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The Alcohol-Crash Problem in Canada: 1999

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ABSTRACT

This report describes the magnitude and characteristics of the alcohol-crash problem in Canada during 1999 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.

The title and contents of this report and the report last year differ from that of previous annual reports in this series produced by TIRF under funding from Transport Canada and CCMTA. Previous reports focussed exclusively on the alcohol-fatal crash problem, defined in terms of the number and percent of fatally injured drivers (and pedestrians) who had been drinking. The present report (as well as the one last year) also includes data on alcohol in fatally injured drivers and pedestrians but it extends information about the magnitude of the alcohol-crash problem in two ways: the report examines the number and percent of people who died in alcohol-related crashes; and it examines 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 1999 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.

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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.**

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1.0 INTRODUCTION

This report describes the magnitude and characteristics of the alcohol-crash problem in Canada during 1999 as well as trends in the problem. Similar to last year's report, its scope is considerably broader than that of other annual reports in this series produced by the Traffic Injury Research Foundation (TIRF) under funding from Transport Canada and the Canadian Council of Motor Transport Administrators (CCMTA). The reasons for, and the nature of, the differences between this report and previous ones are described in last year's report (see Mayhew et al. 2000).

The present report 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 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 2001)* 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 1999 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 1999 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 1999 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 1999, 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)* has 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.

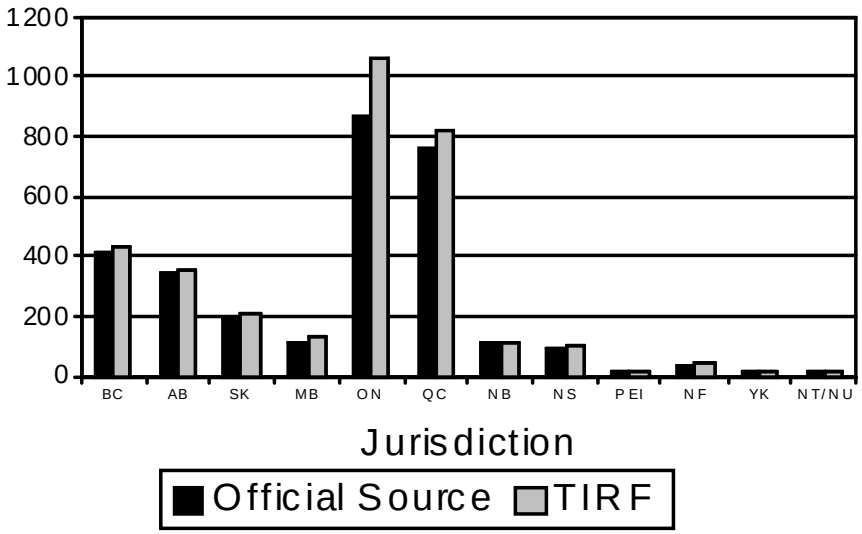
Police-reported data include characteristics of the victim (age and sex, position in the vehicle -- driver, passenger) and details of the crash (type of vehicle(s) and collision, time, date). Objective, toxicological data on alcohol use among victims are obtained from files in coroners' and medical examiners' 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 3,315 persons fatally injured in motor vehicle collisions in Canada during 1999. This figure is higher than the number that would be obtained by adding together the fatalities officially reported in each jurisdiction in Canada. The primary reason that the *Fatality Database* has more cases than the transportation agencies is that the *Database* typically includes victims of motor vehicle crashes that occurred off-road (e.g. ATV, snowmobile) and on private property (e.g., farm tractors, industrial motor vehicles) -- cases which are not routinely contained in the files of transportation agencies. And, as mentioned previously, the

Figure 2-1
Number of Fatalities Reported by Official Sources and in Database: 1999



	Official Source	TIRF
BC	402	433
AB	347	358
SK	186	206
MB	113	127
ON	868	1064
QC	759	817
NB	110	115
NS	97	99
PEI	19	20
NF	41	47
YK	16	17
NT/NU	11	12

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 1999. For all 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.

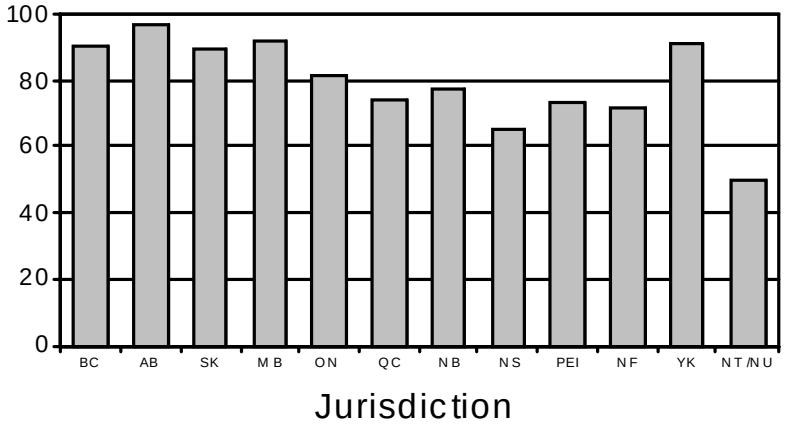
In Canada during 1999, about 6 out of every 10 fatalities were operators of motor vehicles (60.8%); about 24.8% were passengers; and 14.3% were pedestrians. From this perspective, vehicle occupants, particularly drivers, remain the major road-user group of concern for traffic safety.

- **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 1999, fatally injured drivers were tested most frequently (81.9%), followed by pedestrians (60.9%) and passengers (34.2%). 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 (65.5% and 37.7%, 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 77.9%).

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

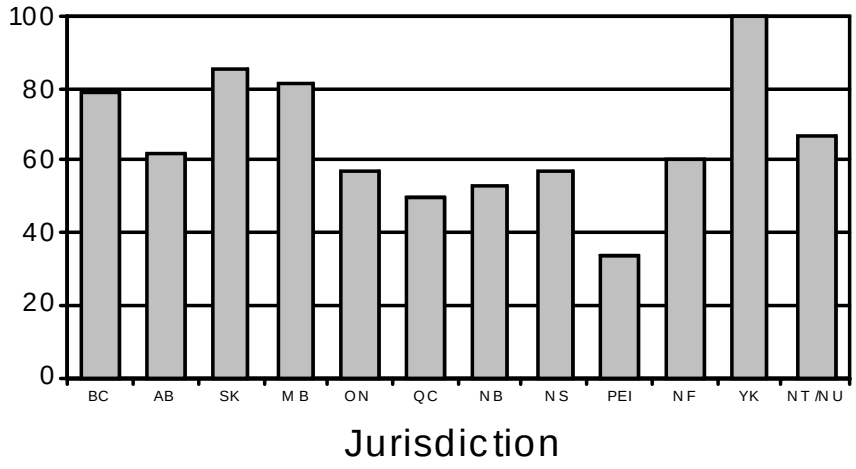
Figure 2-2
Percent of Fatally Injured Drivers Tested for Alcohol: Canada, 1999



over 80.0% of the driver fatalities. However, 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 exsanguinations (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 33.3% in Prince Edward Island to 100% in the Yukon.

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

Figure 2-3
Percent of Fatally Injured Pedestrians Tested for Alcohol: Canada, 1999



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, 7.9%, 7.3% and 7.3% of injuries are recorded as “unspecified”, so the number of drivers in serious injury crashes used in this report for these three jurisdictions are 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 1999, 15,390 persons were seriously injured in motor vehicle crashes; 18,787 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 (6,724 drivers or 35.8% of the "national" total); the Northwest Territories and Nunavut (combined) account for the lowest number of drivers in such crashes (39 drivers or 0.2% of all drivers).

Table 2-1
Number and Percent of Drivers Involved in Serious Injury Crashes in Each Jurisdiction: Canada*, 1999

Jurisdiction	Number of Drivers	% of Total
Alberta	3,298	17.6
Saskatchewan	809	4.3
Manitoba	619	3.3
Ontario	5,692	30.3
Quebec	6,724	35.8
New Brunswick	527	2.8
Nova Scotia	610	3.2
Prince Edward Island	133	0.7
Newfoundland	279	1.5
Yukon Territory	57	0.3
NWT/Nunavut	39	0.2
TOTAL	18,787	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 (57.5%); over one-quarter were truck-van drivers (27.4%); 5.2% were off-road vehicle drivers (e.g., snowmobiles, dirt bikes); 4.7% were motorcycle riders; 3.3% were tractor-trailer drivers; and 0.4% 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 1999, it was possible to determine if alcohol was a factor in the crash in 91.6% 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 1999, with 84.1% 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 – 60.9% overall, which increases to 65.5% if victims under the age of 16, who are less often tested, 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 1999. 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 1999. 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, 389 people age 16-19 were killed in road crashes in Canada during 1999. And, in 363 of these cases (93.3%) it was possible to determine if alcohol was a factor in the crash.

The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, 137 people age 16-19 died in alcohol-related crashes in Canada during 1999. The next column expresses this as a percentage – e.g., 37.6% 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 13.2% of all the people killed in alcohol-related crashes in Canada during 1999.

Table 3-1
Deaths* in Alcohol-Related Crashes: Canada, 1999

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	232	216	93.1	39	18.1	3.8
16-19	389	364	93.6	137	37.6	13.2
20-25	453	426	94.0	206	48.4	19.8
26-35	507	472	93.1	232	49.2	22.4
36-45	463	429	92.7	195	45.5	18.8
46-55	376	343	91.2	116	33.8	11.2
>55	894	786	87.9	112	14.2	10.8
Unknown	1	1	100.0	1	100.0	0.1
Gender						
Male	2279	2091	91.8	825	39.5	79.5
Female	1036	946	91.3	213	22.5	20.5
Type						
Driver/Operator	2015	1875	93.1	637	34.0	61.4
Passenger	822	749	91.1	255	34.0	24.6
Pedestrian	473	409	86.5	142	34.7	13.7
Unknown	5	4	80.0	4	100.0	0.4
Vehicle Occupied						
Automobiles	1699	1583	93.2	497	31.4	47.9
Trucks/Vans	669	625	93.4	263	42.1	25.3
Motorcycles	170	161	94.7	54	33.5	5.2
Tractor Trailers	47	46	97.9	6	13.0	0.6
Other Hwy. Vehs.	7	7	100.0	0	0.0	0.0
Off-road Vehicles	233	202	86.7	75	37.1	7.2
(Pedestrians)	473	409	86.5	142	34.7	13.7
Unknown	17	4	23.5	1	0.0	0.1
TOTAL	3315	3037	91.6	1038	34.2	100.0

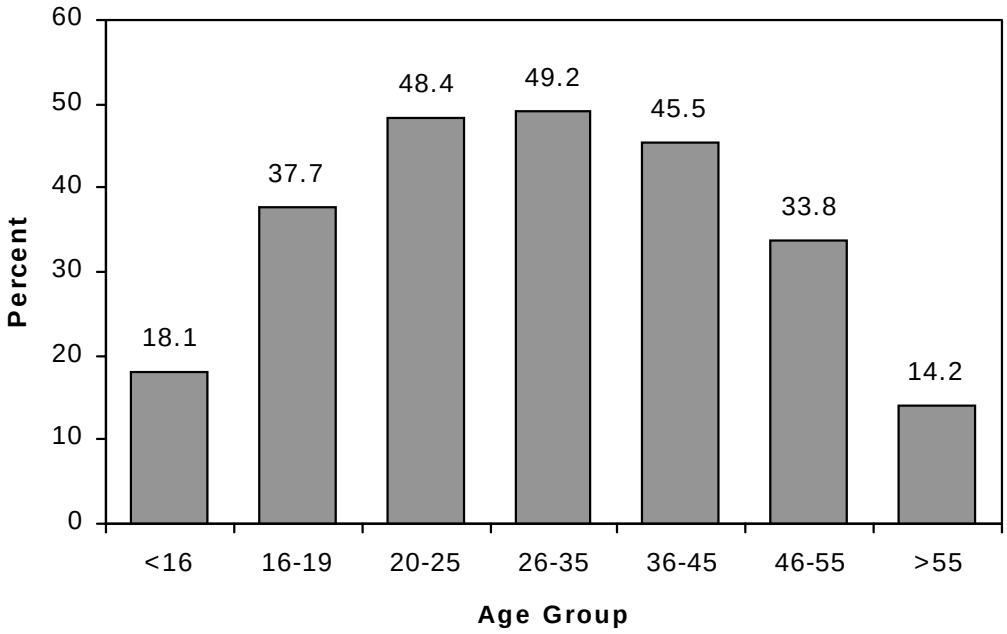
*persons dying within 12 months in collisions on and off public roadways

The totals at the bottom of the table provide a summary. As can be seen, 3,315 persons died in motor vehicle crashes in Canada during 1999. In 3,037 (91.6%) of these cases, it was possible to determine if alcohol was a factor. Of these known cases, 1,038 (34.2%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (3,315 x .342) it can be estimated that *in Canada during 1999, 1,134 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), 22.4% were aged 26-35; 19.8% were aged 20-25 and 18.8% were aged 36-45. The youngest (<16) and the oldest groups (>55) accounted for only 3.8% and 10.8%, respectively, 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 (49.2%) occurred in the crashes in which a person aged 26-35 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 18.1% of persons under 16 and 14.2% 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, 1999



3.1.2 Gender. Of all the people who died in alcohol-related crashes, 79.5% were males. The incidence of alcohol in crashes in which a male died (39.5%) was also greater than the incidence of alcohol in crashes in which a female died (22.5%).

3.1.3 Victim type. Of all the people who died in alcohol-related crashes, 61.4% were drivers/operators of a vehicle; 24.6% were passengers; and 13.7% were pedestrians.

Within each of these victim types, there is little difference in alcohol involvement. The highest incidence of alcohol involvement (34.7%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 34.0% of the crashes in which a driver/operator and passenger died.

3.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, almost half (47.9%) were in an automobile; 25.3% were in a truck/van; 7.2% were on an off-road vehicle (e.g., bicycle, snowmobile, all-terrain vehicle); and 5.2% 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 (42.1% versus 31.4%). The incidence of alcohol involvement in which a person on an off-road vehicle died was 37.1%.

3.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Canada during 1999. 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 187 drivers killed during 1999; 163 of these fatally injured drivers (87.2%) were tested for alcohol. Of those who were tested, 69.9% showed no evidence of alcohol, 4.3% had BACs (blood alcohol concentrations) below 50 mg%, 4.9% had BACs from 50 to 80 mg%, 9.8% had BACs from 81 to 150 mg%, and 11.0% had BACs over 150 mg%.

Table 3-2
Alcohol Use Among Fatally Injured Drivers: Canada, 1999

Category of Driver	Number of Drivers*	Drivers Tested		Percent of Tested Drivers with BACs of:				
		Number	% of total	Zero	1-49	50-80	81-150	>150
Age								
<16	6	6	100.0	66.7	0.0	16.7	0.0	16.7
16-19	187	163	87.2	69.9	4.3	4.9	9.8	11.0
20-25	285	260	91.2	60.0	3.5	3.8	10.4	22.3
26-35	329	293	89.1	51.2	3.1	4.1	7.5	34.1
36-45	278	242	87.1	61.6	3.7	1.2	9.5	24.0
46-55	227	200	88.1	72.0	2.0	3.5	5.5	17.0
>55	481	344	71.5	84.9	2.0	1.2	3.2	8.7
Gender								
Male	1381	1183	85.7	63.1	3.1	2.9	8.4	22.6
Female	412	325	78.9	80.9	2.5	3.4	3.4	9.8
Vehicle Type								
Automobile	1151	947	82.3	70.0	2.4	3.0	6.9	17.7
Motorcycle	152	132	86.8	66.7	3.8	4.5	12.1	12.9
Tractor Trailer	43	39	90.7	89.7	2.6	2.6	2.6	2.6
Heavy Truck[1]	15	13	86.7	84.6	0.0	0.0	0.0	15.4
Van	110	94	85.5	76.6	1.1	5.3	6.4	10.6
Motorhome	4	3	75.0	100.0	0.0	0.0	0.0	0.0
Light Truck[2]	305	271	88.9	47.6	5.5	1.8	8.1	36.9
Other Truck[3]	11	9	81.8	88.9	0.0	0.0	0.0	11.1
Other Hwy. Vehicle[4]	2	0	0.0	0.0	0.0	0.0	0.0	0.0
Collision Type								
Single-Vehicle	777	656	84.4	48.0	2.9	4.0	12.3	32.8
Multiple-Vehicle	1015	852	83.9	81.5	3.1	2.2	3.4	9.9
Unknown	1	0	0.0	100.0	0.0	0.0	0.0	0.0
TOTAL	1793	1508	84.1	66.9	3.0	3.0	7.3	19.8

* 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 1,793 drivers fatally injured in traffic crashes in Canada during 1999. The overall rate of testing for alcohol in drivers was 84.1%, similar to the rate in 1998 – 83.5%.

Among tested drivers in Canada:

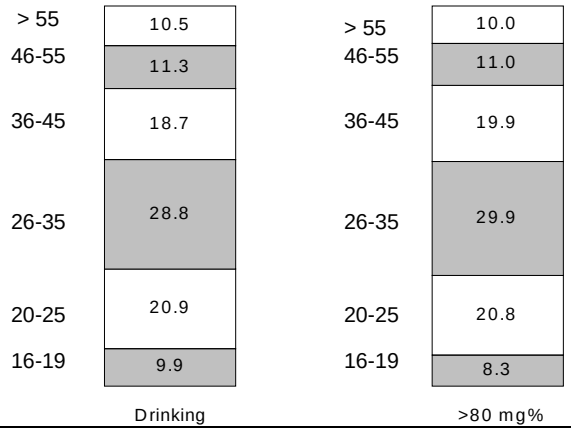
- 66.9% showed no evidence of alcohol – 33.1% had been drinking;
- 3.0% had BACs from 1-49 mg%;
- 3.0% had BACs from 50-80 mg%
- 7.3% had BACs from 81 to 150 mg%; and,
- 19.8% had BACs over 150 mg%.

Thus, 33.1% of fatally injured drivers in Canada had been drinking and most of these had illegal BACs – 82.0% 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, 1999

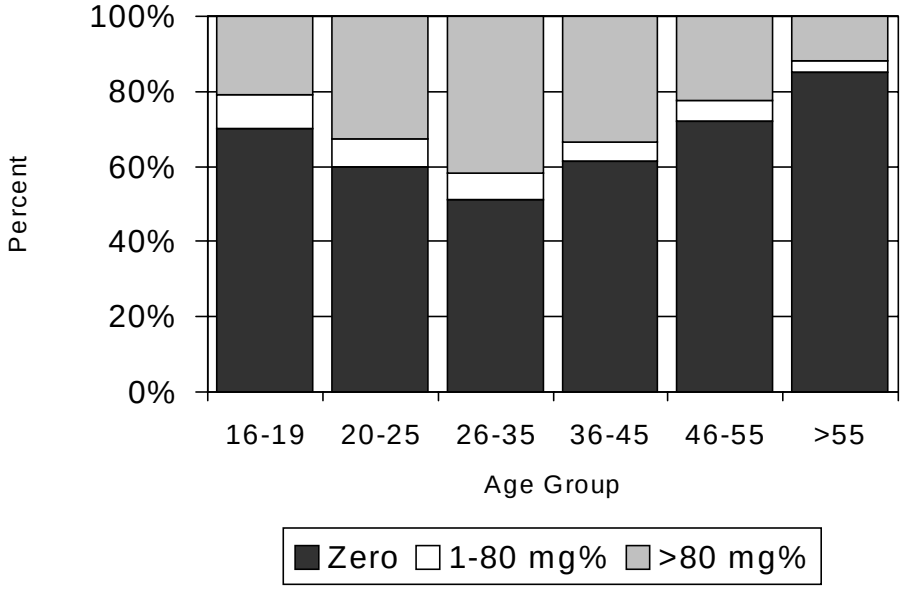


Of all the fatally injured drinking drivers, 28.8% were aged 26-35; 20.9% were aged 20-25; 18.7% were aged 36-45; 11.3% were aged 46-55; and 10.5% were aged over 55. Those aged 16-19 accounted for only 9.9% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 29.9% were aged 26-35; 20.8% were aged 20-25; 19.9% were aged 36-45; 11.0% were aged 46-55; and 10.0% were over 55. Those aged 16-19 accounted for only 8.3% 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.

Figure 3-3
Percent of Drinking Drivers Within Each Age Group: Canada, 1999

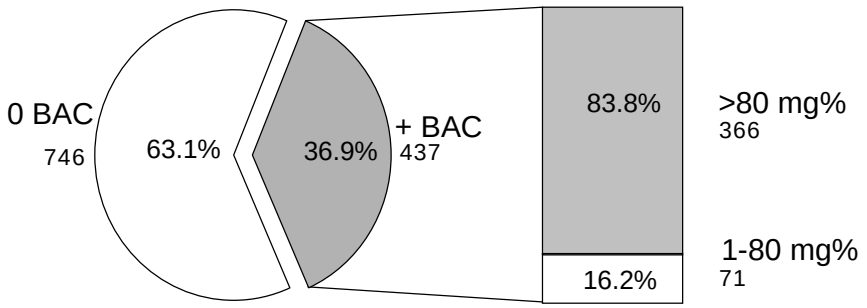


Within each of the age groups, fatally injured drivers age 26-35 were the most likely to have been drinking – 48.8% of drivers in this age group had been drinking. By contrast, only 15.1% of tested drivers over age 55 had been drinking.

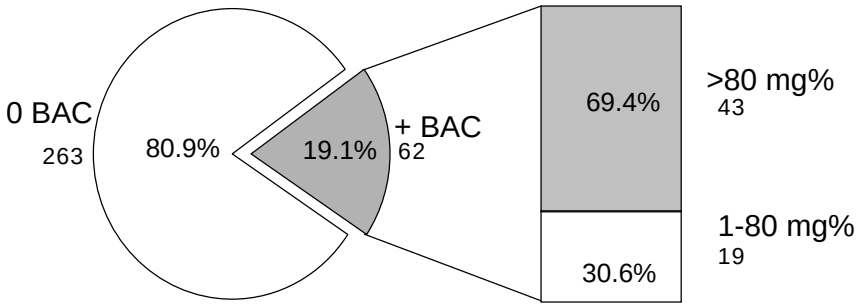
3.2.2 Gender differences. Males dominate the picture – they account for 87.6% of all the fatally injured drivers who had been drinking and 89.5% of all of the fatally injured drivers who were legally impaired. However, males dominate the picture largely because they account for most of the drivers who are killed (1,381 of the 1,793 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, 1999



MALES



FEMALES

Fatally injured male drivers were considerably more likely to have been drinking than female drivers (36.9% and 19.1%, respectively). However, most of the male and female drivers who were drinking had BACs over the legal limit (83.8% and 69.4%, 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), 56.9% were automobile drivers; 28.5% were light truck drivers; 8.8% were motorcycle riders; and 4.4% 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, 1999

Vehicle Type	Number of Drinking Drivers	% of All Drinking Drivers	Number of Legally Impaired Drivers	% of All Legally Impaired Drivers
Automobile	284	56.9	233	57.0
Motorcycle	44	8.8	33	8.1
Tractor-Trailer	4	0.8	2	0.5
Heavy Truck[1]	2	0.4	2	0.5
Van	22	4.4	16	3.9
Motor Home	0	0.0	0	0.0
Light Truck[2]	142	28.5	122	29.8
Other Truck[3]	1	0.2	1	0.2
Other Hwy. Vehicle[4]	0	0.0	0	0.0
TOTAL	499	100.0	409	100.0

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

[1] Trucks over 4500 kg.

[2] e.g., pickup trucks.

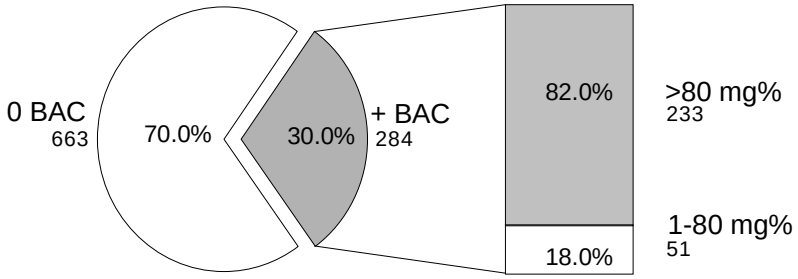
[3] Utility vehicles, plows and trucks of unknown type.

[4] Emergency vehicles and buses.

