193	101	52.3	87.1	2.0	1.0	2.0	7.9
Gender								
Male	248	157	63.3	61.8	3.2	1.3	6.4	27.4
Female	151	82	54.3	67.1	3.7	3.7	7.3	18.3
Jurisdiction								
British Columbia	55	28	50.9	60.7	7.1	3.6	3.6	25.0
Alberta	43	34	79.1	61.8	0.0	0.0	2.9	35.3
Saskatchewan	18	13	72.2	38.5	0.0	0.0	15.4	46.2
Manitoba	16	11	68.8	45.5	0.0	0.0	18.2	36.4
Ontario	147	91	61.9	68.1	3.3	1.1	4.4	23.1
Quebec	85	39	45.9	66.7	5.1	2.6	10.3	15.4
New Brunswick	15	9	60.0	66.7	0.0	11.1	11.1	11.1
Nova Scotia	11	7	63.6	71.4	0.0	0.0	14.3	14.3
Prince Edward Island	2	2	100.0	100.0	0.0	0.0	0.0	0.0
Newfoundland	3	3	100.0	33.3	33.3	33.3	0.0	0.0
Yukon	1	0	0.0	0.0	0.0	0.0	0.0	0.0
Northwest Territories	2	2	100.0	100.0	0.0	0.0	0.0	0.0
Nunavut	1	0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	399	239	59.9	63.6	3.3	2.1	6.7	24.3

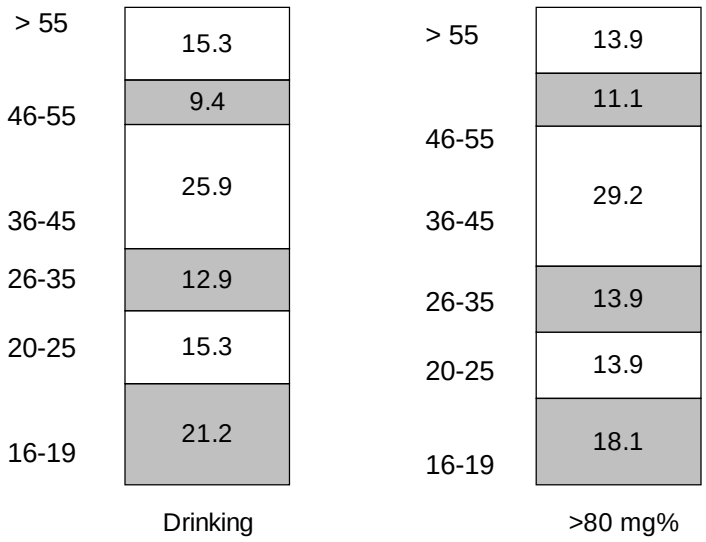
During 2002, as shown by the totals at the bottom of the table, there were 399 pedestrians fatally injured; 239 (59.9%) of these pedestrians were tested for the presence of alcohol. Among tested pedestrians:

- 63.6% showed no evidence of alcohol – 36.4% had been drinking;
- 3.3% had BACs below 50 mg%;
- 2.1% had BACs from 50 to 80 mg%;
- 6.7% had BACs from 81 to 160%; and
- 24.3% had BACs over 160 mg%.

Thus, 36.4% of fatally injured pedestrians had been drinking and most of these had BACs over 80 mg%.

3.3.1 Age differences. Of all the fatally injured pedestrians, almost half (48.4%) were over 55 years of age (193 of the 399 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 3-7. The figure shows the percent of all drinking pedestrians accounted for by each age group. The bar on the left shows the percent of all fatally injured pedestrians with any evidence of alcohol accounted for by each age group. On the right is shown the percent of pedestrians with BACs over 80 mg% accounted for by each age group. Of all the fatally injured drinking pedestrians, 25.9% were aged 36-45, 21.2% were aged 16-19; 15.3% were aged 20-25 and over 55; 12.9% were aged 26-35 and 9.4% were 46-55.

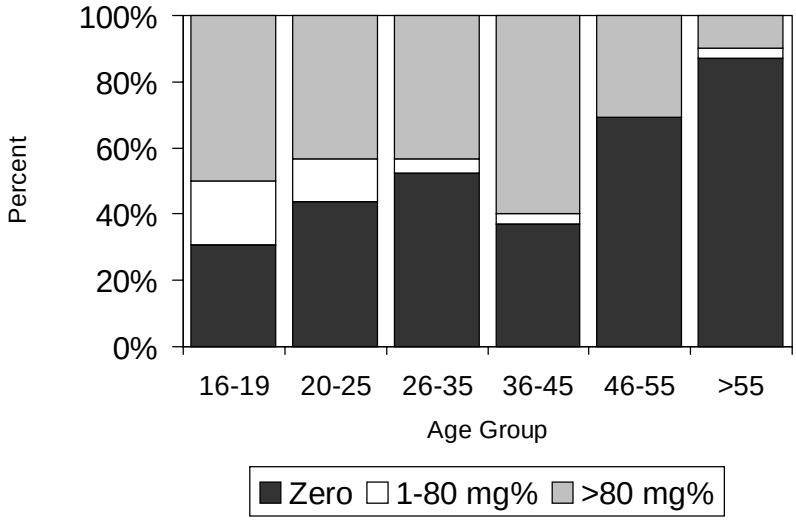
Figure 3-7
Percent of All Fatally Injured Drinking and Legally Impaired Pedestrians Accounted for by Each Age Group: Canada, 2002



Of all the fatally injured pedestrians with BACs over 80 mg%, 29.2% were aged 36-45; 18.1% were aged 16-19; 13.9% were aged 20-25, 26-35 and over 55; and only 11.1% were aged 46-55.

Figure 3-8 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 below 81 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 3-8
Percent of Drinking Pedestrians Within Each Age Group: Canada, 2002



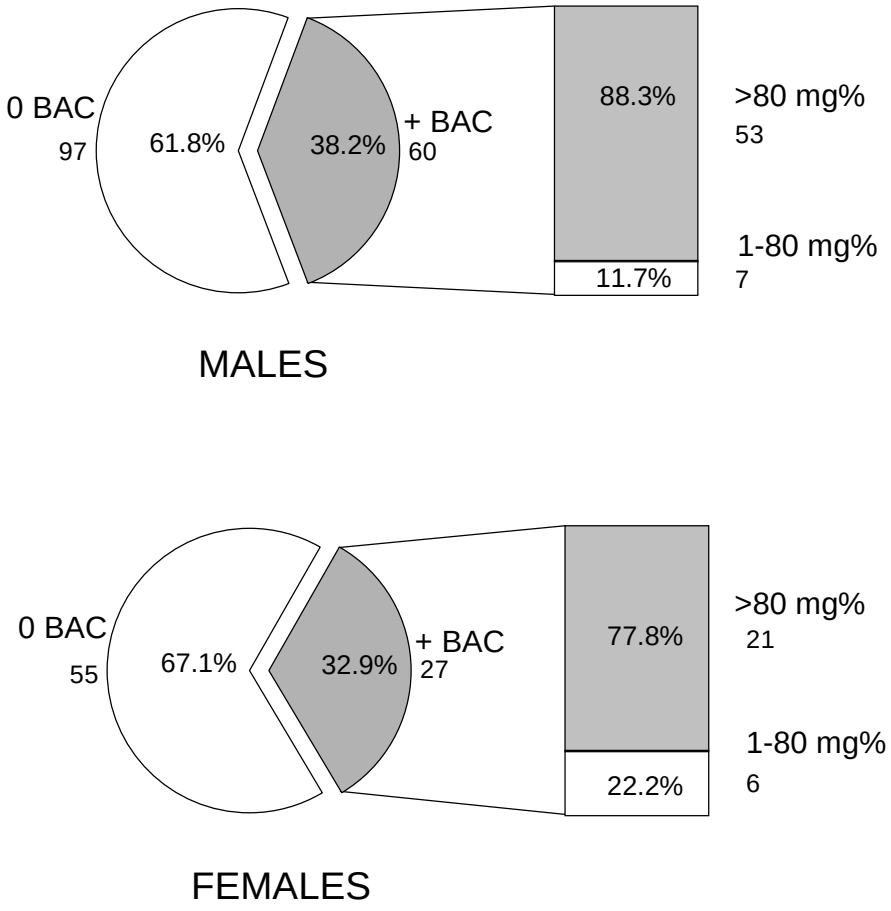
Within each of the age groups, fatally injured pedestrians age 16-19 were the most likely to have been drinking – 69.2% of pedestrians in this age group had been drinking. By contrast, only 12.9% of tested pedestrians over age 55 had been drinking. Fatally injured pedestrians aged 46-55 were either sober or over 80 mg%.

3.3.2 Gender differences. Males account for over two-thirds (69.0%) of all the fatally injured pedestrians who had been drinking, and 71.6% of all of the fatally injured pedestrians who had BACs over 80 mg%. However, males dominate the picture because they account for 62.2% of the pedestrians who are killed (248 of the 399 fatalities are male).

Figure 3-9 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 (i.e., 0 BAC) and those positive for alcohol (+ BAC). The bar to the right of the pie chart shows the distribution of alcohol levels found among those who had been drinking; the percent who had BACs above and below 80 mg%. Percentages are given inside the figures; the absolute number of cases is shown adjacent to the figure.

Among fatally injured male pedestrians, 38.2% had been drinking, and 88.3% of these pedestrians had BACs over 80 mg%. A slightly different picture emerges among fatally injured female pedestrians – only 32.9% had been drinking and 77.8% of these pedestrians had BACs over 80 mg% (100.0%).

Figure 3-9
Alcohol Use Among Male and Female
Fatally Injured Pedestrians: Canada, 2002



***3.3.3 Jurisdictional differences*.** Of all the fatally injured pedestrians, over half were killed in Ontario and Quebec (36.8% and 21.3%, respectively). Ontario accounted for 33.3%, and Quebec and Alberta each accounted for 14.9% of the fatally injured drinking pedestrians. Ontario accounted for 33.8% and Alberta accounted for 17.6% of the fatally injured pedestrians with BACs over 80 mg%. It should be noted that the figures for drinking and legally impaired pedestrians in Quebec are underestimated because they are based on tested pedestrians and the rate of testing for alcohol is low in that province – e.g., only 45.9% of pedestrians fatally injured in Quebec were tested, compared to 79.1% in Alberta, 72.2% in Saskatchewan, and 68.8% in Manitoba. In some jurisdictions with few pedestrian deaths, 100.0% were tested for alcohol – Prince Edward Island, Newfoundland, and the Northwest Territories.

As shown in Table 3-4 (see page 27), the highest incidence of alcohol in fatally injured pedestrians, however, was in Newfoundland – 66.7%. The lowest incidence of alcohol in fatally injured pedestrians was in Prince Edward Island and the Northwest Territories where 0.0% had been drinking. Some caution should be taken interpreting the BAC results for Newfoundland, Prince Edward Island and the Northwest Territories because there were few fatally injured pedestrians – 3, 3, and 2, respectively. In Nova Scotia, only 28.6% of fatally injured pedestrians 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 2002 in Canada. 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.

As shown, by the totals at the bottom of the table, 19,196 drivers were involved in crashes in which someone was seriously injured. Among these, 17.2% were alcohol-related crashes.

3.4.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 21.8% were aged 20-25 and 26-35; and 18.5% were aged 36-45. Drivers under the age of 16 accounted for only 0.8% of all those involved in alcohol-related crashes.

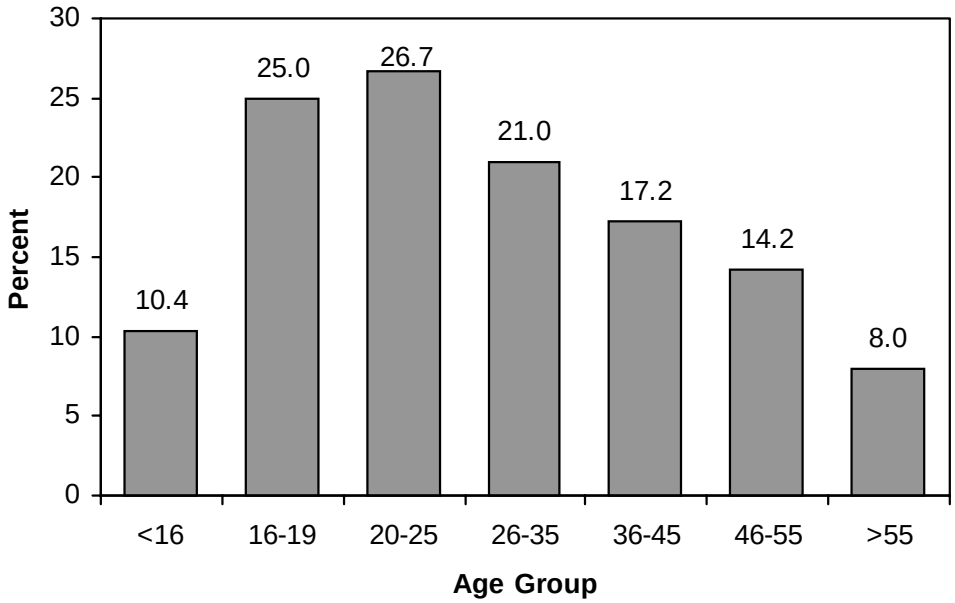
Table 3-5
Drivers* in Alcohol-Related Serious Injury Crashes:
Canada, 2002

Category of Drivers	Number of Drivers	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	240	25	10.4	0.8
16-19	1821	455	25.0	13.8
20-25	2706	722	26.7	21.8
26-35	3447	723	21.0	21.8
36-45	3554	611	17.2	18.5
46-55	2607	371	14.2	11.2
>55	2717	218	8.0	6.6
unknown	2104	184	8.7	5.6
Gender				
Male	13165	2606	19.8	78.8
Female	5713	653	11.4	19.7
unknown	318	50	15.7	1.5
Vehicle Type				
Auto	11251	1981	17.6	59.9
Truck/Van	5107	965	18.9	29.2
Motorcycle	886	133	15.0	4.0
Tractor Trailer	579	61	10.5	1.8
Other Hwy. Vehicle	182	12	6.6	0.4
Off-Road	973	131	13.5	4.0
Unknown	218	26	11.9	0.8
Collision Type				
Single-Vehicle	5908	2287	38.7	69.1
Multiple-Vehicle	13288	1022	7.7	30.9
TOTAL	19196	3309	17.2	100.0

*Excludes British Columbia

Figure 3-10 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 age 20-25 (26.7%) and those age 16-19 (25.0%). The lowest incidence of involvement in alcohol-related crashes was found for the oldest age group of drivers – those aged over 55 (8.0%).

Figure 3-10
Percent of Drivers Within Each Age Group in Serious Injury Crashes that Involved Alcohol: Canada, 2002



3.4.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 78.8% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (19.8% and 11.4%, respectively).

3.4.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 59.9% were automobile drivers; and 29.2% were truck-van drivers.

About one of five of the serious injury crashes involving truck/van drivers and automobile drivers were alcohol related (18.9% and 17.6%, respectively) as were 15.0% of motorcycle riders. The lowest incidence of involvement in alcohol-related serious injury crashes was found among drivers of other highway vehicles (6.6%).

3.4.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 69.1% 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 – 38.7% of these drivers, compared to only 7.7% 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.

3.5.1 Deaths in alcohol-related crashes: 1995-2002. Table 3-6 and Figure 3-11 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. These results differ slightly from those presented in Section 3.1 for two reasons. First, deaths that occur in *crashes that involve a drinking pedestrian are not 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; the previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations*.

Table 3-6

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Canada, 1995-2002

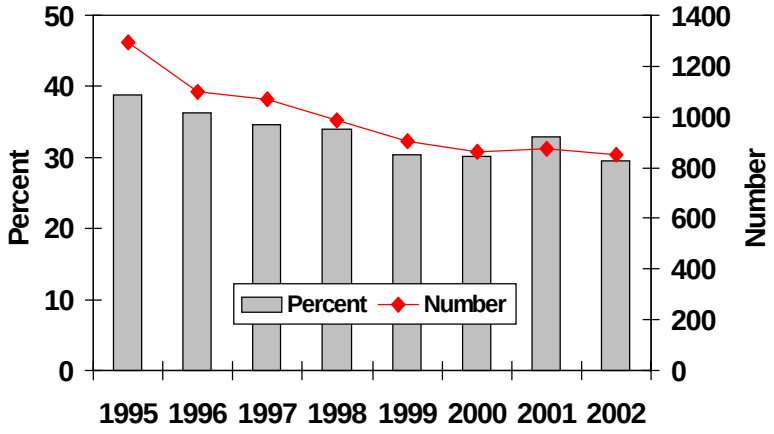
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	3338	1296	38.8
1996	3031	1097	36.2
1997	3089	1070	34.6
1998	2909	986	33.9
1999	2986	906	30.3
2000	2865	864	30.2
2001	2645	874	33.0
2002	2867	850	29.6

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

** only on public roadways involving principal vehicle types.

As shown in the figure, the number of deaths in crashes that involved a drinking driver dropped from 1,296 to 864 between 1995 and 2000, rose slightly to 874 deaths in 2001, then declined to 850 in 2002. The percentage of alcohol-related fatalities decreased from 38.8% in 1995 to 30.2% in 2000, increased to 33.0% in 2001, and then dropped to a low of 29.6% in 2002.

Figure 3-11
Number and Percent of Deaths Involving a Drinking Driver: Canada, 1995-2002



3.5.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987 to 2002 are shown in Table 3-7. Trends are illustrated in Figure 3-12 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%) declined from 742 to 409, between 1987 and 1999, rose to 445 in 2001, and declined to 425 in 2002. The percent of fatally injured drivers with BACs over the legal limit dropped from 43.1% to 27.1% between 1987 and 1999, rose to 32.1% in 2001, then declined again in 2002 (29.1%).

By contrast, the number of fatally injured drivers with zero BAC has fluctuated over this 16-year period, from a low of 807 in 1987 to a high of 1,009 in 1999. In 2002, there were 949 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, then decreased to 62.1% in 2001, and rose to 65.0% in 2002.

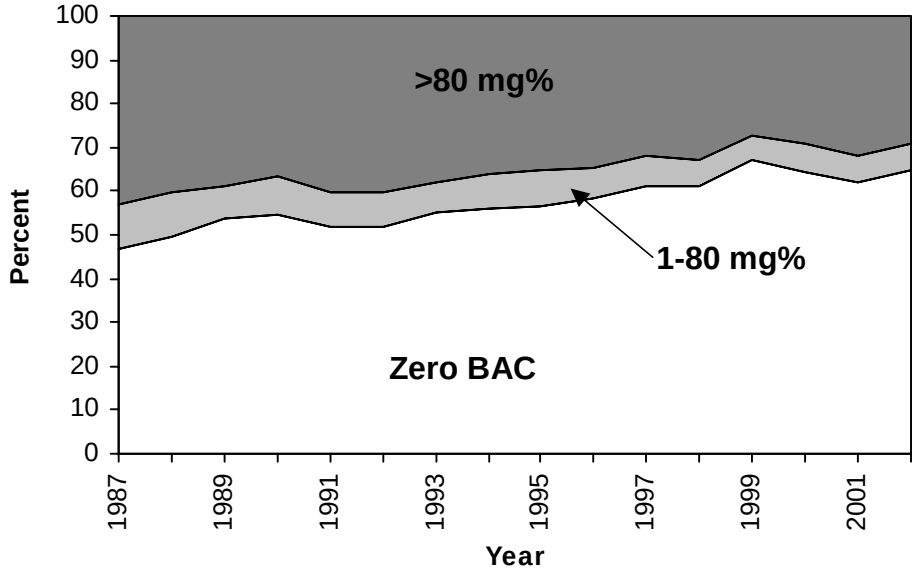
Table 3-7

Alcohol Use Among Fatally Injured Drivers:
Canada, 1987-2002

				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

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

Figure 3-12
Trends in Alcohol Use Among Driver Fatalities: Canada, 1987-2002



The number of fatally injured drivers with BACs between 1-80 mg% declined from 186 to 90, between 1988 and 1998, was constant until 2000, fell to 80 in 2001, and rose to 86 in 2002. The percent of fatally injured drivers with BACs between 1 and 80 mg% also dropped, from a high of 10.4% in 1988 to its lowest level (5.8%) in 2001, before rising slightly in 2002 (5.9%).

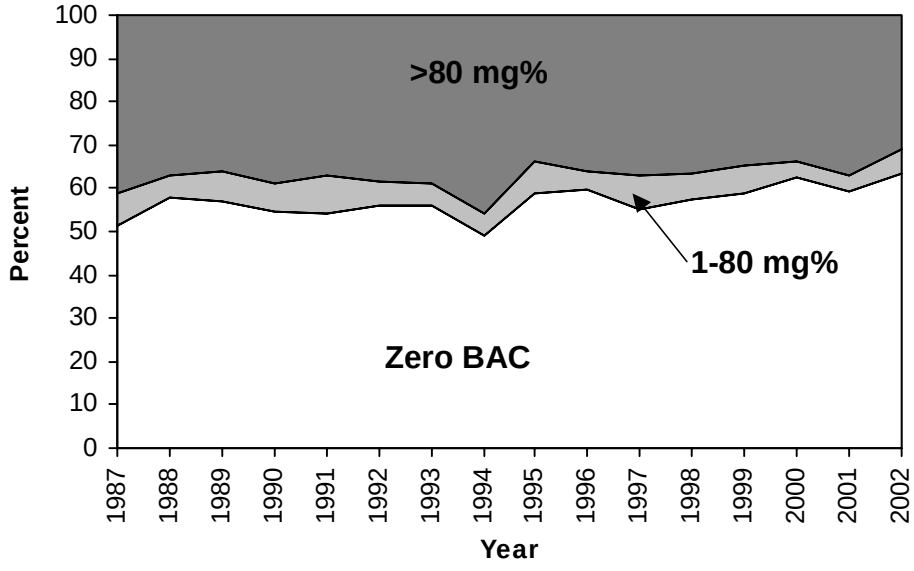
3.5.3 Fatally injured pedestrians: 1987-2002. Data on alcohol use among fatally injured pedestrians over the 16-year period from 1987 to 2002 are shown in Table 3-8. Trends are illustrated in Figure 3-13 which shows changes in the percent of fatally injured pedestrians who: (1) showed no evidence of 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 3-8

Alcohol Use Among Fatally Injured Pedestrians:
Canada, 1987-2002

				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

Figure 3-13
Trends in Alcohol Use Among Pedestrian Fatalities: Canada, 1987-2002



The number of fatally injured pedestrians with a BAC over 80 mg% declined from a high of 171 in 1987 to 83 in 2000, rose to 94 in 2001, and fell to a low of 74 in 2002. The percent of fatally injured pedestrians with a BAC over 80 mg% declined from 41.3 to 35.9% between 1987 and 1989, increased until 1994, fell in 2000 (33.9%), rose to 37.0% in 2001, and dropped to its lowest level in 2002 (31.0%).

The number of fatally injured pedestrians with no evidence of alcohol decreased from 213 to 145 between 1987 and 1994, increased to 194 in 1996, decreased to 150 in 2001, and rose slightly to 152 in 2002. The percent of fatally injured pedestrians with zero BAC has not changed much over this 16-year period – 58.1% of fatally injured pedestrians showed no evidence of alcohol in 1988, compared to 63.6% in 2002.

The number of fatally injured pedestrians with BACs between 1-80 mg% has fluctuated over this 16-year period with 30 in 1987 and 13 in 2002. The percent of fatally injured drivers with BACs between 1-80 mg% also fluctuated between 7.2% in 1987 and 5.4% in 2002.

3.5.4 Drivers in serious injury crashes: 1995-2002. Table 3-9 and Figure 3-14 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.

As can be seen, the incidence of alcohol-involvement in serious crashes has declined only slightly. Between 1995 and 2002 the number of drivers in serious injury crashes that involved alcohol declined from 4,002 to 3,152. The percentage of drivers in serious injury crashes that involved alcohol dropped from 20.9% to 18.7% between 1995 to 1998. The percentage rose slightly to 18.9% in 1999 before dropping to 17.5% in 2002.