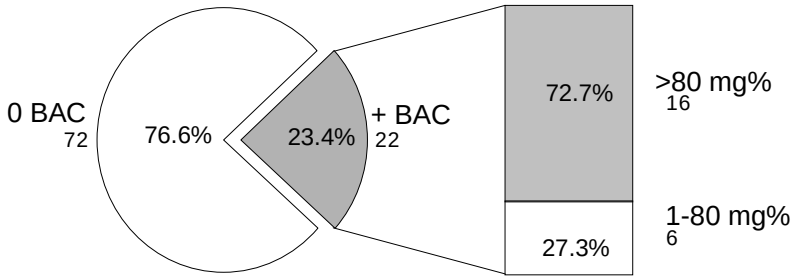
Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 57.0% were automobile drivers; 29.8% were light truck drivers; 8.1% were motorcycle riders; and 3.9% were van drivers.

Figure 3-5a-c summarizes the results of alcohol tests for drivers fatally injured in 1999 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, 1999

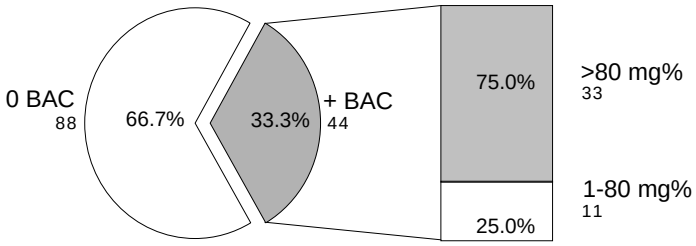


AUTOMOBILE DRIVERS

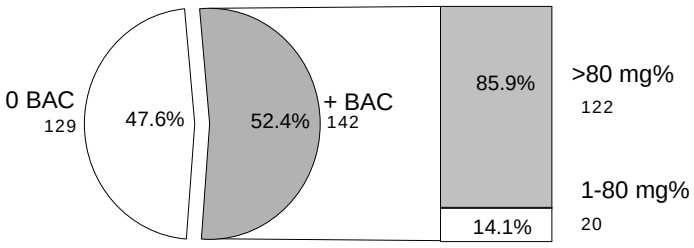


VAN DRIVERS

Figure 3-5b
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 1999

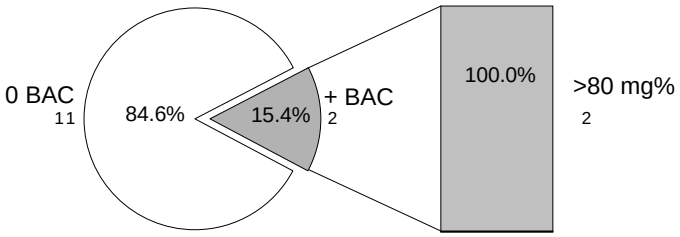


MOTORCYCLISTS

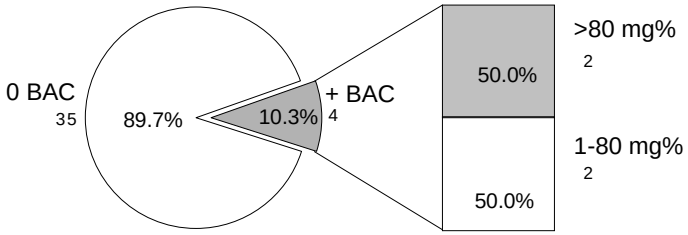


LIGHT TRUCK DRIVERS

Figure 3-5c
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 1999



HEAVY TRUCK DRIVERS

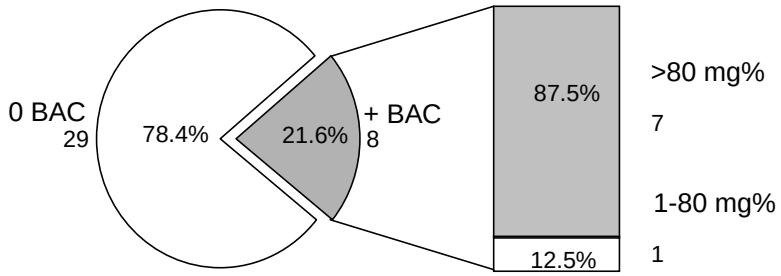


TRACTOR-TRAILER DRIVERS

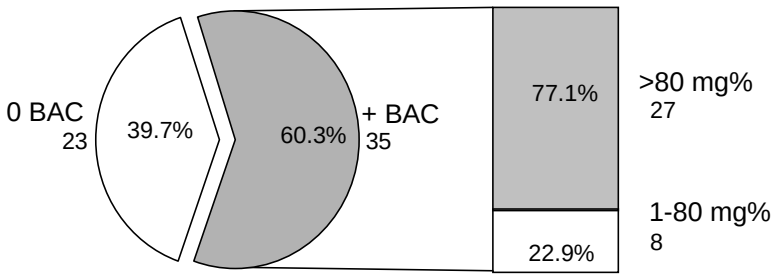
Among fatally injured automobile drivers, 30.0% had been drinking. Of those who were drinking, the vast majority (82.0%) had alcohol levels in excess of the legal limit. Among fatally injured van drivers, 23.4% had been drinking and 72.7% of these had BACs over the legal limit. Among motorcycle riders, 33.3% had been drinking and 75.0% of these had BACs over the legal limit. The highest incidence of drinking was found among drivers of light trucks – 52.4% had been drinking and 85.9% of these had illegal BACs. Heavy truck and tractor-trailer drivers have a much lower frequency of alcohol involvement. Indeed only 15.4% of heavy truck drivers had been drinking. And, the lowest incidence of drinking is found among tractor-trailer drivers – only 10.3% 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 21.6% of fatally

Figure 3-5d
Alcohol Use Among Drivers of Different
Vehicle Types: Canada, 1999



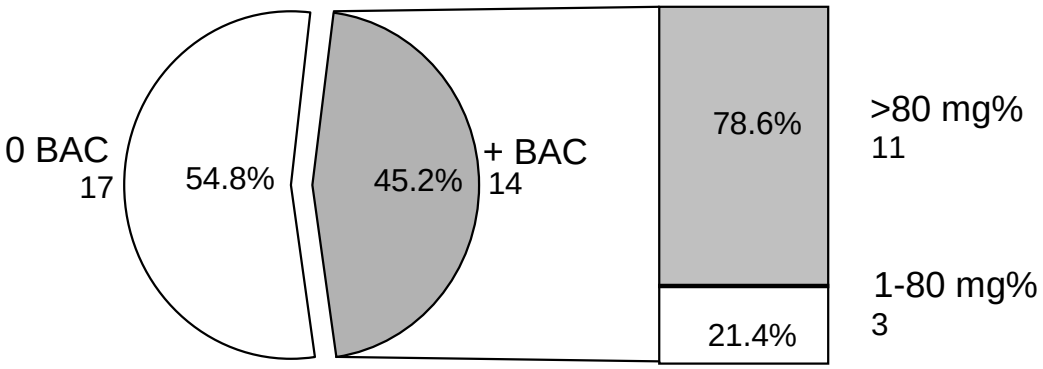
CYCLISTS



SNOWMOBILE OPERATORS

injured bicyclists had been drinking at the time of the collision. However, among those bicyclists who had been drinking, 87.5% had BACs over the legal limit. Among snowmobile drivers, 60.3% had been drinking, and 77.1% had BACs over the legal limit. Operators of off-road vehicles were less likely than snowmobile drivers to have been drinking -- 45.2% of them had been drinking and 78.6% of these drinking drivers had BACs over the legal limit.

Figure 3-5e
Alcohol Use Among Drivers of Different Vehicle Types: Canada, 1998

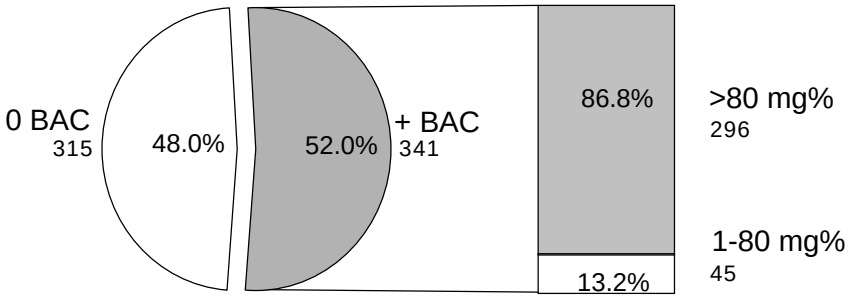


OFF-ROAD VEHICLE OPERATORS

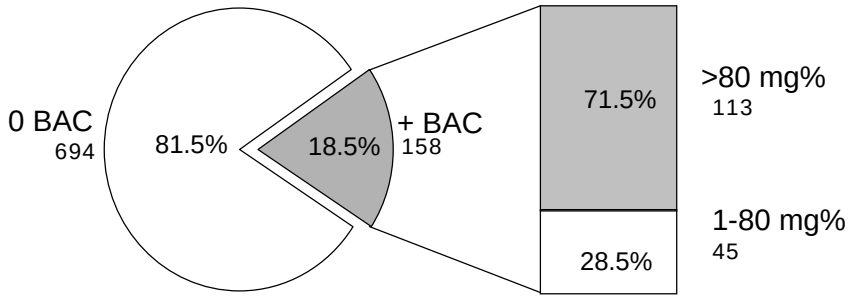
3.2.4 Collision differences. Less than half of all drivers killed (43.5%) were involved in single-vehicle collisions but these crashes accounted for over half of the drivers who had been drinking or were legally impaired (68.3% and 72.4%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. As shown in Figure 3-6, nearly half of the drivers involved in single-vehicle crashes (52.0%) were positive for alcohol, compared to only 18.5% of those involved in multiple-vehicle collisions. Most drinking drivers in single-vehicle crashes had BACs over the legal limit (86.8%). By contrast, among drinking drivers in multiple-vehicle crashes, 71.5% had BACs over the legal limit.

Figure 3-6
Alcohol Use Among Drivers by
Type of Collision: Canada, 1999



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 1999. 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, 1999

Category of Pedestrian	Number of Pedestrians*	Pedestrians Tested		Percent of Tested Pedestrians with BACs of:				
		Number	% of total	Zero	1-49	50-80	81-150	>150
Age								
<16	60	17	28.3	88.2	0.0	5.9	5.9	0.0
16-19	34	26	76.5	53.8	7.7	0.0	15.4	23.1
20-25	35	30	85.7	33.3	6.7	6.7	10.0	43.3
26-35	45	36	80.0	44.4	2.8	0.0	8.3	44.4
36-45	57	40	70.2	42.5	5.0	0.0	10.0	42.5
46-55	55	38	69.1	55.3	2.6	0.0	5.3	36.8
>55	186	100	53.8	77.0	3.0	4.0	5.0	11.0
Unknown	1	1	100.0	0.0	0.0	0.0	0.0	100.0
Gender								
Male	298	199	66.8	52.8	4.0	3.5	10.1	29.6
Female	175	89	50.9	73.0	3.4	0.0	2.2	21.3
Jurisdiction								
British Columbia	71	56	78.9	55.4	7.1	3.6	5.4	28.6
Alberta	39	24	61.5	54.2	0.0	4.2	4.2	37.5
Saskatchewan	20	17	85.0	41.2	5.9	11.8	17.6	23.5
Manitoba	21	17	81.0	64.7	0.0	0.0	5.9	29.4
Ontario	164	93	56.7	55.9	4.3	2.2	8.6	29.0
Quebec	117	58	49.6	72.4	3.4	0.0	5.2	19.0
New Brunswick	15	8	53.3	62.5	0.0	0.0	12.5	25.0
Nova Scotia	14	8	57.1	50.0	0.0	0.0	25.0	25.0
Prince Edward Island	3	1	33.3	100.0	0.0	0.0	0.0	0.0
Newfoundland	5	3	60.0	66.7	0.0	0.0	0.0	33.3
Territories*	4	3	75.0	66.7	0.0	0.0	0.0	33.3
TOTAL	473	288	60.9	59.0	3.8	2.4	7.6	27.1

* The number of pedestrians have been combined for the Territories to ensure that the BAC of one of the pedestrians cannot be identified.

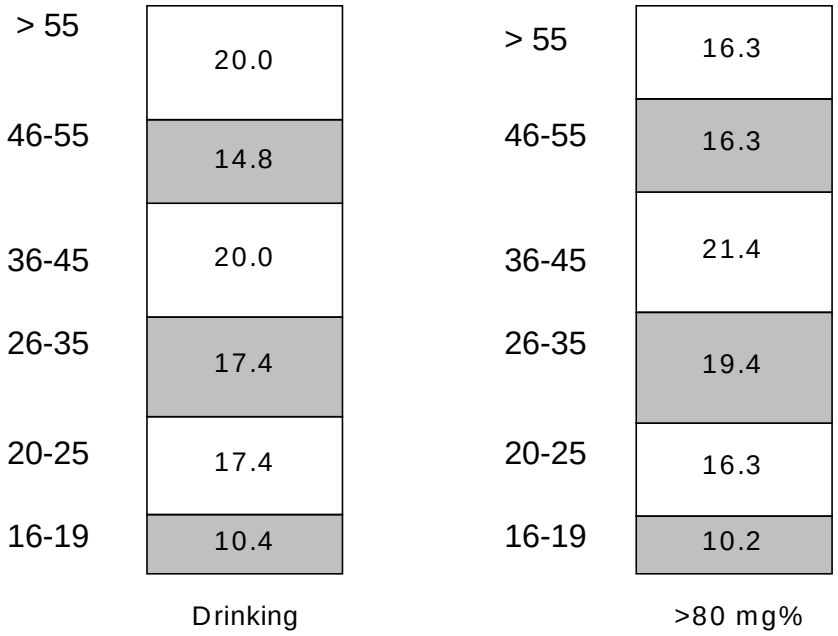
During 1999, as shown by the totals at the bottom of the table, there were 473 pedestrians fatally injured; 288 (60.9%) of these pedestrians were tested for the presence of alcohol. Among tested pedestrians:

- 59.0% showed no evidence of alcohol – 41.0% had been drinking;
- 3.8% had BACs below 50 mg%;
- 2.4% had BACs from 50 to 80 mg%;
- 7.6% had BACs from 81 to 150%; and
- 27.1% had BACs over 150 mg%.

Thus, 41.0% 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, two-fifths (39.3%) were over 55 years of age (186 of the 473 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.

Figure 3-7
Percent of All Fatally Injured Drinking and Legally Impaired Pedestrians Accounted for by Each Age Group: Canada, 1999

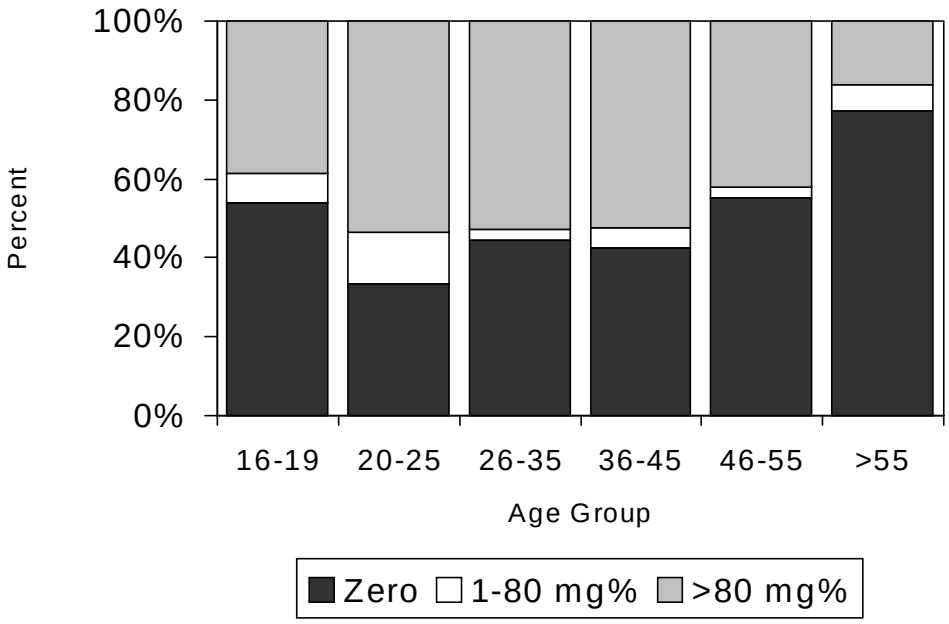


Of all the fatally injured drinking pedestrians, 20.0% were aged 36-45 and over 55, 17.4% were age 20-25 and 26-35; 14.8% were 46-55; and 10.4% were age 16-19.

Of all the fatally injured pedestrians with BACs over 80 mg%, 21.4% were age 36-45; 19.4% were age 26-35; 16.3% were age 20-25, 46-55 and over 55; and only 10.2% were age 16-19.

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, 1999

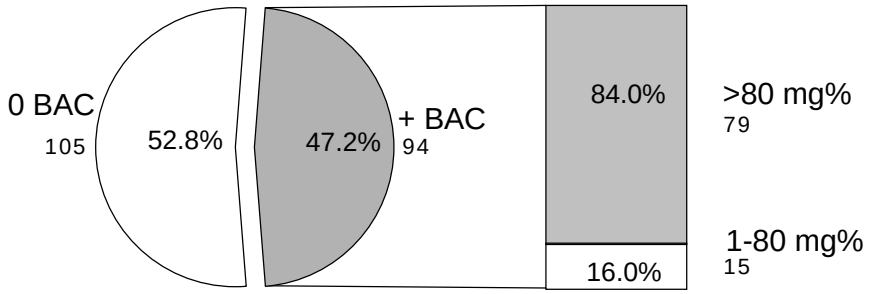


Within each of the age groups, fatally injured pedestrians age 20-25 were the most likely to have been drinking – 66.7% of pedestrians in this age group had been drinking. By contrast, only 23.0% of tested pedestrians over age 55 had been drinking.

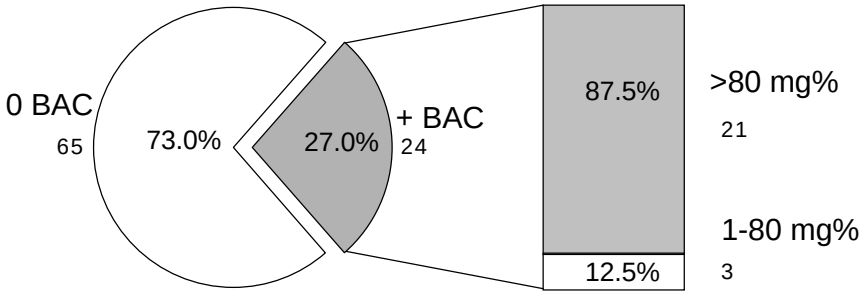
3.3.2 Gender differences. Males account for four-fifths (79.7%) of all the fatally injured pedestrians who had been drinking, and 79.0% of all of the fatally injured pedestrians who had BACs over 80 mg%.

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.

Figure 3-9
Alcohol Use Among Male and Female Fatally Injured Pedestrians: Canada, 1999



MALES



FEMALES

Among fatally injured male pedestrians, 47.2% had been drinking, and 84.0% of these pedestrians had BACs over 80 mg%. A slightly different picture emerges among fatally injured female pedestrians – only 27.0% of female pedestrians had been drinking but 87.5% of them had BACs over 80 mg%.

***3.3.3 Jurisdictional differences*.** Of all the fatally injured pedestrians, over half were killed in Ontario and Quebec (34.7% and 24.7%, respectively). Ontario and Quebec also accounted for 34.7% and 13.6% (respectively) of the fatally injured drinking pedestrians and for 35.0% and 14.0% of the fatally injured pedestrians with BACs over 80 mg%. It should be noted that the figures for drinking and legally impaired pedestrians in Quebec are underestimated because they are based on tested pedestrians and the rate of testing for alcohol is low in that province – e.g., only 49.6% of pedestrians fatally injured in Quebec were tested, compared to 56.7% in Ontario and 85.0% in Saskatchewan.

As shown in Table 3-4 (see page 27), the highest incidence of alcohol in fatally injured pedestrians, however, was in Saskatchewan – 58.8%. The lowest incidence of alcohol in fatally injured pedestrians was in Prince Edward Island – where the one pedestrian fatality tested for alcohol had not been drinking and Quebec where 27.6% 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 1999 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.

Table 3-5
Drivers* in Alcohol-Related Serious Injury Crashes:
Canada, 1999

Category of Drivers	Number of Drivers	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	322	24	7.5	0.7
16-19	1845	483	26.2	13.9
20-25	2748	758	27.6	21.8
26-35	3555	796	22.4	22.9
36-45	3494	660	18.9	19.0
46-55	2297	341	14.8	9.8
>55	2463	215	8.7	6.2
unknown	2063	199	9.6	5.7
Gender				
Male	13069	2739	21.0	78.8
Female	5369	666	12.4	19.2
unknown	349	71	20.3	2.0
Vehicle Type				
Auto	10808	2015	18.6	58.0
Truck/Van	5151	1092	21.2	31.4
Motorcycle	881	133	15.1	3.8
Tractor Trailer	626	73	11.7	2.1
Other Hwy. Vehicle	173	20	11.6	0.6
Off-Road	967	122	12.6	3.5
Unknown	181	21	11.6	0.6
Collision Type				
Single-Vehicle	5696	2289	40.2	65.9
Multiple-Vehicle	13091	1187	9.1	34.1
TOTAL	18787	3476	18.5	100.0

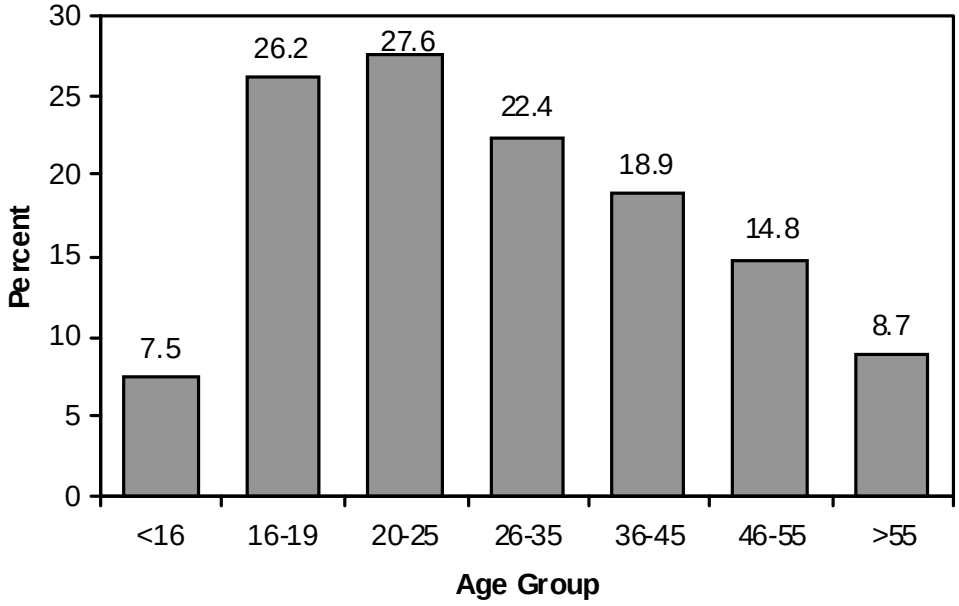
*Excludes British Columbia

As shown, by the totals at the bottom of the table, 18,787 drivers were involved in crashes in which someone was seriously injured. Among these, 18.5% were alcohol-related crashes.

3.4.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 22.9% were aged 26-35; 21.8% were aged 20-25; and 19.0% were aged 36-45. Drivers under the age of 16 accounted for only 0.7% of all those involved in alcohol-related crashes.

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 (27.6%) and those age 16-19 (26.2%). The lowest incidence of involvement in alcohol-related crashes was found for the youngest age group of drivers – those aged under 16 (7.5%).

Figure 3-10
Percent of Drivers Within Each Age Group in Serious Injury Crashes that Involved Alcohol: Canada, 1999



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 (21.0% and 12.4%, respectively).

3.4.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 58.0% were automobile drivers; and 31.4% were truck-van drivers.

About one of six of the serious injury crashes involving truck/van drivers and automobile drivers were alcohol related (21.2% and 18.6%, respectively) as were 15.1% of motorcycle riders. The lowest incidence of involvement in alcohol-related serious injury crashes was found among drivers of off-highway vehicles and tractor-trailers (11.6% and 11.7%, respectively).

3.4.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 65.9% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 40.2% of these drivers, compared to only 9.1% 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: 1995-1999. 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 1999. 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, 1995-1999

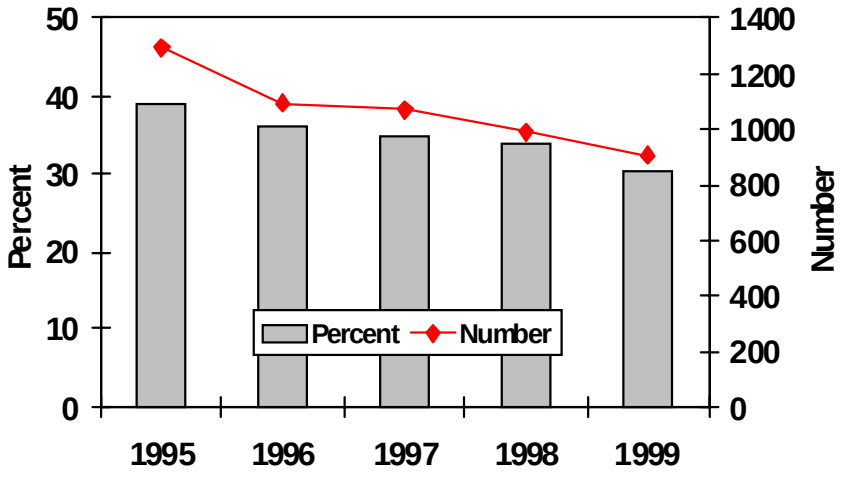
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	3338	1296	38.8
1996	3031	1097	36.2
1997	3089	1070	34.6
1998	2909	986	33.9
1999	2986	906	30.3

* 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 906 between 1995 and 1999. The percentage of alcohol-related fatalities decreased from 38.8% in 1995 to 30.3% in 1999.

Figure 3-11
Number and Percent of Deaths Involving a Drinking Driver: Canada, 1995-1999



3.5.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987 to1999 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.

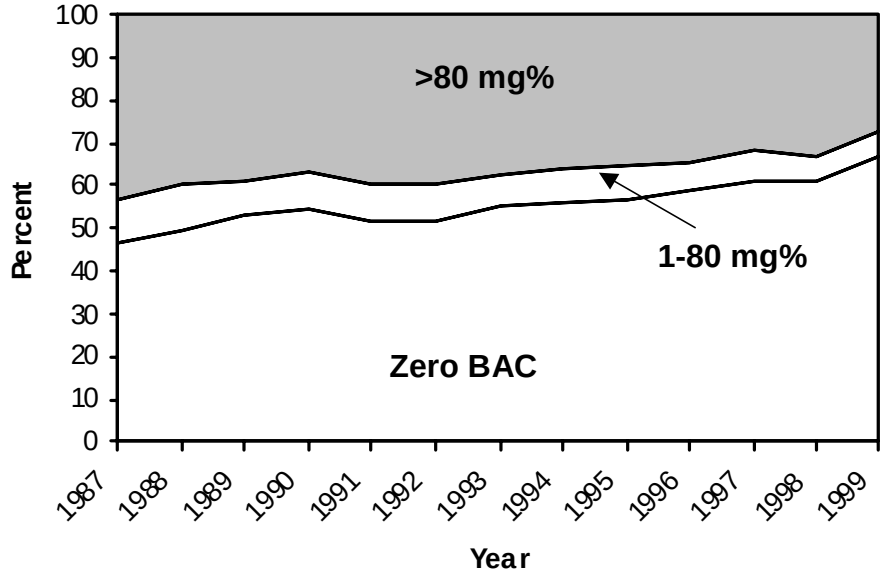
Table 3-7

Alcohol Use Among Fatally Injured Drivers:
Canada, 1987-1999

				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

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

Figure 3-12
Trends in Alcohol Use Among Driver Fatalities: Canada, 1987-1999



The number of fatally injured drivers with BACs over the legal limit (> 80 mg%) declined from 742 to 409, between 1987 and 1999. The percent of fatally injured drivers with BACs over the legal limit dropped from 43.1% to 27.1%, between 1987 and 1999.

By contrast, the number of fatally injured drivers with zero BAC has fluctuated over this 13-year period, from a low of 807 in 1987 to a high of 1,009 in 1999. The percent of fatally injured drivers with zero BAC increased from 46.9% to 66.9%, between 1987 and 1999.

The number of fatally injured drivers with BACs between 1-80 mg% declined from 186 to 90, between 1988 and 1998. 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 (6.0%) in 1999.

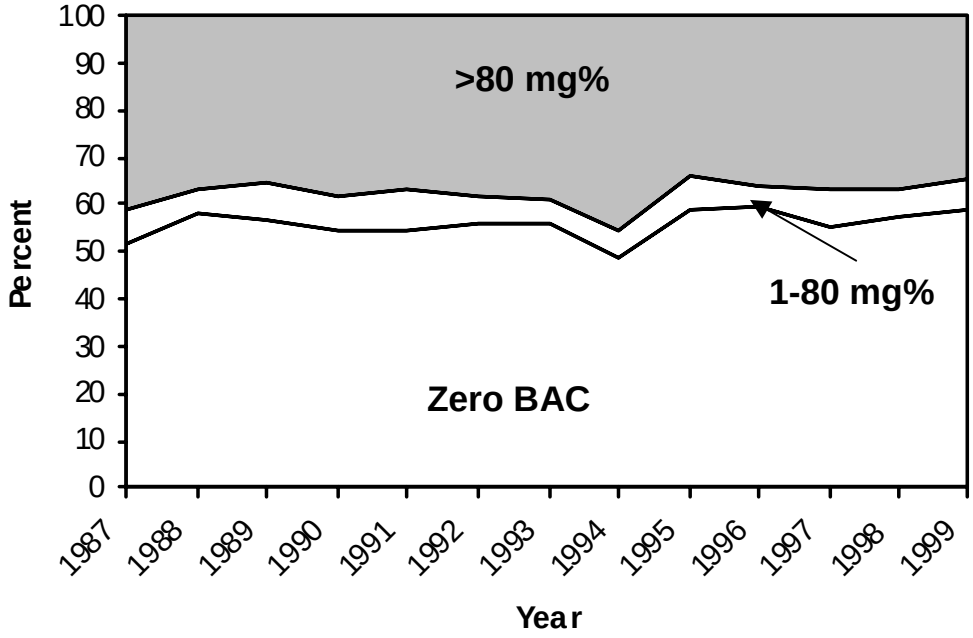
3.5.3 Fatally injured pedestrians: 1987-1999. Data on alcohol use among fatally injured pedestrians over the 13-year period from 1987 to 1999 are shown in Table 3-8. Trends are illustrated in Figure 3-13 which shows changes in the percent of fatally injured pedestrians who: (1) showed no evidence of alcohol -- represented by the white area; (2) had BACs below the legal limit -- shown by the light grey area; and (3) had BACs over the legal limit -- the dark grey area.

Table 3-8

Alcohol Use Among Fatally Injured Pedestrians:
Canada, 1987-1999

				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

Figure 3-13
Trends in Alcohol Use Among Pedestrian Fatalities: Canada, 1987-1999



The number of fatally injured pedestrians with a BAC over 80 mg% declined from a high of 171 in 1987 to a low of 100 in 1999. 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, and then generally declined again to 1999 (34.7%).

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 and decreased to 170 in 1999. The percent of fatally injured pedestrians with zero BAC has remained basically unchanged over this 13-year period – 58.1% of fatally injured pedestrians showed no evidence of alcohol in 1988, compared to 59.0% in 1999.

The number of fatally injured pedestrians with BACs between 1-80 mg% has fluctuated over this 13 year period with 30 in 1987 and 18 in 1999. The percent of fatally injured drivers with BACs between 1-80 mg% also fluctuated between 7.2% in 1987 and 6.3% in 1999.

3.5.4 Drivers in serious injury crashes: 1995-1999. 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, the Yukon, the Northwest Territories 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 highway vehicles – are excluded.

Table 3-9

Number and Percent of All Drivers[1] in Serious Injury Crashes that Involved Alcohol[2]: Canada[3], 1995-1999

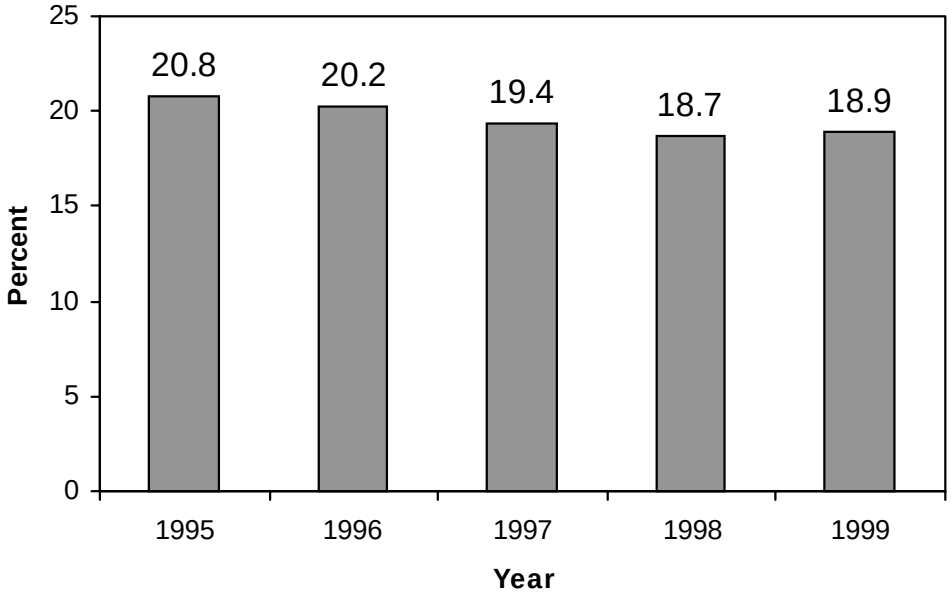
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	19205	4000	(20.8)
1996	18568	3743	(20.2)
1997	17917	3475	(19.4)
1998	18095	3382	(18.7)
1999	17563	3316	(18.9)

[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, the Yukon and Northwest Territories

Figure 3-14
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Canada, 1995-1999



As can be seen, the incidence of alcohol-involvement in serious crashes has declined only slightly. Between 1995 and 1999 the number of drivers in serious injury crashes that involved alcohol declined from 4,000 to 3,316. The percentage of drivers in serious injury crashes that involved alcohol dropped from 20.8% to 18.7% from 1995 to 1998 and remained basically unchanged at 18.9% in 1999.

4.0 BRITISH COLUMBIA

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in British Columbia during 1999. 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 1999. 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, 57 people age 16-19 were killed in road crashes in British Columbia during 1999. And, in 55 of these cases (96.5%) 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, 25 people age 16-19 died in alcohol-related crashes in British Columbia during 1999. The next column expresses this as a percentage – e.g., 45.5% 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 16.6% of all the people killed in alcohol-related crashes in British Columbia during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 433 persons died in motor vehicle crashes in British Columbia during 1999. In 406 (93.8%) of these cases, it was

possible to determine if alcohol was a factor. Of these known cases, 151 (37.2%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (433 x .372) it can be estimated that *in British Columbia during 1999, 161 persons died in alcohol-related crashes*.

Table 4-1
Deaths* in Alcohol-Related Crashes: British Columbia, 1999

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	32	28	87.5	5	17.9	3.3
16-19	57	55	96.5	25	45.5	16.6
20-25	52	51	98.1	28	54.9	18.5
26-35	60	58	96.7	32	55.2	21.2
36-45	62	60	96.8	30	50.0	19.9
46-55	37	37	100.0	14	37.8	9.3
>55	133	117	88.0	17	14.5	11.3
Gender						
Male	295	277	93.9	121	43.7	80.1
Female	138	129	93.5	30	23.3	19.9
Type						
Driver/Operator	252	240	95.2	88	36.7	58.3
Passenger	110	103	93.6	36	35.0	23.8
Pedestrian	71	63	88.7	27	42.9	17.9
Vehicle Occupied						
Automobiles	201	194	96.5	58	29.9	38.4
Trucks/Vans	113	103	91.2	51	49.5	33.8
Motorcycles	26	24	92.3	11	45.8	7.3
Other Hwy. Vehs.	10	10	100.0	3	30.0	2.0
Offroad Vehicles	12	12	100.0	1	8.3	0.7
(Pedestrians)	71	63	88.7	27	42.9	17.9
TOTAL	433	406	93.8	151	37.2	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, 21.2% (see last column) were aged 26-35. Those aged 36-45 accounted for 19.9% of the deaths.

Within each of the age groups, the highest incidence of alcohol involvement (55.2% and 54.9%, 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 14.5% of persons over age 55 and 17.9% of the fatalities under 16 years of age died in crashes involving alcohol.

4.1.2 Gender. Of all the people who died in alcohol-related crashes, 80.1% 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 (23.3%).

4.1.3 Victim type. Of all the people who died in alcohol-related crashes, 58.3% were drivers/operators of a vehicle; 23.8% were passengers; and 17.9% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (42.9%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 36.7% of the crashes in which a driver/operator died and 35.0% of those in which a passenger died.

4.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 38.4% were in an automobile; and 33.8% were in a truck/van. 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 (49.5% versus 29.9%).

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 1999. 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, 1999

Category of Driver	Number of Drivers	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
<16	1	1	100.0	0	0.0	0.0	0	0.0	0.0
16-19	32	31	96.9	11	35.5	13.4	8	25.8	11.6
20-25	35	35	100.0	19	54.3	23.2	18	51.4	26.1
26-35	42	39	92.9	21	53.8	25.6	18	46.2	26.1
36-45	42	42	100.0	16	38.1	19.5	14	33.3	20.3
46-55	20	19	95.0	7	36.8	8.5	6	31.6	8.7
>55	69	53	76.8	8	15.1	9.8	5	9.4	7.2
Gender									
Male	180	165	91.7	72	43.6	87.8	62	37.6	89.9
Female	61	55	90.2	10	18.2	12.2	7	12.7	10.1
Vehicle Type									
Automobile	131	117	89.3	33	28.2	40.2	29	24.8	42.0
Trucks/Van	78	72	92.3	36	50.0	43.9	28	38.9	40.6
Motorcycle	25	24	96.0	11	45.8	13.4	11	45.8	15.9
Tractor Trailer	7	7	100.0	2	28.6	2.4	1	14.3	1.4
Collision Type									
Single-Vehicle	119	108	90.8	60	55.6	73.2	54	50.0	78.3
Multiple-Vehicle	122	112	91.8	22	19.6	26.8	15	13.4	21.7
TOTAL	241	220	91.3	82	37.3	100.0	69	31.4	100.0

To illustrate, among 16-19 year olds there were 32 drivers killed during 1999; 31 of these fatally injured drivers (96.9%) were tested for alcohol. Of those who were tested, 11 (35.5%) were positive for alcohol. This means that 16-19 year olds fatally injured drinking drivers accounted for 13.4% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that eight of the 31 (25.8%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that eight of the 11 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 11.6% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. British Columbia had a very high testing rate in 1999, with 91.3% of fatally injured drivers being tested for alcohol use.

In British Columbia, 37.3% had been drinking and most of these had illegal BACs – 84.1% 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:

- 3.6% had BACs from 1-49 mg%;
- 2.3% had BACs from 50-80 mg%
- 10.5% had BACs from 81 to 150 mg%; and,
- 20.9% had BACs over 150 mg%.

***4.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 25.6% were aged 26-35; 23.2% were aged 20-25; 19.5% were aged 36-45; 13.4% were aged 16-19; 9.8% were over age 55; and 8.5% were aged 46-55.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), drivers age 20-25 and 26-35 each accounted for 26.1%; 20.3% were aged 36-45; 11.6% were aged 16-19; 8.7% were age 46-55; and 7.2% were over age 55.

Within each of the age groups, fatally injured drivers age 20-25 and 26-35 were the most likely to have been drinking (54.3% and 53.8% respectively). By contrast, only 15.1% of tested drivers over age 55 had been drinking.

4.2.2 Gender differences. Males dominate the picture – they account for 87.8% of all the fatally injured drivers who had been drinking, and 89.9% 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 (180 of the 241 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

much more likely to have been drinking than female drivers (43.6% and 18.2%, respectively). And, 86.1% of the male and 70.0% 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), 43.9% were truck/van drivers; 40.2% were automobile drivers; 13.4% were motorcyclists; and only 2.4% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 42.0% were automobile drivers; 40.6% were truck/van drivers; 15.9% were motorcyclists; and only 1.4% were tractor-trailer drivers.

Within each of the vehicle types, 50.0% of fatally injured drivers of truck/vans, 45.8% of motorcyclists; 28.6% of tractor-trailer drivers; and 28.2% of automobile drivers were found to have been drinking.

4.2.4 Collision differences. Almost 1/2 of the drivers killed (119 of the 241) were involved in single-vehicle collisions and these crashes accounted for 3/4 of the drivers who had been drinking or were legally impaired (73.2% and 78.3%, respectively).

Nearly three out of five drivers involved in single-vehicle crashes (55.6%) were positive for alcohol, compared to 19.6% 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 1999 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.

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, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	333	15	4.5	0.3
16-19	3848	713	18.5	15.2
20-25	5507	1050	19.1	22.3
26-35	7464	1034	13.9	22.0
36-45	6942	871	12.5	18.5
46-55	4719	517	11.0	11.0
>55	4882	309	6.3	6.6
unknown	1167	191	16.4	4.1
Gender				
Male	22074	3479	15.8	74.0
Female	11792	1043	8.8	22.2
unknown	996	178	17.9	3.8
Vehicle Type				
Auto	26182	3406	13.0	72.5
Truck/Van	5965	1049	17.6	22.3
Motorcycle	720	91	12.6	1.9
Tractor Trailer	547	74	13.5	1.6
Other Hwy. Vehicle	183	16	8.7	0.3
Off-Road	1135	53	4.7	1.1
Unknown	130	11	8.5	0.2
Collision Type				
Single-Vehicle	7394	2748	37.2	58.5
Multiple-Vehicle	27468	1952	7.1	41.5
TOTAL	34862	4700	13.5	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, 34,862 drivers were involved in crashes in which someone was injured, and among these 13.5% were alcohol-related crashes.

4.3.1 Driver age. Of all the drivers involved in alcohol-related injury crashes, 22.3% were aged 20-25; 22.0% were aged 26-35; and 18.5% 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 five drivers age 20-25 and 16-19 were involved in alcohol-related injury crashes (19.1% and 18.5%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for the youngest age group of drivers – those aged under 16 (4.5%).

4.3.2 Driver gender. Of all the drivers involved in alcohol-related injury crashes, 74.0% were males. The incidence of involvement in alcohol-related injury crashes was also greater for males than for females (15.8% and 8.8%, respectively).

4.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related injury crashes, 72.5% were automobile drivers and 22.3% were truck-van drivers.

The highest incidence of involvement in alcohol-related injury crashes was found for truck/van drivers – 17.6% of these drivers were in crashes that involved alcohol, compared to 13.5% for tractor-trailer drivers; 13.0% for automobile drivers; and 12.6% for motorcycle riders.

4.3.4 Type of collision. Of all the drivers involved in alcohol-related injury crashes, 58.5% 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 – 37.2% of these drivers, compared to only 7.1% 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

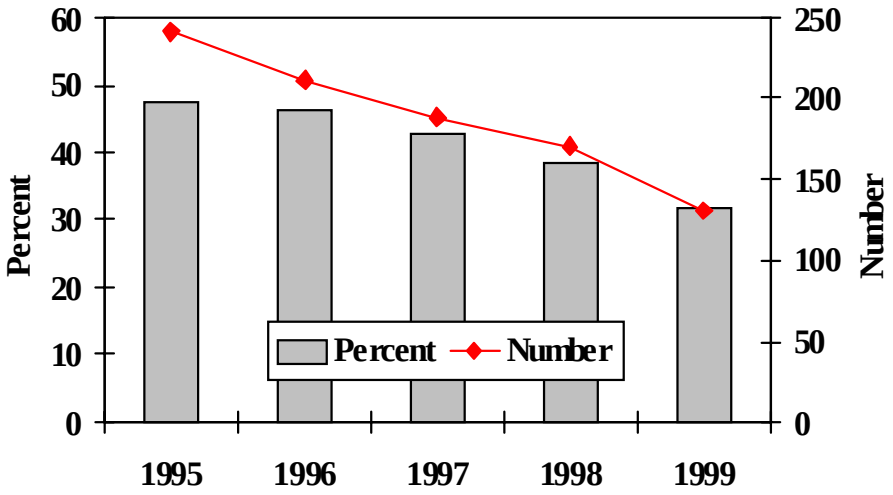
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: British Columbia, 1995-1999

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

* 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, 1995-1999



4.4.1 Deaths in alcohol-related crashes: 1995-1999. 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 1999. 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. The percentage of alcohol-related fatalities decreased from 47.6% in 1995 to 31.7% in 1999.

4.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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 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.

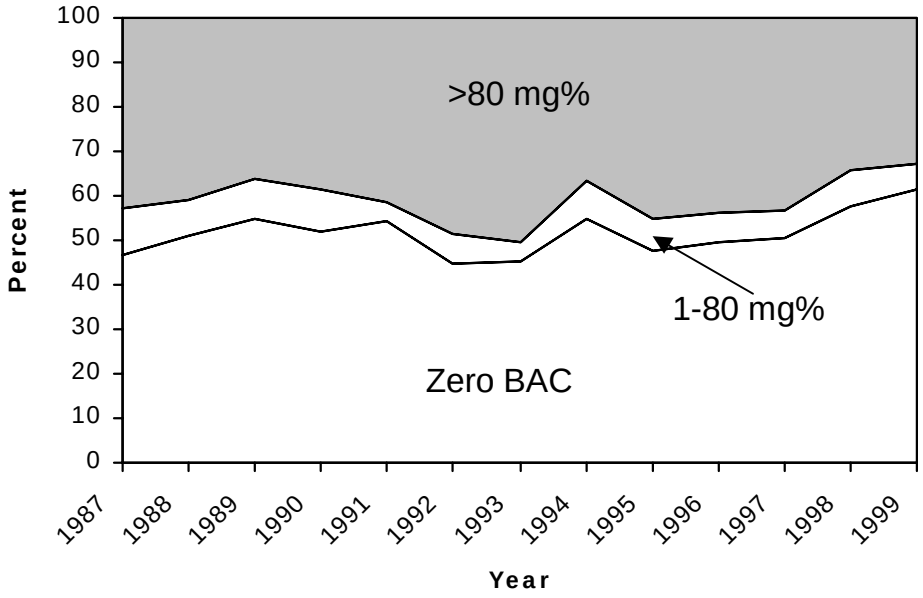
Table 4-5

Alcohol Use Among Fatally Injured Drivers:
British Columbia, 1987-1999

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

* dying in less than six hours.

Figure 4-2
Trends in Alcohol Use Among Driver Fatalities: British Columbia, 1987-1999



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%), and then reached its lowest point in 1999 (32.8%). The percent of fatally injured drivers with zero BAC decreased from 1989 (55.0%) to 1992 (44.8%), and then reached its highest level in 1999 (61.3%). The percent of fatally injured drivers with BACs between 1 and 80 mg% was at its highest level in 1987 (10.2%), dropped to its lowest mark in 1991 (4.0%), increased to 7.8% in 1998, and decreased to 5.9% in 1999.

4.4.3 Drivers in injury crashes: 1995-1999. 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 highway vehicles.

As can be seen, the incidence of alcohol-involvement in injury crashes has increased slightly over this five-year period. The percentage of drivers in injury crashes that involved alcohol rose steadily from 10.1% to 13.8% between 1995 and 1999.

Table 4-6

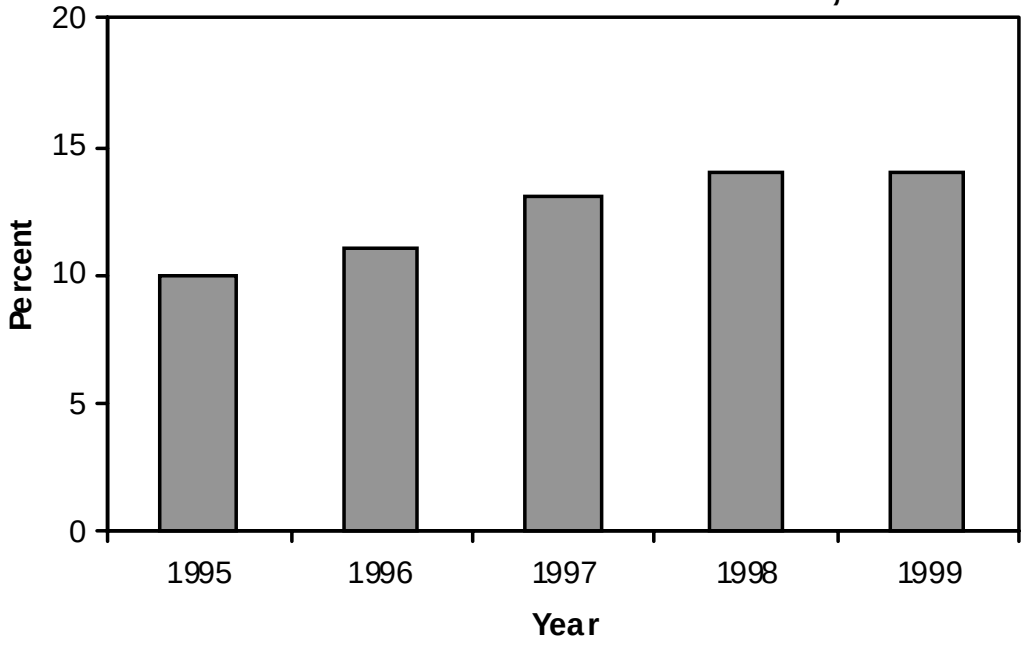
Number and Percent of All Drivers* in Injury Crashes**
that Involved Alcohol: British Columbia, 1995-1999

Year	Number of Drivers	Alcohol Related Number	(Pct.)
1995	56432	5692	(10.1)
1996	46129	4923	(10.7)
1997	36348	4536	(12.5)
1998	34445	4730	(13.7)
1999	33597	4636	(13.8)

* 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 4-3
Percent of All Drivers in Injury Crashes that Involved Alcohol: British Columbia, 1995-1999



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 1999. 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 1999. 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, 39 people age 16-19 were killed in motor vehicle crashes in Alberta during 1999. 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, 17 people age 16-19 died in alcohol-related crashes in Alberta during 1999. The next column expresses this as a percentage – e.g., 43.6% 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 12.1% of all the people killed in alcohol-related crashes in Alberta during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 358 persons died in motor vehicle crashes in Alberta during 1999. In 338 (94.4%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 140 (41.4%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (358 x .414) it can be estimated that *in Alberta during 1999, 148 persons died in alcohol-related crashes*.