Table 3-9

Number and Percent of All Drivers[1] in Serious Injury Crashes that Involved Alcohol[2]: Canada[3], 1995-2002

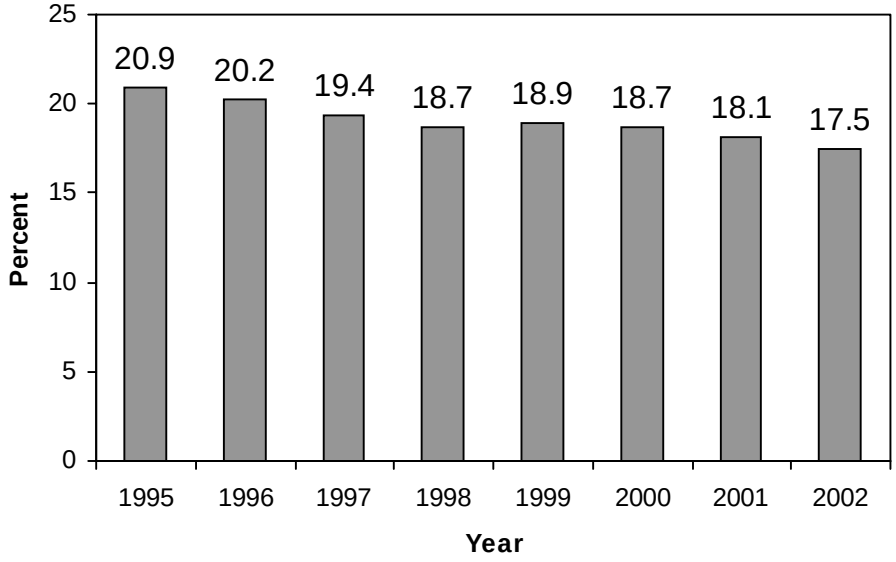
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	19132	4002	(20.9)
1996	18584	3749	(20.2)
1997	17931	3478	(19.4)
1998	18113	3393	(18.7)
1999	17584	3324	(18.9)
2000	17213	3211	(18.7)
2001	17432	3157	(18.1)
2002	18005	3152	(17.5)

[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 British Columbia and the Yukon

Figure 3-14
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Canada, 1995-2002



4.0 BRITISH COLUMBIA

This section of the report reviews the major findings on alcohol involvement in fatal and injury motor vehicle collisions in British Columbia during 2002. 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 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 2002. 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, 47 people age 16-19 were killed in road crashes in British Columbia during 2002. And, in 45 of these cases (95.7%) 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, 17 people age 16-19 died in alcohol-related crashes in British Columbia during 2002. The next column expresses this as a percentage – e.g., 37.8% 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 9.8% of all the people killed in alcohol-related crashes in British Columbia during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 508 persons died in motor vehicle crashes in British Columbia during 2002. In 489 (96.3%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 173 (35.4%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (508 x .354) it can be estimated that *in British Columbia during 2002, 180 persons died in alcohol-related crashes*.

Table 4-1
Deaths* in Alcohol-Related Crashes: British Columbia, 2002

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	25	24	96.0	2	8.3	1.2
16-19	47	45	95.7	17	37.8	9.8
20-25	72	71	98.6	33	46.5	19.1
26-35	71	70	98.6	37	52.9	21.4
36-45	78	77	98.7	33	42.9	19.1
46-55	61	58	95.1	20	34.5	11.6
>55	154	144	93.5	31	21.5	17.9
Gender						
Male	368	352	95.7	133	37.8	76.9
Female	140	137	97.9	40	29.2	23.1
Type						
Driver/Operator	310	302	97.4	119	39.4	68.8
Passenger	143	135	94.4	39	28.9	22.5
Pedestrian	55	52	94.5	15	28.8	8.7
Vehicle Occupied						
Automobiles	238	229	96.2	76	33.2	43.9
Trucks/Vans	144	140	97.2	60	42.9	34.7
Motorcycles	33	33	100.0	15	45.5	8.7
Other Hwy. Vehs.	24	22	91.7	3	13.6	1.7
Offroad Vehicles	13	13	100.0	4	30.8	2.3
(Pedestrians)	55	52	94.5	15	28.8	8.7
Unknown	1	0	0.0	0	0.0	0.0
TOTAL	508	489	96.3	173	35.4	100.0

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

4.1.1 Victim age. Of all the people who died in alcohol-related crashes, 21.4% (see last column) were aged 26-35. Those aged 20-25 and 36-45 each accounted for 19.1% of the deaths.

Within each of the age groups, the highest incidence of alcohol involvement (52.9% and 46.5%, respectively) occurred in the crashes in which persons aged 26-35 and 20-25 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 8.3% of persons under age 16 and 21.5% of the fatalities over 55 years of age died in crashes involving alcohol.

4.1.2 Gender. Of all the people who died in alcohol-related crashes, 76.9% were males. The incidence of alcohol in crashes in which a male died (37.8%) was greater than the incidence of alcohol in crashes in which a female died (29.2%).

4.1.3 Victim type. Of all the people who died in alcohol-related crashes, 68.8% were drivers/operators of a vehicle; 22.5% were passengers; and 8.7% were pedestrians.

Within each of the principal victim types, the highest incidence of alcohol involvement (39.4%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 28.9% of the crashes in which a passenger died and 28.8% of those in which a pedestrian died.

4.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 43.9% were in an automobile; and 34.7% were in a truck/van. 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 a truck/van occupant and an automobile occupant died (45.5% compared to 42.9% and 33.2%).

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

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 2002. 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%.

Table 4-2
Alcohol Use Among Fatally Injured Drivers: British Columbia, 2002

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	23	21	91.3	8	38.1	7.8	6	28.6	6.8
20-25	41	34	82.9	20	58.8	19.4	17	50.0	19.3
26-35	52	44	84.6	24	54.5	23.3	24	54.5	27.3
36-45	60	50	83.3	22	44.0	21.4	21	42.0	23.9
46-55	46	39	84.8	12	30.8	11.7	8	20.5	9.1
>55	75	55	73.3	17	30.9	16.5	12	21.8	13.6
Gender									
Male	240	198	82.5	88	44.4	85.4	75	37.9	85.2
Female	57	45	78.9	15	33.3	14.6	13	28.9	14.8
Vehicle Type									
Automobile	143	114	79.7	46	40.4	44.7	37	32.5	42.0
Trucks/Van	101	86	85.1	43	50.0	41.7	39	45.3	44.3
Motorcycle	31	27	87.1	13	48.1	12.6	12	44.4	13.6
Tractor Trailer	19	16	84.2	1	6.3	1.0	0	0.0	0.0
Other Vehicle	3	0	0.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	154	132	85.7	71	53.8	68.9	62	47.0	70.5
Multiple-Vehicle	143	111	77.6	32	28.8	31.1	26	23.4	29.5
TOTAL	297	243	81.8	103	42.4	100.0	88	36.2	100.0

To illustrate, among 16-19 year olds there were 23 drivers killed during 2002; 21 of these fatally injured drivers (91.3%) were tested for alcohol. Of those who were tested, eight (38.1%) were positive for alcohol. This means that 16-19 year olds fatally injured drinking drivers accounted for 7.8% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that six of the 21 (28.6%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that six 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 6.8% 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 an average testing rate in 2002, with 81.8% of fatally injured drivers being tested for alcohol use.

In British Columbia, 42.4% had been drinking and most of these had illegal BACs – 85.4% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 3.7% had BACs from 1-49 mg%;
- 2.5% had BACs from 50-80 mg%
- 11.1% had BACs from 81 to 160 mg%; and,
- 25.1% had BACs over 160 mg%.

4.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 23.3% were aged 26-35; 21.4% were aged 36-45; 19.4% were aged 20-25; 16.5% were over age 55; 11.7% were aged 46-55; and 7.8% were aged 16-19.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), drivers age 26-35 accounted for 27.3%; 23.9% were aged 36-45; 19.3% were aged 20-25; 13.6% were over age 55; 9.1% were aged 46-55; and 6.8% were aged 16-19.

Within each of the age groups, fatally injured drivers age 20-25 and 26-35 were the most likely to have been drinking (58.8% and 54.5% respectively). By contrast, only 30.8% of tested drivers aged 46-55 had been drinking.

4.2.2 Gender differences. Males dominate the picture – they account for 85.4% of all the fatally injured drivers who had been drinking, and 85.2% of all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (240 of the 297 fatalities are males). If one examines the frequency of alcohol use

among males compared to females, a similar picture emerges. Fatally injured male drivers were more likely to have been drinking than female drivers (44.4% and 33.3%, respectively). And, 85.2% 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), 44.7% were automobile drivers; 41.7% were truck/van drivers; 12.6% were motorcyclists; and 1.0% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 44.3% were truck/van drivers; 42.0% were automobile drivers; and 13.6% were motorcyclists.

Within each of the vehicle types, 50.0% of fatally injured truck/van drivers, 48.1% of motorcyclists; 40.4% of automobile drivers; and 6.3% of tractor-trailer drivers were found to have been drinking.

4.2.4 Collision differences. One-half of the drivers killed (154 of the 297) were involved in single-vehicle collisions and these crashes accounted for two out of three of the drivers who had been drinking or were legally impaired (68.9% and 70.5%, respectively).

Over half of the drivers involved in single-vehicle crashes (53.8%) were positive for alcohol, compared to only 28.8% of those involved in multiple-vehicle collisions.

4.3 DRIVERS INVOLVED IN ALCOHOL-RELATED INJURY CRASHES

This section presents information on drivers involved in alcohol-related crashes in which someone was injured in 2002 in British Columbia. This includes all injury crashes not just serious ones because information on injury severity in a crash is not recorded by the police in British Columbia. It also includes only injury collisions attended by the police.

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

Table 4-3
Drivers in Alcohol-Related Injury Crashes:
British Columbia, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	213	12	5.6	0.3
16-19	3446	605	17.6	14.3
20-25	4990	893	17.9	21.2
26-35	6179	928	15.0	22.0
36-45	6504	832	12.8	19.7
46-55	4805	506	10.5	12.0
>55	5109	281	5.5	6.7
unknown	911	161	17.7	3.8
Gender				
Male	20078	3041	15.1	72.1
Female	11206	1020	9.1	24.2
unknown	873	157	18.0	3.7
Vehicle Type				
Auto	23849	3018	12.7	71.6
Truck/Van	5678	916	16.1	21.7
Motorcycle	786	106	13.5	2.5
Tractor Trailer	599	85	14.2	2.0
Other Hwy. Vehicle	161	16	9.9	0.4
Off-Road	954	59	6.2	1.4
Unknown	130	18	13.8	0.4
Collision Type				
Single-Vehicle	7340	2668	36.3	63.3
Multiple-Vehicle	24817	1550	6.2	36.7
TOTAL	32157	4218	13.1	100.0

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 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 injury crashes in any row as a percent of all drivers involved in alcohol-related injury crashes.

As shown, by the totals at the bottom of the table, 32,157 drivers were involved in crashes in which someone was injured, and among these 13.1% were alcohol-related crashes.

4.3.1 Driver age. Of all the drivers involved in alcohol-related injury crashes, 22.0% were aged 26-35; 21.2% were aged 20-25; and 19.7% were aged 36-45. Drivers under 16 accounted for only 0.3% of those involved in alcohol-related injury crashes.

Within each of the age groups, one out of six drivers age 20-25 and 16-19 were involved in alcohol-related injury crashes (17.9% and 17.6%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for the oldest age group of drivers – those aged over 55 (5.5%).

4.3.2 Driver gender. Of all the drivers involved in alcohol-related injury crashes, 72.1% were males. The incidence of involvement in alcohol-related injury crashes was also greater for males than for females (15.1% and 9.1%, respectively).

4.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related injury crashes, 71.6% were automobile drivers and 21.7% were truck/van drivers.

The highest incidence of involvement in alcohol-related injury crashes was found for truck/van drivers – 16.1% of these drivers were in crashes that involved alcohol, compared to 14.2% for tractor-trailer drivers; 13.5% for motorcycle riders and 12.7% for automobile drivers.

4.3.4 Type of collision. Of all the drivers involved in alcohol-related injury crashes, 63.3% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related injury crashes was also found among drivers in single-vehicle crashes – 36.3% of these drivers, compared to only 6.2% 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 injury crashes that involved alcohol. This section examines changes in these three indicators of the problem.

Table 4-4

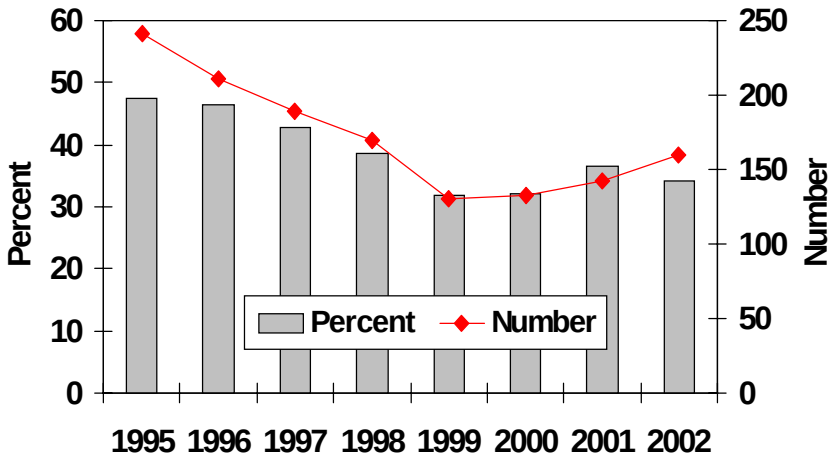
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: British Columbia, 1995-2002

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

* 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 4-1
Number and Percent of Deaths Involving a Drinking Driver: British Columbia, 1995-2002



4.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 4-4 and Figure 4-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 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; 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 dropped from 241 to 130 between 1995 and 1999, then rose to 160 in 2002. The percentage of alcohol-related fatalities decreased from 47.6% in 1995 to 31.7% in 1999, rose to 36.6% in 2001, and then dropped to 34.1% in 2002.

4.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 4-5. Trends are illustrated in Figure 4-2 which shows changes in the percent of fatally injured drivers who: (1) showed no

Table 4-5

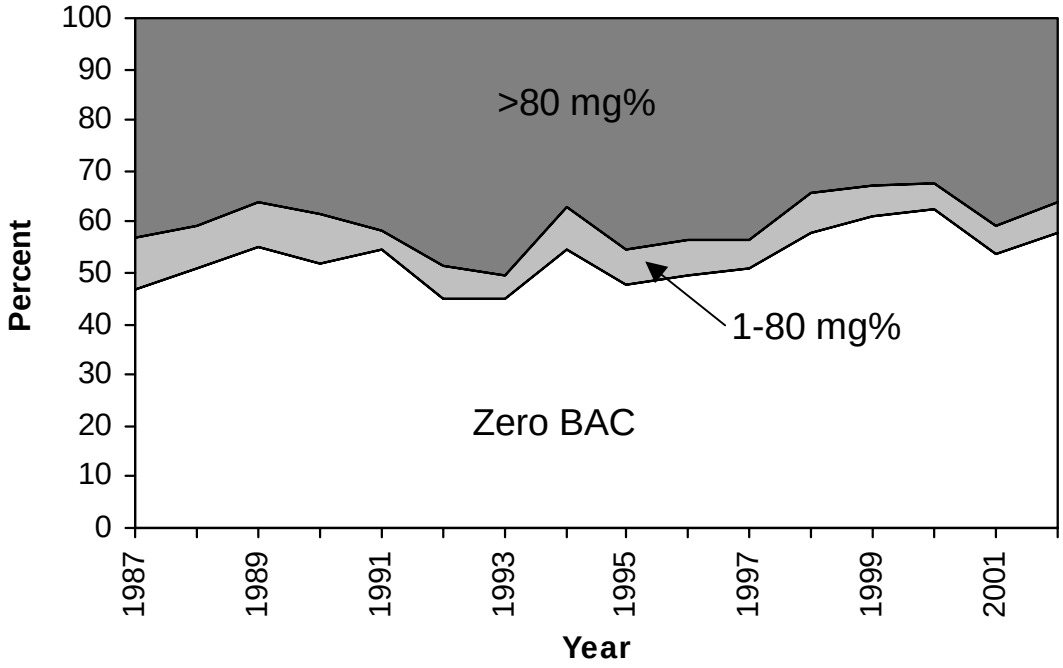
Alcohol Use Among Fatally Injured Drivers:
British Columbia, 1987-2002

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

* dying in less than six hours.

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 differ slightly from those shown in Section 4.2 because the analysis is restricted to drivers who died in less than six hours of the crash.

Figure 4-2
Trends in Alcohol Use Among Driver Fatalities: British Columbia, 1987-2002



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 its lowest point in 2000 (32.2%), rose in 2001 (40.6%), and dropped to 36.2% in 2002. The percent of fatally injured drivers with zero BAC decreased from 1989 (55.0%) to 1992 (44.8%), rose to its highest level in 2000 (62.4%), fell to 53.5% in 2001, and rose in 2002 (58.0%). 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 point in 1991 (4.0%), increased to 7.8% in 1998, decreased to 5.4% in 2000, rose to 5.9% in 2001, and declined slightly to 5.8% in 2002.

4.4.3 Drivers in injury crashes: 1995-2002. Table 4-6 and Figure 4-3 show information on drivers involved in alcohol-related injury crashes. These results differ slightly from those in Section 4.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 4-6

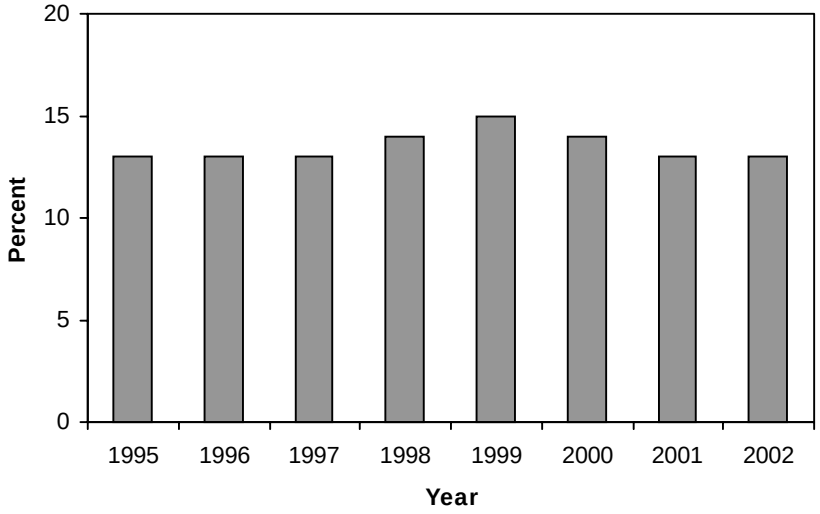
Number and Percent of All Drivers* in Injury Crashes**
that Involved Alcohol: British Columbia, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 4-3
Percent of All Drivers in Injury Crashes that Involved Alcohol: British Columbia, 1995-2002



As can be seen, the incidence of alcohol-involvement in injury crashes has increased slightly over this eight-year period. The percentage of drivers in injury crashes that involved alcohol decreased slightly from 12.7% in 1995 to 12.6% in 1996, rose to 14.9% in 1999, decreased to 13.1% in 2001, and rose slightly to 13.3% in 2002.

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 2002. 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 2002. 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, 47 people age 16-19 were killed in motor vehicle crashes in Alberta during 2002. And, in 43 of these cases (91.5%) 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 age 16-19 died in alcohol-related crashes in Alberta during 2002. The next column expresses this as a percentage – e.g., 44.2% 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 13.3% of all the people killed in alcohol-related crashes in Alberta during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 400 persons died in motor vehicle crashes in Alberta during 2002. In 369 (92.3%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 143 (38.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (400 x .388) it can be estimated that *in Alberta during 2002, 155 persons died in alcohol-related crashes*.

Table 5-1
Deaths* in Alcohol-Related Crashes: Alberta, 2002

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	29	25	86.2	5	20.0	3.5
16-19	47	43	91.5	19	44.2	13.3
20-25	52	50	96.2	25	50.0	17.5
26-35	59	57	96.6	24	42.1	16.8
36-45	60	55	91.7	29	52.7	20.3
46-55	58	53	91.4	20	37.7	14.0
>55	95	86	90.5	21	24.4	14.7
Gender						
Male	282	261	92.6	114	43.7	79.7
Female	118	108	91.5	29	26.9	20.3
Type						
Driver/Operator	248	231	93.1	93	40.3	65.0
Passenger	107	98	91.6	34	34.7	23.8
Pedestrian	43	38	88.4	14	36.8	9.8
Unknown	2	2	100.0	2	100.0	1.4
Vehicle Occupied						
Automobiles	141	129	91.5	47	36.4	32.9
Trucks/Vans	158	145	91.8	64	44.1	44.8
Motorcycles	25	25	100.0	10	40.0	7.0
Other Hwy. Vehs.	12	12	100.0	2	16.7	1.4
Offroad Vehicles	21	20	95.2	6	30.0	4.2
(Pedestrians)	43	38	88.4	14	36.8	9.8
TOTAL	400	369	92.3	143	38.8	100.0

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

5.1.1 Victim age. Of all the people who died in alcohol-related crashes, 20.3% (see last column) were aged 36-45; 17.5% were aged 20-25 and 16.8% were 26-35.

Within each of the age groups, the highest incidence of alcohol involvement (52.7%) occurred in the crashes in which a person aged 36-45 died. The lowest incidence of alcohol involvement

was found among the youngest and oldest fatalities – only 20.0% of persons under age 16 and 24.4% of the fatalities over 55 years of age died in crashes involving alcohol.

5.1.2 Gender. Of all the people who died in alcohol-related crashes, 79.7% were males. The incidence of alcohol in crashes in which a male died (43.7%) was greater than the incidence of alcohol in crashes in which a female died (26.9%).

5.1.3 Victim type. Of all the people who died in alcohol-related crashes, 65.0% were drivers/operators of a vehicle; 23.8% were passengers; 9.8% were pedestrians; and in 1.4% of cases, the victim type was unknown.

Within each of these victim types, the highest incidence of alcohol involvement (100.0%) occurred in the crashes in which a victim with an unknown seating position died. Alcohol was involved in 40.3% of the crashes in which a driver/operator died; 36.8% of those in which a pedestrian died; and 34.7% of crashes in which a passenger died.

5.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over two-fifths (44.8%) were in a truck/van; 32.9% were in an automobile.

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 (44.1% versus 36.4%). Alcohol was involved in 40.0% of the crashes in which a motorcyclist died.

5.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Alberta during 2002. 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, 2002

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	24	23	95.8	7	30.4	8.9	5	21.7	7.9
20-25	32	31	96.9	17	54.8	21.5	13	41.9	20.6
26-35	42	42	100.0	15	35.7	19.0	13	31.0	20.6
36-45	39	37	94.9	18	48.6	22.8	16	43.2	25.4
46-55	46	44	95.7	13	29.5	16.5	10	22.7	15.9
>55	47	42	89.4	9	21.4	11.4	6	14.3	9.5
Gender									
Male	182	173	95.1	66	38.2	83.5	52	30.1	82.5
Female	48	46	95.8	13	28.3	16.5	11	23.9	17.5
Vehicle Type									
Automobile	88	82	93.2	24	29.3	30.4	19	23.2	30.2
Trucks/Van	109	104	95.4	44	42.3	55.7	38	36.5	60.3
Motorcycle	23	23	100.0	10	43.5	12.7	5	21.7	7.9
Tractor Trailer	9	9	100.0	1	11.1	1.3	1	11.1	1.6
Other Vehicle	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	109	103	94.5	56	54.4	70.9	49	47.6	77.8
Multiple-Vehicle	121	116	95.9	23	19.8	29.1	14	12.1	22.2
TOTAL	230	219	95.2	79	36.1	100.0	63	28.8	100.0

To illustrate, among those under 20 years of age there were 24 drivers killed during 2002; 23 of these fatally injured drivers (95.8%) were tested for alcohol. Of those who were tested, 7 (30.4%) were positive for alcohol. This means that fatally injured drinking drivers under 20 accounted for 8.9% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that 5 of the 23 (21.7%) fatally injured drivers under 20 who were tested for alcohol had BACs in excess of 80 mg%. This means 5 of the 7 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 under 20 years accounted for 7.9% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Alberta had a very high testing rate in 2002, with 95.2% of fatally injured drivers being tested for alcohol use.

In Alberta, 36.1% had been drinking and most of these had illegal BACs – 79.5% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 4.6% had BACs from 1-49 mg%;
- 2.7% had BACs from 50-80 mg%
- 5.9% had BACs from 81 to 160 mg%; and,
- 22.8% had BACs over 160 mg%.

***5.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 22.8% were aged 36-45 and 21.5% were aged 20-25; 19.0% were aged 26-35; 16.5% were aged 46-55 and 11.4% were over 55. Those under age 20 accounted for only 8.9% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 25.4% were aged 36-45; 20.6% were aged 20-25 and 26-35 ; 15.9% were aged 46-55; and 9.5% were over 55. Those under age 20 accounted for only 7.9% of fatally injured drivers who were over the legal limit.

Within each of the age groups, fatally injured drivers age 20-25 were the most likely to have been drinking – 54.8% of drivers in this age group had been drinking. By contrast, only 21.4% of tested drivers over age 55 had been drinking.

5.2.2 Gender differences. Males dominate the picture – they account for 83.5% of all the fatally injured drivers who had been drinking, and 82.5% of all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (182 of the 230 fatalities are males). If one examines the frequency of alcohol use among males compared to females, a similar picture emerges. Fatally injured male drivers were more likely to have been drinking than female drivers (38.2% and 28.3%, respectively).