Table 5-1
Deaths* in Alcohol-Related Crashes: Alberta, 1999

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	27	27	100.0	3	11.1	2.1
16-19	39	39	100.0	17	43.6	12.1
20-25	57	56	98.2	31	55.4	22.1
26-35	73	69	94.5	39	56.5	27.9
36-45	51	47	92.2	26	55.3	18.6
46-55	40	36	90.0	17	47.2	12.1
>55	71	64	90.1	7	10.9	5.0
Gender						
Male	236	224	94.9	107	47.8	76.4
Female	122	114	93.4	33	28.9	23.6
Type						
Driver/Operator	224	216	96.4	85	39.4	60.7
Passenger	93	89	95.7	37	41.6	26.4
Pedestrian	39	31	79.5	16	51.6	11.4
Unknown	2	2	100.0	2	0.0	1.4
Vehicle Occupied						
Automobiles	134	131	97.8	49	37.4	35.0
Trucks/Vans	154	145	94.2	67	46.2	47.9
Motorcycles	11	11	100.0	5	45.5	3.6
Other Hwy. Vehs.	8	8	100.0	0	0.0	0.0
Offroad Vehicles	12	12	100.0	3	25.0	2.1
(Pedestrians)	39	31	79.5	16	51.6	11.4
TOTAL	358	338	94.4	140	41.4	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, 27.9% (see last column) were aged 26-35; 22.1% were aged 20-25 and 18.6% were 36-45.

Within each of the age groups, the highest incidence of alcohol involvement (56.5%) occurred in the crashes in which a person aged 26-35 died. The lowest incidence of alcohol involvement

was found among the youngest and oldest fatalities – only 10.9% of persons over age 55 and 11.1% of the fatalities under 16 years of age died in crashes involving alcohol.

5.1.2 Gender. Of all the people who died in alcohol-related crashes, 76.4% were males. The incidence of alcohol in crashes in which a male died (47.8%) was greater than the incidence of alcohol in crashes in which a female died (28.9%).

5.1.3 Victim type. Of all the people who died in alcohol-related crashes, 60.7% were drivers/operators of a vehicle; 26.4% were passengers; 11.4% 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 (51.6%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 41.6% of the crashes in which a passenger died and 39.4% of those in which a driver/operator died.

5.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, almost half (47.9%) were in a truck/van; 35.0% 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 (46.2% versus 37.4%). Alcohol was involved in 45.5% 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 1999. 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, 1999

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	2	2	100.0	0	0.0	0.0	0	0.0	0.0
16-19	21	21	100.0	6	28.6	8.5	3	14.3	5.0
20-25	38	38	100.0	14	36.8	19.7	11	28.9	18.3
26-35	54	53	98.1	27	50.9	38.0	25	47.2	41.7
36-45	31	31	100.0	11	35.5	15.5	10	32.3	16.7
46-55	28	27	96.4	10	37.0	14.1	9	33.3	15.0
>55	41	37	90.2	3	8.1	4.2	2	5.4	3.3
Gender									
Male	155	151	97.4	64	42.4	90.1	55	36.4	91.7
Female	60	58	96.7	7	12.1	9.9	5	8.6	8.3
Vehicle Type									
Automobile	100	97	97.0	29	29.9	40.8	23	23.7	38.3
Trucks/Van	98	95	96.9	38	40.0	53.5	35	36.8	58.3
Motorcycle	11	11	100.0	4	36.4	5.6	2	18.2	3.3
Tractor Trailer	6	6	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	83	82	98.8	46	56.1	64.8	40	48.8	66.7
Multiple-Vehicle	132	127	96.2	25	19.7	35.2	20	15.7	33.3
TOTAL	215	209	97.2	71	34.0	100.0	60	28.7	100.0

To illustrate, among 16-19 year olds there were 21 drivers killed during 1999; all of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, six (28.6%) were positive for alcohol. This means that 16-19 year olds fatally injured drinking drivers accounted for 8.5% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that three of the 21 (14.3%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means three of the six drivers who were positive for alcohol all had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 16-19 year old drivers accounted for 5.0% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Alberta had a very high testing rate in 1999, with 97.2% of fatally injured drivers being tested for alcohol use.

In Alberta, 34.0% had been drinking and most of these had illegal BACs – 84.5% 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:

- 3.3% had BACs from 1-49 mg%;
- 1.9% had BACs from 50-80 mg%
- 5.3% had BACs from 81 to 150 mg%; and,
- 23.4% had BACs over 150 mg%.

***5.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 38.0% were aged 26-35 and 19.7% were aged 20-25; 15.5% were aged 36-45; 14.1% were aged 46-55; and 8.5% were aged 16-19. Those over age 55 accounted for only 4.2% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 41.7% were aged 26-35; 18.3% were aged 20-25 ; 16.7% were aged 36-45; 15.0% were aged 46-55; and 5.0% were aged 16-19. Those over age 55 accounted for only 3.3% of 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 – 50.9% of drivers in this age group had been drinking. By contrast, only 8.1% of tested drivers over age 55 had been drinking.

5.2.2 Gender differences. Males dominate the picture – they account for 90.1% of all the fatally injured drivers who had been drinking, and 91.7% 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 (155 of the 215 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 much more likely to have been drinking than female drivers (42.4% and 12.1%, respectively).

And 85.9% of the male and 71.4% 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), 53.5% were truck-van drivers; 40.8% were automobile drivers; and 5.6% were motorcyclists.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 58.3% were truck-van drivers; 38.3% were automobile drivers; and 3.3% were motorcyclists.

Within each of the vehicle types, 40.0% of fatally injured drivers of trucks/vans, 36.4% of motorcyclists; 29.9% of automobile drivers; and 0.0% of tractor-trailer drivers were found to have been drinking.

5.2.4 Collision differences. About 2/5 of the drivers killed (83 of the 215) were involved in single-vehicle collisions yet these crashes accounted for two-thirds of the drivers who had been drinking or were legally impaired (64.8% and 66.7%, respectively).

Over half of the drivers involved in single-vehicle crashes (56.1%) were positive for alcohol, compared to 19.7% 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 1999 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, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	48	5	10.4	0.7
16-19	422	119	28.2	15.8
20-25	573	174	30.4	23.1
26-35	708	185	26.1	24.5
36-45	657	138	21.0	18.3
46-55	401	71	17.7	9.4
>55	446	47	10.5	6.2
unknown	43	15	34.9	2.0
Gender				
Male	2253	596	26.5	79.0
Female	1017	148	14.6	19.6
unknown	28	10	35.7	1.3
Vehicle Type				
Auto	1537	312	20.3	41.4
Truck/Van	1398	379	27.1	50.3
Motorcycle	110	25	22.7	3.3
Tractor Trailer	111	24	21.6	3.2
Other Hwy. Vehicle	22	1	4.5	0.1
Off-Road	113	11	9.7	1.5
Unknown	7	2	28.6	0.3
Collision Type				
Single-Vehicle	1074	484	45.1	64.2
Multiple-Vehicle	2224	270	12.1	35.8
TOTAL	3298	754	22.9	100.0

As shown, by the totals at the bottom of the table, 3,298 drivers were involved in crashes in which someone was seriously injured, and among these 22.9% were alcohol-related crashes.

5.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 24.5% were aged 26-35; 23.1% were aged 20-25; and 18.3% 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 three out of ten drivers age 20-25 and 16-19 were involved in alcohol-related serious injury crashes (30.4% and 28.2%, respectively). The lowest incidence of involvement in alcohol-related serious injury crashes was found for drivers aged under 16 and over 55 (10.4% and 10.5%, respectively).

5.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 79.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (26.5% and 14.6%, respectively).

5.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, truck-van drivers accounted for 50.3% and automobile drivers accounted for 41.4%.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 27.1% of truck/van drivers were in crashes that involved alcohol, compared to 22.7% for motorcyclists; 21.6% for tractor-trailer drivers and 20.3% for automobile drivers.

5.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 64.2% 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 – 45.1% of these drivers, compared to only 12.1% 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, 1995-1999

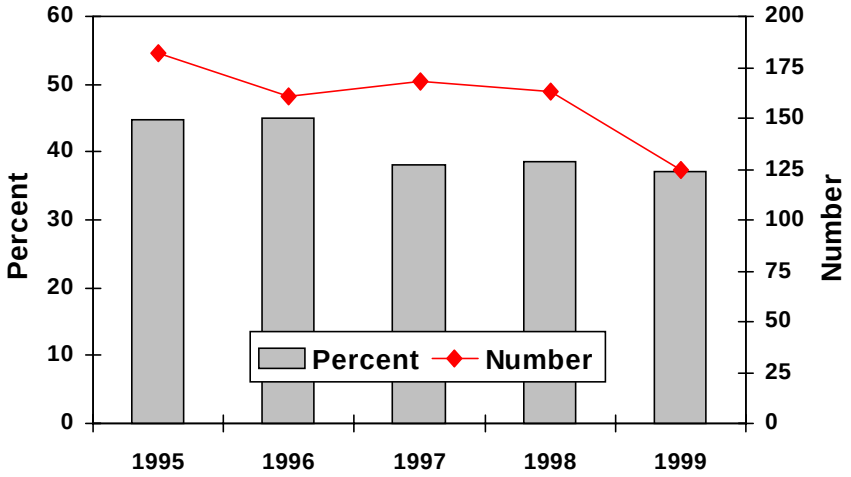
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	406	182	44.8
1996	357	161	45.1
1997	440	168	38.2
1998	422	163	38.6
1999	337	125	37.1

* 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, 1995-1999



5.4.1 Deaths in alcohol-related crashes: 1995-1999. 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 1999. 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, and dropped to 125 in 1999. The percentage of alcohol-related fatalities increased from 44.8% in 1995 to to a high of 45.1% in 1996. Since then, the percentage of alcohol-related fatalities in Alberta has dropped to 37.1% in 1999.

5.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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

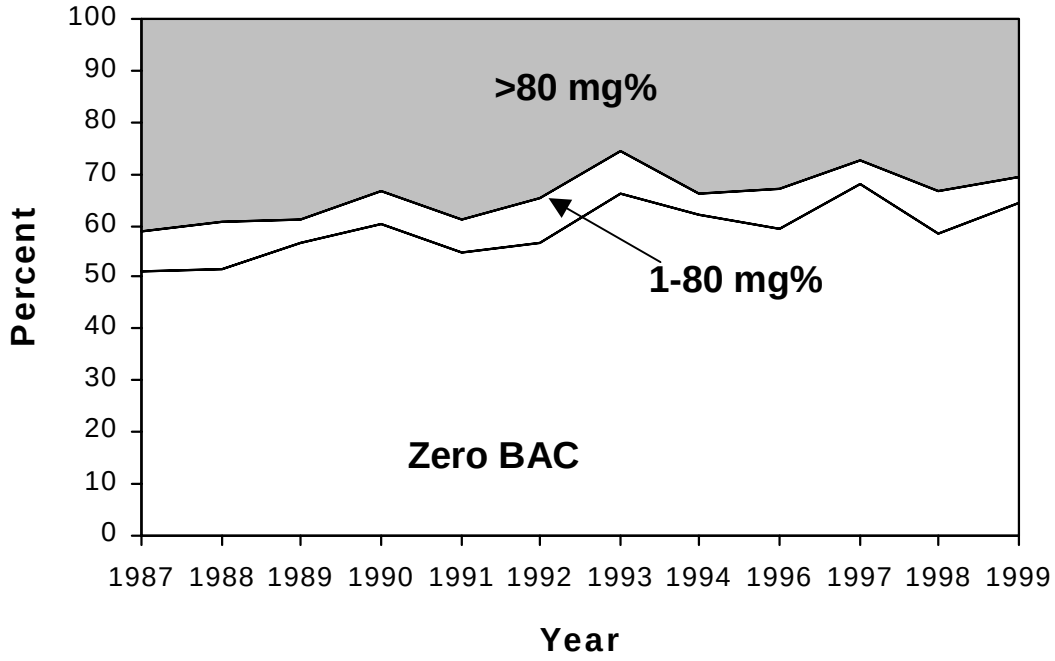
Alcohol Use Among Fatally Injured Drivers:
Alberta, 1987-1999

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

* 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, 1987-1999



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%). 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%), dropped to 58.5% in 1998 before rising to 64.4% in 1999. The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (9.3%), dropped to its lowest mark in 1994 (4.2%), increased to 8.0% in 1998 and fell to 4.8% in 1999.

5.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

Table 5-6

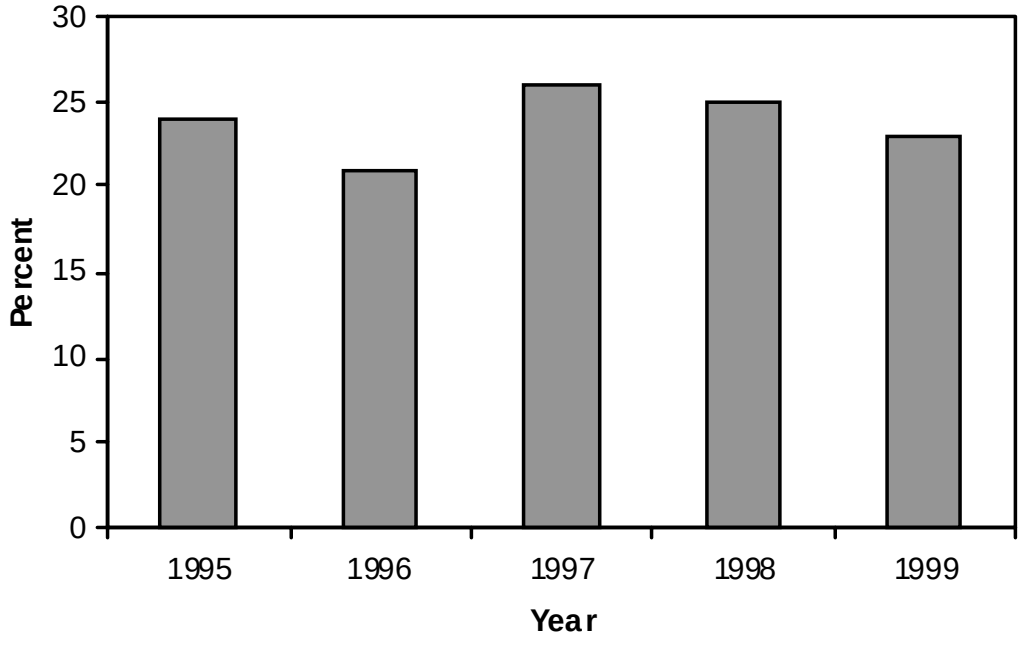
Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Alberta, 1995-1999

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	2701	657	(24.3)
1996	3023	622	(20.6)
1997	2938	749	(25.5)
1998	3332	821	(24.6)
1999	3178	741	(23.3)

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

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

Figure 5-3
Percent of All Drivers in Serious Injury
Crashes that Involved Alcohol: Alberta, 1995-1999



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 24.3% to 20.6%. In 1997, the incidence rose to 25.5% before dropping to 23.3% in 1999.

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 1999. 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 1999. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. The first data column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash*. For example, 25 people age 16-19 were killed in motor vehicle crashes in Saskatchewan during 1999. And, in 24 cases (96.0%) 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, 16 people age 16-19 died in alcohol-related crashes in Saskatchewan during 1999. The next column expresses this as a percentage – e.g., 66.7% 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 15.8% of all the people killed in alcohol-related crashes in Saskatchewan during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 206 persons died in motor vehicle crashes in Saskatchewan during 1999. In 198 (96.1%) of these cases, it was

possible to determine if alcohol was a factor. Of these known cases, 101 (51.0%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (206 x .51) it can be estimated that *in Saskatchewan during 1999, 105 persons died in alcohol-related crashes*.

Table 6-1
Deaths* in Alcohol-Related Crashes: Saskatchewan, 1999

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	18	17	94.4	3	17.6	3.0
16-19	25	24	96.0	16	66.7	15.8
20-25	22	22	100.0	18	81.8	17.8
26-35	36	34	94.4	25	73.5	24.8
36-45	23	21	91.3	12	57.1	11.9
46-55	30	28	93.3	13	46.4	12.9
>55	52	52	100.0	14	26.9	13.9
Gender						
Male	145	140	96.6	79	56.4	78.2
Female	61	58	95.1	22	37.9	21.8
Type						
Driver/Operator	110	107	97.3	54	50.5	53.5
Passenger	74	72	97.3	34	47.2	33.7
Pedestrian	20	17	85.0	11	64.7	10.9
Unknown	2	2	100.0	2	100.0	2.0
Vehicle Occupied						
Automobiles	90	89	98.9	44	49.4	43.6
Trucks/Vans	71	68	95.8	36	52.9	35.6
Motorcycles	2	2	100.0	1	50.0	1.0
Other Hwy. Vehs.	6	6	100.0	0	0.0	0.0
Offroad Vehicles	17	16	94.1	9	56.3	8.9
(Pedestrians)	20	17	85.0	11	64.7	10.9
TOTAL	206	198	96.1	101	51.0	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, 24.8% (see last column) were aged 26-35; 17.8% were aged 20-25 and 15.8% were 16-19.

Within each of the age groups, the highest incidence of alcohol involvement (81.8%) occurred in the crashes in which a person aged 20-25 died. The lowest incidence of alcohol involvement

was found among the youngest and oldest fatalities – only 17.6% of persons under 16 and 26.9% 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, 78.2% were males. And the incidence of alcohol in crashes in which a male died (56.4%) was much greater than the incidence of alcohol in crashes in which a female died (37.9%).

6.1.3 Victim type. Of all the people who died in alcohol-related crashes, 53.5% were drivers/operators of a vehicle; 33.7% were passengers; 10.9% were pedestrians; and 2.0% were occupants whose position in the vehicle was unknown.

Within each of the principal victim types, the highest incidence of alcohol involvement (64.7%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 50.5% of the crashes in which a driver/operator died and 47.2% of those in which a passenger died.

6.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over two-fifths (43.6%) were in an automobile; 35.6% were in a truck/van.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was slightly greater than the incidence of alcohol in crashes in which an automobile occupant died (52.9% versus 49.4%).

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 1999. 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, 1999

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	14	14	100.0	8	57.1	19.5	5	35.7	15.2
20-25	8	7	87.5	4	57.1	9.8	2	28.6	6.1
26-35	20	19	95.0	13	68.4	31.7	13	68.4	39.4
36-45	11	11	100.0	7	63.6	17.1	6	54.5	18.2
46-55	15	15	100.0	3	20.0	7.3	2	13.3	6.1
>55	28	22	78.6	6	27.3	14.6	5	22.7	15.2
Gender									
Male	72	67	93.1	33	49.3	80.5	27	40.3	81.8
Female	24	21	87.5	8	38.1	19.5	6	28.6	18.2
Vehicle Type									
Automobile	52	47	90.4	23	48.9	56.1	18	38.3	54.5
Trucks/Van	37	34	91.9	17	50.0	41.5	15	44.1	45.5
Motorcycle	2	2	100.0	1	50.0	2.4	0	0.0	0.0
Tractor Trailer	5	5	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	46	44	95.7	29	65.9	70.7	25	56.8	75.8
Multiple-Vehicle	50	44	88.0	12	27.3	29.3	8	18.2	24.2
TOTAL	96	88	91.7	41	46.6	100.0	33	37.5	100.0

To illustrate, among 20-25 year olds there were eight drivers killed during 1999; seven of these fatally injured drivers (87.5%) were tested for alcohol. Of those who were tested, four (57.1%) were positive for alcohol. This means that 20-25 year old fatally injured drinking drivers accounted for 9.8% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that two of the seven (28.6%) fatally injured 20-25 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that two of the four 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 6.1% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Saskatchewan had a very high testing rate in 1999, with 91.7% of fatally injured drivers being tested for alcohol use.

In Saskatchewan, 46.6% had been drinking and most of these had illegal BACs – 80.5% 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:

- 4.5% had BACs from 1-49 mg%;
- 4.5% had BACs from 50-80 mg%
- 8.0% had BACs from 81 to 150 mg%; and,
- 29.6% had BACs over 150 mg%.

***6.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 31.7% were aged 26-35; 19.5% were aged under 20; 17.1% were aged 36-45; 14.6% were aged 55; and 9.8% were aged 20-25. Those aged 46-55 accounted for only 7.3% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 39.4% were aged 26-35; 18.2% were aged 36-45 and 15.2% were aged under 20 and over 55. Those aged 20-25 and 46-55 each accounted for only 6.1% of 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 – 68.4% of drivers in this age group had been drinking. By contrast, only 20.0% of tested drivers aged 46-55 had been drinking.

About four of five (80.5%) fatally injured drinking drivers had BACs over the legal limit.

6.2.2 Gender differences. Males dominate the picture – they account for 80.5% of all the fatally injured drivers who had been drinking, and 81.8% 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 (72 of the 96 fatalities are males). Fatally injured male drivers were more likely to have

been drinking than female drivers (49.3% and 38.1%, respectively). And, 81.8% of the male and 75% 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), 56.1% were automobile drivers; 41.5% were truck/van drivers; and only 2.4% were motorcycle riders.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 54.5% were automobile drivers and 45.5% were truck-van drivers.

Within each of the vehicle types, 50.0% of fatally injured drivers of truck-vans and 48.9% of drivers of automobiles were found to have been drinking.

6.2.4 Collision differences. Less than half of the drivers killed (46 of the 96) were involved in single-vehicle collisions but these crashes accounted for about three-fourths of the drivers who had been drinking or were legally impaired (70.7% and 75.8%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Nearly two out of three drivers involved in single-vehicle crashes (65.9%) were positive for alcohol, compared to only 27.3% 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 1999 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, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	17	0	0.0	0.0
16-19	127	37	29.1	18.1
20-25	132	47	35.6	23.0
26-35	138	46	33.3	22.5
36-45	165	42	25.5	20.6
46-55	95	14	14.7	6.9
>55	105	8	7.6	3.9
unknown	30	10	33.3	4.9
Gender				
Male	535	157	29.3	77.0
Female	249	37	14.9	18.1
unknown	25	10	40.0	4.9
Vehicle Type				
Auto	357	92	25.8	45.1
Truck/Van	321	90	28.0	44.1
Motorcycle	30	7	23.3	3.4
Tractor Trailer	46	6	13.0	2.9
Other Hwy. Vehicle	3	0	0.0	0.0
Off-Road	48	7	14.6	3.4
Unknown	4	2	50.0	1.0
Collision Type				
Single-Vehicle	291	132	45.4	64.7
Multiple-Vehicle	518	72	13.9	35.3
TOTAL	809	204	25.2	100.0

As shown, by the totals at the bottom of the table, 809 drivers were involved in crashes in which someone was seriously injured, and among these 25.2% were alcohol-related crashes.

6.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.0% were aged 20-25; 22.5% were aged 26-35; and 20.6% were aged 36-45. Drivers over 55 accounted for only 3.9% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, about three out of ten drivers age 16-19, 20-25, and 26-35 were involved in alcohol-related serious injury crashes (29.1%, 35.6% and 33.3%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for the youngest and oldest age groups of drivers – those under 16 (0.0%) and those aged over 55 (7.6%).

6.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 77.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (29.3% and 14.9%, respectively).