And, 78.8% of the male and 84.6% 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), 55.7% were truck-van drivers; 30.4% were automobile drivers; 12.7% were motorcyclists; and 1.3% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 60.3% were truck-van drivers; 30.2% were automobile drivers; 7.9% were motorcyclists; and 1.6% were tractor-trailer drivers.

Within each of the vehicle types, 43.5% of fatally injured motorcyclists, 42.3% of truck/van drivers; 29.3% of automobile drivers; and 11.1% of tractor-trailer drivers were found to have been drinking.

5.2.4 Collision differences. Although less than half of the drivers killed (109 of the 230) were involved in single-vehicle collisions, these crashes accounted for about three-quarters of the drivers who had been drinking or were legally impaired (70.9% and 77.8%, respectively).

Over half of the drivers involved in single-vehicle crashes (54.4%) were positive for alcohol, compared to 19.8% 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 2002 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.

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, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	51	6	11.8	0.7
16-19	495	137	27.7	16.9
20-25	623	190	30.5	23.4
26-35	817	176	21.5	21.7
36-45	770	141	18.3	17.4
46-55	562	93	16.5	11.5
>55	533	52	9.8	6.4
unknown	48	16	33.3	2.0
Gender				
Male	2646	626	23.7	77.2
Female	1218	172	14.1	21.2
unknown	35	13	37.1	1.6
Vehicle Type				
Auto	1786	374	20.9	46.1
Truck/Van	1677	350	20.9	43.2
Motorcycle	152	35	23.0	4.3
Tractor Trailer	137	23	16.8	2.8
Other Hwy. Vehicle	25	2	8.0	0.2
Off-Road	107	21	19.6	2.6
Unknown	15	6	40.0	0.7
Collision Type				
Single-Vehicle	1282	545	42.5	67.2
Multiple-Vehicle	2617	266	10.2	32.8
TOTAL	3899	811	20.8	100.0

As shown, by the totals at the bottom of the table, 3,899 drivers were involved in crashes in which someone was seriously injured, and among these 20.8% were alcohol-related crashes.

5.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.4% were aged 20-25; 21.7% were aged 26-35; and 17.4% were aged 36-45. Drivers under 16 accounted for only 0.7% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, about one out of three drivers age 20-25 and 16-19 were involved in alcohol-related serious injury crashes (30.5% and 27.7%, respectively). The lowest incidence of involvement in alcohol-related serious injury crashes was found for drivers over 55 and under 16 years of age (9.8% and 11.8%, respectively).

5.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 77.2% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (23.7% and 14.1%, respectively).

5.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, automobile drivers accounted for 46.1% and truck/van drivers accounted for 43.2%.

The highest incidence of involvement in alcohol-related serious injury crashes was found for motorcyclists – 23.0% of these drivers were in crashes that involved alcohol, compared to 20.9% for automobile and truck/van drivers, and 19.6% for off-road vehicle drivers.

5.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 67.2% 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 – 42.5% of these drivers, compared to only 10.2% 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.

Table 5-4

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Alberta, 1995-2002

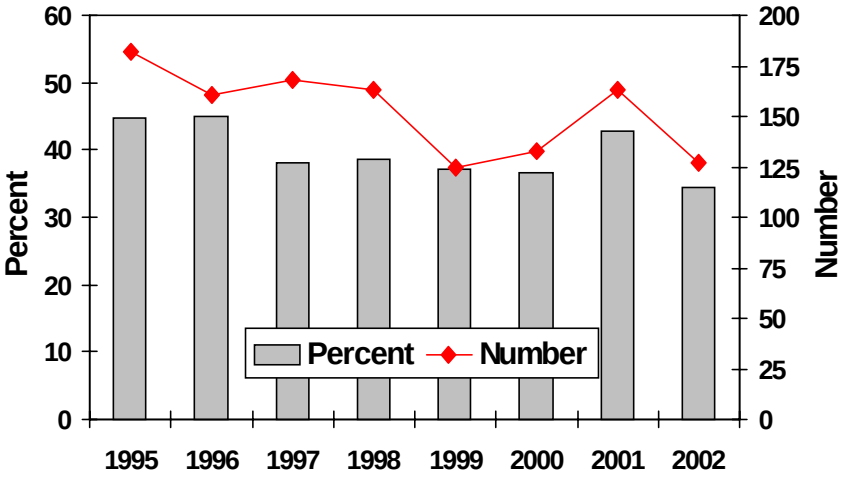
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	406	182	44.8
1996	357	161	45.1
1997	440	168	38.2
1998	422	163	38.6
1999	337	125	37.1
2000	362	133	36.7
2001	382	163	42.7
2002	368	127	34.5

* 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 5-1

Number and Percent of Deaths Involving
a Drinking Driver: Alberta, 1995-2002



5.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 5-4 and Figure 5-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 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; 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 dropped from 182 to 161 between 1995 and 1996, then increased to 168 in 1997, dropped to 125 in 1999, rose to 163 in 2001, and decreased to 127 in 2002. The percentage of alcohol-related fatalities increased from 44.8% in 1995 to a high of 45.1% in 1996. Since then, the percentage of alcohol-related fatalities in Alberta dropped to 36.7% in 2000, rose to 42.7% in 2001, and decreased to a low of 34.5% in 2002.

5.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 5-5. Trends are illustrated in Figure 5-2 which shows changes in the percent of fatally injured drivers who: (1) showed no

Table 5-5

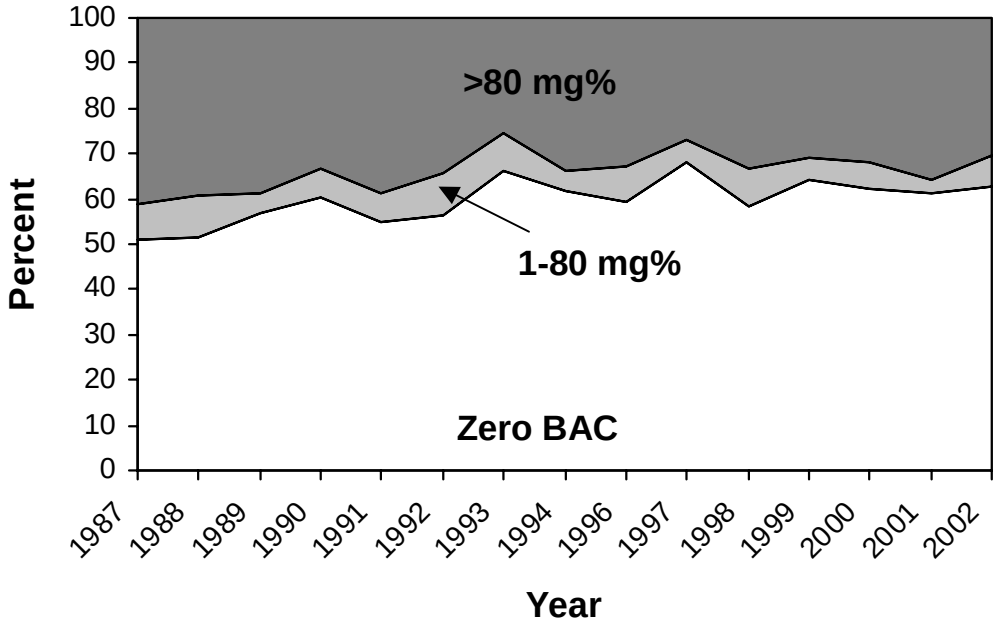
Alcohol Use Among Fatally Injured Drivers:
Alberta, 1987-2002

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

* dying in less than six hours.

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 differ slightly from those shown in Section 5.2 because the analysis is restricted to drivers who died in less than six hours of the crash.

Figure 5-2
Trends in Alcohol Use Among Driver Fatalities: Alberta, 1987-2002



As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (41.1%) to 1999 (30.9%), rose in 2001 (35.6%), and fell again in 2002 (30.5%). The percent of fatally injured drivers with zero BAC increased from 1987 (51.0%) to 1993 (66.1%), declined to 59.5% in 1996, reached its highest level in 1997 (67.9%), and has since stabilized, reaching 62.9% in 2002. The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (9.3%), fell to its lowest level in 2001 (3.1%), and rose in 2002 (6.6%).

5.4.3 Drivers in serious injury crashes: 1995-2002. Table 5-6 and Figure 5-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 5.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 5-6

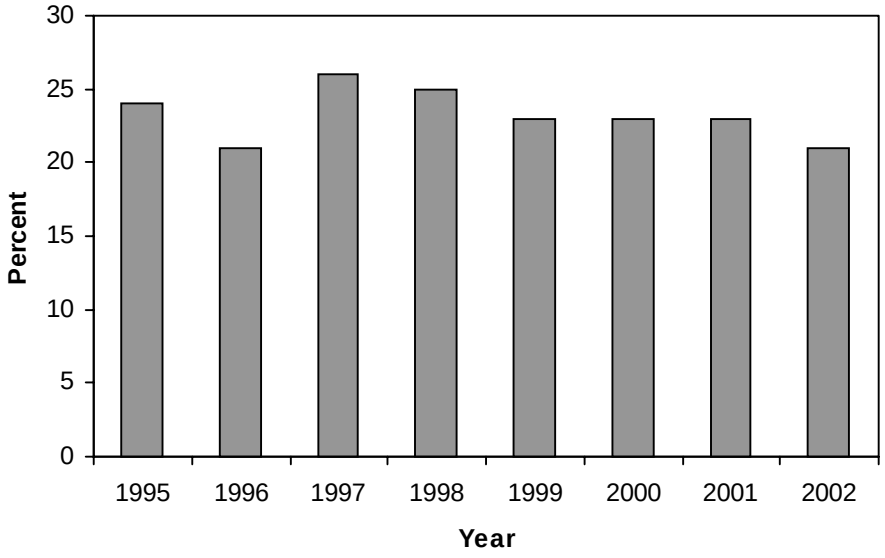
Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Alberta, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 5-3
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: Alberta, 1995-2002



As can be seen, the incidence of alcohol-involvement in serious injury crashes has been relatively stable. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol dropped slightly from 24.4% to 20.6%. In 1997, the incidence rose to 25.5%, dropped to 22.7% in 2000, rose slightly to 23.1% in 2001, and dropped to 20.8% in 2002.

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 2002. 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 2002. 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, 17 people age 16-19 were killed in motor vehicle crashes in Saskatchewan during 2002. And, in 16 cases (94.1%) 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, eight people age 16-19 died in alcohol-related crashes in Saskatchewan during 2002. The next column expresses this as a percentage – e.g., 50.0% 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 15.4% of all the people killed in alcohol-related crashes in Saskatchewan during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 153 persons died in motor vehicle crashes in Saskatchewan during 2002. In 134 (87.6%) of these cases, it was

possible to determine if alcohol was a factor. Of these known cases, 52 (38.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (153 x .388) it can be estimated that *in Saskatchewan during 2002, 59 persons died in alcohol-related crashes*.

Table 6-1
Deaths* in Alcohol-Related Crashes: Saskatchewan, 2002

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	15	13	86.7	1	7.7	1.9
16-19	17	16	94.1	8	50.0	15.4
20-25	25	23	92.0	12	52.2	23.1
26-35	21	19	90.5	13	68.4	25.0
36-45	15	14	93.3	10	71.4	19.2
46-55	18	17	94.4	5	29.4	9.6
>55	42	32	76.2	3	9.4	5.8
Gender						
Male	102	93	91.2	40	43.0	76.9
Female	51	41	80.4	12	29.3	23.1
Type						
Driver/Operator	83	78	94.0	33	42.3	63.5
Passenger	50	43	86.0	11	25.6	21.2
Pedestrian	18	13	72.2	8	61.5	15.4
Unknown	2	0	0.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	60	53	88.3	18	34.0	34.6
Trucks/Vans	57	55	96.5	23	41.8	44.2
Motorcycles	3	3	100.0	1	33.3	1.9
Other Hwy. Vehs.	2	2	100.0	0	0.0	0.0
Offroad Vehicles	13	8	61.5	2	25.0	3.8
(Pedestrians)	18	13	72.2	8	61.5	15.4
TOTAL	153	134	87.6	52	38.8	100.0

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

6.1.1 Victim age. Of all the people who died in alcohol-related crashes, 25.0% (see last column) were aged 26-35; 23.1% were aged 20-25; and 19.2% were aged 36-45.

Within each of the age groups, the highest incidence of alcohol involvement (71.4%) occurred in the crashes in which a person aged 36-45 died. The lowest incidence of alcohol involvement

was found among the youngest and oldest fatalities – only 7.7% of persons under 16 and 9.4% 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, 76.9% were males. And the incidence of alcohol in crashes in which a male died (43.0%) was much greater than the incidence of alcohol in crashes in which a female died (29.3%).

6.1.3 Victim type. Of all the people who died in alcohol-related crashes, 63.5% were drivers/operators of a vehicle; 21.2% were passengers; and 15.4% were pedestrians.

Within each of the principal victim types, the highest incidence of alcohol involvement (61.5%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 42.3% of the crashes in which a driver/operator died and 25.6% of those in which a passenger died.

6.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 44.2% were in a truck/van; 34.6% were in an automobile.

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 (41.8% versus 34.0%).

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

6.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Saskatchewan during 2002. Table 6-2 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 6-2
Alcohol Use Among Fatally Injured Drivers: Saskatchewan, 2002

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	0	0.0	0	0.0	0.0	0	0.0	0.0
16-19	7	6	85.7	3	50.0	10.3	3	50.0	12.0
20-25	16	15	93.8	8	53.3	27.6	8	53.3	32.0
26-35	11	10	90.9	7	70.0	24.1	7	70.0	28.0
36-45	9	8	88.9	7	87.5	24.1	4	50.0	16.0
46-55	10	8	80.0	3	37.5	10.3	2	25.0	8.0
>55	21	14	66.7	1	7.1	3.4	1	7.1	4.0
Gender									
Male	57	47	82.5	26	55.3	89.7	22	46.8	88.0
Female	18	14	77.8	3	21.4	10.3	3	21.4	12.0
Vehicle Type									
Automobile	33	26	78.8	10	38.5	34.5	9	34.6	36.0
Trucks/Van	37	32	86.5	18	56.3	62.1	15	46.9	60.0
Motorcycle	3	2	66.7	1	50.0	3.4	1	50.0	4.0
Tractor Trailer	2	1	50.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	34	30	88.2	23	76.7	79.3	22	73.3	88.0
Multiple-Vehicle	41	31	75.6	6	19.4	20.7	3	9.7	12.0
TOTAL	75	61	81.3	29	47.5	100.0	25	41.0	100.0

To illustrate, among 20-25 year olds there were 16 drivers killed during 2002; 15 of these fatally injured drivers (93.8%) were tested for alcohol. Of those who were tested, eight (53.3%) were positive for alcohol. This means that 20-25 year old fatally injured drinking drivers accounted for 27.6% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that eight of the 15 (53.3%) fatally injured 20-25 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that all 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, 20-25 year old drivers accounted for 32.0% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Saskatchewan had an average testing rate in 2002, with 81.3% of fatally injured drivers being tested for alcohol use.

In Saskatchewan, 47.5% had been drinking and most of these had illegal BACs – 86.2% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 6.6% had BACs from 1-49 mg%;
- 0.0% had BACs from 50-80 mg%
- 9.8% had BACs from 81 to 160 mg%; and,
- 31.1% had BACs over 160 mg%.

***6.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 27.6% were aged 20-25; 24.1% were aged 26-35 and 36-45; 10.3% were aged 16-19 and 46-55; 3.4% were over 55; and 0.0% were under 16.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 32.0% were aged 20-25; 28.0% were 26-35 and 16.0% were 36-45. Those aged over 55 accounted for 4.0% of fatally injured drivers who were over the legal limit.

Within each of the age groups, fatally injured drivers age 36-45 were the most likely to have been drinking – 87.5% of drivers in this age group had been drinking. By contrast, 7.1% of the tested drivers aged over 55 had been drinking.

6.2.2 Gender differences. Males dominate the picture – they account for 89.7% of all the fatally injured drivers who had been drinking, and 88.0% of all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (57 of the 75 fatalities are males). Fatally injured male drivers were much more likely to have been drinking than female drivers (55.3% and 21.4%, respectively). And, 84.6% of the male and 100.0% 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), 62.1% were truck/van drivers; 34.5% were automobile drivers; and only 3.4% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 60.0% were truck/van drivers, 36.0% were automobile drivers, and 4.0% were motorcyclists.

Within each of the vehicle types, 56.3% of fatally injured drivers of truck-vans; and 38.5% of drivers of automobiles were found to have been drinking.

6.2.4 Collision differences. Less than half of the drivers killed (34 of the 75) were involved in single-vehicle collisions but these crashes accounted for four-fifths of the drivers who had been drinking or were legally impaired (79.3% and 88.0%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Three-quarters of the drivers involved in single-vehicle crashes (76.7%) were positive for alcohol, compared to only 19.4% 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 2002 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.

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.

Table 6-3
Drivers in Alcohol-Related Serious Injury Crashes:
Saskatchewan, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	10	3	30.0	1.6
16-19	101	31	30.7	16.8
20-25	98	35	35.7	19.0
26-35	101	39	38.6	21.2
36-45	127	46	36.2	25.0
46-55	95	20	21.1	10.9
>55	87	7	8.0	3.8
unknown	15	3	20.0	1.6
Gender				
Male	424	132	31.1	71.7
Female	198	49	24.7	26.6
unknown	12	3	25.0	1.6
Vehicle Type				
Auto	327	97	29.7	52.7
Truck/Van	220	71	32.3	38.6
Motorcycle	17	5	29.4	2.7
Tractor Trailer	31	4	12.9	2.2
Other Hwy. Vehicle	4	0	0.0	0.0
Off-Road	33	6	18.2	3.3
Unknown	2	1	50.0	0.5
Collision Type				
Single-Vehicle	252	127	50.4	69.0
Multiple-Vehicle	382	57	14.9	31.0
TOTAL	634	184	29.0	100.0

As shown, by the totals at the bottom of the table, 634 drivers were involved in crashes in which someone was seriously injured, and among these 29.0% were alcohol-related crashes.

6.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 25.0% were aged 36-45, 21.2% were aged 26-35; and 19.0% were aged 20-25. Drivers over 55 accounted for only 3.8% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, over one out of three drivers aged 26-35 and 36-45 were involved in alcohol-related serious injury crashes (38.6% and 36.2%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for the two oldest age groups of drivers – those over 55 (8.0%) and those aged 46-55 (21.1%).

6.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 71.7% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (31.1% and 24.7%, respectively).

6.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 52.7% were automobile drivers; and 38.6% were truck/van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 32.3% of these drivers were in crashes that involved alcohol, compared to 29.7% for automobile drivers, 29.4% for motorcycle riders; and 18.2% for off-road vehicle drivers. Only 12.9% of tractor trailer drivers were involved in alcohol-related crashes.

6.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 69.0% 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 – 50.4% of these drivers, compared to only 14.9% 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.

6.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 6-4 and Figure 6-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. These results differ slightly from those in Section 6.1 for two reasons. First, deaths that

Table 6-4

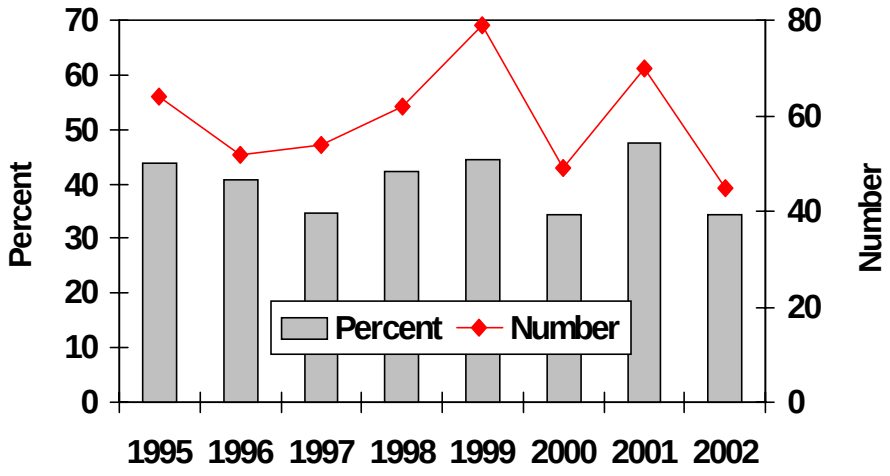
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Saskatchewan, 1995-2002

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

* 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 6-1
Number and Percent of Deaths Involving a Drinking Driver: Saskatchewan, 1995-2002



occur in crashes that involve a drinking pedestrian are not 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; 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 dropped from 64 to 52 between 1995 and 1996. There was an increase to 79 alcohol-related fatalities in 1999, a decrease to 49 in 2000, an increase to 70 in 2001, and a decrease to a low of 45 in 2002. The percentage of alcohol-related fatalities decreased from 43.8% in 1995 to 34.8% in 1997. In 1999, the percentage of alcohol-related fatalities in Saskatchewan rose to 44.4%, decreased to a low of 34.3% in 2000, reached a high of 47.6% in 2001, and decreased again to 34.4% in 2002.

6.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 6-5. Trends are illustrated in Figure 6-2 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

Table 6-5

Alcohol Use Among Fatally Injured Drivers:
Saskatchewan, 1987-2002

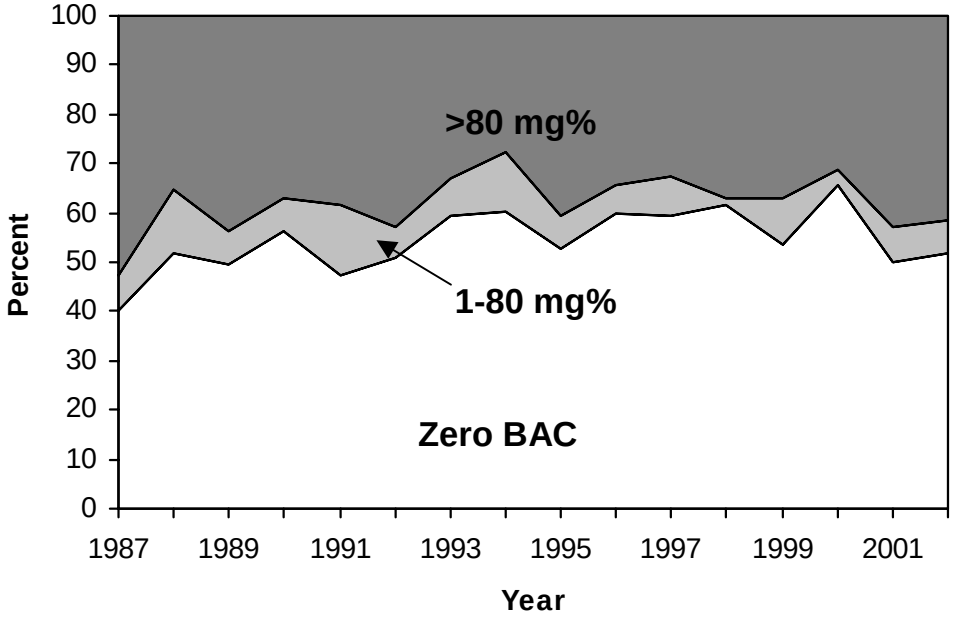
YEAR	Number of Drivers*	Drivers Tested	(% Total)	Drivers Grouped by BAC (mg%) Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	94	85	90.4	34	40.0	6	7.1	45	52.9
1988	81	79	97.5	41	51.9	10	12.7	28	35.4
1989	110	103	93.6	51	49.5	7	6.8	45	43.7
1990	80	78	97.5	44	56.4	5	6.4	29	37.2
1991	83	78	94.0	37	47.4	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

* dying in less than six hours.

by the light grey area); and (3) had BACs over the legal limit (the dark grey area). The data reported here differ slightly from those shown in Section 6.2 because the analysis is restricted to drivers who died in less than six hours of 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 1997 (32.8%), increased in 1999 (36.9%), decreased in 2000 (31.3%), rose in 2001 (42.7%), and decreased slightly in 2002 (41.4%). The percent of fatally injured drivers with zero BACs increased from 1987 (40.0%) to 1998 (61.6%), declined to 53.6% in 1999, peaked in 2000 (65.7%), declined in 2001 (50.0%), and rose in 2002 (51.7%). 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%), rose in 1999 (9.5%), decreased in 2000 (3.0%), increased in 2001 (7.3%), and decreased slightly in 2002 (6.9%).

Figure 6-2
Trends in Alcohol Use Among Driver Fatalities: Saskatchewan, 1987-2002



6.4.3 Drivers in serious injury crashes: 1995-2002. Table 6-6 and Figure 6-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 6.3 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 crashes has increased gradually over this study period. Between 1995 and 1996 the percentage of all drivers in serious injury crashes that involved alcohol rose only slightly from 25.0% to 25.6%. In 1997 the incidence dropped to 23.4%, rose to 26.3% in 1998, dropped to 25.8% in 1999, and peaked at 29.5% in 2002.