6.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 45.1% were automobile drivers; and 44.1% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers – 28.0% of truck/van drivers were in crashes that involved alcohol, compared to 25.8% for automobile drivers and 23.3% for motorcycle riders. Only 13.0% 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, 64.7% 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 – 45.4% of these drivers, compared to only 13.9% 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: 1995-1999. 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

Table 6-4

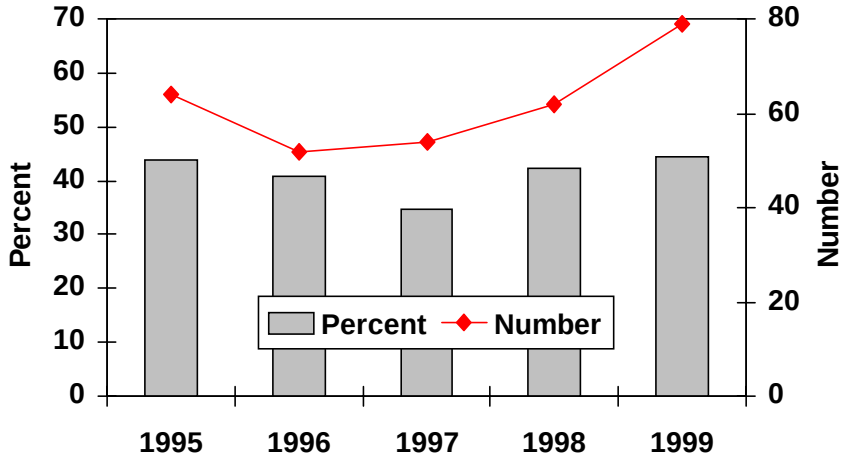
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Saskatchewan, 1995-1999

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

* 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, 1995-1999



1999. These results differ slightly from those in Section 6.1 for two reasons. First, deaths that occur in crashes that involve a drinking pedestrian are not 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. Since then there has been an increase to 79 alcohol-related fatalities in 1999. The percentage of alcohol-related fatalities decreased from 43.8% in 1995 to 34.8% in 1997. However, in 1999, the percentage of alcohol-related fatalities in Saskatchewan rose to 44.4%.

6.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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 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.

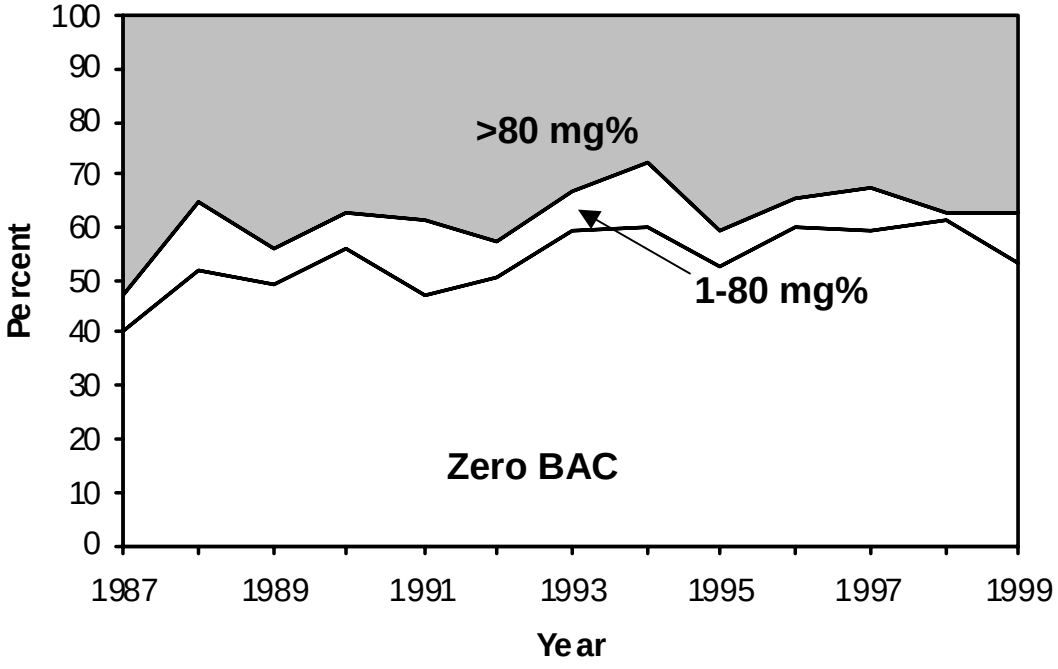
Table 6-5

Alcohol Use Among Fatally Injured Drivers:
Saskatchewan, 1987-1999

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

* dying in less than six hours.

Figure 6-2
Trends in Alcohol Use Among Driver Fatalities: Saskatchewan, 1987-1999



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%), and then increased in 1999 (36.9%). The percent of fatally injured drivers with zero BACs increased from 1987 (40.0%) to 1994 (60.3%), declined in 1995 (52.6%), peaked in 1998 (61.6%) before decreasing to 53.6% in 1999. The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1991 (14.1%), and dropped to its lowest mark in 1998 (1.4%), before rising in 1999 (9.5%).

6.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious crashes has been relatively stable. Between 1995 and 1996 the percentage of all drivers in serious injury crashes that involved alcohol rose only slightly from 25.1% to 25.6%. In 1997 the incidence dropped to 23.4%, rose to 26.3% in 1998 and then dropped slightly to 25.8% in 1999.

Table 6-6

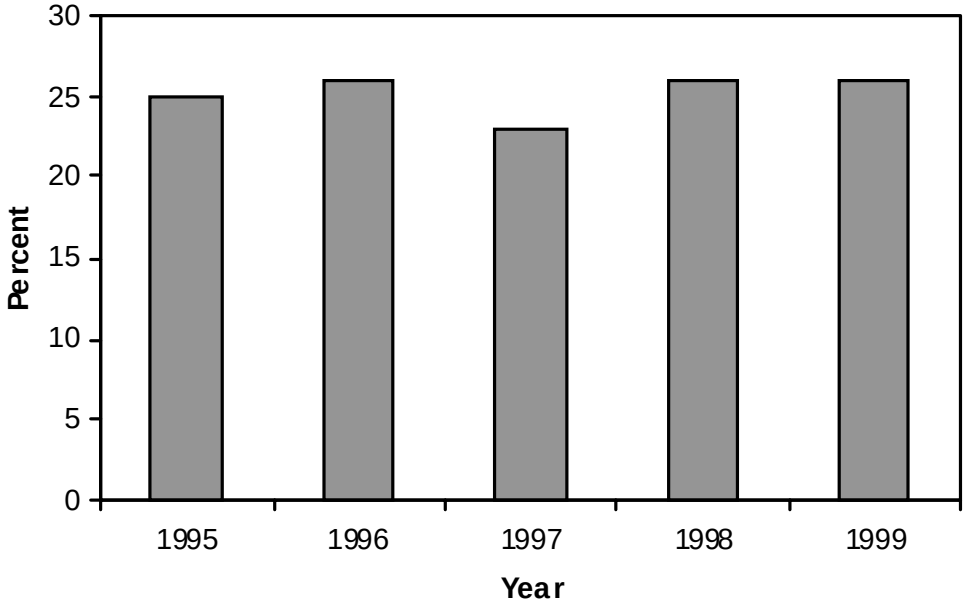
Number and Percent of All Drivers* in Serious Injury Crashes ** that Involved Alcohol: Saskatchewan, 1995-1999

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	887	223	(25.1)
1996	656	168	(25.6)
1997	843	197	(23.4)
1997	703	185	(26.3)
1999	757	195	(25.8)

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

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

Figure 6-3
Percent of All Drivers in Serious Injury Crashes that Involved Alcohol: Saskatchewan, 1995-1999



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 1999. 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 1999. 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, 18 people age 16-19 were killed in motor vehicle crashes in Manitoba during 1999. And, in 17 cases (94.4%) it was possible to determine if alcohol was a factor in the crash.

The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, six people age 16-19 died in alcohol-related crashes in Manitoba during 1999. The next column expresses this as a percentage – e.g., 35.3% 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 13.0% of all the people killed in alcohol-related crashes in Manitoba during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 127 persons died in motor vehicle crashes in Manitoba during 1999. In 121 (95.3%) of these cases, it was possible

to determine if alcohol was a factor. Of these known cases, 46 (38.0%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (127 x .38) it can be estimated that *in Manitoba during 1999, 48 persons died in alcohol-related crashes*.

Table 7-1
Deaths* in Alcohol-Related Crashes: Manitoba, 1999

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	11	10	90.9	3	30.0	6.5
16-19	18	17	94.4	6	35.3	13.0
20-25	13	13	100.0	9	69.2	19.6
26-35	16	15	93.8	9	60.0	19.6
36-45	13	13	100.0	6	46.2	13.0
46-55	17	16	94.1	8	50.0	17.4
>55	39	37	94.9	5	13.5	10.9
Gender						
Male	79	75	94.9	34	45.3	73.9
Female	48	46	95.8	12	26.1	26.1
Type						
Driver/Operator	71	68	95.8	25	36.8	54.3
Passenger	35	33	94.3	12	36.4	26.1
Pedestrian	21	20	95.2	9	45.0	19.6
Vehicle Occupied						
Automobiles	64	62	96.9	20	32.3	43.5
Trucks/Vans	27	27	100.0	12	44.4	26.1
Motorcycles	2	2	100.0	0	0.0	0.0
Offroad Vehicles	13	10	76.9	5	50.0	10.9
(Pedestrians)	21	20	95.2	9	45.0	19.6
TOTAL	127	121	95.3	46	38.0	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, 19.6% (see last column) were aged 20-25 and 26-35; 17.4% were aged 46-55 and 13.0% were age 16-19 and 36-45.

Within each of the age groups, the highest incidence of alcohol involvement (69.2%) occurred in the crashes in which a person aged 20-25 died. The lowest incidence of alcohol involvement

was found among the oldest fatalities – only 13.5% of persons over 55 year of age died in crashes involving alcohol.

7.1.2 Gender. Of all the people who died in alcohol-related crashes, 73.9% were males. And, the incidence of alcohol in crashes in which a male died (45.3%) was greater than the incidence of alcohol in crashes in which a female died (26.1%).

7.1.3 Victim type. Of all the people who died in alcohol-related crashes, 54.3% were drivers/operators of a vehicle; 26.1% were passengers; and 19.6% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (45.0%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 36.8% of the crashes in which a driver/operator died and 36.4% of those in which a passenger died.

7.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 43.5% were in an automobile and 26.1% were in a truck/van.

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 (44.4% versus 32.3%).

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 1999. 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, 1999

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	9	9	100.0	3	33.3	15.8	2	22.2	12.5
20-25	9	9	100.0	4	44.4	21.1	3	33.3	18.8
26-35	9	9	100.0	3	33.3	15.8	3	33.3	18.8
36-45	8	8	100.0	4	50.0	21.1	4	50.0	25.0
46-55	5	5	100.0	3	60.0	15.8	3	60.0	18.8
>55	20	16	80.0	2	12.5	10.5	1	6.3	6.3
Gender									
Male	44	41	93.2	16	39.0	84.2	14	34.1	87.5
Female	16	15	93.8	3	20.0	15.8	2	13.3	12.5
Vehicle Type									
Automobile	40	36	90.0	11	30.6	57.9	10	27.8	62.5
Trucks/Van	18	18	100.0	8	44.4	42.1	6	33.3	37.5
Motorcycle	2	2	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	25	23	92.0	15	65.2	78.9	14	60.9	87.5
Multiple-Vehicle	35	33	94.3	4	12.1	21.1	2	6.1	12.5
TOTAL	60	56	93.3	19	33.9	100.0	16	28.6	100.0

To illustrate, among those aged 16-19 there were nine drivers killed during 1999; all nine of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, three (33.3%) were positive for alcohol. This means that fatally injured drinking drivers aged 16-19 accounted for 15.8% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that two of the nine (22.2%) 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 12.5% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Manitoba had a very high testing rate in 1999, with 93.3% of fatally injured drivers being tested for alcohol use.

In Manitoba, 33.9% had been drinking and most of these had illegal BACs – 84.2% 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:

- 5.4% had BACs from 1-49 mg%;
- 0.0% had BACs from 50-80 mg%;
- 5.4% had BACs from 81 to 150 mg%; and,
- 23.1% had BACs over 150 mg%.

***7.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 21.1% were aged 20-25 and 36-45; and 15.8% of the drivers were aged 16-19, 26-35 and 46-55. Those over 55 accounted for only 10.5% 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 36-45; and 18.8% were aged 20-25, 26-35 and 46-55.

Within each of the age groups, fatally injured drivers aged 46-55 were the most likely to have been drinking – 60.0% of drivers in this age group had been drinking. By contrast, only 12.5% of tested drivers over age 55 had been drinking.

7.2.2 Gender differences. Males dominate the picture – they account for 84.2% of all the fatally injured drivers who had been drinking, and 87.5% 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 (44 of the 60 fatalities are males). Fatally injured male drivers were twice as likely to have been drinking than female drivers (39.0% and 20.0%, respectively). And 87.5% of the males and 66.7% of 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), 57.9% were automobile drivers and 42.1% were truck/van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 62.5% were automobile drivers and 37.5% were truck/van drivers.

Within each of the vehicle types, 44.4% of fatally injured drivers of trucks/vans and 30.6% of automobile drivers were found to have been drinking.

7.2.4 Collision differences. Less than half of the drivers killed (25 of the 60) 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 (78.9% and 87.5%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. About two out of three drivers involved in single-vehicle crashes (65.2%) were positive for alcohol, compared to only 12.1% 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 1999 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, 1999

Category of Drivers	Number of Drivers*	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	11	1	9.1	0.8
16-19	102	26	25.5	21.1
20-25	85	27	31.8	22.0
26-35	100	25	25.0	20.3
36-45	120	24	20.0	19.5
46-55	77	7	9.1	5.7
>55	104	10	9.6	8.1
unknown	20	3	15.0	2.4
Gender				
Male	402	84	20.9	68.3
Female	207	37	17.9	30.1
unknown	10	2	20.0	1.6
Vehicle Type				
Auto	324	79	24.4	64.2
Truck/Van	237	37	15.6	30.1
Motorcycle	21	4	19.0	3.3
Tractor Trailer	13	0	0.0	0.0
Off-Road	20	1	5.0	0.8
Unknown	4	2	50.0	1.6
Collision Type				
Single-Vehicle	240	96	40.0	78.0
Multiple-Vehicle	379	27	7.1	22.0
TOTAL	619	123	19.9	100.0

As shown, by the totals at the bottom of the table, 619 drivers were involved in crashes in which someone was seriously injured, and among these 19.9% were alcohol-related crashes.

*These numbers are slightly underestimated because about 7.9% of all injuries are recorded as "unspecified".

7.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 22.0% were aged 20-25; 21.1% were aged 16-19; and 20.3% were aged 26-35. Drivers under 16 accounted for only 0.8% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, about one out of four drivers aged 20-25, 16-19, and 26-35 were involved in alcohol-related serious injury crashes (31.8%, 25.5% and 25.0%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for drivers under 16 and 46-55 (9.1%).

7.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 68.3% were males. The incidence of involvement in alcohol-related serious injury crashes was slightly greater for males than for females (20.9% and 17.9%, respectively).

7.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 64.2% were automobile drivers; and 30.1% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was also found for automobile drivers – 24.4% of automobile drivers were in crashes that involved alcohol, compared to 19.0% for motorcyclists, 15.6% for truck/van drivers, and 5.0% for drivers of off-road vehicles. None of the tractor-trailer drivers were involved in an alcohol-related crash.

7.3.4 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 – 40.0% of these drivers, compared to only 7.1% 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: 1995-1999. 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 1999. 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

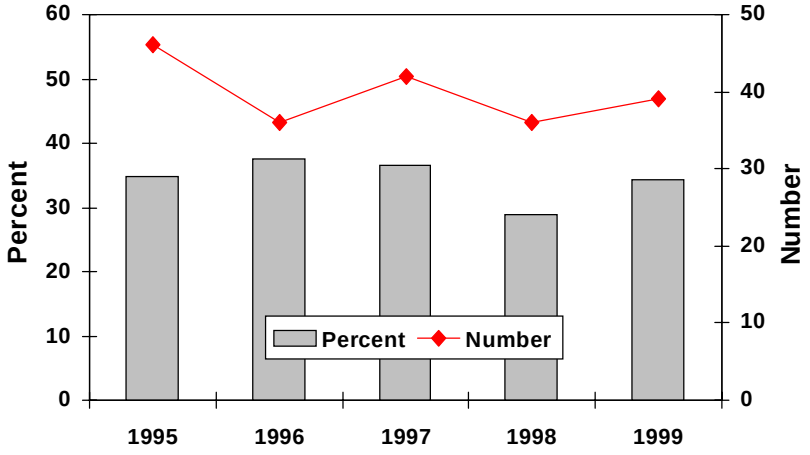
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Manitoba, 1995-1999

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

* 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, 1995-1999



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, and then ncreased again to 39 in 1999. 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% before rising to 34.2% in 1999.

7.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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).

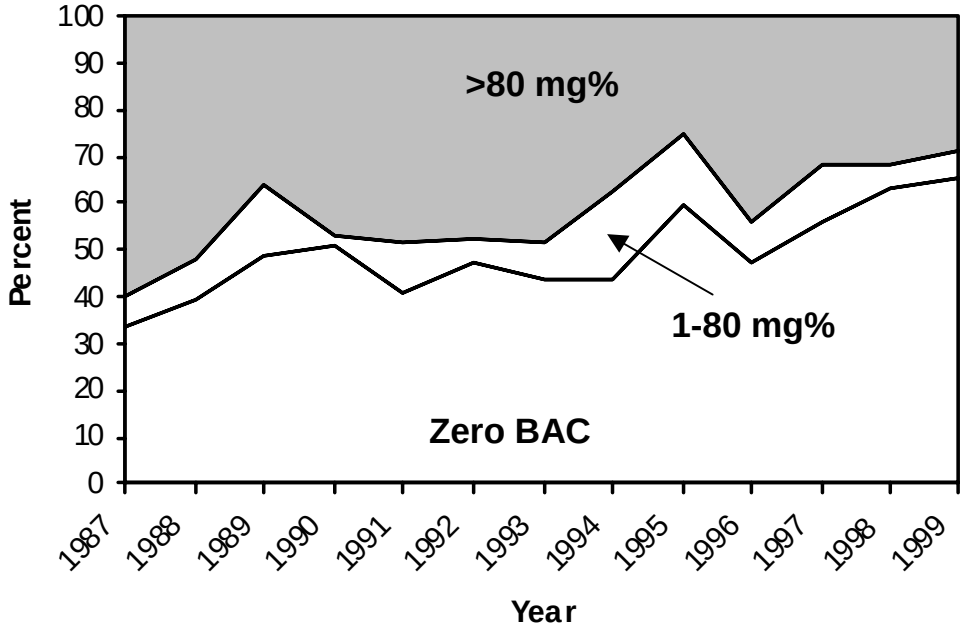
Table 7-5

Alcohol Use Among Fatally Injured Drivers:
Manitoba, 1987-1999

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

* dying in less than six hours.

Figure 7-2
Trends in Alcohol Use Among Driver Fatalities: Manitoba, 1987-1999



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%). 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. The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1994 (18.9%), and dropped to 5.8% in 1999.

7.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles. As can be seen, the incidence of alcohol-involvement in serious crashes has been relatively stable. 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% before reaching a low of 20.2% in 1999.

Table 7-6

Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Manitoba, 1995-1999

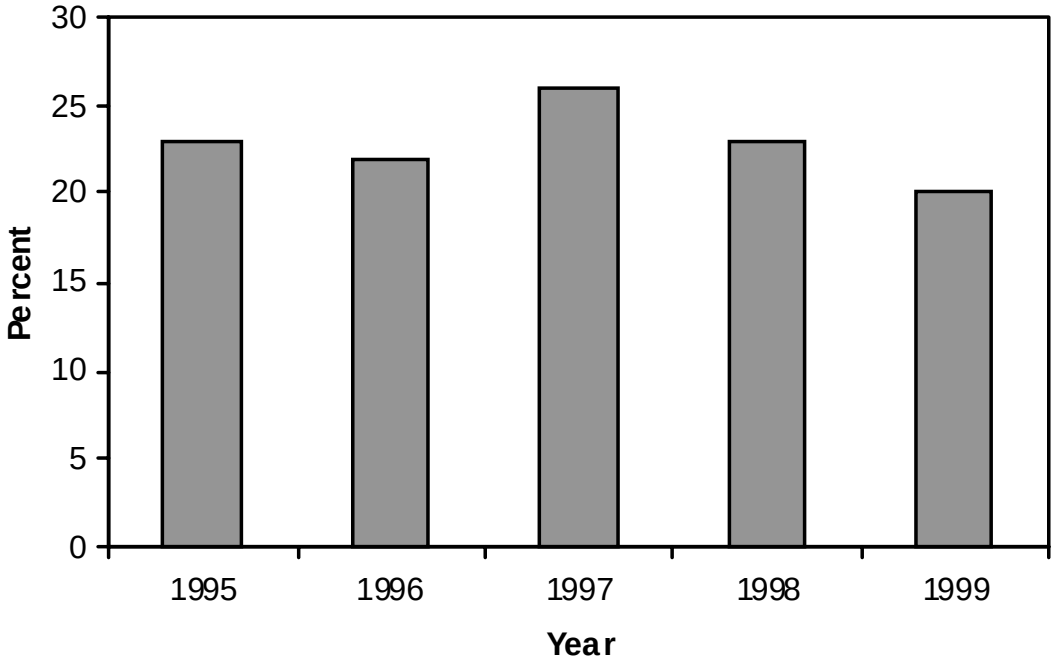
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	743	170	(22.9)
1996	804	174	(21.6)
1997	630	162	(25.7)
1998	657	151	(23.0)
1999	595	120	(20.2)

* 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, 1995-1999



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 1999. 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 1999. 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, 115 people age 16-19 were killed in motor vehicle crashes in Ontario during 1999. And, in 103 of these cases (89.6%) 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, 33 people age 16-19 died in alcohol-related crashes in Ontario during 1999. The next column expresses this as a percentage – e.g., 32.0% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 10.4% of all the people killed in alcohol-related crashes in Ontario during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 1,064 persons died in motor vehicle crashes in Ontario during 1999. In 919 (86.4%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 316 (34.4%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (1064 x .344) it can be estimated that *in Ontario during 1999, 366 persons died in alcohol-related crashes*.

Table 8-1
Deaths* in Alcohol-Related Crashes: Ontario, 1999

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	58	93.5	15	25.9	4.7
16-19	115	103	89.6	33	32.0	10.4
20-25	150	132	88.0	64	48.5	20.3
26-35	155	138	89.0	68	49.3	21.5
36-45	144	129	89.6	68	52.7	21.5
46-55	132	116	87.9	33	28.4	10.4
>55	306	243	79.4	35	14.4	11.1
Gender						
Male	745	646	86.7	259	40.1	82.0
Female	319	273	85.6	57	20.9	18.0
Type						
Driver/Operator	648	573	88.4	196	34.2	62.0
Passenger	252	211	83.7	73	34.6	23.1
Pedestrian	164	135	82.3	47	34.8	14.9
Vehicle Occupied						
Automobiles	596	525	88.1	181	34.5	57.3
Trucks/Vans	156	139	89.1	51	36.7	16.1
Motorcycles	44	41	93.2	15	36.6	4.7
Other Hwy. Vehs.	16	15	93.8	3	20.0	0.9
Offroad Vehicles	72	60	83.3	33	55.0	10.4
(Pedestrians)	164	136	82.9	47	34.6	14.9
Unknown	16	3	18.8	1	0.0	0.0
TOTAL	1064	919	86.4	316	34.4	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, 21.5% (see last column) were aged 26-35 and 36-45; and 20.3% were 20-25.

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 14.4% of persons over 55 and 25.9% of the fatalities under 16 years of age died in crashes involving alcohol.

8.1.2 Gender. Of all the people who died in alcohol-related crashes, 82.0% were males. The incidence of alcohol in crashes in which a male died (40.1%) was about twice as great as the incidence of alcohol in crashes in which a female died (20.9%).

8.1.3 Victim type. Of all the people who died in alcohol-related crashes, 62.0% were drivers/operators of a vehicle; 23.1% were passengers; and 14.9% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (34.8%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 34.6% of the crashes in which a passenger died and 34.2% of those in which a driver/operator died.

8.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, over half (52.5%) were in an automobile; 16.1% were in a truck/van; and 10.4% were in off-road vehicles (e.g., bicycle, snowmobile, all-terrain vehicle).

Within each of these vehicle types, the incidence of alcohol involvement in which a person on an off-road vehicle died was 55.9% compared to 36.7% for truck/van occupants, 36.6% for motorcycle occupants and 31.6% for automobile occupants.

8.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Ontario during 1999. 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 45 drivers killed during 1999; 40 of these fatally injured drivers (88.9%) were tested for alcohol. Of those who were tested, six (15.0%) were positive for alcohol. This means that 16-19 year old fatally injured drinking drivers accounted for 4.3% of all drinking drivers who were killed.