Table 6-6

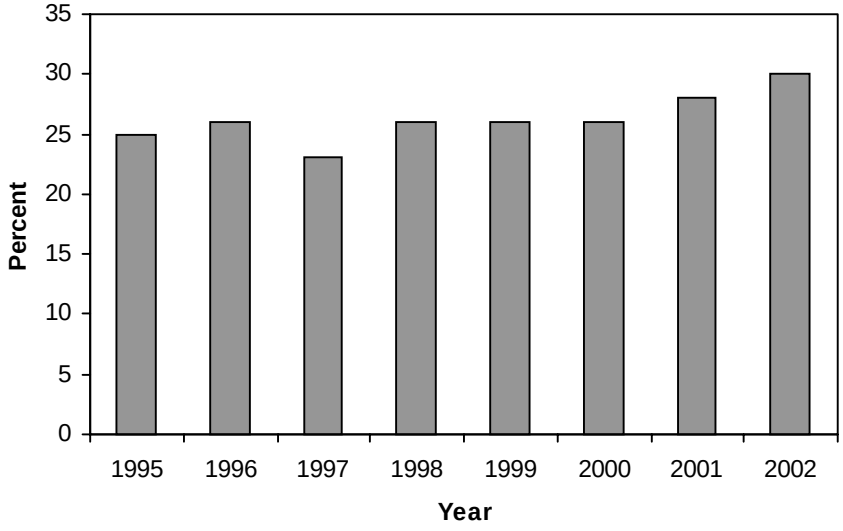
Number and Percent of All Drivers* in Serious Injury Crashes ** that Involved Alcohol: Saskatchewan, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 6-3
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Saskatchewan, 1995-2002



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 2002. 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 2002. 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, 14 people age 16-19 were killed in motor vehicle crashes in Manitoba during 2002. 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, nine people age 16-19 died in alcohol-related crashes in Manitoba during 2002. The next column expresses this as a percentage – e.g., 64.3% 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 20.0% of all the people killed in alcohol-related crashes in Manitoba during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 122 persons died in motor vehicle crashes in Manitoba during 2002. In 115 (94.3%) of these cases, it was possible

to determine if alcohol was a factor. Of these known cases, 45 (39.1%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (122 x .391) it can be estimated that *in Manitoba during 2002, 48 persons died in alcohol-related crashes*.

Table 7-1
Deaths* in Alcohol-Related Crashes: Manitoba, 2002

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	13	9	69.2	2	22.2	4.4
16-19	14	14	100.0	9	64.3	20.0
20-25	15	15	100.0	8	53.3	17.8
26-35	11	11	100.0	5	45.5	11.1
36-45	23	22	95.7	17	77.3	37.8
46-55	17	16	94.1	3	18.8	6.7
>55	29	28	96.6	1	3.6	2.2
Gender						
Male	79	76	96.2	33	43.4	73.3
Female	43	39	90.7	12	30.8	26.7
Type						
Driver/Operator	68	65	95.6	23	35.4	51.1
Passenger	38	36	94.7	15	41.7	33.3
Pedestrian	16	14	87.5	7	50.0	15.6
Vehicle Occupied						
Automobiles	54	54	100.0	25	46.3	55.6
Trucks/Vans	35	34	97.1	6	17.6	13.3
Motorcycles	6	6	100.0	5	83.3	11.1
Offroad Vehicles	8	6	75.0	1	16.7	2.2
(Pedestrians)	16	14	87.5	7	50.0	15.6
Unknown	3	1	33.3	1	100.0	2.2
TOTAL	122	115	94.3	45	39.1	100.0

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

7.1.1 Victim age. Of all the people who died in alcohol-related crashes, 37.8% (see last column) were aged 36-45; 20.0% were aged 16-19 and 17.8% were aged 20-25.

Within each of the age groups, the highest incidence of alcohol involvement (77.3%) occurred in the crashes in which a person aged 36-45 died. The lowest incidence of alcohol involvement

was found among the oldest fatalities – 18.8% of the persons aged 46-55 and only 3.6% of persons over 55 years of age died in crashes involving alcohol.

7.1.2 Gender. Of all the people who died in alcohol-related crashes, 73.3% were males. And, the incidence of alcohol in crashes in which a male died (43.4%) was much greater than the incidence of alcohol in crashes in which a female died (30.8%).

7.1.3 Victim type. Of all the people who died in alcohol-related crashes, 51.1% were drivers/operators of a vehicle; 33.3% were passengers; and 15.6% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (50.0%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 41.7% of the crashes in which a passenger died and 35.4% of those in which a driver/operator died.

7.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 55.6% were in an automobile and 13.3% were in a truck/van.

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 died (46.3% versus 17.6%).

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

7.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Manitoba during 2002. Table 7-2 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 7-2
Alcohol Use Among Fatally Injured Drivers: Manitoba, 2002

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	6	6	100.0	3	50.0	14.3	2	33.3	11.1
20-25	9	9	100.0	5	55.6	23.8	4	44.4	22.2
26-35	4	3	75.0	1	33.3	4.8	1	33.3	5.6
36-45	14	14	100.0	9	64.3	42.9	8	57.1	44.4
46-55	12	12	100.0	3	25.0	14.3	3	25.0	16.7
>55	14	12	85.7	0	0.0	0.0	0	0.0	0.0
Gender									
Male	45	42	93.3	16	38.1	76.2	13	31.0	72.2
Female	14	14	100.0	5	35.7	23.8	5	35.7	27.8
Vehicle Type									
Automobile	29	27	93.1	13	48.1	61.9	11	40.7	61.1
Trucks/Van	24	23	95.8	3	13.0	14.3	3	13.0	16.7
Motorcycle	6	6	100.0	5	83.3	23.8	4	66.7	22.2
Collision Type									
Single-Vehicle	26	25	96.2	15	60.0	71.4	14	56.0	77.8
Multiple-Vehicle	33	31	93.9	6	19.4	28.6	4	12.9	22.2
TOTAL	59	56	94.9	21	37.5	100.0	18	32.1	100.0

To illustrate, among those aged 16-19 there were six drivers killed during 2002; all of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, three (50.0%) were positive for alcohol. This means that fatally injured drinking drivers aged 16-19 accounted for 14.3% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that two of the six (33.3%) fatally injured drivers aged 16-19 who were tested for alcohol had BACs in excess of 80 mg%. This means that two of the three drivers who were positive for alcohol had 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 11.1% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Manitoba had a very high testing rate in 2002, with 94.9% of fatally injured drivers being tested for alcohol use.

In Manitoba, 37.5% had been drinking and most of these had illegal BACs – 85.7% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 5.4% had BACs from 1-49 mg%;
- 0.0% had BACs from 50-80 mg%;
- 10.7% had BACs from 81 to 160 mg%; and,
- 21.4% had BACs over 160 mg%.

***7.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 42.9% were aged 36-45; 23.8% of the drivers were aged 20-25; 14.3% were aged 16-19 and 46-55; and 4.8% were aged 26-35. Those over 55 accounted for 0.0% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 44.4% were aged 36-45; 22.2% were aged 20-25; 16.7% were aged 46-55, 11.1% were aged 16-19; and 5.6% were aged 26-35.

Within each of the age groups, fatally injured drivers aged 36-45 were the most likely to have been drinking – 64.3% of drivers in this age group had been drinking. By contrast, none of the tested drivers over age 55 had been drinking.

7.2.2 Gender differences. Males dominate the picture – they account for 76.2% of all the fatally injured drivers who had been drinking, and 72.2% of all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (45 of the 59 fatalities are males). Fatally injured male drivers were slightly more likely to have been drinking than female drivers (38.1% and 35.7%, respectively). And 81.3% of the males and all of the female drinking drivers 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), 61.9% were automobile drivers; 23.8% were motorcyclists and 14.3% were truck/van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 61.1% were automobile drivers; 22.2% were motorcyclists and 16.7% were truck/van drivers.

Within each of the vehicle types, 83.3% of fatally injured motorcyclists; 48.1% of automobile drivers and 13.0% of truck/van drivers were found to have been drinking.

7.2.4 Collision differences. Less than half of the drivers killed (26 of the 59) were involved in single-vehicle collisions but these crashes accounted for 71.4% of drivers who had been drinking and 77.8% of those who were legally impaired.

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Three out of five drivers involved in single-vehicle crashes (60.0%) were positive for alcohol, compared to only 19.4% 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 2002 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.

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.

Table 7-3
Drivers in Alcohol-Related Serious Injury Crashes:
Manitoba, 2002

Category of Drivers	Number of Drivers*	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	13	3	23.1	2.8
16-19	82	23	28.0	21.1
20-25	77	27	35.1	24.8
26-35	82	22	26.8	20.2
36-45	93	16	17.2	14.7
46-55	73	10	13.7	9.2
>55	93	5	5.4	4.6
unknown	27	3	11.1	2.8
Gender				
Male	340	79	23.2	72.5
Female	188	30	16.0	27.5
unknown	12	0	0.0	0.0
Vehicle Type				
Auto	286	56	19.6	51.4
Truck/Van	194	44	22.7	40.4
Motorcycle	29	7	24.1	6.4
Tractor Trailer	8	0	0.0	0.0
Other Hwy. Vehicle	8	1	12.5	0.9
Off-Road	15	1	6.7	0.9
Collision Type				
Single-Vehicle	235	97	41.3	89.0
Multiple-Vehicle	305	12	3.9	11.0
TOTAL	540	109	20.2	100.0

* These numbers are slightly underestimated because about 6.5% of all injuries are recorded as unspecified.

As shown, by the totals at the bottom of the table, 540 drivers were involved in crashes in which someone was seriously injured, and among these 20.2% were alcohol-related crashes.

7.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 24.8% were aged 20-25; 21.1% were aged 16-19; and 20.2% were aged 26-35. Drivers under 16 accounted for only 2.8% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, the highest incidence of involvement in alcohol-related crashes was found for drivers age 20-25 (35.1%). The lowest incidence was found for drivers over age 55 (5.4%).

7.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 72.5% were males. The incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (23.2% and 16.0%, respectively).

7.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 51.4% were automobile drivers; and 40.4% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for motorcyclists – 24.1% of motorcyclists were in crashes that involved alcohol, compared to 22.7% for truck/van drivers, 19.6% for automobile drivers, 12.5% for drivers of other highway vehicles; and 6.7% for off-road vehicle drivers. None of the drivers of tractor-trailers were involved in an alcohol-related crash.

7.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 89.0% 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 – 41.3% of these drivers, compared to only 3.9% 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.

7.4.1 Deaths in alcohol-related crashes: 1995-2002 Table 7-4 and Figure 7-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 classified as alcohol-related deaths.

Table 7-4

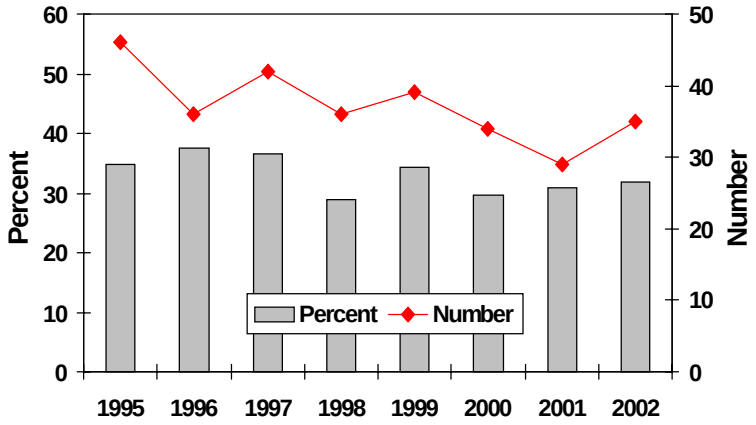
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Manitoba, 1995-2002

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

* 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 7-1
Number and Percent of Deaths Involving
a Drinking Driver: Manitoba, 1995-2002



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; 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 dropped from 46 to 36 between 1995 and 1996, increased to 42 in 1997, dropped to 36 in 1998, then increased to 39 in 1999, reached a low of 29 in 2001, and rose to 35 in 2002. The percentage of alcohol-related fatalities rose from 34.8% in 1995 to 37.5% in 1996. In 1998, the percentage of alcohol-related fatalities in Manitoba decreased to 29.0%, rose to 34.2% in 1999, decreased to 29.6% in 2000, and rose to 31.8% in 2002.

7.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 7-5. Trends are illustrated in Figure 7-2 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).

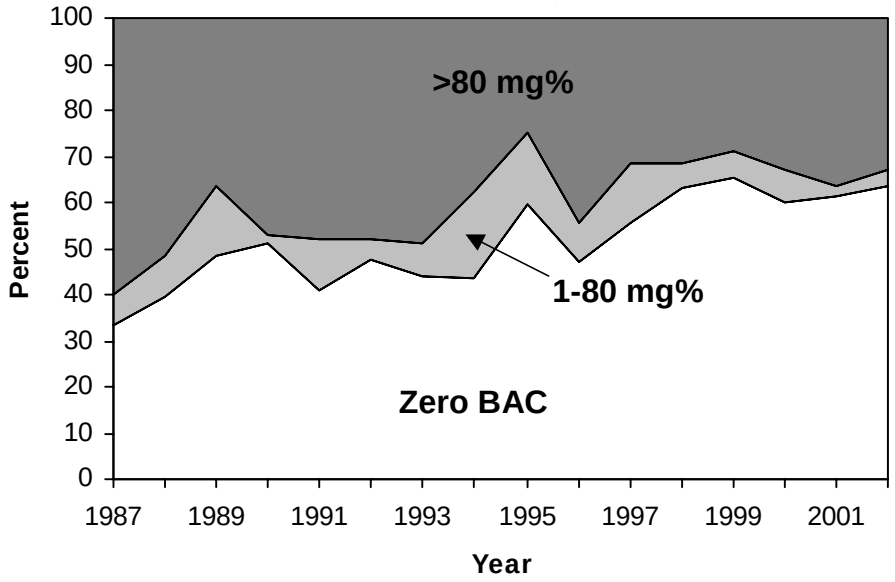
Table 7-5

Alcohol Use Among Fatally Injured Drivers:
Manitoba, 1987-2002

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

* dying in less than six hours.

Figure 7-2
Trends in Alcohol Use Among Driver Fatalities: Manitoba, 1987-2002



The data reported here differ slightly from those shown in Section 7.2 because the analysis is restricted to drivers who died in less than six hours of 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 1999 (28.8%) rose to 36.5% in 2001, and decreased to 32.7% in 2002. The percent of fatally injured drivers with zero BAC increased from a low of 33.3% in 1987 to its highest level of 65.4% in 1999, decreased to 60.0% in 2000, and rose to 63.5% in 2002. The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1994 (18.9%), dropped to 5.6% in 1998, rose to 7.3% in 2000, dropped to a low of 1.9% in 2001, and increased to 3.8% in 2002.

7.4.3 Drivers in serious injury crashes: 1995-2002. Table 7-6 and Figure 7-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 7.3 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 crashes has been relatively stable, particularly in the last four years. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol fell slightly from 22.9% to 21.6%. In 1997, the incidence peaked at 25.7%, dropped to a low of 18.7% in 2000, and rose to 20.6% in 2002.

Table 7-6

Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Manitoba, 1995-2002

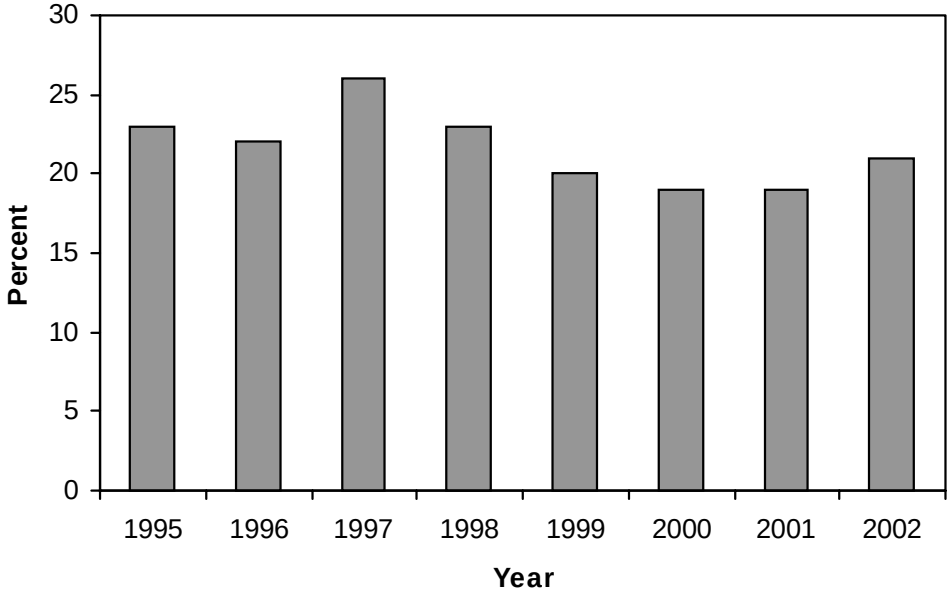
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	743	170	(22.9)
1996	804	174	(21.6)
1997	630	162	(25.7)
1998	657	151	(23.0)
1999	595	120	(20.2)
2000	587	110	(18.7)
2001	597	115	(19.3)
2002	525	108	(20.6)

* 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 7-3

Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: Manitoba, 1995-2002



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 2002. 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 2002. 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, 104 people age 16-19 were killed in motor vehicle crashes in Ontario during 2002. And, in 94 of these cases (90.4%) 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 age 16-19 died in alcohol-related crashes in Ontario during 2002. The next column expresses this as a percentage – e.g., 28.7% 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 10.7% of all the people killed in alcohol-related crashes in Ontario during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 983 persons died in motor vehicle crashes in Ontario during 2002. In 869 (88.4%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 252 (29.0%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (983 x .29) it can be estimated that *in Ontario during 2002, 285 persons died in alcohol-related crashes*.

Table 8-1
Deaths* in Alcohol-Related Crashes: Ontario, 2002

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	62	52	83.9	5	9.6	2.0
16-19	104	94	90.4	27	28.7	10.7
20-25	125	112	89.6	43	38.4	17.1
26-35	121	113	93.4	44	38.9	17.5
36-45	149	140	94.0	57	40.7	22.6
46-55	125	119	95.2	41	34.5	16.3
>55	297	239	80.5	35	14.6	13.9
Gender						
Male	656	592	90.2	207	35.0	82.1
Female	327	277	84.7	45	16.2	17.9
Type						
Driver/Operator	594	539	90.7	169	31.4	67.1
Passenger	242	201	83.1	45	22.4	17.9
Pedestrian	147	129	87.8	38	29.5	15.1
Vehicle Occupied						
Automobiles	496	439	88.5	128	29.2	50.8
Trucks/Vans	200	180	90.0	53	29.4	21.0
Motorcycles	41	39	95.1	8	20.5	3.2
Other Hwy. Vehs.	18	17	94.4	2	11.8	0.8
Offroad Vehicles	75	65	86.7	23	35.4	9.1
(Pedestrians)	147	129	87.8	38	29.5	15.1
Unknown	6	0	0.0	0	0.0	0.0
TOTAL	983	869	88.4	252	29.0	100.0

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

8.1.1 Victim age. Of all the people who died in alcohol-related crashes, 22.6% (see last column) were aged 36-45; 17.5% were aged 26-35 and 17.1% were 20-25.

Within each of the age groups, the highest incidence of alcohol involvement (40.7%) occurred in the crashes in which a person aged 36-45 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 9.6% of persons under 16 and 14.6% 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, 82.1% were males. The incidence of alcohol in crashes in which a male died (35.0%) was over twice as great as the incidence of alcohol in crashes in which a female died (16.2%).

8.1.3 Victim type. Of all the people who died in alcohol-related crashes, 67.1% were drivers/operators of a vehicle; 17.9% were passengers; and 15.1% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (31.4%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 29.5% of the crashes in which a pedestrian died and 22.4% of those in which a passenger died.

8.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over half (50.8%) were in an automobile; 21.0% were in a truck/van; 9.1% were off-road vehicle occupants; and 3.2% were motorcycle riders.

Within each of these vehicle types, the incidence of alcohol involvement in which an off-road vehicle occupant died was 35.4% compared to 29.4% for truck/van occupants, 29.2% for automobile occupants and 20.5% for motorcycle riders.

8.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Ontario during 2002. Table 8-2 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 40 drivers killed during 2002; 33 of these fatally injured drivers (82.5%) were tested for alcohol. Of those who were tested, nine (27.3%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 7.6% of all drinking drivers who were killed.

Table 8-2
Alcohol Use Among Fatally Injured Drivers: Ontario, 2002

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	3	2	66.7	1	50.0	0.8	1	50.0	1.0
16-19	40	33	82.5	9	27.3	7.6	6	18.2	6.2
20-25	67	59	88.1	20	33.9	16.8	16	27.1	16.5
26-35	77	69	89.6	26	37.7	21.8	21	30.4	21.6
36-45	102	91	89.2	33	36.3	27.7	29	31.9	29.9
46-55	86	78	90.7	21	26.9	17.6	18	23.1	18.6
>55	143	109	76.2	9	8.3	7.6	6	5.5	6.2
Gender									
Male	376	323	85.9	105	32.5	88.2	85	26.3	87.6
Female	142	118	83.1	14	11.9	11.8	12	10.2	12.4
Vehicle Type									
Automobile	340	288	84.7	82	28.5	68.9	68	23.6	70.1
Trucks/Van	127	108	85.0	30	27.8	25.2	24	22.2	24.7
Motorcycle	38	35	92.1	6	17.1	5.0	5	14.3	5.2
Tractor Trailer	10	9	90.0	1	11.1	0.8	0	0.0	0.0
Other Vehicle	3	1	33.3	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	212	178	84.0	77	43.3	64.7	70	39.3	72.2
Multiple-Vehicle	306	263	85.9	42	16.0	35.3	27	10.3	27.8
TOTAL	518	441	85.1	119	27.0	100.0	97	22.0	100.0

Then, in the final three columns, it can be seen that six of the 33 (18.2%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that six 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. Thus, 16-19 year old drivers accounted for 6.2% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Ontario had a high testing rate in 2002, with 85.1% of fatally injured drivers being tested for alcohol use.

In Ontario, 27.0% had been drinking and most of these had illegal BACs – 81.5% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 3.4% had BACs from 1-49 mg%;
- 1.6% had BACs from 50-80 mg%
- 6.6% had BACs from 81 to 160 mg%; and,
- 15.4% had BACs over 160 mg%.

***8.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 27.7% were aged 36-45; 21.8% were aged 26-35; 17.6% were aged 46-55; and 16.8% were aged 20-25. Those aged 16-19 and over 55 each accounted for only 7.6% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 29.9% were aged 36-45; 21.6% were aged 26-35; 18.6% were aged 46-55; and 16.5% were 20-25. Those aged 16-19 and over 55 each accounted for only 6.2% of fatally injured drivers who were over the legal limit.

Within each of the age groups, fatally injured drivers age <16 were the most likely to have been drinking – one of the two tested drivers in this age group were positive for alcohol (50.0%). Almost two out of five (37.7%) fatally injured drivers age 26-35 had been drinking. By contrast, only 8.3% of tested drivers over age 55 had been drinking.

8.2.2 Gender differences. Males dominate the picture – they account for 88.2% of all the fatally injured drivers who had been drinking, and 87.6% of all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (376 of the 518 fatalities are males). Fatally injured male drivers were almost three times more likely to have been drinking than female drivers (32.5% and 11.9%, respectively). And, 81.0% of the male drivers and 85.7% 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), 68.9% were automobile drivers; 25.2% were truck/van drivers; 5.0% were motorcycle riders; and 0.8% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 70.1% were automobile drivers; 24.7% were truck/van drivers; and 5.2% were motorcycle riders.

Within each of the vehicle types, 28.5% of fatally injured drivers of automobiles, 27.8% of truck/van drivers; 17.1% of motorcyclists; and 11.1% of tractor-trailer drivers were found to have been drinking.

8.2.4 Collision differences. Only about two out of five of the drivers killed (212 of the 518) were involved in single-vehicle collisions but these crashes accounted for two-thirds of the drivers who had been drinking or were legally impaired (64.7% and 72.2%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over two-fifths of the drivers involved in single-vehicle crashes (43.3%) were positive for alcohol, compared to only 16.0% 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 2002 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.