Table 8-2
Alcohol Use Among Fatally Injured Drivers: Ontario, 1999

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	45	40	88.9	6	15.0	4.3	5	12.5	4.5
20-25	91	83	91.2	32	38.6	23.0	27	32.5	24.1
26-35	97	87	89.7	42	48.3	30.2	34	39.1	30.4
36-45	84	73	86.9	29	39.7	20.9	23	31.5	20.5
46-55	83	68	81.9	14	20.6	10.1	11	16.2	9.8
>55	168	122	72.6	16	13.1	11.5	12	9.8	10.7
Gender									
Male	449	385	85.7	124	32.2	89.2	102	26.5	91.1
Female	119	88	73.9	15	17.0	10.8	10	11.4	8.9
Vehicle Type									
Automobile	392	323	82.4	87	26.9	62.6	71	22.0	63.4
Trucks/Van	119	102	85.7	37	36.3	26.6	30	29.4	26.8
Motorcycle	42	38	90.5	13	34.2	9.4	10	26.3	8.9
Tractor Trailer	13	10	76.9	2	20.0	1.4	1	10.0	0.9
Other	2	0	0.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	234	195	83.3	88	45.1	63.3	75	38.5	67.0
Multiple-Vehicle	333	278	83.5	51	18.3	36.7	37	13.3	33.0
Unknown	1	0	0.0	0	0.0	0.0	0	0.0	0.0
TOTAL	568	473	83.3	139	29.4	100.0	112	23.7	100.0

Then, in the final three columns, it can be seen that five of the 40 (12.5%) fatally injured 16-19 year olds who were tested for alcohol had BACs in excess of 80 mg%. This means that five of the six drivers who were positive for alcohol had BACs in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 16-19 year old drivers accounted for 4.5% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Ontario had a high testing rate in 1999, with 83.3% of fatally injured drivers being tested for alcohol use.

In Ontario, 29.4% had been drinking and most of these had illegal BACs – 80.6% 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:

- 2.8% had BACs from 1-49 mg%;
- 3.0% had BACs from 50-80 mg%
- 6.1% had BACs from 81 to 150 mg%; and,
- 17.5% had BACs over 150 mg%.

***8.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 30.2% were aged 26-35 and 23.0% were aged 20-25; 20.9% were aged 36-45; 11.5% were over age 55; and 10.1% were aged 46-55. Those aged 16-19 accounted for only 4.3% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 30.4% were aged 26-35; 24.1% were aged 20-25; 20.5% were aged 36-45; 10.7% were over age 55; and 9.8% were aged 46-55. Those aged 16-19 accounted for only 4.5% of 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 – 48.3% of drivers in this age group had been drinking. By contrast, only 13.1% of tested drivers over age 55 had been drinking.

8.2.2 Gender differences. Males dominate the picture – they account for 89.2% of all the fatally injured drivers who had been drinking, and 91.1% 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 (449 of the 568 fatalities are males). Fatally injured male drivers were about twice as likely to have been drinking than female drivers (32.2% and 17.0%, respectively). And, 82.3% of the male drivers and 66.7% 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), 62.6% were automobile drivers; 26.6% were truck/van drivers; 9.4% were motorcycle riders; and only 1.4% were tractor-trailer drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 63.4% were automobile drivers; 26.8% were truck/van drivers; 8.9% were motorcycle riders; and only 0.9% were tractor-trailer drivers.

Within each of the vehicle types, 36.3% of fatally injured drivers of truck/vans, 34.2% of motorcyclists, 26.9% of automobile drivers and 20.0% 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 (234 of the 568) were involved in single-vehicle collisions but these crashes accounted for over half of the drivers who had been drinking or were legally impaired (63.3% and 67.0%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Nearly half of the drivers involved in single-vehicle crashes (45.1%) were positive for alcohol, compared to only 18.3% 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 1999 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

Table 8-3
Drivers in Alcohol-Related Serious Injury Crashes:
Ontario, 1999

Category of Drivers	Number of Drivers	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	50	5	10.0	0.4
16-19	470	127	27.0	11.4
20-25	854	219	25.6	19.7
26-35	1242	277	22.3	24.9
36-45	1222	261	21.4	23.5
46-55	804	124	15.4	11.1
>55	864	63	7.3	5.7
unknown	186	37	19.9	3.3
Gender				
Male	4113	902	21.9	81.0
Female	1533	199	13.0	17.9
unknown	46	12	26.1	1.1
Vehicle Type				
Auto	3508	710	20.2	63.8
Truck/Van	1483	310	20.9	27.9
Motorcycle	228	39	17.1	3.5
Tractor Trailer	199	16	8.0	1.4
Other Hwy. Vehicle	68	13	19.1	1.2
Off-Road	177	22	12.4	2.0
Unknown	29	3	10.3	0.3
Collision Type				
Single-Vehicle	1418	611	43.1	54.9
Multiple-Vehicle	4274	502	11.7	45.1
TOTAL	5692	1113	19.6	100.0

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, 5,692 drivers were involved in crashes in which someone was seriously injured, and among these 19.6% were alcohol-related crashes.

8.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 24.9% were aged 26-35; 23.5% were aged 36-45; and 19.7% were aged 20-25. Drivers under 16 accounted for only 0.4% of those involved in alcohol-related serious injury crashes.

Within each of the age groups, 27.0% of drivers age 16-19 and 25.6% of drivers age 20-25 were involved in alcohol-related serious injury crashes. The lowest incidence of involvement in alcohol-related serious injury crashes was found for the oldest age group of drivers – those aged over 55 (7.3%).

8.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 81.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (21.9% and 13.0%, respectively).

8.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 63.8% were automobile drivers; and 27.9% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for truck/van drivers (20.9%); compared to 20.2% for automobile drivers, 19.1% for drivers of other highway vehicles and 17.1 of motorcyclists. Only 8.0% of tractor trailer drivers 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, 54.9% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 43.1% of these drivers, compared to only 10.6% for drivers involved in multiple-vehicle crashes.

8.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three indicators of the alcohol-crash problem: the number and percent of people who died in crashes that involved alcohol; the number and percent of fatally

injured drivers who had been drinking; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem.

8.4.1 Deaths in alcohol-related crashes: 1995-1999. 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 1999. 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, 1995-1999

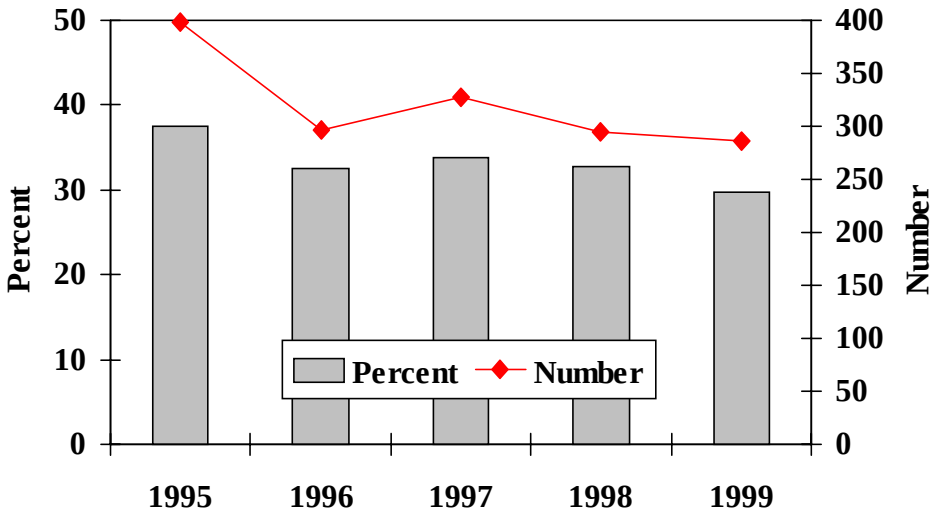
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	1059	398	37.6
1996	915	297	32.5
1997	969	328	33.8
1998	900	295	32.8
1999	966	287	29.7

* 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 decrease to 287 alcohol-related fatalities in 1999. 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 before dropping to 29.7% in 1999.

Figure 8-1
Number and Percent of Deaths Involving a Drinking Driver: Ontario, 1995-1999



8.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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 1990 (33.3%), increased to 38.1% in 1992, and then decreased to 23.3% in 1999. The percent of fatally injured drivers with zero BAC increased from 1987 (53.0%) to 1997 (65.0%), dropped slightly in 1998 (64.4%), and reached its highest level in 1999 (71.3%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (12.5%), and dropped to its lowest mark in 1999 (5.4%).

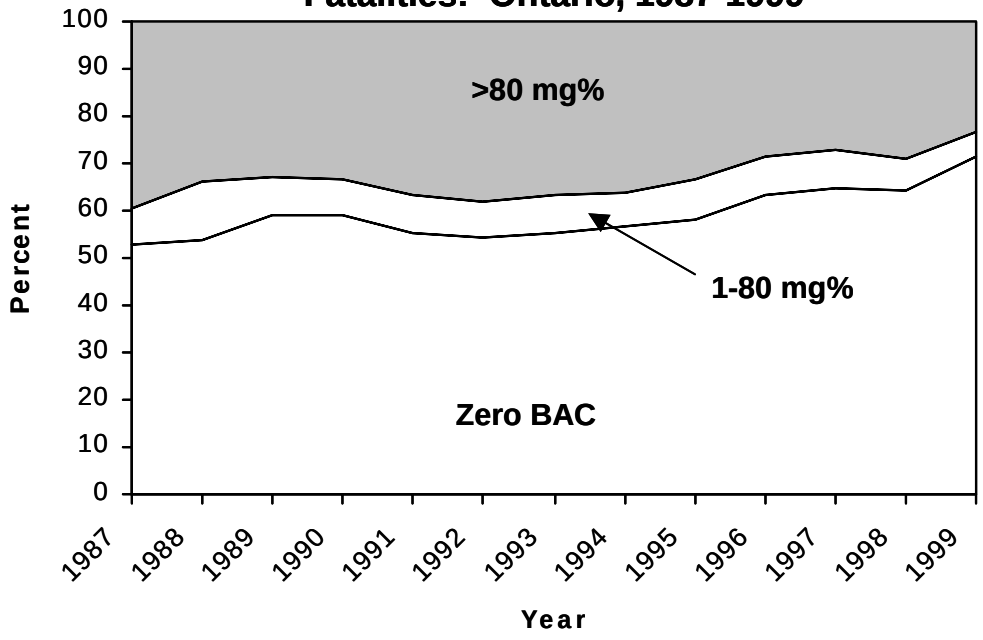
Table 8-5

Alcohol Use Among Fatally Injured Drivers:
Ontario, 1987-1999

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

* dying in less than six hours.

Figure 8-2
Trends in Alcohol Use Among Driver Fatalities: Ontario, 1987-1999



8.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious crashes has declined slightly over this five 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 before rising slightly to 19.8% in 1999.

Table 8-6

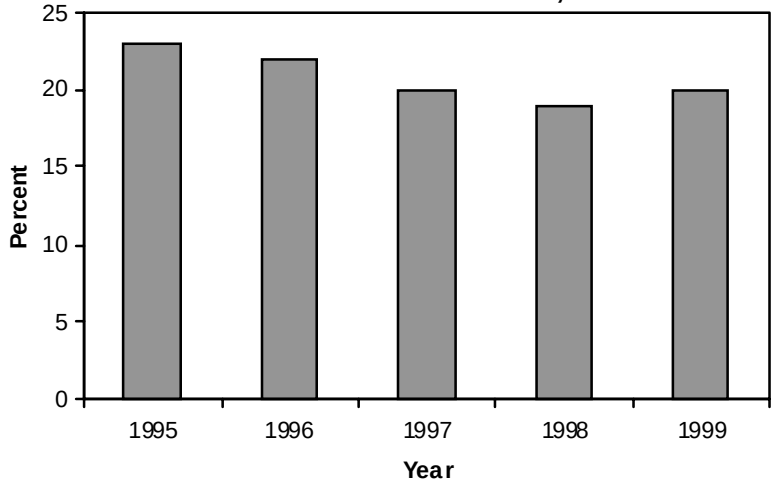
Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Ontario, 1995-1999

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)

* 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, 1995-1999



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 1999. 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 1999. 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, 101 people age 16-19 were killed in motor vehicle crashes in Quebec during 1999. And, in 94 of these cases (93.1%) 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, 26 people age 16-19 died in alcohol-related crashes in Quebec during 1999. The next column expresses this as a percentage – e.g., 27.7% 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 14.0% of all the people killed in alcohol-related crashes in Quebec during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 817 persons died in motor vehicle crashes in Quebec during 1999. In 755 (92.4%) of these cases, it was possible to

determine if alcohol was a factor. Of these known cases, 186 (24.6%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (817 x .246) it can be estimated that *in Quebec during 1999, 201 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, 1999

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	51	45	88.2	7	15.6	3.8
16-19	101	94	93.1	26	27.7	14.0
20-25	116	109	94.0	36	33.0	19.4
26-35	118	111	94.1	36	32.4	19.4
36-45	126	116	92.1	36	31.0	19.4
46-55	91	81	89.0	21	25.9	11.3
>55	213	198	93.0	23	11.6	12.4
Unknown	1	1	100.0	1	100.0	0.5
Gender						
Male	552	508	92.0	144	28.3	77.4
Female	265	247	93.2	42	17.0	22.6
Type						
Driver/Operator	518	488	94.2	128	26.2	68.8
Passenger	181	162	89.5	36	22.2	19.4
Pedestrian	117	105	89.7	22	21.0	11.8
Unknown	1	0	0.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	477	444	93.1	112	25.2	60.2
Trucks/Vans	73	71	97.3	19	26.8	10.2
Motorcycles	64	60	93.8	16	26.7	8.6
Other Hwy. Vehs.	9	9	100.0	0	0.0	0.0
Offroad Vehicles	77	66	85.7	17	25.8	9.1
(Pedestrians)	117	105	89.7	22	21.0	11.8
TOTAL	817	755	92.4	186	24.6	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 20-25, 26-35 and 36-45 each accounted for 19.4% (see last column).

Within each of the age groups, the highest incidence of alcohol involvement (33.0%) occurred in the crashes in which a person aged 20-25 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – only 11.6% of persons over 55 and 15.6% 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, 77.4% were males. The incidence of alcohol in crashes in which a male died (28.3%) was greater than the incidence of alcohol in crashes in which a female died (17.0%).

9.1.3 Victim type. Of all the people who died in alcohol-related crashes, 68.8% were drivers/operators of a vehicle; 19.4% were passengers; and 11.8% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (26.2%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 22.2% of the crashes in which a passenger died and 21.0% of those in which a pedestrian died.

9.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, more than half (60.2%) were in an automobile; 10.2% were in a truck/van.

Within each of these vehicle types, the incidence of alcohol involvement was similar in crashes in which a truck/van occupant, a motorcyclist, an off-road vehicle occupant, and an automobile occupant died (26.8%, 26.7%, 25.8% and 25.2%, 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 1999. 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, 1999

Category of Driver	Number of Drivers	Drivers Tested		Positive BAC			BAC > 80 mg%		
		Number	% of total	Number	% of tested	% of all drivers with +BAC	Number	% of tested	% of all drivers with BAC >80 mg%
Age									
<16	1	1	100.0	0	0.0	0.0	0	0.0	0.0
16-19	51	38	74.5	11	28.9	11.5	6	15.8	8.0
20-25	73	59	80.8	19	32.2	19.8	15	25.4	20.0
26-35	77	63	81.8	23	36.5	24.0	17	27.0	22.7
36-45	77	57	74.0	19	33.3	19.8	17	29.8	22.7
46-55	57	50	87.7	13	26.0	13.5	9	18.0	12.0
>55	114	69	60.5	11	15.9	11.5	11	15.9	14.7
Gender									
Male	345	268	77.7	82	30.6	85.4	64	23.9	85.3
Female	105	69	65.7	14	20.3	14.6	11	15.9	14.7
Vehicle Type									
Automobile	340	252	74.1	74	29.4	77.1	59	23.4	78.7
Trucks/Van	50	37	74.0	12	32.4	12.5	11	29.7	14.7
Motorcycle	53	41	77.4	10	24.4	10.4	5	12.2	6.7
Tractor Trailer	7	7	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	184	136	73.9	63	46.3	65.6	52	38.2	69.3
Multiple-Vehicle	266	201	75.6	33	16.4	34.4	23	11.4	30.7
TOTAL	450	337	74.9	96	28.5	100.0	75	22.3	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 51 drivers killed during 1999; 38 of these fatally injured drivers (74.5%) were tested for alcohol. Of those who were tested, 11 (28.9%) were positive for alcohol. This means that 16-19 year olds fatally injured drinking drivers accounted for 11.5% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that six of the 38 (15.8%) 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 8.0% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Quebec had a low testing rate in 1999, with 74.9% of fatally injured drivers being tested for alcohol use.

In Quebec, 28.5% had been drinking and most of these had illegal BACs – 78.1% 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:

- 2.4% had BACs from 1-49 mg%;
- 3.9% had BACs from 50-80 mg%
- 6.8% had BACs from 81 to 150 mg%; and,
- 15.4% had BACs over 150 mg%.

***9.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 24.0% were aged 26-35; 19.8% were aged 20-25 and 36-45; and 13.5% were aged 46-55. Those aged 16-19 and over 55 each accounted for only 11.5% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 22.7% were aged 26-35 and 36-45; 20.0% were age 20-25; 14.7% were over 55; and 12.0% were age 46-55. Those aged 16-19 accounted for only 8.0% of 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 – 36.5% of drivers in this age group had been drinking. By contrast, only 15.9% of tested drivers over age 55 had been drinking.

9.2.2 Gender differences. Males dominate the picture – they account for 85.4% of all the fatally injured drivers who had been drinking, and 85.3% 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 (345 of the 450 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 (30.6% and 20.3%, respectively). And, 78.0% of the male and 78.6% 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), 77.1% were automobile drivers; 12.5% were truck/van drivers; and only 10.4% were motorcycle riders.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 78.7% were automobile drivers; 14.7% were truck/van drivers; and only 6.7% were motorcycle riders.

Within each of the vehicle types, 32.4% of fatally injured truck/van drivers, 29.4% of automobile drivers and 24.4% of motorcyclists were found to have been drinking. The seven tractor-trailer drivers showed no evidence of alcohol.

9.2.4 Collision differences. Only about two out of five of the drivers killed (184 of the 450) were involved in single-vehicle collisions but these crashes accounted for over half of the drivers who had been drinking or were legally impaired (65.6% and 69.3%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Almost three times as many drivers involved in single-vehicle crashes (46.3%) were positive for alcohol than those involved in multiple-vehicle collisions (16.4%).

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 1999 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, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	156	11	7.1	1.2
16-19	507	112	22.1	12.4
20-25	862	209	24.2	23.1
26-35	1058	184	17.4	20.4
36-45	1035	135	13.0	15.0
46-55	690	80	11.6	8.9
>55	699	52	7.4	5.8
unknown	1717	120	7.0	13.3
Gender				
Male	4632	691	14.9	76.5
Female	1899	183	9.6	20.3
unknown	193	29	15.0	3.2
Vehicle Type				
Auto	4172	603	14.5	66.8
Truck/Van	1255	164	13.1	18.2
Motorcycle	391	44	11.3	4.9
Tractor Trailer	210	15	7.1	1.7
Other Hwy. Vehicle	70	5	7.1	0.6
Off-Road	515	61	11.8	6.8
Unknown	111	11	9.9	1.2
Collision Type				
Single-Vehicle	1934	660	34.1	73.1
Multiple-Vehicle	4790	243	5.1	26.9
TOTAL	6724	903	13.4	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, 6,724 drivers were involved in crashes in which someone was seriously injured, and among these 13.4% were alcohol-related crashes.

9.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 23.1% were aged 20-25; 20.4% were aged 26-35; and 15.0% were aged 36-45. Drivers under 16 accounted for only 1.2% 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 (24.2%, 22.1% and 17.4%, respectively). The lowest incidence of involvement in alcohol-related serious injury crashes was found for the youngest age group of drivers – those aged under 16 (7.1%).

9.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 76.5% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (14.9% and 9.6%, respectively).

9.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 66.8% were automobile drivers; and 18.2% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 14.5% of automobile drivers were in crashes that involved alcohol, compared to 13.1% for truck/van drivers, 11.8% for off-road vehicle drivers, and 11.3% for motorcyclists. Only 7.1% of tractor trailer drivers and 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, 73.1% 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 – 34.1% 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: 1995-1999. 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 1999. 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. 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 9-4

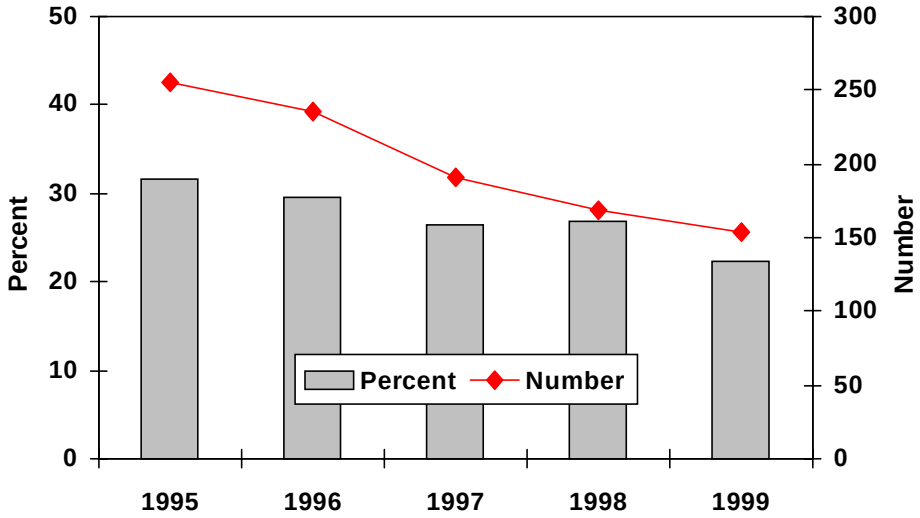
Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Quebec, 1995-1999

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

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

** only on public roadways involving principal vehicle types.

Figure 9-1
Number and Percent of Deaths Involving a Drinking Driver: Quebec, 1995-1999



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. 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% before dropping to 22.3% in 1999.

9.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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).

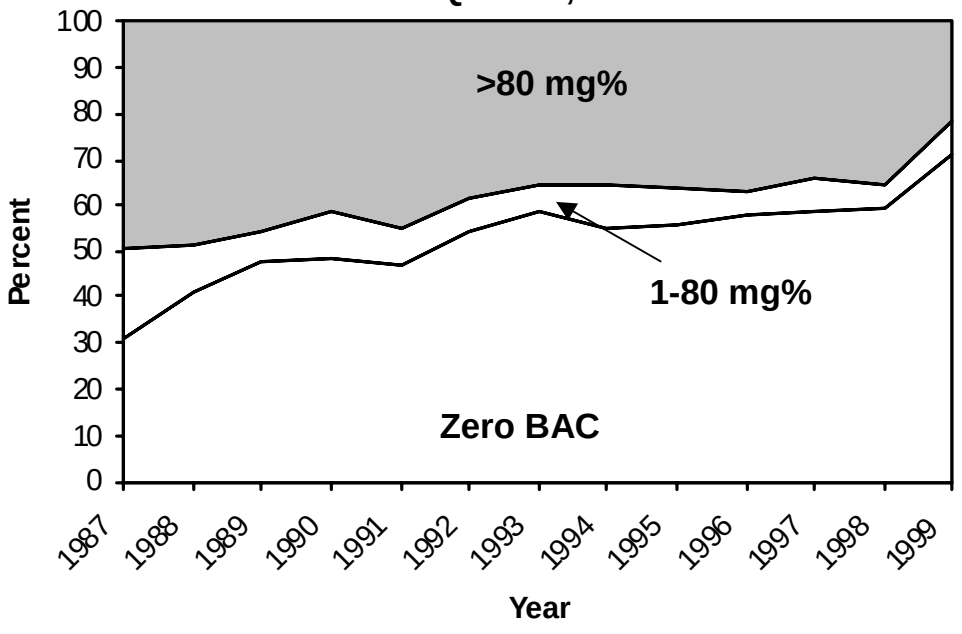
As can be seen, the percent of fatally injured drivers with BACs over the legal limit generally declined from 1987 (49.5%) to 1999 (22.3%). The percent of fatally injured drivers with zero BAC increased from 1987 (30.9%) to 1993 (58.9%), remained relatively stable until 1998 and reached its highest level in 1999 (71.5%). The percent of fatally injured drivers with BACs between 1 and 80 mg% decreased from 1987 (19.6%) to its lowest mark in 1998 (5.4%) before rising to 6.2% in 1999.

Table 9-5

Alcohol Use Among Fatally Injured Drivers:
Quebec, 1987-1999

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

Figure 9-2
Trends in Alcohol Use Among Driver Fatalities: Quebec, 1987-1999



9.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

Table 9-6

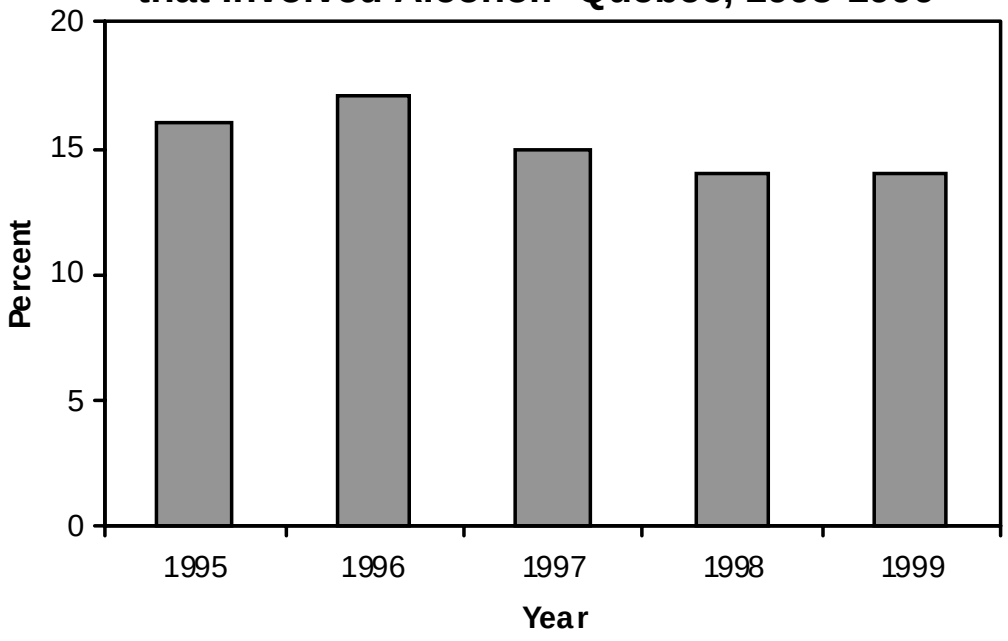
Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Quebec, 1995-1999

Year	Number of Drivers	Alcohol Related Number	(Pct.)
1995	6703	1074	(16.0)
1996	6657	1109	(16.7)
1997	6681	974	(14.6)
1998	6681	921	(13.8)
1999	6098	831	(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, 1995-1999



As can be seen, the incidence of alcohol-involvement in serious injury crashes has declined over this five year period. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol rose only slightly from 16.0% to 16.7%. The incidence steadily dropped to 13.6% in 1999.

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 1999. 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 1999. 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 1999. 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, six people aged 16-19 died in alcohol-related crashes in New Brunswick during 1999. 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 17.6% of all the people killed in alcohol-related crashes in New Brunswick during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 115 persons died in motor vehicle crashes in New Brunswick during 1999. In 112 (97.4%) of these cases, it was

possible to determine if alcohol was a factor. Of these known cases, 34 (30.4%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (115 x .304) it can be estimated that in New Brunswick *in 1999, 35 persons died in alcohol-related crashes.*

Table 10-1
Deaths* in Alcohol-Related Crashes: New Brunswick, 1999

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	12	12	100.0	1	8.3	2.9
16-19	12	12	100.0	6	50.0	17.6
20-25	10	10	100.0	5	50.0	14.7
26-35	26	26	100.0	13	50.0	38.2
36-45	19	18	94.7	4	22.2	11.8
46-55	8	8	100.0	3	37.5	8.8
>55	28	26	92.9	2	7.7	5.9
Gender						
Male	92	90	97.8	28	31.1	82.4
Female	23	22	95.7	6	27.3	17.6
Type						
Driver/Operator	70	69	98.6	18	26.1	52.9
Passenger	30	30	100.0	13	43.3	38.2
Pedestrian	15	13	86.7	3	23.1	8.8
Vehicle Occupied						
Automobiles	51	51	100.0	19	37.3	55.9
Trucks/Vans	25	25	100.0	7	28.0	20.6
Motorcycles	11	11	100.0	4	36.4	11.8
Other Hwy. Vehs.	4	4	100.0	0	0.0	0.0
Offroad Vehicles	9	8	88.9	1	12.5	2.9
(Pedestrians)	15	13	86.7	3	23.1	8.8
TOTAL	115	112	97.4	34	30.4	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, 38.2% (see last column) were aged 26-35; 17.6% were aged 16-19; and 14.7% were 20-25.

Within each of the age groups, the highest incidence of alcohol involvement (50.0%) occurred in the crashes in which persons aged 16-19, 20-25 and 26-35 died. The lowest incidence of

alcohol involvement was found among the youngest and oldest fatalities – only 7.7% of persons over 55 and 8.3% of the fatalities under 16 years of age died in crashes involving alcohol.

10.1.2 Gender. Of all the people who died in alcohol-related crashes, 82.4% were males. The incidence of alcohol in crashes in which a male died (31.1%) was greater than the incidence of alcohol in crashes in which a female died (27.3%).

10.1.3 Victim type. Of all the people who died in alcohol-related crashes, 52.9% were drivers/operators of a vehicle; 38.2% were passengers; and 8.8% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (43.3%) occurred in the crashes in which a passenger died. Alcohol was involved in 26.1% of the crashes in which a driver/operator died and 23.1% of those in which a pedestrian died.

10.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, (55.9%) were in an automobile; 20.6% were in a truck or 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 (37.3% versus 28.0%). Among motorcycle occupants, 36.4% 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 1999. 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, 1999

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	5	3	60.0	2	66.7	11.8	2	66.7	13.3
20-25	8	8	100.0	4	50.0	23.5	4	50.0	26.7
26-35	17	14	82.4	8	57.1	47.1	6	42.9	40.0
36-45	13	11	84.6	1	9.1	5.9	1	9.1	6.7
46-55	4	3	75.0	0	0.0	0.0	0	0.0	0.0
>55	13	10	76.9	2	20.0	11.8	2	20.0	13.3
Gender									
Male	54	45	83.3	17	37.8	100.0	15	33.3	100.0
Female	6	4	66.7	0	0.0	0.0	0	0.0	0.0
Vehicle Type									
Automobile	34	29	85.3	10	34.5	58.8	9	31.0	60.0
Trucks/Van	15	11	73.3	4	36.4	23.5	3	27.3	20.0
Motorcycle	8	7	87.5	3	42.9	17.6	3	42.9	20.0
Tractor Trailer	3	2	66.7	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	25	20	80.0	11	55.0	64.7	10	50.0	66.7
Multiple-Vehicle	35	29	82.9	6	20.7	35.3	5	17.2	33.3
TOTAL	60	49	81.7	17	34.7	100.0	15	30.6	100.0

To illustrate, among those under 20 years of age, there were five drivers killed during 1999; three of these fatally injured drivers (60.0%) were tested for alcohol. Of those who were tested, two (66.7%) were positive for alcohol. This means that fatally injured drivers under 20 years of age accounted for 11.8% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that two of the three (66.7%) fatally injured drivers under 20 who were tested for alcohol had BACs in excess of 80 mg%. This means that 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, drivers under 20 accounted for 13.3% 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 high testing rate in 1999, with 81.7% of fatally injured drivers being tested for alcohol use.

In New Brunswick, 34.7% had been drinking and most of these had illegal BACs – 88.2% 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:

- 2.0% had BACs from 1-49 mg%;
- 2.0% had BACs from 50-80 mg%
- 10.2% had BACs from 81 to 150 mg%; and,
- 20.5% had BACs over 150 mg%.

***10.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 47.1% were aged 26-35; 23.5% were aged 20-25; 11.8% were aged under 20 and over 55; and 5.9% were aged 36-45.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 40.0% were aged 26-35; 26.7% were aged 20-25; 13.3% were aged <20 and over 55; and 6.7% were aged 36-45.

Within each of the age groups, fatally injured drivers aged 26-35 were the most likely to have been drinking – 57.1% of drivers in this age group had been drinking. By contrast, none of the tested drivers aged 46-55 had been drinking.

10.2.2 Gender differences. Males dominate the picture – they account for 100.0% of the fatally injured drivers who had been drinking, and consequently, 100.0% 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 (54 of the 60 fatalities are males). Fatally injured male drivers were much more likely to have been drinking than female drivers (37.8% and 0.0%, respectively). Most of the male (88.2%) drivers who were drinking had BACs over the legal limit.

***10.2.3 Vehicle differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 58.8% were automobile drivers; 23.5% were truck/van drivers; and 17.6% were motorcycle riders.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 60.0% were automobile drivers; truck/van drivers and motorcycle riders each accounted for 20.0%.

Within each of the vehicle types, 42.9% of fatally injured motorcycle riders were found to have been drinking, compared to 36.4% of truck/van drivers and 34.5% of automobile drivers.

10.2.4 Collision differences. Only two out of five drivers killed (25 of the 60) were involved in single-vehicle collisions but these crashes accounted for a majority of the drivers who had been drinking or were legally impaired (64.7% and 66.7%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over half of the drivers involved in single-vehicle crashes (55.0%) were positive for alcohol, compared to only 20.7% 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 1999 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, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	6	0	0.0	0.0
16-19	61	20	32.8	15.9
20-25	80	25	31.3	19.8
26-35	96	23	24.0	18.3
36-45	104	25	24.0	19.8
46-55	83	20	24.1	15.9
>55	71	8	11.3	6.3
unknown	26	5	19.2	4.0
Gender				
Male	370	106	28.6	84.1
Female	133	16	12.0	12.7
Unknown	24	4	16.7	3.2
Vehicle Type				
Auto	294	71	24.1	56.3
Truck/Van	148	39	26.4	31.0
Motorcycle	39	8	20.5	6.3
Tractor Trailer	28	6	21.4	4.8
Other Hwy. Vehicle	3	0	0.0	0.0
Off-Road	15	2	13.3	1.6
Collision Type				
Single-Vehicle	217	94	43.3	74.6
Multiple-Vehicle	310	32	10.3	25.4
TOTAL	527	126	23.9	100.0

As shown, by the totals at the bottom of the table, 527 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, 19.8% were aged 20-25 and 36-45; 18.3% were aged 26-35; and 15.9% were aged 16-19 and

46-55. Drivers over 55 years of age accounted for only 6.3% 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 (32.8% and 31.3%, respectively). The lowest incidence of involvement in alcohol-related crashes was found for the oldest age group of drivers – those aged over 55 (11.3%).

10.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 84.1% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (28.6% and 12.0%, respectively).

10.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 56.3% were automobile drivers; and 31.0% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found among truck/van drivers – 26.4% of truck/van drivers were in crashes that involved alcohol, compared to 24.1% for automobile drivers, 21.4% for tractor-trailer drivers, and 20.5% for motorcyclists. Only 13.3% of off-road vehicle drivers were involved in alcohol-related crashes.

10.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 74.6% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 43.3% of these drivers, compared to only 10.3% 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: 1995-1998. 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 1999. 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, 1995-1999

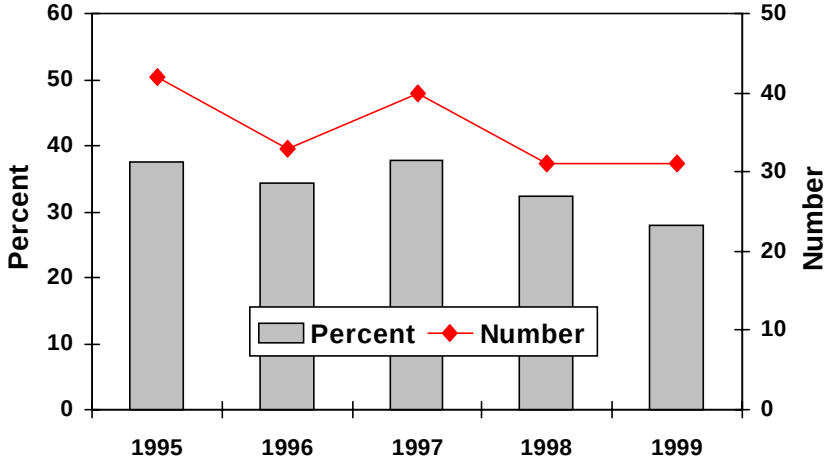
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	112	42	37.5
1996	96	33	34.4
1997	106	40	37.7
1998	96	31	32.3
1999	111	31	27.9

* 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, 1995-1999



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, and decreased to 31 in 1998 and 1999. 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 rose to 37.7% and then declined to its lowest level in 1999 (27.9%).

10.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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

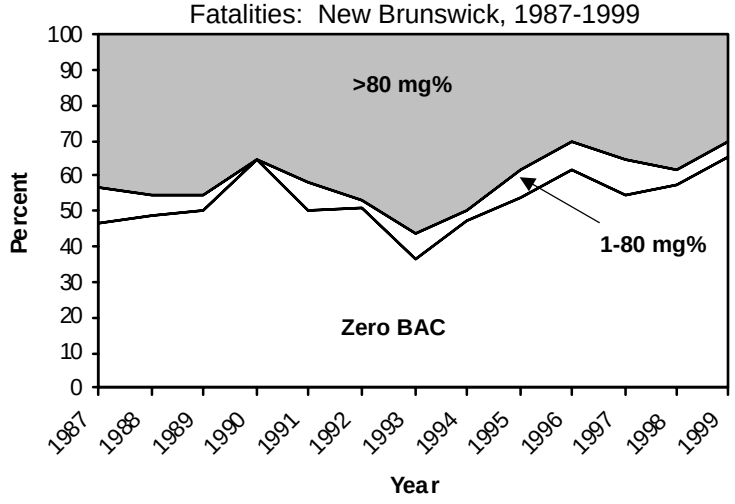
Table 10-5

Alcohol Use Among Fatally Injured Drivers:
New Brunswick, 1987-1999

	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

*dying in less than six hours.

Figure 10-2
Trends in Alcohol Use Among Driver Fatalities: New Brunswick, 1987-1999



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, reaching its peak in 1993 (56.0%), its low mark in 1996 (30.6%), increasing to 38.3% in 1998 before returning to 30.6% in 1999. The percent of fatally injured drivers with zero BAC increased from 1987 (46.8%) to 1990 (64.9%), declined in 1993 (36.0%), and has gradually increased to its highest mark in 1999 (65.3%). The percent of fatally injured drivers with BACs between 1 and 80 mg% declined until 1990 (0.0%), peaked in 1997 (9.8%), and then declined to 4.1% in 1999.

10.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

Table 10-6

Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: New Brunswick, 1995-1999

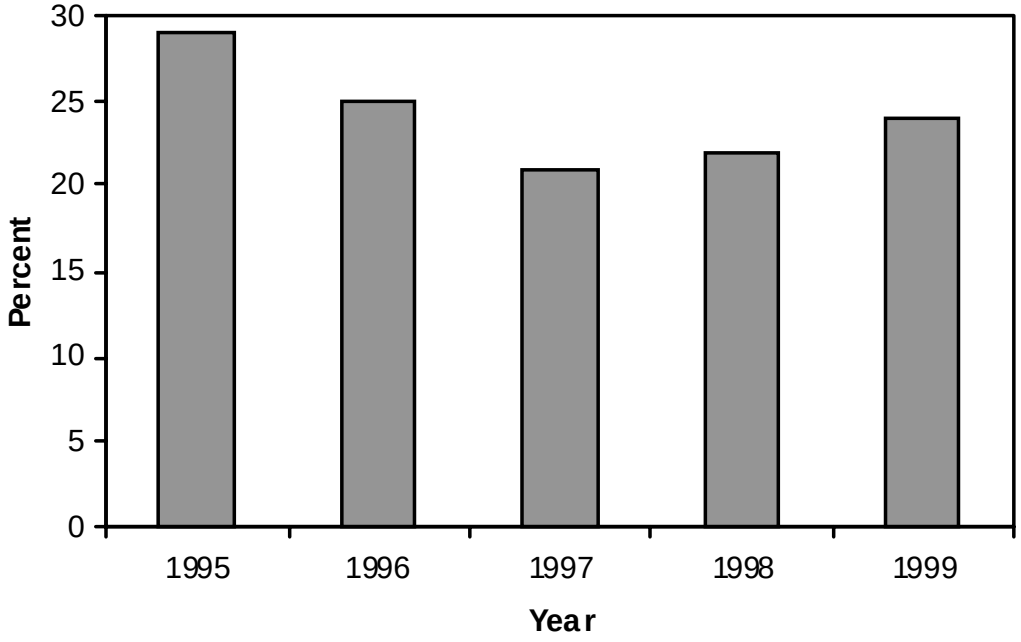
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	681	199	(29.2)
1996	593	146	(24.6)
1997	561	118	(21.0)
1998	542	121	(22.3)
1999	512	124	(24.2)

* 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

As can be seen, the incidence of alcohol-involvement in serious crashes has declined. 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 has increased to 24.2% in 1999.

Figure 10-3
Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: New Brunswick, 1995-1999



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 1999. 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 1999. Motor vehicle deaths are categorized in terms of the victim's age, gender, type (i.e., driver, passenger, pedestrian) and the type of vehicle they occupied. The first data column in the table presents the number of deaths. The next two columns show the number and percent of these fatalities in which sufficient information was available to determine if alcohol was involved. *A motor vehicle fatality was considered to be alcohol involved if there was at least one drinking driver or drinking pedestrian in the fatal crash*. For example, 11 people age 16-19 were killed in motor vehicle crashes in Nova Scotia during 1999. 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 people age 16-19 died in alcohol-related crashes in Nova Scotia during 1999. The next column expresses this as a percentage – e.g., 27.3% of the 16-19 year olds who were killed died in an alcohol-related crash.

The final column (percent of all alcohol-related deaths) expresses the number of deaths in alcohol-related crashes as a percent of all the deaths in such crashes. For example, the alcohol-related deaths among 16-19 year olds represent 10.0% of all the people killed in alcohol-related crashes in Nova Scotia during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 99 persons died in motor vehicle crashes in Nova Scotia during 1999. In 97 (98.0%) of these cases, it was possible

to determine if alcohol was a factor. Of these known cases, 30 (30.9%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (99 x .309) it can be estimated that *in Nova Scotia during 1999, 31 persons died in alcohol-related crashes*.

Table 11-1
Deaths* in Alcohol-Related Crashes: Nova Scotia, 1999

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	8	8	100.0	0	0.0	0.0
16-19	11	11	100.0	3	27.3	10.0
20-25	19	19	100.0	8	42.1	26.7
26-35	16	16	100.0	8	50.0	26.7
36-45	12	12	100.0	4	33.3	13.3
46-55	5	5	100.0	3	60.0	10.0
>55	28	26	92.9	4	15.4	13.3
Gender						
Male	72	70	97.2	24	34.3	80.0
Female	27	27	100.0	6	22.2	20.0
Type						
Driver/Operator	66	66	100.0	20	30.3	66.7
Passenger	19	19	100.0	5	26.3	16.7
Pedestrian	14	12	85.7	5	41.7	16.7
Vehicle Occupied						
Automobiles	52	52	100.0	18	34.6	60.0
Trucks/Vans	18	18	100.0	4	22.2	13.3
Motorcycles	7	7	100.0	2	28.6	6.7
Other Hwy. Vehs.	2	2	100.0	0	0.0	0.0
Offroad Vehicles	6	6	100.0	1	16.7	3.3
(Pedestrians)	14	12	85.7	5	41.7	16.7
TOTAL	99	97	98.0	30	30.9	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 20-25 and 26-35 each accounted for 26.7% (see last column).

Within each of the age groups, the highest incidence of alcohol involvement (60.0%) occurred in the crashes in which a person aged 46-55 died. The lowest incidence of alcohol involvement was found among the youngest and oldest fatalities – none of the persons under 16 and only 15.4% of the fatalities over 55 years of age died in crashes involving alcohol.

11.1.2 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 (34.3%) was greater than the incidence of alcohol in crashes in which a female died (22.2%).

11.1.3 Victim type. Of all the people who died in alcohol-related crashes, 66.7% were drivers/operators of a vehicle; passengers and pedestrians each accounted for 16.7%.

Within each of these victim types, the highest incidence of alcohol involvement (41.7%) occurred in the crashes in which a pedestrian died. Alcohol was involved in 30.3% of the crashes in which a driver/operator died and 26.3% of those in which a passenger died.

11.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, three-fifths (60.0%) were in an automobile and 13.3% were in a truck/van.

Within each of the vehicle types, the incidence of alcohol involvement in which an automobile occupant died was greater than the incidence of alcohol in crashes in which a truck/van occupant or a motorcyclist died (34.6% versus 22.2% and 28.6%).

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

11.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in Nova Scotia during 1999. 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, 1999

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	9	6	66.7	1	16.7	6.3	1	16.7	7.7
20-25	13	12	92.3	3	25.0	18.8	2	16.7	15.4
26-35	11	8	72.7	5	62.5	31.3	5	62.5	38.5
36-45	8	5	62.5	3	60.0	18.8	3	60.0	23.1
46-55	4	3	75.0	3	100.0	18.8	2	66.7	15.4
>55	15	7	46.7	1	14.3	6.3	0	0.0	0.0
Gender									
Male	47	34	72.3	15	44.1	93.8	13	38.2	100.0
Female	13	7	53.8	1	14.3	6.3	0	0.0	0.0
Vehicle Type									
Automobile	41	28	68.3	10	35.7	62.5	8	28.6	61.5
Trucks/Van	11	6	54.5	4	66.7	25.0	3	50.0	23.1
Motorcycle	6	5	83.3	2	40.0	12.5	2	40.0	15.4
Tractor Trailer	2	2	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	30	23	76.7	12	52.2	75.0	10	43.5	76.9
Multiple-Vehicle	30	18	60.0	4	22.2	25.0	3	16.7	23.1
TOTAL	60	41	68.3	16	39.0	100.0	13	31.7	100.0

To illustrate, among 16-19 year olds there were nine drivers killed during 1999; six of these fatally injured drivers (66.7%) were tested for alcohol. Of those who were tested, one (16.7%) was positive for alcohol. This means that 16-19 year olds fatally injured drinking drivers accounted for 6.3% of all drinking drivers who were killed.

Then, in the final three columns, it can be seen that one of the six (16.7%) fatally injured 16-19 year olds who were tested for alcohol had a BAC in excess of 80 mg%. This means that the driver who was positive for alcohol had a BAC in excess of the legal limit. The final column expresses the number of drivers with illegal BACs as a percent of all drivers with BACs over the limit. Thus, 16-19 year old drivers accounted for 7.7% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Nova Scotia had a very low testing rate in 1999, with only 68.3% of fatally injured drivers being tested for alcohol use.

In Nova Scotia, 39.0% had been drinking and most of these had illegal BACs – 81.3% 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%;
- 7.3% had BACs from 50-80 mg%
- 14.6% had BACs from 81 to 150 mg%; and,
- 17.1% had BACs over 150 mg%.

11.2.1 Age differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 31.3% were aged 26-35 and 18.8% were aged 20-25, 36-45, and 46-55. Those aged 16-19 and those over 55 each accounted for only 6.3% of the fatally injured drinking drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 38.5% were aged 26-35; 23.1% were aged 36-45; 15.4% were 20-25 and 46-55; and 7.7% were aged 16-19. Those aged over 55 accounted for none of the 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 – All three (100.0%) tested drivers in this age group had been drinking. By contrast, only 14.3% of tested drivers over age 55 had been drinking.

11.2.2 Gender differences. Males dominate the picture – they account for 93.8% of all the fatally injured drivers who had been drinking, and all (100.0%) 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 (47 of the 60 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 than three times as likely to have been drinking than female drivers (44.1% and 14.3%, respectively). And, 81.3% of the male drivers who were drinking had BACs over the legal limit.

11.2.3 Vehicle differences. Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 62.5% were automobile drivers and 25.0% were truck/van drivers.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 61.5% were automobile drivers; 23.1% were truck/van drivers and 15.4% were motorcyclists.

Within each of the vehicle types, 66.7% of fatally injured drivers of trucks/vans, 40% of motorcyclists and 35.7% of automobile drivers were found to have been drinking.

11.2.4 Collision differences. One-half of the drivers killed (30 of the 60) were involved in single-vehicle collisions and these crashes accounted for most of the drivers who had been drinking or were legally impaired (75.0% and 76.9%, respectively).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Over half (52.2%) of drivers involved in single-vehicle crashes were positive for alcohol, compared to only 22.2% 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 1999 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, 1999

Category of Drivers	Number of Drivers	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	8	0	0.0	0.0
16-19	75	22	29.3	18.2
20-25	79	30	38.0	24.8
26-35	92	27	29.3	22.3
36-45	94	15	16.0	12.4
46-55	75	11	14.7	9.1
>55	86	12	14.0	9.9
unknown	16	4	25.0	3.3
Gender				
Male	357	98	27.5	81.0
Female	153	20	13.1	16.5
unknown	15	3	20.0	2.5
Vehicle Type				
Auto	324	76	23.5	62.8
Truck/Van	133	36	27.1	29.8
Motorcycle	34	1	2.9	0.8
Tractor Trailer	10	4	40.0	3.3
Other Hwy. Vehicle	3	0	0.0	0.0
Off-Road	15	4	26.7	3.3
Unknown	6	0	0.0	0.0
Collision Type				
Single-Vehicle	222	99	44.6	81.8
Multiple-Vehicle	303	22	7.3	18.2
TOTAL	525	121	23.0	100.0

As shown, by the totals at the bottom of the table, 525 drivers were involved in crashes in which someone was seriously injured, and among these 23.0% were alcohol-related crashes.