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

Table 8-3
Drivers in Alcohol-Related Serious Injury Crashes:
Ontario, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	24	3	12.5	0.3
16-19	521	122	23.4	12.5
20-25	790	210	26.6	21.5
26-35	1147	217	18.9	22.3
36-45	1235	201	16.3	20.6
46-55	848	108	12.7	11.1
>55	923	79	8.6	8.1
unknown	244	35	14.3	3.6
Gender				
Male	4073	800	19.6	82.1
Female	1659	175	10.5	17.9
Vehicle Type				
Auto	3565	653	18.3	67.0
Truck/Van	1396	233	16.7	23.9
Motorcycle	250	32	12.8	3.3
Tractor Trailer	190	17	8.9	1.7
Other Hwy. Vehicle	67	4	6.0	0.4
Off-Road	232	30	12.9	3.1
Unknown	32	6	18.8	0.6
Collision Type				
Single-Vehicle	1583	599	37.8	61.4
Multiple-Vehicle	4149	376	9.1	38.6
TOTAL	5732	975	17.0	100.0

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, 5,732 drivers were involved in crashes in which someone was seriously injured, and among these 17.0% were alcohol-related crashes.

8.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 22.3% were aged 26-35; 21.5% were aged 20-25; and 20.6% were aged 36-45. Drivers under 16 accounted for only 0.3% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, 26.6% of drivers age 20-25 and 23.4% of drivers 16-19 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related serious injury crashes was found for the youngest and oldest age group of drivers – those aged over 55 (8.6%) and those under 16 (12.6%).

8.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 82.1% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (19.6% and 10.5%, respectively).

8.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 67.0% were automobile drivers; and 23.9% were truck/van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers (18.3%); compared to 16.7% for truck/van drivers; 12.9% for off-road vehicle drivers and 12.8% for motorcyclists. Only 6.0% of drivers of other highway vehicles were involved in alcohol-related serious injury crashes.

8.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 61.4% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 37.8% of these drivers, compared to only 9.1% 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.

8.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 8-4 and Figure 8-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 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; 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, 1995-2002

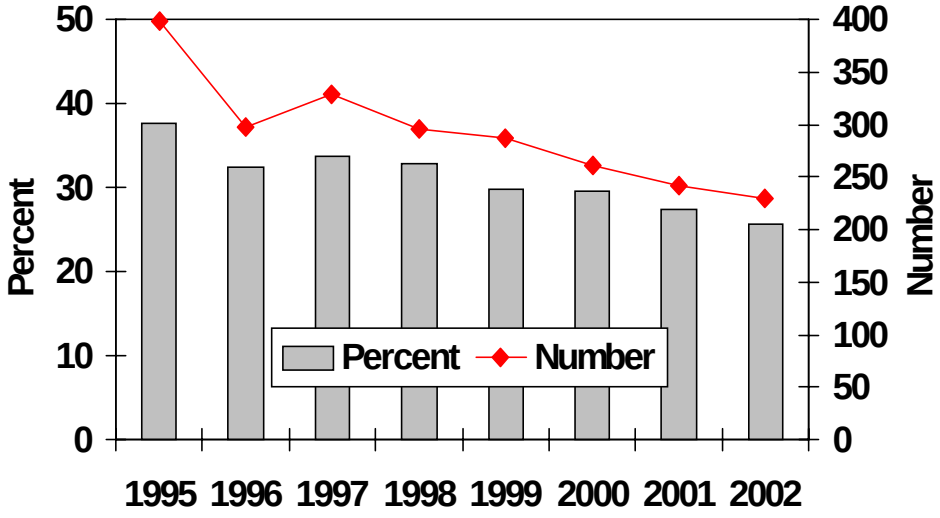
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	1059	398	37.6
1996	915	297	32.5
1997	969	328	33.8
1998	900	295	32.8
1999	966	287	29.7
2000	886	261	29.5
2001	878	241	27.4
2002	895	229	25.6

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

** only on public roadways involving principal vehicle types.

As shown in the figure, the number of deaths in crashes that involved a drinking driver dropped from 398 to 297 between 1995 and 1996. There was an increase to 328 in 1997 and then a gradual decrease to 229 alcohol-related fatalities in 2002. The percentage of alcohol-related fatalities decreased from 37.6% in 1995 to 32.5% in 1996. From 1996 to 1998, the percentage of alcohol-related fatalities in Ontario remained basically unchanged and since then has dropped, reaching a low of 25.6% in 2002.

Figure 8-1
Number and Percent of Deaths Involving a Drinking Driver: Ontario, 1995-2002



8.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 8-5. Trends are illustrated in Figure 8-2 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 differ slightly from those shown in Section 8.2 because the analysis is restricted to drivers who died in less than six hours of the crash.

As can be seen, the percent of fatally injured drivers with BACs over the legal limit declined from 1987 (39.6%) to 1989 (32.8%), increased to 38.1% in 1992, decreased to 23.3% in 1999, increased to 25.8% in 2001, and fell to 22.9% in 2002, the lowest level recorded since 1987. The percent of fatally injured drivers with zero BAC increased from 1987 (53.0%) to 1999

(71.3%), dropped in 2000 (69.0%), and rose to its highest level (72.2%) in 2002. The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (12.5%), dropped in 1999 (5.4%), rose in 2000 (6.7%), fell to its lowest mark in 2001 (4.3%), and rose slightly to 4.9% in 2002.

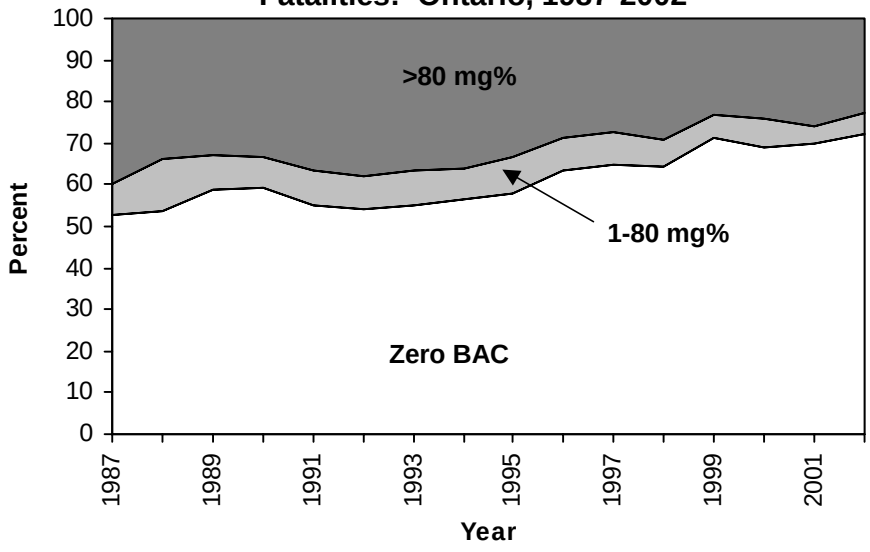
Table 8-5

Alcohol Use Among Fatally Injured Drivers:
Ontario, 1987-2002

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

* dying in less than six hours.

Figure 8-2
Trends in Alcohol Use Among Driver Fatalities: Ontario, 1987-2002



8.4.3 Drivers in serious injury crashes: 1995-2002. Table 8-6 and Figure 8-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 8.3 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 crashes has declined slightly over this eight-year period. The percentage of drivers in serious injury crashes that involved alcohol gradually dropped from 22.9% in 1995 to 19.0% in 1998, rose slightly to 20.1% in 2000, and fell to 17.2% in 2002.

Table 8-6

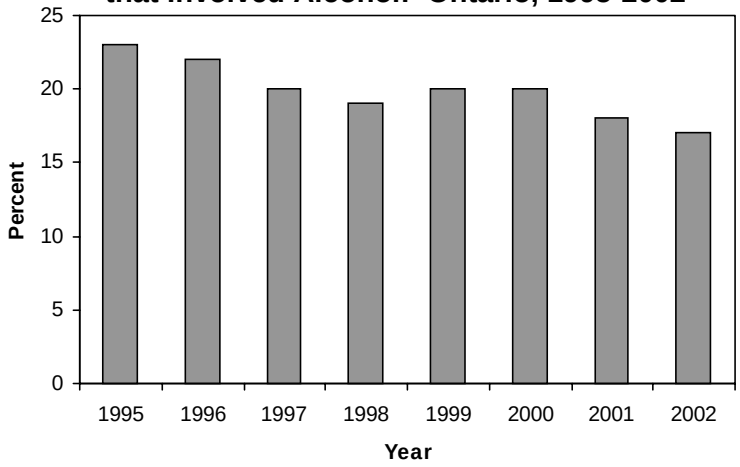
Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Ontario, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 8-3
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Ontario, 1995-2002



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 2002. 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 2002. 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, 72 people age 16-19 were killed in motor vehicle crashes in Quebec during 2002. And, in 64 of these cases (88.9%) it was possible to determine if alcohol was a factor in the crash.

The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, 15 people age 16-19 died in alcohol-related crashes in Quebec during 2002. The next column expresses this as a percentage – e.g., 23.4% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 8.1% of all the people killed in alcohol-related crashes in Quebec during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 736 persons died in motor vehicle crashes in Quebec during 2002. In 676 (91.8%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 185 (27.4%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (736 x .274) it can be estimated that *in Quebec during 2002, 202 persons died in alcohol-related crashes*. This estimate, however, underestimates the magnitude of the alcohol-fatal crash problem in Quebec, compared to other jurisdictions, because of different police reporting practices for alcohol in that province (see Mayhew et al. 1999). For this reason, SAAQ prefers to use BAC test results on fatally injured drivers derived from coroner files as a more accurate measure of the alcohol-crash problem.

Table 9-1
Deaths* in Alcohol-Related Crashes: Quebec, 2002

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	36	34	94.4	2	5.9	1.1
16-19	72	64	88.9	15	23.4	8.1
20-25	102	99	97.1	31	31.3	16.8
26-35	99	95	96.0	39	41.1	21.1
36-45	121	109	90.1	45	41.3	24.3
46-55	106	97	91.5	32	33.0	17.3
>55	200	178	89.0	21	11.8	11.4
Gender						
Male	540	499	92.4	157	31.5	84.9
Female	196	177	90.3	28	15.8	15.1
Type						
Driver/Operator	498	474	95.2	145	30.6	78.4
Passenger	135	124	91.9	22	17.7	11.9
Pedestrian	85	78	91.8	18	23.1	9.7
Unknown	18	0	0.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	406	380	93.6	105	27.6	56.8
Trucks/Vans	81	79	97.5	26	32.9	14.1
Motorcycles	49	47	95.9	7	14.9	3.8
Other Hwy. Vehs.	12	12	100.0	1	8.3	0.5
Offroad Vehicles	87	79	90.8	28	35.4	15.1
(Pedestrians)	85	78	91.8	18	23.1	9.7
Unknown	16	1	6.3	0	0.0	0.0
TOTAL	736	676	91.8	185	27.4	100.0

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

9*.1.1 Victim age.* Of all the people who died in alcohol-related crashes, those aged 36-45 accounted for 24.3%; 21.1% were aged 26-35 and 17.3% were aged 46-55 (see last column).

Within each of the age groups, the highest incidence of alcohol involvement (41.3%) occurred in the crashes in which a person aged 36-45 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 11.8% of persons over 55 and 5.9% of the fatalities under 16 years of age died in crashes involving alcohol.

9*.1.2 Gender.* Of all the people who died in alcohol-related crashes, 84.9% were males. The incidence of alcohol in crashes in which a male died (31.5%) was greater than the incidence of alcohol in crashes in which a female died (15.8%).

9.1.3 Victim type. Of all the people who died in alcohol-related crashes, 78.4% were drivers/operators of a vehicle; 11.9% were passengers; and 9.7% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (30.6%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 23.1% of the crashes in which a pedestrian died and 17.7% of those in which a passenger died.

9.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over half (56.8%) were in an automobile; 15.1% were in an off-road vehicle; and 14.1% were in a truck/van.

Within each of these vehicle types, the incidence of alcohol involvement was similar in crashes in which an off-road vehicle occupant and a truck/van occupant died (35.4% and 32.9%, respectively). The incidence of alcohol involvement was lower in crashes in which an automobile occupant and a motorcyclist died (27.6% and 14.9% respectively).

9.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Quebec during 2002. 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, 2002

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	0	0.0	0	0.0	0.0	0	0.0	0.0
16-19	39	31	79.5	8	25.8	7.5	4	12.9	4.3
20-25	72	61	84.7	23	37.7	21.7	23	37.7	25.0
26-35	64	51	79.7	19	37.3	17.9	15	29.4	16.3
36-45	79	59	74.7	25	42.4	23.6	20	33.9	21.7
46-55	74	50	67.6	23	46.0	21.7	22	44.0	23.9
>55	91	63	69.2	8	12.7	7.5	8	12.7	8.7
Gender									
Male	329	253	76.9	94	37.2	88.7	81	32.0	88.0
Female	91	62	68.1	12	19.4	11.3	11	17.7	12.0
Vehicle Type									
Automobile	300	225	75.0	80	35.6	75.5	69	30.7	75.0
Trucks/Van	66	59	89.4	22	37.3	20.8	19	32.2	20.7
Motorcycle	44	25	56.8	4	16.0	3.8	4	16.0	4.3
Tractor Trailer	10	6	60.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	155	120	77.4	65	54.2	61.3	56	46.7	60.9
Multiple-Vehicle	263	193	73.4	40	20.7	37.7	35	18.1	38.0
Unknown	2	2	100.0	1	50.0	0.9	1	50.0	1.1
TOTAL	420	315	75.0	106	33.7	100.0	92	29.2	100.0

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 39 drivers killed during 2002; 31 of these fatally injured drivers (79.5%) were tested for alcohol. Of those who were tested, 8 (25.8%) were positive for alcohol. This means that 16-19 year olds fatally injured drinking drivers accounted for 7.5% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that four of the 31 (12.9%) 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 4.3% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Quebec had a relatively low testing rate in 2002, with 75.0% of fatally injured drivers being tested for alcohol use.

In Quebec, 33.7% had been drinking and most of these had illegal BACs – 86.8% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 3.5% had BACs from 1-49 mg%;
- 1.0% had BACs from 50-80 mg%
- 12.7% had BACs from 81 to 160 mg%; and,
- 16.5% had BACs over 160 mg%.

9.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 23.6% were aged 36-45; 21.7% were aged 20-25 and 46-55; and 17.9% were aged 26-35. Those aged 16-19 and over 55 each accounted for only 7.5% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 25.0% were aged 20-25; 23.9% were age 46-55; 21.7% were age 36-45; 16.3% were age 26-35; and 8.7% were over age 55. Those aged 16-19 accounted for only 4.3% of fatally injured drivers who were over the legal limit.

Within each of the age groups, fatally injured drivers age 46-55 were the most likely to have been drinking – 46.0% of drivers in this age group had been drinking. By contrast, only 12.7% of tested drivers over age 55 had been drinking.

9.2.2 Gender differences. Males dominate the picture – they account for 88.7% of all the fatally injured drivers who had been drinking, and 88.0% of all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (329 of the 420 fatalities are males). If one examines the frequency of alcohol use among males compared to females, a similar picture emerges. Fatally injured male drivers were more likely to have been drinking than female drivers (37.2% and 19.4%, respectively). And, 86.2% of the male and 91.7% of the female drivers who were drinking had BACs over the legal limit.

9.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 75.5% were automobile drivers; 20.8% were truck/van drivers; and only 3.8% were motorcycle riders.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 75.0% were automobile drivers; 20.7% were truck/van drivers; and only 4.3% were motorcycle riders.

Within each of the vehicle types, 37.3% of fatally injured truck/van drivers, 35.6% of automobile drivers and 16.0% of motorcyclists were found to have been drinking.

9.2.4 Collision differences. Less than two out of five of the drivers killed (155 of the 420) were involved in single-vehicle collisions but these crashes accounted for three-fifths of the drivers who had been drinking or were legally impaired (61.3% and 60.9%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. More drivers involved in single-vehicle crashes (54.2%) were positive for alcohol than those involved in multiple-vehicle collisions (20.7%).

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 2002 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.

Table 9-3
Drivers in Alcohol-Related Serious Injury Crashes:
Quebec, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	104	7	6.7	0.7
16-19	486	99	20.4	10.4
20-25	933	197	21.1	20.8
26-35	1061	199	18.8	21.0
36-45	1077	164	15.2	17.3
46-55	845	108	12.8	11.4
>55	874	55	6.3	5.8
unknown	1734	119	6.9	12.6
Gender				
Male	4763	731	15.3	77.1
Female	2121	189	8.9	19.9
unknown	230	28	12.2	3.0
Vehicle Type				
Auto	4591	646	14.1	68.1
Truck/Van	1288	183	14.2	19.3
Motorcycle	351	40	11.4	4.2
Tractor Trailer	176	11	6.3	1.2
Other Hwy. Vehicle	71	4	5.6	0.4
Off-Road	495	53	10.7	5.6
Unknown	142	11	7.7	1.2
Collision Type				
Single-Vehicle	1995	685	34.3	72.3
Multiple-Vehicle	5119	263	5.1	27.7
TOTAL	7114	948	13.3	100.0

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, 7,114 drivers were involved in crashes in which someone was seriously injured, and among these 13.3% 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; 20.8% were aged 20-25; and 17.3% were aged 36-45. Drivers under 16 and over 55 accounted for only 0.7% and 5.8% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, about one out of five drivers age 20-25, 16-19, and 26-35 were involved in alcohol-related serious injury crashes (21.1%, 20.4% and 18.8%, respectively). The lowest incidence of involvement in alcohol-related serious injury crashes was found for the youngest and oldest age groups of drivers – those aged under 16 (6.7%) and those over 55 (6.3%).

9.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 77.1% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (15.3% and 8.9%, respectively).

9.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 68.1% were automobile drivers; and 19.3% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 14.2% of truck/van drivers were in crashes that involved alcohol, compared to 14.1% for automobile drivers, and 11.4% for motorcyclists. Only 5.6% of drivers of other highway vehicles were involved in alcohol-related serious injury crashes.

9.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 72.3% 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 – 34.3% of these drivers, compared to only 5.1% 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.

9.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 9-4 and Figure 9-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 classified as alcohol-related deaths.

Table 9-4

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Quebec, 1995-2002

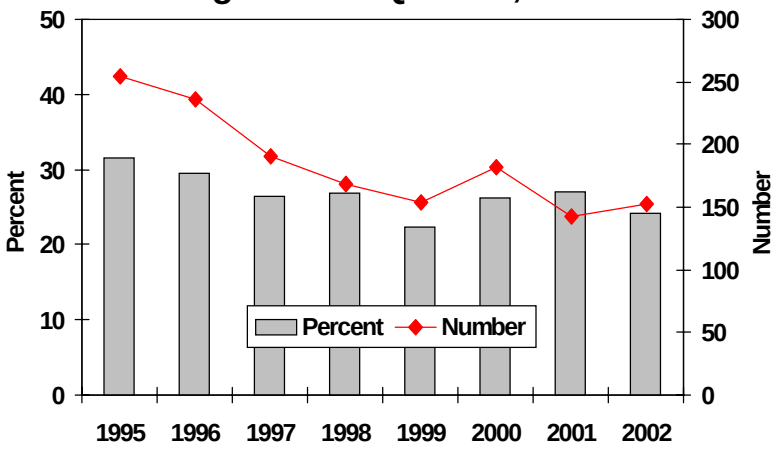
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	807	255	31.6
1996	797	236	29.6
1997	720	191	26.5
1998	628	168	26.8
1999	692	154	22.3
2000	691	182	26.3
2001	527	143	27.1
2002	631	152	24.1

* 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.

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; the previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

Figure 9-1
Number and Percent of Deaths Involving a Drinking Driver: Quebec, 1995-2002



As shown in the figure, the number of deaths in crashes that involved a drinking driver dropped from 255 to 154 between 1995 and 1999, rose to 182 in 2000, fell to a low of 143 in 2001, and rose to 152 in 2002. The percentage of alcohol-related fatalities decreased from 31.6% in 1995 to 26.5% in 1997. In 1998, the percentage of alcohol-related fatalities in Quebec rose slightly to 26.8%, dropped to 22.3% in 1999, rose to 27.1% in 2001, and dropped again to 24.1% in 2002.

9.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 9-5. Trends are illustrated in Figure 9-2 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 1999 (22.3%), rose to 29.6% in 2001, and dropped slightly to 29.2% in 2002. The percent of fatally injured drivers with zero BAC increased from 1987 (30.9%) to 1993 (58.9%), was relatively stable at this level until 1998, peaked in 1999 (71.5%), fell to 63.0% in 2001, and rose to 66.3% in 2002. The percent of fatally injured drivers with

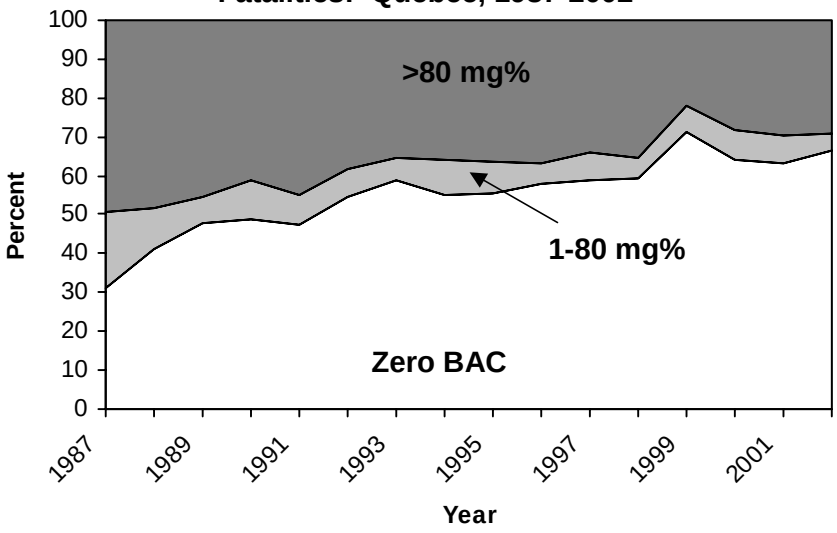
BACs between 1 and 80 mg% decreased from 1987 (19.6%) to 1996 (5.4%), rose to 7.8% in 2000, and dropped to its lowest mark in 2002 (4.4%).

Table 9-5

Alcohol Use Among Fatally Injured Drivers:
Quebec, 1987-2002

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

Figure 9-2
Trends in Alcohol Use Among Driver Fatalities: Quebec, 1987-2002



9.4.3 Drivers in serious injury crashes: 1995-2002. Table 9-6 and Figure 9-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 9.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 9-6

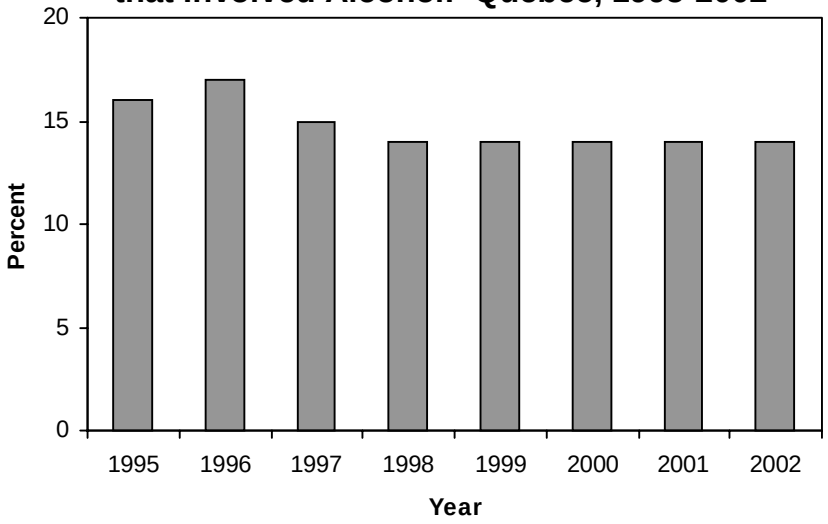
Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Quebec, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	6615	1063	(16.1)
1996	6657	1109	(16.7)
1997	6681	974	(14.6)
1998	6681	921	(13.8)
1999	6098	831	(13.6)
2000	6285	866	(13.8)
2001	6275	844	(13.5)
2002	6477	884	(13.6)

* 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 9-3
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Quebec, 1995-2002



As can be seen, the incidence of alcohol-involvement in serious injury crashes has generally declined over this eight-year period. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol rose only slightly from 16.1% to 16.7%. The incidence steadily dropped to 13.6% in 1999, rose slightly to 13.8% in 2000, dropped to 13.5% in 2001, and rose slightly to 13.6% in 2002.

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 2002. 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 2002. 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, 12 people age 16-19 were killed in motor vehicle crashes in New Brunswick during 2002. And, in all 12 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, five people aged 16-19 died in alcohol-related crashes in New Brunswick during 2002. The next column expresses this as a percentage – e.g., 41.7% 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 10.6% of all the people killed in alcohol-related crashes in New Brunswick during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 123 persons died in motor vehicle crashes in New Brunswick during 2002. In 118 (95.9%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 47 (39.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (123 x .398) it can be estimated that in New Brunswick *in 2002, 49 persons died in alcohol-related crashes.*

Table 10-1
Deaths* in Alcohol-Related Crashes: New Brunswick, 2002

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	12	85.7	1	8.3	2.1
16-19	12	12	100.0	5	41.7	10.6
20-25	18	18	100.0	8	44.4	17.0
26-35	17	15	88.2	6	40.0	12.8
36-45	20	20	100.0	11	55.0	23.4
46-55	21	21	100.0	10	47.6	21.3
>55	21	20	95.2	6	30.0	12.8
Gender						
Male	87	83	95.4	38	45.8	80.9
Female	36	35	97.2	9	25.7	19.1
Type						
Driver/Operator	78	78	100.0	32	41.0	68.1
Passenger	30	29	96.7	11	37.9	23.4
Pedestrian	15	11	73.3	4	36.4	8.5
Vehicle Occupied						
Automobiles	61	61	100.0	25	41.0	53.2
Trucks/Vans	21	20	95.2	6	30.0	12.8
Motorcycles	10	10	100.0	6	60.0	12.8
Other Hwy. Vehs.	2	2	100.0	0	0.0	0.0
Offroad Vehicles	14	14	100.0	6	42.9	12.8
(Pedestrians)	15	11	73.3	4	36.4	8.5
TOTAL	123	118	95.9	47	39.8	100.0

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

10.1.1 Victim age. Of all the people who died in alcohol-related crashes, 23.4% (see last column) were aged 36-45; 21.3% were 46-55; and 17.0% were 20-25.

Within each of the age groups, the highest incidence of alcohol involvement (55.0%) occurred in the crashes in which persons aged 36-45 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 8.3% of the persons under 16 and 30.0% of persons over 55 years of age died in crashes involving alcohol.

10.1.2 Gender. Of all the people who died in alcohol-related crashes, 80.9% were males. The incidence of alcohol in crashes in which a male died (45.8%) was much greater than the incidence of alcohol in crashes in which a female died (25.7%).

10.1.3 Victim type. Of all the people who died in alcohol-related crashes, 68.1% were drivers/operators of a vehicle; 23.4% were passengers; and 8.5% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (41.0%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 37.9% of the crashes in which a passenger died and 36.4% of those in which a pedestrian died.

10.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 53.2% were in an automobile; occupants of trucks/vans, motorcycles, and off-road vehicles each accounted for 12.8%.

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 died (41.0% versus 30.0%). Among motorcycle occupants, 60.0% died in an alcohol-related crash.

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 2002 Table 10-2 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 10-2
Alcohol Use Among Fatally Injured Drivers: New Brunswick, 2002

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	4.8	1	33.3	5.3
20-25	13	10	76.9	4	40.0	19.0	3	30.0	15.8
26-35	8	8	100.0	3	37.5	14.3	3	37.5	15.8
36-45	12	11	91.7	5	45.5	23.8	5	45.5	26.3
46-55	15	12	80.0	7	58.3	33.3	6	50.0	31.6
>55	12	7	58.3	1	14.3	4.8	1	14.3	5.3
Gender									
Male	51	42	82.4	20	47.6	95.2	18	42.9	94.7
Female	13	9	69.2	1	11.1	4.8	1	11.1	5.3
Vehicle Type									
Automobile	44	36	81.8	15	41.7	71.4	13	36.1	68.4
Trucks/Van	11	8	72.7	2	25.0	9.5	2	25.0	10.5
Motorcycle	8	7	87.5	4	57.1	19.0	4	57.1	21.1
Tractor Trailer	1	0	0.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	34	29	85.3	16	55.2	76.2	15	51.7	78.9
Multiple-Vehicle	30	22	73.3	5	22.7	23.8	4	18.2	21.1
TOTAL	64	51	79.7	21	41.2	100.0	19	37.3	100.0

To illustrate, among those aged 16-19, there were four drivers killed during 2002; three of these fatally injured drivers (75.0%) were tested for alcohol. Of those who were tested, one (33.3%) was positive for alcohol. This means that fatally injured drivers aged 16-19 accounted for 4.8% 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 one 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 5.3% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. New Brunswick had a lower than average testing rate in 2002, with 79.7% of fatally injured drivers being tested for alcohol use.

In New Brunswick, 41.2% had been drinking and most of these had illegal BACs – 90.5% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 0.0% had BACs from 1-49 mg%;
- 3.9% had BACs from 50-80 mg%
- 11.8% had BACs from 81 to 160 mg%; and,
- 25.5% had BACs over 160 mg%.

***10.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 33.3% were aged 46-55; 23.8% were aged 36-45; 19.0% were aged 20-25; 14.3% were aged 26-35; and 4.8% were aged 16-19 and over age 55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 31.6% were aged 46-55; 26.3% were aged 36-45; 15.8% were aged 20-25 and 26-35; and 5.3% were aged 16-19 and over 55.

Within each of the age groups, fatally injured drivers aged 46-55 were the most likely to have been drinking – 58.3% of drivers in this age group had been drinking. By contrast, 14.3% of the tested drivers over 55 had been drinking.

10.2.2 Gender differences. Males dominate the picture – they account for 95.2% of the fatally injured drivers who had been drinking and 94.7% the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (51 of the 64 fatalities are males). Fatally injured male drivers were more likely to have been drinking than female drivers (47.6% and 11.1%, respectively). Most of the male drivers (90.0%) and the one female driver who had been 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), 71.4% were automobile drivers; 19.0% were motorcyclists; and 9.5% were truck/van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 68.4% were automobile drivers; motorcyclists accounted for 21.1%; and 10.5% were truck/van drivers.

Within each of the vehicle types, 57.1% of fatally injured motorcyclists were found to have been drinking, compared to 41.7% of automobile drivers and 25.0% of truck/van drivers.

10.2.4 Collision differences. Approximately half of the drivers killed (34 of the 64) were involved in single-vehicle collisions but these crashes accounted for a large majority of the drivers who had been drinking or were legally impaired (76.2% and 78.9%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over half of the drivers involved in single-vehicle crashes (55.2%) were positive for alcohol, compared to only 22.7% 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 2002 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.

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.

Table 10-3
Drivers in Alcohol-Related Serious Injury Crashes:
New Brunswick, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	11	0	0.0	0.0
16-19	46	16	34.8	14.7
20-25	64	22	34.4	20.2
26-35	95	28	29.5	25.7
36-45	100	21	21.0	19.3
46-55	68	11	16.2	10.1
>55	69	9	13.0	8.3
unknown	4	2	50.0	1.8
Gender				
Male	341	97	28.4	89.0
Female	113	10	8.8	9.2
Unknown	3	2	66.7	1.8
Vehicle Type				
Auto	248	59	23.8	54.1
Truck/Van	125	34	27.2	31.2
Motorcycle	35	7	20.0	6.4
Tractor Trailer	28	4	14.3	3.7
Other Hwy. Vehicle	3	1	33.3	0.9
Off-Road	17	3	17.6	2.8
Unknown	1	1	100.0	0.9
Collision Type				
Single-Vehicle	179	85	47.5	78.0
Multiple-Vehicle	278	24	8.6	22.0
TOTAL	457	109	23.9	100.0

As shown, by the totals at the bottom of the table, 457 drivers were involved in crashes in which someone was seriously injured, and among these 23.9% were alcohol-related crashes.

10.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 25.7% were aged 26-35; 20.2% were aged 20-25; and 19.3% were aged 36-45. Drivers over 55 accounted for only 8.3% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, one out of three drivers aged 16-19 and 20-25 were involved in alcohol-related serious injury crashes (34.8% and 34.4%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for the youngest age group of drivers – those aged under 16 (0.0%).

10.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 89.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (28.4% and 8.8%, respectively).

10.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 54.1% were automobile drivers; and 31.2% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found among other highway vehicle drivers – 33.3% of these drivers were in crashes that involved alcohol, compared to 27.2% for truck/van drivers, and 23.8% for automobile drivers. One out of seven (14.3%) tractor-trailer drivers were involved in alcohol-related crashes.

10.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 78.0% 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 – 47.5% of these drivers, compared to only 8.6% 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.

10.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 10-4 and Figure 10-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 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; the previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

Table 10-4

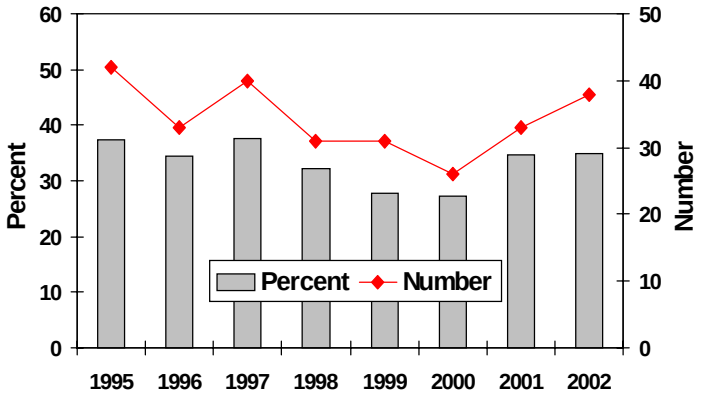
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: New Brunswick, 1995-2002

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

* 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 10-1
Number and Percent of Deaths Involving
a Drinking Driver: New Brunswick, 1995-2002



As shown in the figure, the number of deaths in crashes that involved a drinking driver dropped from 42 to 33 between 1995 and 1996, increased to 40 in 1997, decreased to 26 in 2000, and rose to 38 in 2002. The percentage of alcohol-related fatalities decreased from 37.5% in 1995 to 34.4% in 1996. In 1997, the percentage of alcohol-related fatalities in New Brunswick peaked at 37.7%, declined to its lowest level in 2000 (27.4%), and then rose to 34.9% in 2002.

10.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 10-5. Trends are illustrated in Figure 10-2 which shows changes in the percent of fatally injured drivers who: (1) showed no

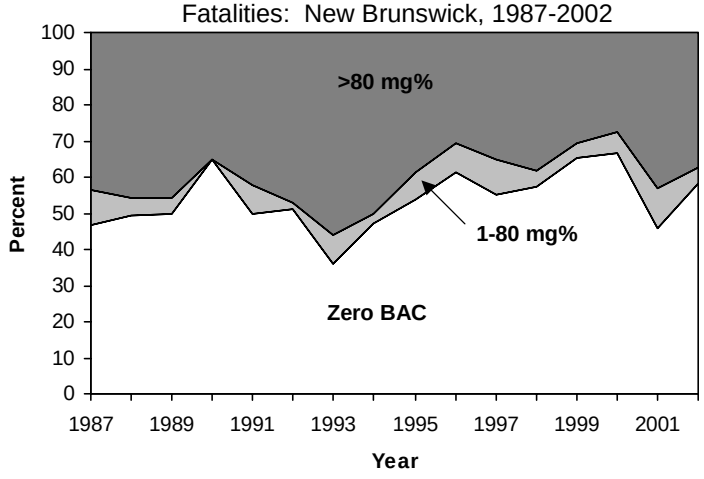
Table 10-5

Alcohol Use Among Fatally Injured Drivers:
New Brunswick, 1987-2002

	Number of Drivers			Drivers Grouped by BAC (mg%)					
YEAR	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

*dying in less than six hours.

Figure 10-2
Trends in Alcohol Use Among Driver Fatalities: New Brunswick, 1987-2002



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 differ slightly from those shown in Section 10.2 because the analysis is restricted to drivers who died in less than six hours of the crash.

Since 1987, the percent of fatally injured drivers with BACs over the legal limit fluctuated, peaking in 1993 (56.0%), falling to its lowest mark in 2000 (27.8%), rising to 43.2% in 2001, and declining to 37.5% in 2002. The percent of fatally injured drivers with zero BAC increased from 1987 (46.8%) to 1990 (64.9%), declined in 1993 (36.0%), gradually increased to its highest mark in 2000 (66.7%), declined to 45.9% in 2001, and rose to 58.3% in 2002. The percent of fatally injured drivers with BACs between 1 and 80 mg% declined until 1990 (0.0%), rose to 9.8% in 1997, declined to 4.1% in 1999, peaked in 2001 (10.8%), and fell again in 2002 (4.2%).

10.4.3 Drivers in serious injury crashes: 1995-2002. Table 10-6 and Figure 10-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 10.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 10-6

Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: New Brunswick, 1995-2002

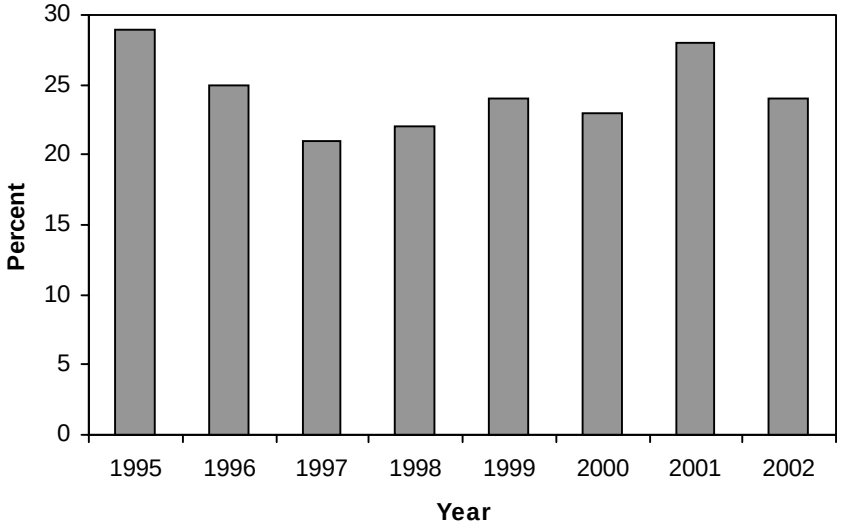
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	681	199	(29.2)
1996	597	146	(24.5)
1997	561	118	(21.0)
1998	542	121	(22.3)
1999	512	124	(24.2)
2000	493	112	(22.7)
2001	511	142	(27.8)
2002	439	105	(23.9)

* 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

As can be seen, the incidence of alcohol-involvement in serious crashes declined until 1997 and gradually increased in more recent years. Between 1995 and 1997 the percentage of drivers in serious injury crashes that involved alcohol dropped from 29.2% to a low of 21.0%. Since then, the percentage increased to 24.2% in 1999, decreased to 22.7% in 2000, rose to 27.8% in 2001, and fell again to 23.9% in 2002.

Figure 10-3
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: New Brunswick, 1995-2002



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 2002. 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 2002. 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, eight people aged 16-19 were killed in motor vehicle crashes in Nova Scotia during 2002. And, in all of these 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, three persons aged 16-19 died in an alcohol-related crash in Nova Scotia during 2002. The next column expresses this as a percentage – e.g., 37.5% 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 7.9% of all the people killed in alcohol-related crashes in Nova Scotia during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 88 persons died in motor vehicle crashes in Nova Scotia during 2002. In 87 (98.9%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 38 (43.7%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (88 x .437) it can be estimated that *in Nova Scotia during 2002, 38 persons died in alcohol-related crashes*.

Table 11-1
Deaths* in Alcohol-Related Crashes: Nova Scotia, 2002

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	6	6	100.0	2	33.3	5.3
16-19	8	8	100.0	3	37.5	7.9
20-25	11	11	100.0	5	45.5	13.2
26-35	16	16	100.0	11	68.8	28.9
36-45	16	16	100.0	5	31.3	13.2
46-55	12	12	100.0	5	41.7	13.2
>55	19	18	94.7	7	38.9	18.4
Gender						
Male	60	59	98.3	29	49.2	76.3
Female	28	28	100.0	9	32.1	23.7
Type						
Driver/Operator	47	47	100.0	25	53.2	65.8
Passenger	30	30	100.0	11	36.7	28.9
Pedestrian	11	10	90.9	2	20.0	5.3
Vehicle Occupied						
Automobiles	53	53	100.0	21	39.6	55.3
Trucks/Vans	11	11	100.0	7	63.6	18.4
Motorcycles	5	5	100.0	2	40.0	5.3
Other Hwy. Vehs.	2	2	100.0	1	50.0	2.6
Offroad Vehicles	6	6	100.0	5	83.3	13.2
(Pedestrians)	11	10	90.9	2	20.0	5.3
TOTAL	88	87	98.9	38	43.7	100.0

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

11.1.1 Victim age. Of all the people who died in alcohol-related crashes, those aged 26-35 accounted for 28.9% (see last column).

Within each of the age groups, the highest incidence of alcohol involvement (68.8%) occurred in the crashes in which a person aged 26-35 died. The lowest incidence of alcohol involvement

was found among those aged 36-45 and 16-19 – 31.3% of the persons aged 36-45 and 33.3% of the fatalities aged 16-19 died in crashes involving alcohol.

11.1.2 Gender. Of all the people who died in alcohol-related crashes, 76.3% were males. The incidence of alcohol in crashes in which a male died (49.2%) was much greater than the incidence of alcohol in crashes in which a female died (32.1%).

11.1.3 Victim type. Of all the people who died in alcohol-related crashes, 65.8% were drivers/operators of a vehicle; 28.9% were passengers and 5.3% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (53.2%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 36.7% of the crashes in which a passenger died and 20.0% of those in which a pedestrian died.

11.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over half (55.3%) were in an automobile and 18.4% were in a truck/van, and 13.2% were in an off-road vehicle.

Within each of the vehicle types, the incidence of alcohol involvement in which an off-road vehicle occupant died was greater than the incidence of alcohol in crashes in which a truck/van occupant or an automobile occupant died (83.3%, 63.6%, and 39.6%, respectively).

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 2002. Table 11-2 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 11-2
Alcohol Use Among Fatally Injured Drivers: Nova Scotia, 2002

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	2	2	100.0	1	50.0	5.0	0	0.0	0.0
20-25	7	4	57.1	2	50.0	10.0	1	25.0	8.3
26-35	11	10	90.9	8	80.0	40.0	4	40.0	33.3
36-45	5	5	100.0	2	40.0	10.0	2	40.0	16.7
46-55	9	9	100.0	4	44.4	20.0	2	22.2	16.7
>55	7	6	85.7	3	50.0	15.0	3	50.0	25.0
Gender									
Male	33	28	84.8	18	64.3	90.0	11	39.3	91.7
Female	8	8	100.0	2	25.0	10.0	1	12.5	8.3
Vehicle Type									
Automobile	32	27	84.4	15	55.6	75.0	9	33.3	75.0
Trucks/Van	4	4	100.0	3	75.0	15.0	3	75.0	25.0
Motorcycle	3	3	100.0	1	33.3	5.0	0	0.0	0.0
Tractor Trailer	2	2	100.0	1	50.0	5.0	0	0.0	0.0
Collision Type									
Single-Vehicle	23	21	91.3	17	81.0	85.0	11	52.4	91.7
Multiple-Vehicle	18	15	83.3	3	20.0	15.0	1	6.7	8.3
TOTAL	41	36	87.8	20	55.6	100.0	12	33.3	100.0

To illustrate, among 20-25 year olds there were seven drivers killed during 2002; four of these fatally injured drivers (57.1%) were tested for alcohol. Of those who were tested, two (50.0%) were positive for alcohol. This means that 20-25 year old fatally injured drinking drivers accounted for 10.0% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the four (25.0%) fatally injured 20-25 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that one of the two drivers who were positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 20-25 year old drivers accounted for 8.3% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Nova Scotia had a high testing rate in 2002, with 87.8% of fatally injured drivers being tested for alcohol use.

In Nova Scotia, 55.6% had been drinking and most of these had illegal BACs – 60.0% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

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

11.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 40.0% were aged 26-35, and 20.0% were aged 46-55. Those aged 16-19 accounted for only 5.0% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 33.3% were aged 26-35; and 25.0% were over 55. Those aged 16-19 accounted for 0.0% and those aged 20-25 accounted for 8.3% of the fatally injured drivers who were over the legal limit.

Within each of the age groups, fatally injured drivers age 26-35 were the most likely to have been drinking – 80.0% of tested drivers in this age group had been drinking. By contrast, only 40.0% of tested drivers aged 36-45 had been drinking.

11.2.2 Gender differences. Males dominate the picture – they account for 90.0% all of the fatally injured drivers who had been drinking and 91.7% of those who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (33 of the 41 fatalities are males). If one examines the frequency of alcohol use among males compared to females, a similar picture emerges. Fatally injured male drivers were more likely to have been drinking than female drivers (64.3% and 25.0%, respectively). Three-fifths of the male drivers (61.1%) and 50.0% of the female drivers who were drinking had BACs over the legal limit.

11.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 75.0% were automobile drivers and 15.0% were truck/van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 75.0% were automobile drivers and 25.0% were truck/van drivers.

Within each of the vehicle types, 55.6% of fatally injured drivers of automobiles, 33.3% of motorcyclists, 75.0% of drivers of trucks/vans, and 50.0% of tractor-trailer drivers were found to have been drinking.

11.2.4 Collision differences. Over half of the drivers killed (23 of the 41) were involved in single-vehicle collisions and these crashes accounted for most of the drivers who had been drinking or were legally impaired (85.0% and 91.7%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Four-fifths (81.0%) of drivers involved in single-vehicle crashes were positive for alcohol, compared to only 20.0% 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 2002 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.

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.

Table 11-3
Drivers in Alcohol-Related Serious Injury Crashes:
Nova Scotia, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	8	2	25.0	2.4
16-19	49	17	34.7	20.0
20-25	67	19	28.4	22.4
26-35	65	17	26.2	20.0
36-45	73	11	15.1	12.9
46-55	65	11	16.9	12.9
>55	80	6	7.5	7.1
unknown	4	2	50.0	2.4
Gender				
Male	297	68	22.9	80.0
Female	111	15	13.5	17.6
unknown	3	2	66.7	2.4
Vehicle Type				
Auto	254	57	22.4	67.1
Truck/Van	86	19	22.1	22.4
Motorcycle	34	4	11.8	4.7
Tractor Trailer	5	1	20.0	1.2
Other Hwy. Vehicle	4	0	0.0	0.0
Off-Road	21	4	19.0	4.7
Unknown	7	0	0.0	0.0
Collision Type				
Single-Vehicle	191	69	36.1	81.2
Multiple-Vehicle	220	16	7.3	18.8
TOTAL	411	85	20.7	100.0

As shown, by the totals at the bottom of the table, 411 drivers were involved in crashes in which someone was seriously injured, and among these 20.7% were alcohol-related crashes.

11.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 22.4% were aged 20-25; 20.0% were aged 16-19 and 26-35; 12.9% were aged 36-45 and 46-55. Drivers under 16 accounted for 2.4% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, about one out of three drivers age 16-19 were involved in alcohol-related serious injury crashes (34.7%). The lowest incidence of involvement in alcohol-related serious injury crashes was found for the oldest age group of drivers – those aged over 55 (7.5%).

11.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 80.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (22.9% and 13.5%, respectively).

11.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 67.1% were automobile drivers; and 22.4% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 22.4% of these drivers were in crashes that involved alcohol, compared to 22.1% for drivers of trucks/vans, 20.0% of tractor-trailer drivers and 19.0% for drivers of off-road vehicles.

11.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 81.2% 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 – 36.1% of these drivers, compared to only 7.3% 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.

11.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 11-4 and Figure 11-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. These results differ slightly from those in Section 11.1 for two reasons. First,

Table 11-4

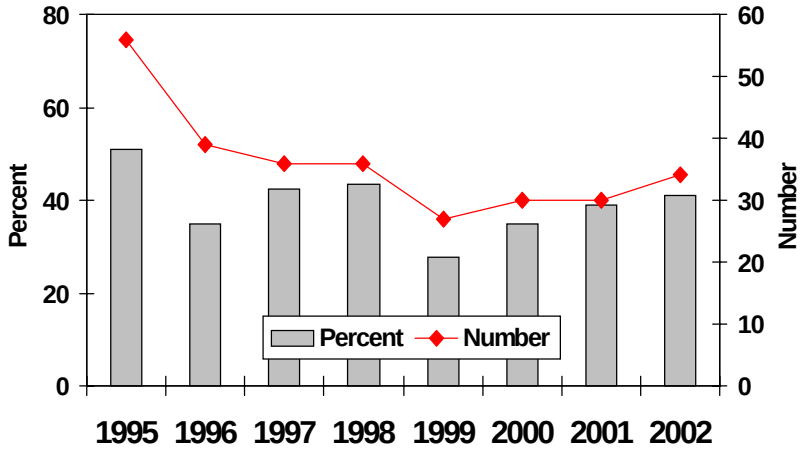
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Nova Scotia, 1995-2002

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

* 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 11-1
Number and Percent of Deaths Involving
a Drinking Driver: Nova Scotia, 1995-2002



deaths that occur in crashes that involve a drinking pedestrian are not 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; 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 dropped from 56 to 36 between 1995 and 1997. Alcohol-related fatalities remained constant at 36 in 1998, fell to a low of 27 in 1999, and rose to 34 in 2002. The percentage of alcohol-related fatalities decreased from 50.9% in 1995 to 34.8% in 1996. In 1998, the percentage of alcohol-related fatalities in Nova Scotia rose to 43.4%, dropped substantially to 27.6% in 1999, and rose to 41.0% in 2002.

11.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 11-5. Trends are illustrated in Figure 11-2 which shows changes in the percent of fatally injured drivers who: (1) showed no

Table 11-5

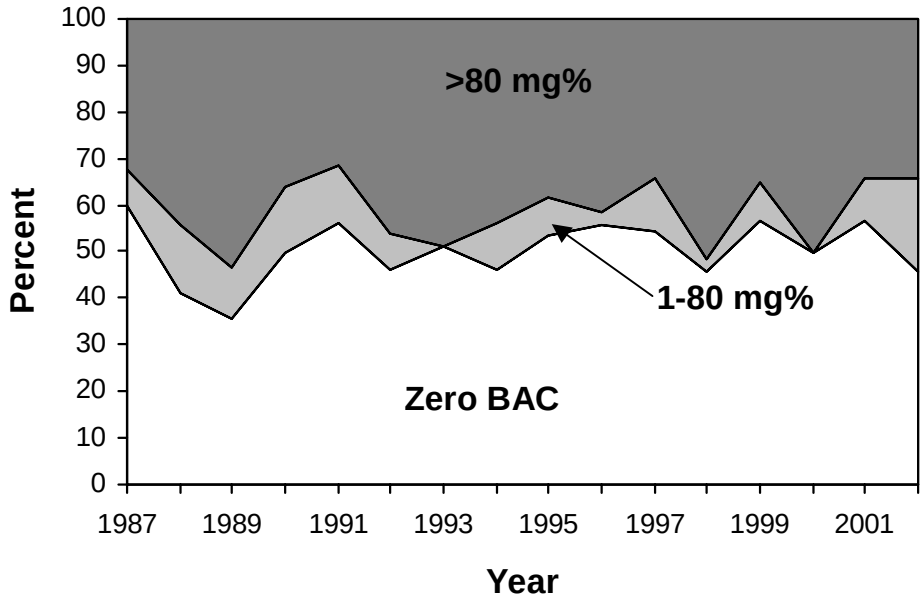
Alcohol Use Among Fatally Injured Drivers:
Nova Scotia, 1987-2002

	Number of	Drivers		Drivers Grouped by BAC (mg%)					
YEAR	Drivers*	Tested	(% Total)	Zero	(% Tested)	1-80	(% Tested)	>80	(% Tested)
1987	79	62	78.5	37	59.7	5	8.1	20	32.3
1988	85	61	71.8	25	41.0	9	14.8	27	44.3
1989	61	45	73.8	16	35.6	5	11.1	24	53.3
1990	67	58	86.6	29	50.0	8	13.8	21	36.2
1991	54	41	75.9	23	56.1	5	12.2	13	31.7
1992	53	37	69.8	17	45.9	3	8.1	17	45.9
1993	52	39	75.0	20	51.3	0	0.0	19	48.7
1994	50	41	82.0	19	46.3	4	9.8	18	43.9
1995	57	47	82.5	25	53.2	4	8.5	18	38.3
1996	49	36	73.5	20	55.6	1	2.8	15	41.7
1997	41	35	85.4	19	54.3	4	11.4	12	34.3
1998	46	35	76.1	16	45.7	1	2.9	18	51.4
1999	52	37	71.2	21	56.8	3	8.1	13	35.1
2000	47	42	89.4	21	50.0	0	0.0	21	50.0
2001	48	44	91.7	25	56.8	4	9.1	15	34.1
2002	36	35	97.2	16	45.7	7	20.0	12	34.3

* dying in less than six hours.

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 differ slightly from those shown in Section 11.2 because the analysis is restricted to drivers who died in less than six hours of the crash.

Figure 11-2
Trends in Alcohol Use Among Driver Fatalities: Nova Scotia, 1987-2002



As can be seen, the percent of fatally injured drivers with BACs over the legal limit peaked in 1989 (53.3%), dropped to 31.7% in 1991, increased in 1998 (51.4%), dropped in 1999 (35.1%), rose in 2000 (50.0%), dropped again in 2001 (34.1%) before rising slightly to 34.3% in 2002. The percent of fatally injured drivers with zero BAC dropped from its peak in 1987 (59.7%) to its lowest point in 1989 (35.6%), fluctuated until 1998 (45.7%), rose in 1999 (56.8%), decreased in 2000 (50.0%), rose again in 2001 (56.8%), and dropped to 45.7% in 2002. The percent of fatally injured drivers with BACs between 1 and 80 mg% reached a low in 1993 (0.0%) and in 2000 (0.0%), before peaking at 20.0% in 2002.

11.4.3 Drivers in serious injury crashes: 1995-2002. Table 11-6 and Figure 11-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 11.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 11-6

Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Nova Scotia, 1995-2002

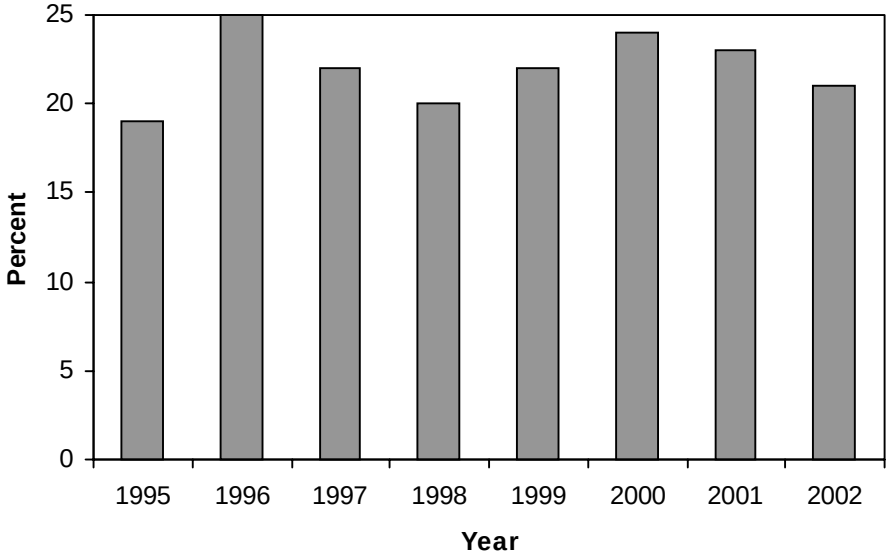
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	491	91	(18.5)
1996	458	114	(24.9)
1997	458	102	(22.3)
1998	427	87	(20.4)
1999	577	125	(21.7)
2000	390	92	(23.6)
2001	400	93	(23.3)
2002	383	81	(21.1)

* 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

As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this eight-year period. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol rose from 18.5% to 24.9%. Since then, the incidence has dropped to 20.4% in 1998, rose to 23.6% in 2000, and dropped to 21.1% in 2002.

Figure 11-3
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: Nova Scotia, 1995-2002



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 2002. 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).

Detailed results are not provided in section 12.2 because the small number of fatally injured drivers – only ten – makes the results unreliable.

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 2002. 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, three people aged 20-25 were killed in motor vehicle crashes in Prince Edward Island during 2002. And, in two of the cases (66.7%) 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, one person aged 20-25 died in an alcohol-related crash in Prince Edward Island during 2002. The next column expresses this as a percentage – e.g., 50.0% of the 20-25 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 those aged 20-25 represent 14.3% of all the people killed in alcohol-related crashes in Prince Edward Island during 2002.

Table 12-1
Deaths* in Alcohol-Related Crashes: Prince Edward Island, 2002

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	1	50.0	0	0.0	0.0
16-19	2	0	0.0	0	0.0	0.0
20-25	3	2	66.7	1	50.0	14.3
26-45	8	7	87.5	6	85.7	85.7
46-55	2	2	100.0	0	0.0	0.0
>35	3	1	33.3	0	0.0	0.0
Gender						
Male	16	12	75.0	6	50.0	85.7
Female	4	1	25.0	1	100.0	14.3
Type						
Driver/Operator	13	10	76.9	6	60.0	85.7
Passenger	5	2	40.0	1	50.0	14.3
Pedestrian	2	1	50.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	6	2	33.3	0	0.0	0.0
Trucks/Vans	7	6	85.7	5	83.3	71.4
Motorcycles	2	2	100.0	0	0.0	0.0
Offroad Vehicles	3	2	66.7	2	100.0	28.6
(Pedestrians)	2	1	50.0	0	0.0	0.0
TOTAL	20	13	65.0	7	53.8	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, 20 persons died in motor vehicle crashes in Prince Edward Island during 2002. In 13 of these cases (65.0%), it was possible to determine if alcohol was a factor. Of these known cases, seven (53.8%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (20 x .538) it can be estimated that *in Prince Edward Island during 2002, 11 persons died in alcohol-related crashes.*

12.1.1 Victim age. Of all the people who died in alcohol-related crashes, 85.7% (see last column) were 26-45; and those aged 20-25 accounted for 14.3%.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 26-45 (85.7%) and 20-25 (50.0%) died. The lowest incidence of alcohol involvement was found among the remaining age groups – 0.0% of these persons died in crashes involving alcohol.

12.1.2 Gender. Of all the people who died in alcohol-related crashes, 85.7% were males. However, the incidence of alcohol in crashes in which a female died was 100.0%, compared to 50.0% for males.

12.1.3 Victim type. Of all the people who died in alcohol-related crashes, 85.7% were drivers/operators of a vehicle; and 14.3% were passengers.

Within each of these victim types, the highest incidence of alcohol involvement (60.0%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 50.0% of crashes where a passenger died and 0.0% of the crashes in which a pedestrian died.

12.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 71.4% were in a truck/van and 28.6% were on an off-road vehicle.

Within each of these vehicle types, the incidence of alcohol involvement in which an off-road vehicle occupant died (100.0%) was greater than the incidence of alcohol in crashes in which a truck/van and an automobile occupant died (83.3% and 0.0%, respectively).

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 2002.

Prince Edward Island had 10 drivers fatally injured in 2002; all of these drivers (100.0%) were tested for alcohol. Of those who were tested, four (40.0%) had been drinking. Three were male drivers and one was female. All four were involved in a single-vehicle collision.

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 2002 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.

The results are shown in Table 12-2 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, 84 drivers were involved in crashes in which someone was seriously injured, and among these 20.2% were alcohol-related crashes.

12.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 35.3% were aged 26-35; 17.6% were aged 20-25 and 36-45; 11.8% were aged 16-19 and over 55; and 5.9% were aged 46-55. Drivers under 16 accounted for none of those involved in alcohol-related serious injury crashes.

Within each of the age groups, 37.5% of drivers age 20-25 and 28.6% of those aged 26-35 were involved in alcohol-related serious injury crashes.

12.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 82.4% were males. And the incidence of involvement in alcohol-related serious injury crashes was more than twice as great for males than for females (25.5% and 10.3%, respectively).

12.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 64.7% were automobile drivers; and 35.3% were truck/van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 26.1% of these drivers were in crashes that involved alcohol, compared to 20.0% for automobile drivers.

Table 12-2
Drivers in Alcohol-Related Serious Injury Crashes:
Prince Edward Island, 2002

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	14	2	14.3	11.8
20-25	8	3	37.5	17.6
26-35	21	6	28.6	35.3
36-45	16	3	18.8	17.6
46-55	10	1	10.0	5.9
>55	14	2	14.3	11.8
Gender				
Male	55	14	25.5	82.4
Female	29	3	10.3	17.6
Vehicle Type				
Auto	55	11	20.0	64.7
Truck/Van	23	6	26.1	35.3
Motorcycle	1	0	0.0	0.0
Tractor Trailer	1	0	0.0	0.0
Off-Road	4	0	0.0	0.0
Collision Type				
Single-Vehicle	29	17	58.6	100.0
Multiple-Vehicle	55	0	0.0	0.0
TOTAL	84	17	20.2	100.0

12.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% of them were in single-vehicle crashes. The incidence of involvement in alcohol-related serious injury crashes was found among 58.6% of these drivers.

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.

12.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 12-3 and Figure 12-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 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; the previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

Table 12-3

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Prince Edward Island, 1995-2002

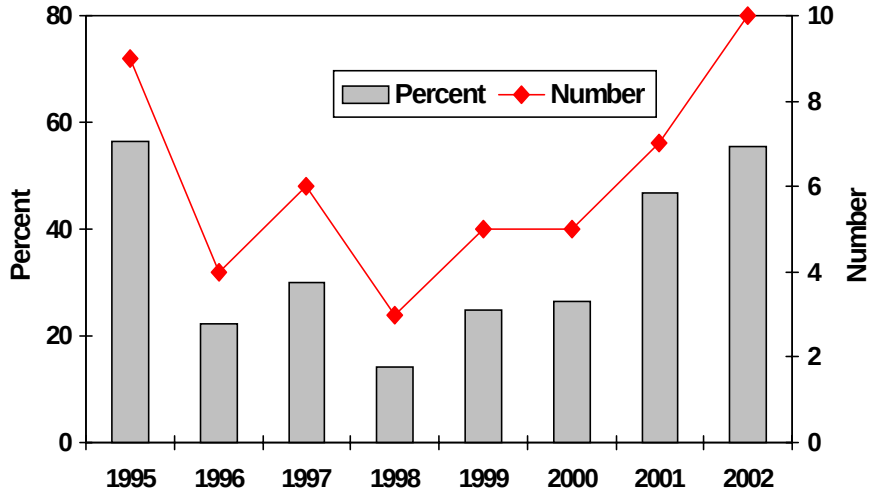
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	16	9	56.3
1996	18	4	22.2
1997	20	6	30.0
1998	21	3	14.3
1999	20	5	25.0
2000	19	5	26.3
2001	15	7	46.7
2002	18	10	55.6

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

** only on public roadways involving principal vehicle types.

As shown in the figure, the number of deaths in crashes that involved a drinking driver dropped from nine to only three between 1995 and 1998 before rising to ten in 2002. The percentage of alcohol-related fatalities 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 55.6% in 2002.

Figure 12-1
Number and Percent of Deaths Involving a
Drinking Driver: Prince Edward Island, 1995-2002



12.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 12-4. Trends are illustrated in Figure 12-2 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 differ slightly from those shown in Section 12.2 because the analysis is restricted to drivers who died in less than six hours of 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 1998 (12.5%) before rising in 2002 (40.0%). The percent of fatally injured drivers with zero BAC increased from 1987 (40.0%) to its highest level in 1998 (87.5%) before dropping in 2002 (60.0%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1990 (33.3%). No fatally injured drivers had BACs between 1 and 80 mg% from 1998 to 2002 (0.0%).

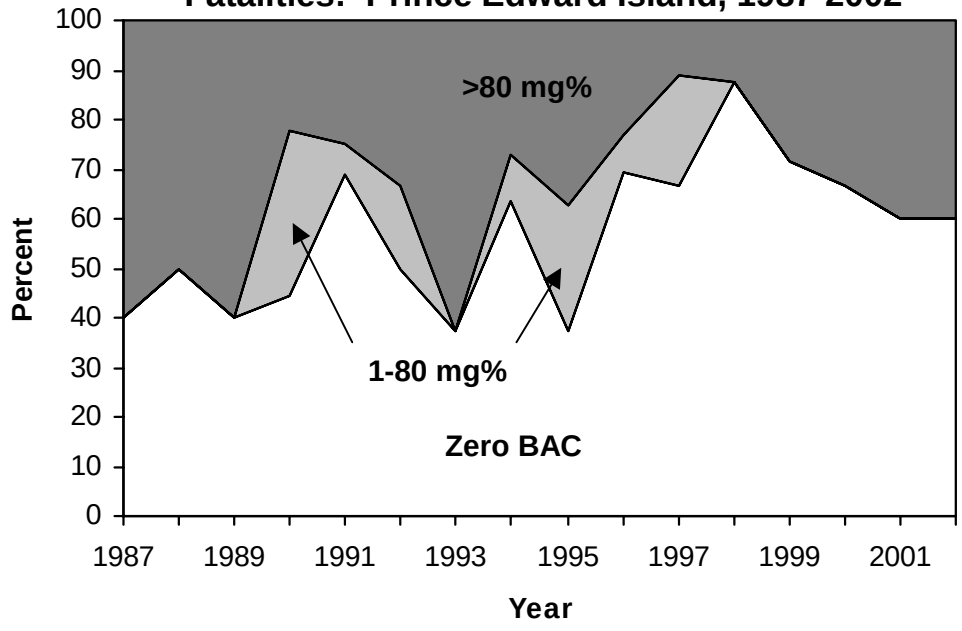
Table 12-4

Alcohol Use Among Fatally Injured Drivers:
Prince Edward Island, 1987-2002

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

* dying in less than six hours.

Figure 12-2
Trends in Alcohol Use Among Driver Fatalities: Prince Edward Island, 1987-2002



12.4.3 Drivers in serious injury crashes: 1995-2002. Table 12-5 and Figure 12-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 12.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 12-5

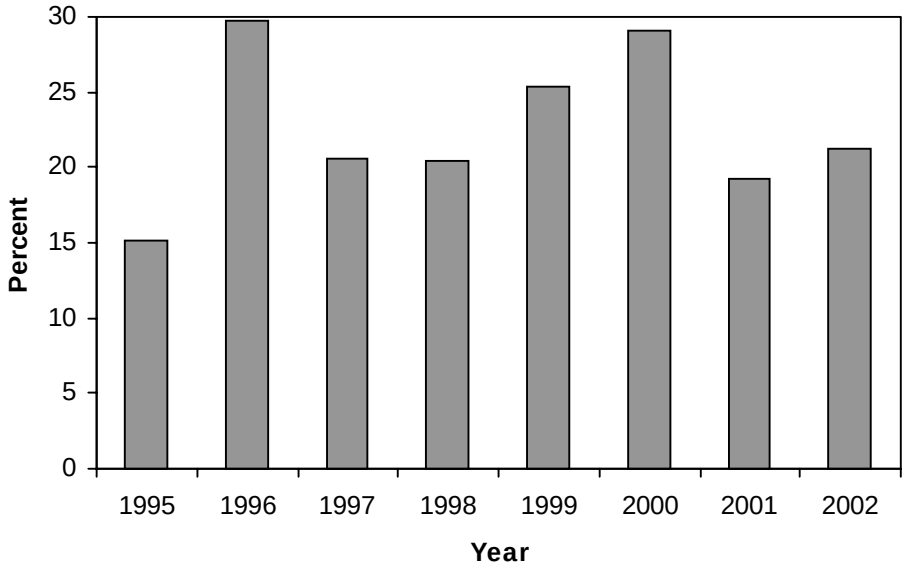
Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Prince Edward Island, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 12-3
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: Prince Edward Island, 1995-2002



As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this seven-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 dropped to 20.4% in 1998, rose to 29.1% in 2000, decreased to 19.3% in 2001, and rose to 21.3% in 2002.

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 2002. 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 during 2002. 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 20-25 were killed in motor vehicle crashes in Newfoundland during 2002. And, in all of these 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, three persons aged 20-25 died in an alcohol-related crash in Newfoundland during 2002. The next column expresses this as a percentage – e.g., 50.0% of the 20-25 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 20-25 year olds represent 18.8% of all the people killed in alcohol-related crashes in Newfoundland during 2002.

The totals at the bottom of the table provide a summary. As can be seen, 41 persons died in motor vehicle crashes in Newfoundland during 2002. In all (100%) of these cases, it was possible to determine if alcohol was a factor. Of these cases, 16 (39.0%) involved alcohol.

Table 13-1
Deaths* in Alcohol-Related Crashes: Newfoundland, 2002

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	4	100.0	1	25.0	6.3
16-19	1	1	100.0	1	100.0	6.3
20-25	6	6	100.0	3	50.0	18.8
26-35	5	5	100.0	3	60.0	18.8
36-45	8	8	100.0	3	37.5	18.8
46-55	9	9	100.0	3	33.3	18.8
>55	8	8	100.0	2	25.0	12.5
Gender						
Male	26	26	100.0	11	42.3	68.8
Female	15	15	100.0	5	33.3	31.3
Type						
Driver/Operator	25	25	100.0	10	40.0	62.5
Passenger	13	13	100.0	3	23.1	18.8
Pedestrian	3	3	100.0	3	100.0	18.8
Vehicle Occupied						
Automobiles	22	22	100.0	6	27.3	37.5
Trucks/Vans	9	9	100.0	4	44.4	25.0
Motorcycles	1	1	100.0	0	0.0	0.0
Offroad Vehicles	6	6	100.0	3	50.0	18.8
(Pedestrians)	3	3	100.0	3	100.0	18.8
TOTAL	41	41	100.0	16	39.0	100.0

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

13.1.1 Victim age. Of all the people who died in alcohol-related crashes, (see last column) 18.8% were aged 20-25, 26-35, 36-45 and 46-55; 12.5% were over age 55 and 6.3% were under 16 and aged 16-19.

Within each of the age groups, the highest incidence of alcohol involvement (100.0%) occurred in the crashes in which a person aged 16-19 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – 25.0% of those under age 16 and over 55 died in crashes involving alcohol.

13.1.2 Gender. Of all the people who died in alcohol-related crashes, 68.8% were males. The incidence of alcohol in crashes in which a male died (42.3%) was greater than the incidence of alcohol in crashes in which a female died (33.3%).

13.1.3 Victim type. Of all the people who died in alcohol-related crashes, 62.5% were drivers/operators of a vehicle; passengers and pedestrians each accounted for 18.8%.

Within each of these victim types, the highest incidence of alcohol involvement (100.0%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 40.0% of the crashes in which a driver/operator died; and in 23.1% of the crashes in which a passenger died.

13.1.4 Type of vehicle occupied. Occupants of automobiles accounted for 37.5% of the people who died in alcohol-related crashes, 25.0% were truck/van occupants; and 18.8% were occupants of off-road vehicles.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was greater than the incidence of alcohol in crashes in which an occupant of an automobile died (44.4% versus 27.3%). And 50.0% of off-road vehicle occupants died in an alcohol-related crash.

13.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Newfoundland during 2002. Table 13-2 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 26-35 year olds there were four drivers killed during 2002; all of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, two (50.0%) were

positive for alcohol. This means that 26-35 year old fatally injured drinking drivers accounted for 33.3% of all drinking drivers who were killed.

Table 13-2
Alcohol Use Among Fatally Injured Drivers: Newfoundland, 2002

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									
20-25	2	2	100.0	1	50.0	16.7	1	50.0	25.0
26-35	4	4	100.0	2	50.0	33.3	2	50.0	50.0
36-45	5	4	80.0	1	25.0	16.7	0	0.0	0.0
46-55	6	6	100.0	2	33.3	33.3	1	16.7	25.0
>55	3	2	66.7	0	0.0	0.0	0	0.0	0.0
Gender									
Male	16	14	87.5	5	35.7	83.3	4	28.6	100.0
Female	4	4	100.0	1	25.0	16.7	0	0.0	0.0
Vehicle Type									
Automobile	15	13	86.7	5	38.5	83.3	4	30.8	100.0
Trucks/Van	4	4	100.0	1	25.0	16.7	0	0.0	0.0
Motorcycle	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	10	8	80.0	5	62.5	83.3	4	50.0	100.0
Multiple-Vehicle	10	10	100.0	1	10.0	16.7	0	0.0	0.0
TOTAL	20	18	90.0	6	33.3	100.0	4	22.2	100.0

Then, in the final three columns, it can be seen that two of the four fatally injured 26-35 year olds (50.0%) 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, 26-35 year old drivers accounted for 50.0% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Newfoundland had a high testing rate in 2002, with 90.0% of fatally injured drivers being tested for alcohol use. In Newfoundland, 33.3% had been drinking and the majority of these had illegal BACs – 66.7% of fatally injured drinking drivers had BACs >80 mg%. Although not shown in the table, more refined analyses by different BAC categories shows that among tested drivers:

- 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%.

***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 46-55; and those aged 20-25 and 36-45 each accounted for 16.7%.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), those aged 26-35 accounted for 50.0%; and those aged 20-25 and 46-55 each accounted for 25.0%.

Within each of the age groups, fatally injured drivers age 20-25 and 26-35 were the most likely to have been drinking – 50.0% of drivers in these age groups had been drinking. By contrast, 25.0% of the tested drivers aged 36-45 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 all of the fatally injured drivers who were legally impaired.

However, males dominate the picture largely because they account for most of the drivers who are killed (16 of the 20 fatalities are males). One-third (35.7%) of fatally injured male drivers had been drinking compared to one of the four (25.0%) fatally injured female drivers. Of the male drivers who were drinking, 80.0% 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), automobile drivers accounted for 83.3% and 16.7% were truck/van drivers.

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

Within each of the vehicle types, 38.5% of fatally injured drivers of trucks/vans and 25.0% of drivers of automobiles were found to have been drinking.

13.2.4 Collision differences. Half of the drivers killed (10 of the 20) were involved in single-vehicle collisions yet these crashes accounted for 83.3% of the drivers who had been drinking and all of those who were legally impaired (100.0%).

Alcohol is overrepresented in single-vehicle crashes. Three-fifths of drivers involved in single-vehicle crashes (62.5%) were positive for alcohol, compared to only 10.0% of those involved in multiple-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 2002 in Newfoundland. 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), and 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.

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, 246 drivers were involved in crashes in which someone was seriously injured, and among these 18.3% were alcohol-related crashes.

13.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 33.3% were aged 20-25; 26.7% were aged 26-35; 11.1% were aged 16-19 and 46-55 and 8.9% were aged 36-45. Drivers under 16 and over 55 each accounted for only 0.0% of those involved in alcohol-related serious injury crashes.

Table 13-3
Drivers in Alcohol-Related Serious Injury Crashes:
Newfoundland, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	12	0	0.0	0.0
16-19	19	5	26.3	11.1
20-25	37	15	40.5	33.3
26-35	43	12	27.9	26.7
36-45	44	4	9.1	8.9
46-55	31	5	16.1	11.1
>55	32	0	0.0	0.0
unknown	28	4	14.3	8.9
Gender				
Male	170	38	22.4	84.4
Female	53	5	9.4	11.1
unknown	23	2	8.7	4.4
Vehicle Type				
Auto	121	23	19.0	51.1
Truck/Van	59	10	16.9	22.2
Motorcycle	10	1	10.0	2.2
Tractor Trailer	1	0	0.0	0.0
Off-Road	36	10	27.8	22.2
Unknown	19	1	5.3	2.2
Collision Type				
Single-Vehicle	108	39	36.1	86.7
Multiple-Vehicle	138	6	4.3	13.3
TOTAL	246	45	18.3	100.0

Within each of the age groups, two out of five drivers aged 20-25 were involved in alcohol-related serious injury crashes (40.5%). The lowest incidence of involvement in alcohol-related serious injury crashes was found for drivers aged over 55 (0.0%) and under 16 (0.0%).

13.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 84.4% were males. The incidence of involvement in alcohol-related serious injury crashes was also twice as great for males than for females (22.4% and 9.4%, respectively).

13.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 51.1% were automobile drivers; 22.2% were drivers of off-road vehicles and trucks/vans.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers – 27.8% of these drivers were in crashes that involved alcohol, compared to 19.0% for automobile drivers, 16.9% for truck/van drivers and 10.0% for motorcyclists.

13.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 86.7% 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 – 36.1% of these drivers, compared to only 4.3% 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.

13.4.1 Deaths in alcohol-related crashes: 1995-2002. Table 13-4 and Figure 13-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 2002. 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 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; the previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

Table 13-4

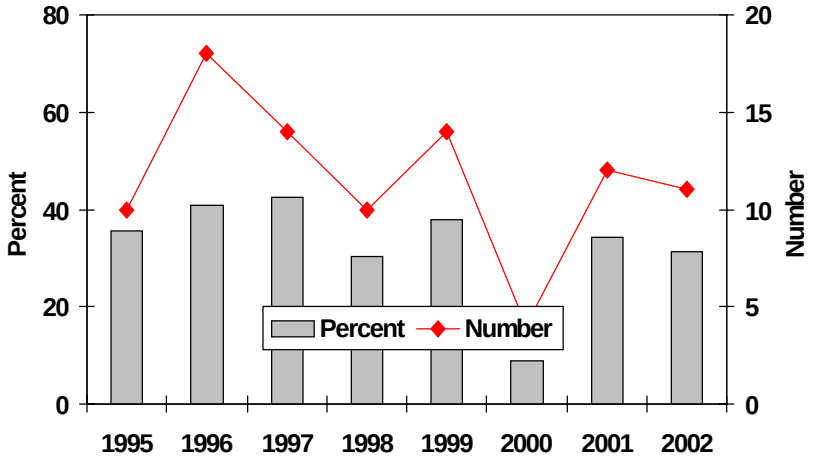
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Newfoundland, 1995-2002

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

* 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 13-1
Number and Percent of Deaths Involving
a Drinking Driver: Newfoundland, 1995-2002



As shown in the figure, the number of deaths in crashes that involved a drinking driver rose from 10 to 18 between 1995 and 1996. Alcohol-related fatalities decreased to 10 in 1998, increased to 14 in 1999, fell to a low of four in 2000, rose to 12 in 2001, and decreased to 11 in 2002. The percentage of alcohol-related fatalities increased from 35.7% in 1995 to 42.4% in 1997. In 1998, the percentage of alcohol-related fatalities in Newfoundland deceased to 30.3%, rose to 37.8% in 1999, fell to a low of 8.9% in 2000, rose to 34.3% in 2001, and decreased to 31.4% in 2002.

13.4.2 Fatally injured drivers: 1987-2002. Data on alcohol use among fatally injured drivers over the 16-year period from 1987-2002 are shown in Table 13-5. Trends are illustrated in Figure 13-2 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 differ slightly from those shown in Section 13.2 because the analysis is restricted to drivers who died in less than six hours of the crash.

Table 13-5

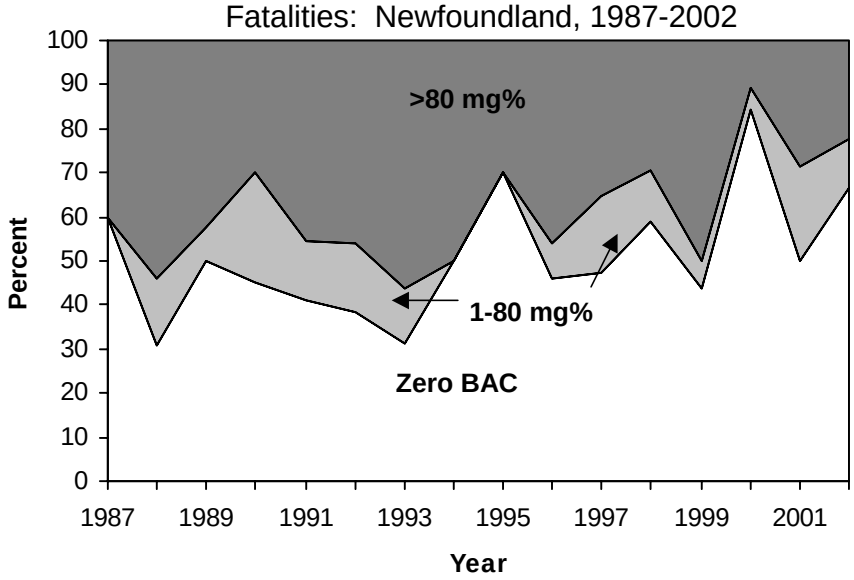
Alcohol Use Among Fatally Injured Drivers:
Newfoundland, 1987-2002

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

* dying in less than six hours.

As can be seen, the percent of fatally injured drivers with BACs over the legal limit peaked in 1993 (56.3%), decreased in 1998 (29.4%), rose to 50.0% in 1999, fell to a low in 2000 (10.5%), rose in 2001 (28.6%), and decreased to 22.2% in 2002. The percent of fatally injured drivers with zero BAC reached 70.0% in 1995, declined in 1996 (46.2%), rose to 58.8% in 1998, fell to 43.8% in 1999, peaked in 2000 (84.2%), dropped in 2001 (50.0%), and rose in 2002 (66.7%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1990 (25.0%), dropped to 0.0% in 1994 and 1995, reached 17.6% in 1997, decreased to 5.3% in 2000, rose to 21.4% in 2001, and dropped to 11.1% in 2002.

Figure 13-2
Trends in Alcohol Use Among Driver Fatalities: Newfoundland, 1987-2002



13.4.3 Drivers in serious injury crashes: 1995-2002. Table 13-6 and Figure 13-3 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 13.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other non-highway vehicles.

Table 13-6

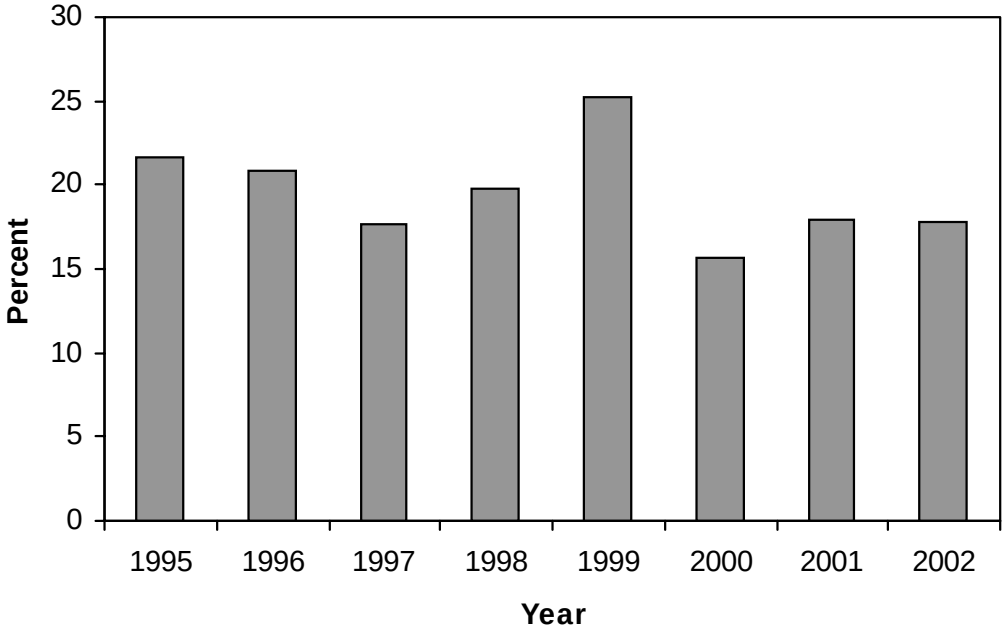
Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Newfoundland, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 13-3
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: Newfoundland, 1995-2002



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, decreased to a low of 15.7% in 2000; rose to 17.9% in 2001, and decreased slightly to 17.8% in 2002.

14.0 YUKON TERRITORY

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in the Yukon during 2002. 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 six – and drivers fatally injured – only nine – 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.

Fourteen persons died in motor vehicle crashes in the Yukon during 2002. In 13 (92.9%) of these cases, it was possible to determine if alcohol was a factor. Of these cases, six (46.2%) involved alcohol.

14.2 ALCOHOL IN FATALLY INJURED DRIVERS

The Yukon had only nine fatally injured drivers during 2002. All of these drivers were tested for alcohol and three (33.3.%) 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 2002 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), and 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.

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 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, 43 drivers were involved in crashes in which someone was seriously injured, and among these 39.5% were alcohol-related crashes.

14.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.5% were aged 36-45 and 46-55; 17.6% were aged 20-25 and 26-35; 11.8% were over 55 and 5.9% were aged 16-19.

Within each of the age groups, four out of five of the drivers aged 46-55 (80.0%), 60.0% of those aged 20-25, 36.4% of those aged 36-45, 33.3% of those aged 26-35, 28.6% of those over 55; and 20.0% of those aged 16-19 were involved in alcohol-related serious injury crashes.

14.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 76.5% were males. And the incidence of involvement in alcohol-related serious injury crashes was greater for males than for females (48.1% and 25.0%, respectively).

14.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 64.7% were truck/van drivers 17.6% were automobile drivers; 11.8% were motorcyclists; and 5.9% were tractor-trailer drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers (52.4%). Among automobile drivers 25.0% were involved in alcohol-related

serious injury crashes. One out of two (50.0%) of tractor-trailer drivers and 28.6% of motorcyclists were involved in alcohol in alcohol-related serious injury crashes.

Table 14-1
Drivers in Alcohol-Related Serious Injury Crashes:
Yukon Territory, 2002

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	5	1	20.0	5.9
20-25	5	3	60.0	17.6
26-35	9	3	33.3	17.6
36-45	11	4	36.4	23.5
46-55	5	4	80.0	23.5
>55	7	2	28.6	11.8
Gender				
Male	27	13	48.1	76.5
Female	16	4	25.0	23.5
Vehicle Type				
Auto	12	3	25.0	17.6
Truck/Van	21	11	52.4	64.7
Motorcycle	7	2	28.6	11.8
Tractor Trailer	2	1	50.0	5.9
Off-Road	1	0	0.0	0.0
Collision Type				
Single-Vehicle	39	17	43.6	100.0
Multiple-Vehicle	4	0	0.0	0.0
TOTAL	43	17	39.5	100.0

*These numbers are slightly underestimated because about 7% of all injuries are recorded as “unspecified”.

14.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% were in single-vehicle crashes. Alcohol involvement was found among 43.6% of drivers in single-vehicle serious injury 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.

14.4.1 Deaths in alcohol-related crashes: 1995-2002. 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 2002. 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 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; the previous analyses included all types of motorized vehicles (e.g., snowmobiles) on both public roadways and in off-road locations.

Table 14-2

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Yukon Territory, 1995-2002

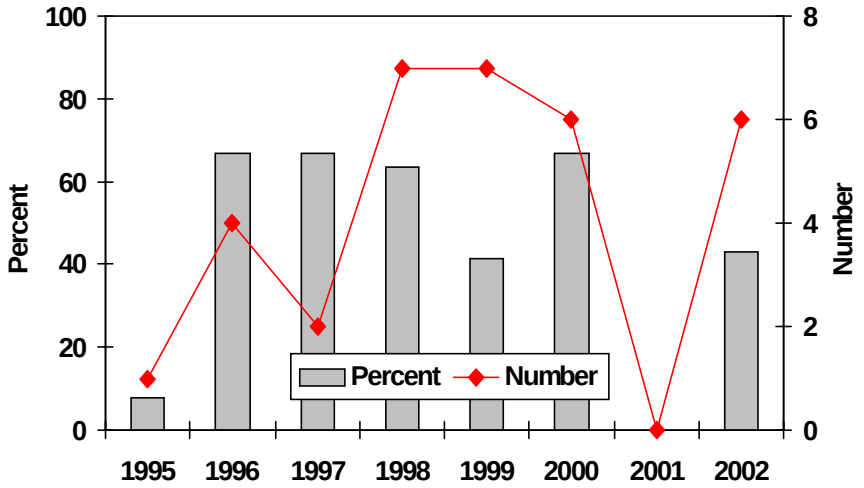
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	13	1	7.7
1996	6	4	66.7
1997	3	2	66.7
1998	11	7	63.6
1999	17	7	41.2
2000	9	6	66.7
2001	4	0	0.0
2002	14	6	42.9

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

** only on public roadways involving principal vehicle types.

As shown in the figure, the number of deaths in crashes that involved a drinking driver increased from one to four between 1995 and 1996. The number of alcohol-related fatalities dropped to two in 1997, rose to seven in 1998, remained there in 1999, fell to none in 2001, and rose to six in 2002. 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 decreased to 41.2% in 1999, rose to 66.7% in 2000, dropped to 0.0% in 2001, and rose to 42.9% in 2002.

Figure 14-1
Number and Percent of Deaths Involving
a Drinking Driver: Yukon Territory, 1995-2002



14.4.2 Fatally injured drivers: 1987-2001. Due to the small number of cases – e.g., only nine fatally injured drivers in 2002 – any trends would be unreliable, and therefore, are not presented in tables and figures.

14.4.3 Drivers in injury crashes: 1995-2002. 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. These results differ slightly from those in Section 14.3 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 been relatively stable. Between 1995 and 1997 the percentage of drivers in injury crashes that involved alcohol decreased slightly from 20.1% to 18.1%. In 1998 the incidence increased to 22.7%, decreased to 14.3% in 2001, and rose to 18.9% in 2002.

Table 14-3

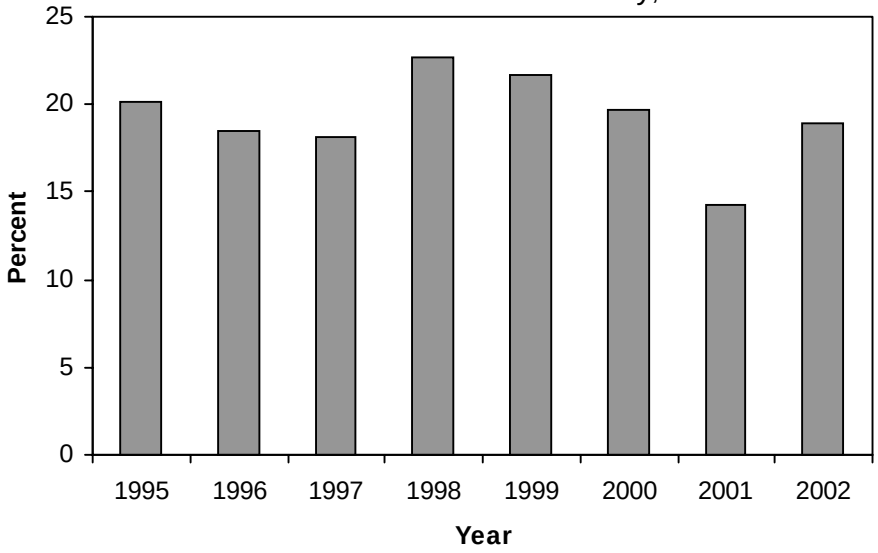
Number and Percent of All Drivers* in Injury Crashes**
that Involved Alcohol: Yukon Territory, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
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)

* 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 14-2
Percent of All Drivers in Injury Crashes
that Involved Alcohol : Yukon Territory, 1995-2002



15.0 NORTHWEST TERRITORIES AND NUNAVUT

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in the Northwest Territories and Nunavut during 2002. The crash data for these two jurisdictions have been aggregated for two reasons. First of all, Nunavut did not become a separate entity from the Northwest Territories until April 1, 1999. And secondly, when examined separately, the number of fatalities and drivers involved in serious injury crashes is not large enough to warrant reliable statistical analysis. This section 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 numbers of persons killed – only nine and drivers fatally injured – only one – makes the results unreliable.

15.1 DEATHS IN ALCOHOL-RELATED CRASHES

In the Northwest Territories and Nunavut during 2002, nine persons died in motor vehicle crashes (four in the Northwest Territories and five in Nunavut). In eight of these cases (88.9%) it was possible to determine if alcohol was a factor. Of these known cases, three (32.5%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (9 x .375) it can be estimated that *in the Northwest Territories and Nunavut during 2002, three persons died in alcohol-related crashes*.

15.2 ALCOHOL IN FATALLY INJURED DRIVERS

In the Northwest Territories and Nunavut during 2002, only one driver of a highway vehicle was fatally injured in a motor vehicle crash. This fatal crash was in the Northwest Territories.

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 2002 in the Northwest Territories and 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), and 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.

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, 36 drivers (22 in the Northwest Territories and 14 in Nunavut) were involved in crashes in which someone was seriously injured, and among these 25.0% were alcohol-related crashes.

15.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 44.4% were aged 26-35; 22.2% were aged 16-19; and 11.1% were under 16, 20-25 and over 55. None of the drivers aged 36-45 or 46-55 were involved in alcohol-related serious injury crashes.

Within each of the age groups, two-thirds of the drivers aged 16-19 and 26-35 were involved in alcohol-related serious injury crashes (66.7%). The lowest incidence of involvement in alcohol-related crashes was found for drivers aged 36-45 and those aged 46-55 (0.0%).

15.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 88.9% were males. And the incidence of involvement in alcohol-related serious injury crashes was twice as great for males than for females (27.6% and 14.3%, respectively).

Table 15-1
Drivers in Alcohol-Related Serious Injury Crashes:
Northwest Territories and Nunavut, 2002

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	5	1	20.0	11.1
16-19	3	2	66.7	22.2
20-25	4	1	25.0	11.1
26-35	6	4	66.7	44.4
36-45	8	0	0.0	0.0
46-55	5	0	0.0	0.0
>55	5	1	20.0	11.1
Gender				
Male	29	8	27.6	88.9
Female	7	1	14.3	11.1
Vehicle Type				
Auto	6	2	33.3	22.2
Truck/Van	18	4	22.2	44.4
Off-Road	12	3	25.0	33.3
Collision Type				
Single-Vehicle	15	7	46.7	77.8
Multiple-Vehicle	21	2	9.5	22.2
TOTAL	36	9	25.0	100.0

15.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 44.4% were truck/van vehicle drivers; 33.3% were off-road vehicle drivers; and 22.2% were automobile drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 33.3% of these drivers were in crashes that involved alcohol, compared to 25.0% for off-road vehicle drivers; and 22.2% for truck/van drivers.

15.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 77.8% 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 – 46.7% of these drivers compared to 9.5% of the 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.

15.4.1 Deaths in alcohol-related crashes: 1995-2002. The number of deaths in crashes that involved a drinking driver rose from zero to seven between 1995 and 1996. In 1997 and 1998, there were three alcohol-related fatalities. This number rose to four in 1999 and dropped again to zero from 2000 to 2002.

15.4.2 Fatally injured drivers: 1987-2002. Due to the small number of cases – e.g., only one fatally injured driver in 2002 – any trends would be unreliable, and therefore are not reported.

15.4.3 Drivers in serious injury crashes: 1995-2002. Table 15-2 and Figure 15-1 show information on drivers involved in alcohol-related serious injury crashes. These results differ slightly from those in Section 15.3 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 crashes has been relatively volatile because of the small number of drivers. Between 1995 and 1997 the percentage of drivers in serious injury crashes that involved alcohol decreased from 61.5% to 21.4%. In 1998 the incidence rose sharply to 61.1%, fell to 38.1% in 1999, rose to 54.5% in 2000, and dropped to 25.0% in 2002.

Table 15-2

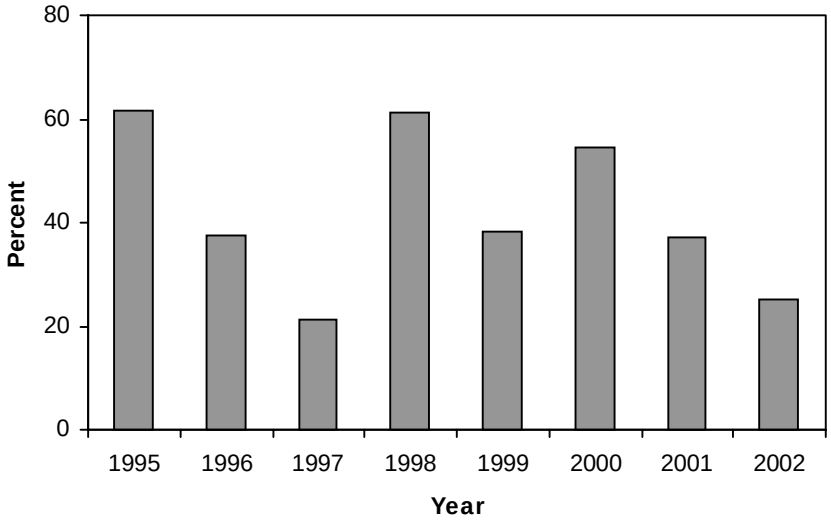
Number and Percent of All Drivers* in
Serious Injury Crashes** that Involved Alcohol:
Northwest Territories and Nunavut, 1995-2002

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	26	16	(61.5)
1996	16	6	(37.5)
1997	14	3	(21.4)
1998	18	11	(61.1)
1999	21	8	(38.1)
2000	11	6	(54.5)
2001	27	10	(37.0)
2002	24	6	(25.0)

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

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

Figure 15-1
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol:
Northwest Territories and Nunavut, 1995-2002



16.0 REFERENCES

Mayhew, D.R.; Beirness, D.J.; and Simpson, H.M. 1997. **Indicators of the Alcohol-Crash Problem.** Ottawa, Ontario: Transport Canada, Road Safety and Motor Vehicle Regulation.

Mayhew, D.R.; Brown, S.W.; and Simpson, H.M. 1999. **Alcohol Use Among Drivers and Pedestrians Fatally Injured in Motor Vehicle Accidents.** Ottawa, Ontario: Transport Canada, Road Safety and Motor Vehicle Regulation.

Mayhew, D.R.; Brown, S.W.; and Simpson, H.M. 2000. **The Alcohol-Crash Problem in Canada: 1998.** Ottawa, Ontario: Transport Canada, Road Safety and Motor Vehicle Regulation.

Mayhew, D.R.; Brown, S.W.; and Simpson, H.M. 2001. **The Alcohol-Crash Problem in Canada: 1999.** Ottawa, Ontario: Transport Canada, Road Safety and Motor Vehicle Regulation.

Mayhew, D.R.; Brown, S.W.; and Simpson, H.M. 2002. **The Alcohol-Crash Problem in Canada: 2000.** Ottawa, Ontario: Transport Canada, Road Safety and Motor Vehicle Regulation.

Mayhew, D.R.; Brown, S.W.; and Simpson, H.M. 2003. **The Alcohol-Crash Problem in Canada: 2001.** Ottawa, Ontario: Transport Canada, Road Safety and Motor Vehicle Regulation.