11.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 24.8% were aged 20-25; 22.3% were aged 26-35; and 18.2% were aged 16-19. Drivers under 16 accounted for none of those involved in alcohol-related serious injury crashes.

Within each of the age groups, almost four out of ten drivers age 20-25 were involved in alcohol-related serious injury crashes (38.0%). The lowest incidence of involvement in alcohol-related serious injury crashes was found for the youngest age group of drivers – those aged under 16 (0.0%).

11.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 81.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (27.5% and 13.1%, respectively).

11.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 62.8% were automobile drivers; and 29.8% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for tractor-trailer drivers – 40.0% of these drivers were in crashes that involved alcohol, compared to 27.1% for truck/van drivers, 26.7% of off-road vehicle operators and 23.5% for automobile drivers.

11.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 81.8% 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 – 44.6% 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: 1995-1999. 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 1999. 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, 1995-1999

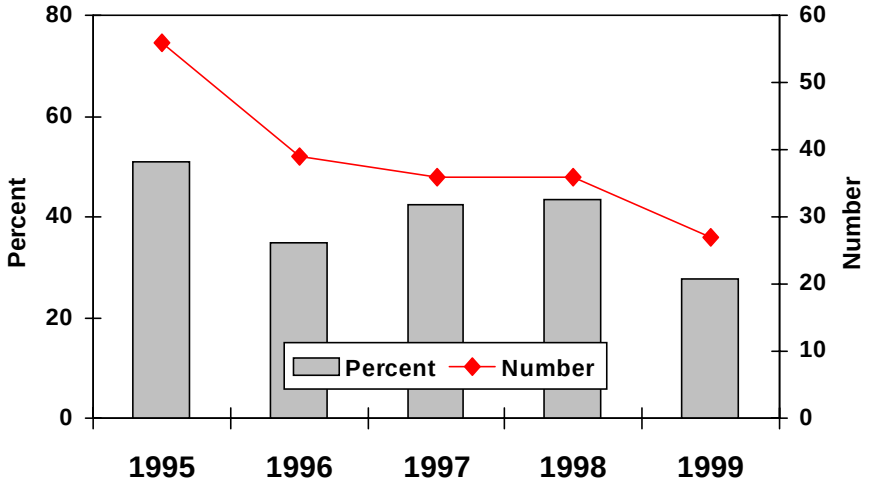
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	110	56	50.9
1996	112	39	34.8
1997	85	36	42.4
1998	83	36	43.4
1999	98	27	27.6

* 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, 1995-1999



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 and then fell to a low of 27 in 1999. 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 slightly to 43.4% before dropping substantially to 27.6% in 1999.

11.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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 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.

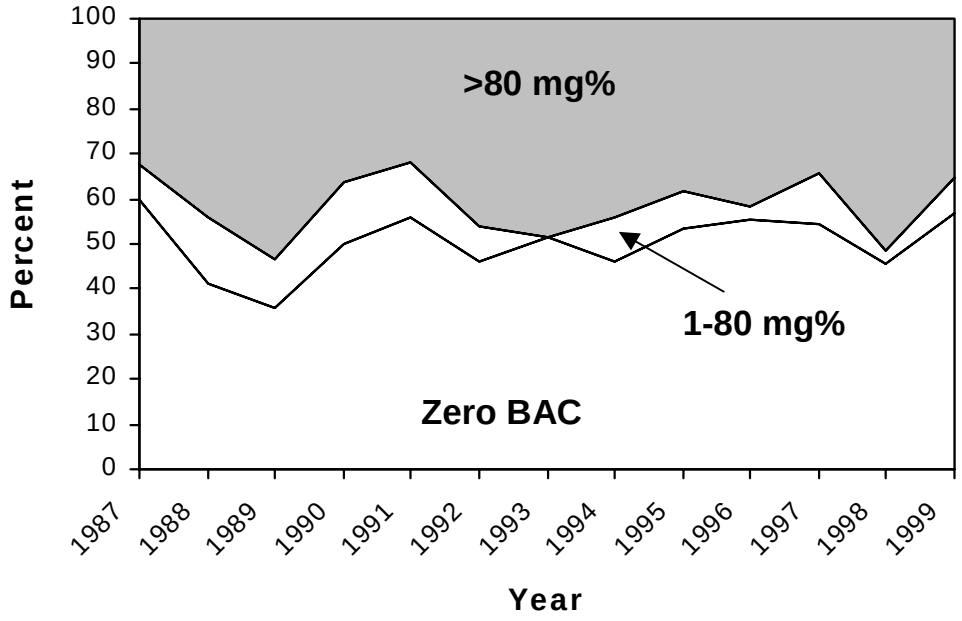
Table 11-5

Alcohol Use Among Fatally Injured Drivers:
Nova Scotia, 1987-1999

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

* dying in less than six hours.

Figure 11-2
Trends in Alcohol Use Among Driver Fatalities: Nova Scotia, 1987-1999



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%) and dropped in 1999 (35.1%). 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%) and rose in 1999 (56.8%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1988 (14.8%), reached a low in 1993 (0.0%) and has fluctuated since then to reach 8.1% in 1999.

11.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

Table 11-6

Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Nova Scotia, 1995-1999

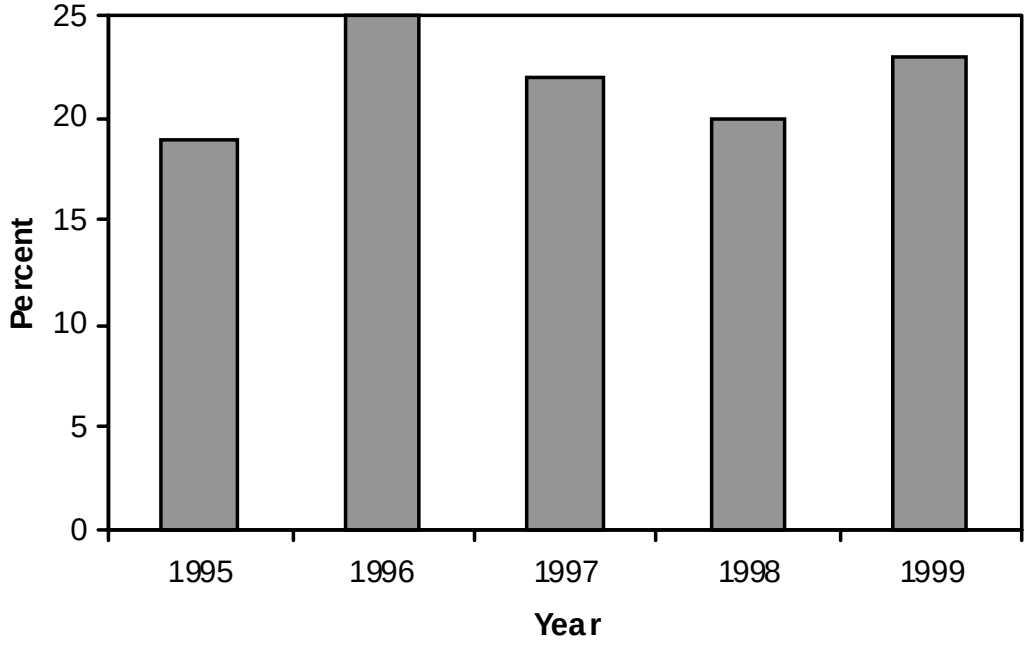
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	491	91	(18.5)
1996	458	114	(24.9)
1997	458	102	(22.3)
1998	427	87	(20.4)
1999	504	117	(23.2)

* 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 11-3

Percent of All Drivers in Serious Injury Crashes
that Involved Alcohol: Nova Scotia, 1995-1999



As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this five 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 before rising to 23.2% in 1999.

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 1999. 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 10 – 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 1999. 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 age 16-19 were killed in motor vehicle crashes in Prince Edward Island during 1999. And, in all three cases (100.0%) it was possible to determine if alcohol was a factor in the crash.

The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, one person age 16-19 died in an alcohol-related crash in Prince Edward Island during 1999. The next column expresses this as a percentage – e.g., 33.3% 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 Prince Edward Island during 1999.

Table 12-1
Deaths* in Alcohol-Related Crashes: Prince Edward Island, 1999

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	2	2	100.0	0	0.0	0.0
16-19	3	3	100.0	1	33.3	20.0
20-25	3	3	100.0	0	0.0	0.0
26-35	1	0	0.0	0	0.0	0.0
36-45	3	3	100.0	1	33.3	20.0
46-55	2	2	100.0	1	50.0	20.0
>55	6	6	100.0	2	33.3	40.0
Gender						
Male	13	12	92.3	5	41.7	100.0
Female	7	7	100.0	0	0.0	0.0
Type						
Driver/Operator	11	11	100.0	4	36.4	80.0
Passenger	6	5	83.3	1	20.0	20.0
Pedestrian	3	3	100.0	0	0.0	0.0
Vehicle Occupied						
Automobiles	9	9	100.0	0	0.0	0.0
Trucks/Vans	7	6	85.7	4	66.7	80.0
Motorcycles	1	1	100.0	1	100.0	20.0
(Pedestrians)	3	3	100.0	0	0.0	0.0
TOTAL	20	19	95.0	5	26.3	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 1999. In 19 of these cases (95.0%), it was possible to determine if alcohol was a factor. Of these known cases, five (26.3%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (20 x .263) it can be estimated that *in Prince Edward Island during 1999, five persons died in alcohol-related crashes.*

12.1.1 Victim age. Of all the people who died in alcohol-related crashes, 40.0% (see last column) were over 55; and those aged 16-19; 36-45 and 46-55 each accounted for 20.0%.

Within each of the age groups, the highest incidence of alcohol involvement occurred in the crashes in which a person aged 46-55 (50.0%) died. The lowest incidence of alcohol involvement was found among the <16, 20-25 and 26-35 age groups – none of these persons died in crashes involving alcohol.

12.1.2 Gender. Of all the people who died in alcohol-related crashes, 100.0% were males. The incidence of alcohol in crashes in which a male died was 41.7%.

12.1.3 Victim type. Of all the people who died in alcohol-related crashes, 80.0% were drivers/operators of a vehicle and 20.0% were passengers.

Within each of these victim types, the highest incidence of alcohol involvement (36.4%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 20.0% of the crashes in which a passenger died.

12.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 80.0% were in a truck/van; 20.0% 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 a motorcycle occupant died (100.0% versus 66.7%).

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 1999.

Prince Edward Island had only ten drivers fatally injured in 1999; seven of these drivers (70.0%) were tested for alcohol. Of those who were tested, two (28.6%) had been drinking. Both of them were male truck/van drivers 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 1999 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, 133 drivers were involved in crashes in which someone was seriously injured, and among these 25.6% were alcohol-related crashes.

12.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 20.6% were aged 36-45; and 17.6% were aged 16-19, 20-25, 26-35 and over 55. Drivers under 16 accounted for none of those involved in alcohol-related serious injury crashes.

Within each of the age groups, over one out of three drivers age 20-25 (37.5%) and 30.4% of those aged 36-45 were involved in alcohol-related serious injury crashes.

12.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 70.6% were males. And the incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (28.9% and 20.0%, respectively).

12.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 67.6% were automobile drivers; and 26.5% were truck-van drivers.

Table 12-2
Drivers in Alcohol-Related Serious Injury Crashes:
Prince Edward Island, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	2	0	0.0	0.0
16-19	28	6	21.4	17.6
20-25	16	6	37.5	17.6
26-35	23	6	26.1	17.6
36-45	23	7	30.4	20.6
46-55	11	3	27.3	8.8
>55	29	6	20.7	17.6
unknown	1	0	0.0	0.0
Gender				
Male	83	24	28.9	70.6
Female	50	10	20.0	29.4
Vehicle Type				
Auto	84	23	27.4	67.6
Truck/Van	38	9	23.7	26.5
Motorcycle	5	1	20.0	2.9
Tractor Trailer	2	0	0.0	0.0
Other Hwy. Vehicle	1	0	0.0	0.0
Off-Road	3	1	33.3	2.9
Collision Type				
Single-Vehicle	48	26	54.2	76.5
Multiple-Vehicle	85	8	9.4	23.5
TOTAL	133	34	25.6	100.0

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle operators – 33.3% of these drivers were in crashes that involved alcohol, compared to 27.4% for automobile drivers; 23.7% for truck/van drivers and 20.0% for motorcycle operators.

12.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 76.5% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 54.2% of these drivers, compared to only 9.4% for drivers involved in multiple-vehicle crashes.

12.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three indicators of the alcohol-crash problem: the number and percent of people who died in crashes that involved alcohol; the number and percent of fatally injured drivers who had been drinking; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem.

12.4.1 Deaths in alcohol-related crashes: 1995-1999. 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 1999. 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

Table 12-3

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Prince Edward Island, 1995-1999

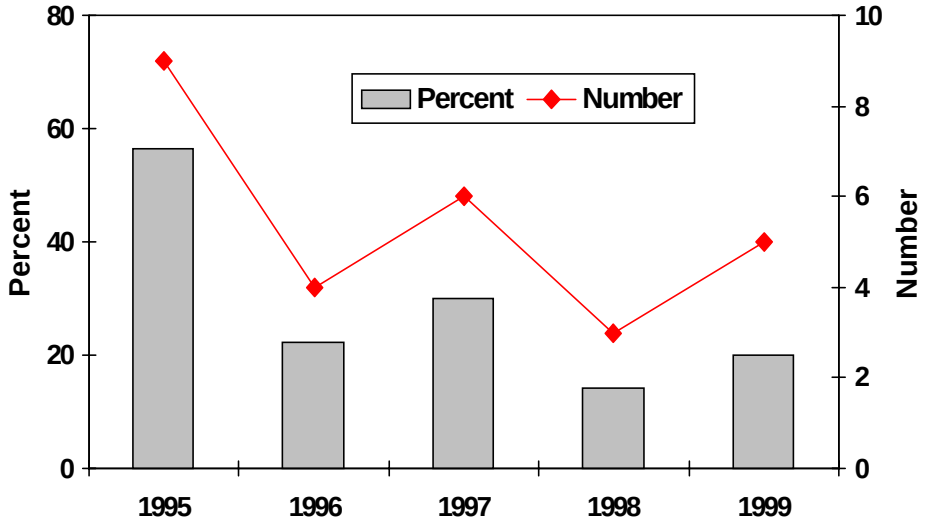
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	16	9	56.3
1996	18	4	22.2
1997	20	6	30.0
1998	21	3	14.3
1999	20	5	25.0

* 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.

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 12-1
Number and Percent of Deaths Involving a Drinking Driver: Prince Edward Island, 1995-1999



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 5 in 1999. The percentage of alcohol-related fatalities decreased from 56.3% in 1995 to 14.3% in 1998. However, in 1999, the percentage of alcohol-related fatalities in Prince Edward Island rose to 25.0%.

12.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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 1999 (28.6%). 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 1999 (71.4%). The percent of fatally injured drivers with BACs between 1 and 80 mg% peaked in 1990 (33.3%), and dropped to 0.0% in 1998 and 1999.

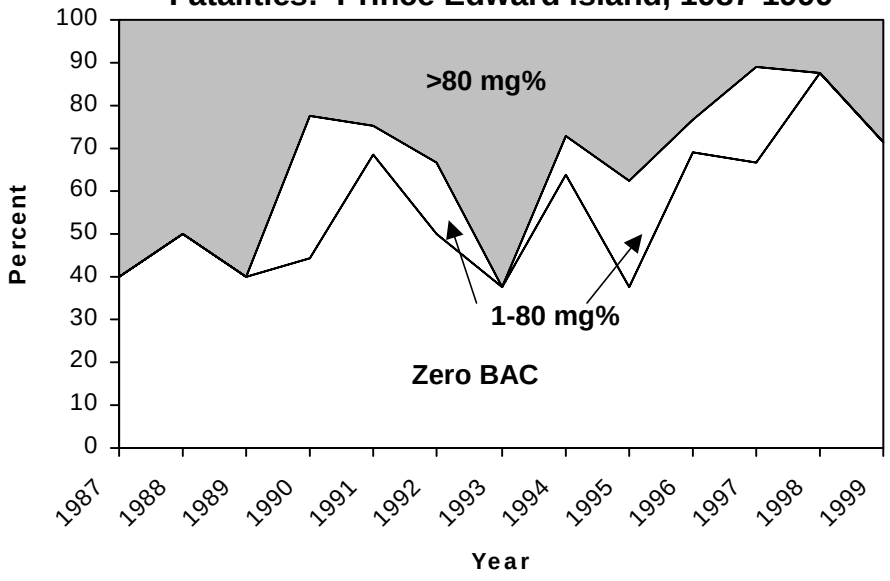
Table 12-4

Alcohol Use Among Fatally Injured Drivers:
Prince Edward Island, 1987-1999

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

* dying in less than six hours.

Figure 12-2
Trends in Alcohol Use Among Driver Fatalities: Prince Edward Island, 1987-1999



12.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

Table 12-5

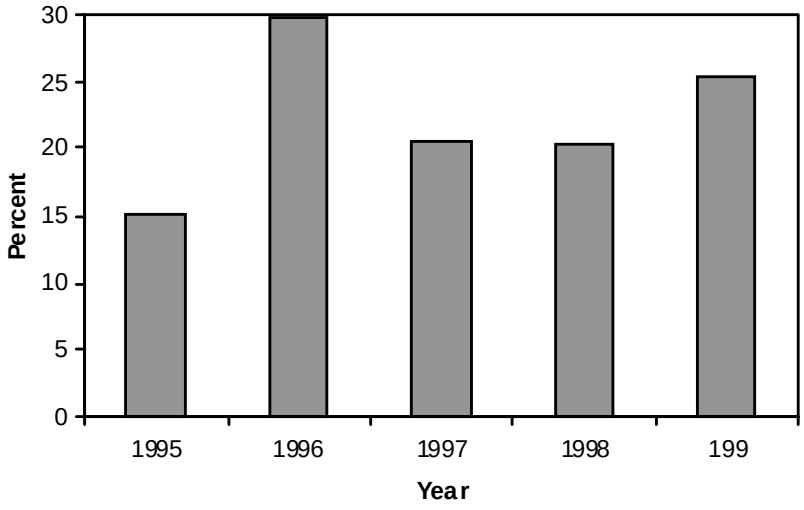
Number and Percent of All Drivers* in Serious Injury Crashes** that Involved Alcohol: Prince Edward Island, 1995-1999

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)

* 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, 1995-1999



As can be seen, the incidence of alcohol-involvement in serious injury crashes has fluctuated over this 5-year period. Between 1995 and 1996 the percentage of drivers in serious injury crashes that involved alcohol rose dramatically from 15.1% to 29.7%. Since then the incidence dropped to 20.4% in 1998 before rising to 25.4% in 1999.

13.0 NEWFOUNDLAND

This section of the report reviews the major findings on alcohol involvement in fatal and serious injury motor vehicle collisions in Newfoundland during 1999. 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 1999. 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, nine people aged 20-25 were killed in motor vehicle crashes in Newfoundland during 1999. 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, six persons aged 20-25 died in an alcohol-related crash in Newfoundland during 1999. The next column expresses this as a percentage – e.g., 66.7% 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 40.0% of all the people killed in alcohol-related crashes in Newfoundland during 1999.

The totals at the bottom of the table provide a summary. As can be seen, 47 persons died in motor vehicle crashes in Newfoundland during 1999. In 44 (93.6%) of these cases, it was

possible to determine if alcohol was a factor. Of these known cases, 15 (34.1%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (47 x .341) it can be estimated that *in Newfoundland during 1999, 16 persons died in alcohol-related crashes*.

Table 13-1
Deaths* in Alcohol-Related Crashes: Newfoundland, 1999

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<16	2	2	100.0	0	0.0	0.0
16-19	3	2	66.7	0	0.0	0.0
20-25	9	9	100.0	6	66.7	40.0
26-35	5	4	80.0	1	25.0	6.7
36-45	5	5	100.0	4	80.0	26.7
46-55	10	10	100.0	2	20.0	13.3
>55	13	12	92.3	2	16.7	13.3
Gender						
Male	32	31	96.9	14	45.2	93.3
Female	15	13	86.7	1	7.7	6.7
Type						
Driver/Operator	28	27	96.4	11	40.7	73.3
Passenger	14	12	85.7	3	25.0	20.0
Pedestrian	5	5	100.0	1	20.0	6.7
Vehicle Occupied						
Automobiles	18	18	100.0	6	33.3	40.0
Trucks/Vans	14	12	85.7	6	50.0	40.0
Motorcycles	1	1	100.0	0	0.0	0.0
Offroad Vehicles	9	8	88.9	2	25.0	13.3
(Pedestrians)	5	5	100.0	1	0.0	6.7
TOTAL	47	44	93.6	15	34.1	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) 40.0% were aged 20-25; 26.7% were aged 36-45 and 13.3% were 46-55 and over 55.

Within each of the age groups, the highest incidence of alcohol involvement (66.7%) occurred in the crashes in which a person aged 20-25 died. The lowest incidence of alcohol involvement was found among the youngest fatalities – none of the under 16 or 16-19 year old fatalities died in crashes involving alcohol.

13.1.2 Gender. Of all the people who died in alcohol-related crashes, 93.3% were males. The incidence of alcohol in crashes in which a male died (45.2%) was over five times greater than the incidence of alcohol in crashes in which a female died (7.7%).

13.1.3 Victim type. Of all the people who died in alcohol-related crashes, 73.3% were drivers/operators of a vehicle; 20.0% were passengers and 6.7% were pedestrians.

Within each of these victim types, the highest incidence of alcohol involvement (40.7%) occurred in the crashes in which a driver/operator died. Alcohol was involved in 25.0% of the crashes in which a passenger died and 20.0% of those in which a pedestrian died.

13.1.4 Type of vehicle occupied. Occupants of automobiles and trucks/vans each accounted for 40.0% of the people who died in alcohol-related crashes, 13.3% were in an off-road vehicle (e.g., bicycle, snowmobile).

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 (50.0% versus 33.3%). Only 25.0% of offroad 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 1999. 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 20-25 year olds there were five drivers killed during 1999; all five of these fatally injured drivers (100.0%) were tested for alcohol. Of those who were tested, four (80.0%)

were positive for alcohol. This means that 20-25 year old fatally injured drinking drivers accounted for 44.4% of all drinking drivers who were killed.

Table 13-2
Alcohol Use Among Fatally Injured Drivers: Newfoundland, 1999

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	5	5	100.0	4	80.0	44.4	3	60.0	37.5
26-45	2	1	50.0	1	100.0	11.1	1	100.0	12.5
46-55	7	6	85.7	2	33.3	22.2	2	33.3	25.0
>55	6	4	66.7	2	50.0	22.2	2	50.0	25.0
Gender									
Male	17	13	76.5	8	61.5	88.9	8	61.5	100.0
Female	3	3	100.0	1	33.3	11.1	0	0.0	0.0
Vehicle Type									
Automobile	11	10	90.9	5	50.0	55.6	4	40.0	50.0
Trucks/Van	8	5	62.5	4	80.0	44.4	4	80.0	50.0
Motorcycle	1	1	100.0	0	0.0	0.0	0	0.0	0.0
Collision Type									
Single-Vehicle	14	11	78.6	9	81.8	100.0	8	72.7	100.0
Multiple-Vehicle	6	5	83.3	0	0.0	0.0	0	0.0	0.0
TOTAL	20	16	80.0	9	56.3	100.0	8	50.0	100.0

Then, in the final three columns, it can be seen that three of the five fatally injured 20-25 year olds (60.0%) who were tested for alcohol had BACs in excess of 80 mg%. This means that three of the four 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 37.5% of all the drivers with BACs over the legal limit.

The main findings are shown by the totals at the bottom of the table. Newfoundland had a high testing rate in 1999, with 80.0% of fatally injured drivers being tested for alcohol use.
In Newfoundland, 56.3% had been drinking and most of these had illegal BACs – 88.9% 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%;
- 6.3% had BACs from 50-80 mg%
- 12.5% had BACs from 81 to 150 mg%; and,
- 37.5% had BACs over 150 mg%.

***13.2.1 Age differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 44.4% were aged 20-25; 22.2% were aged 46-55 and over 55; and 11.1% were aged 26-45.

Of all the fatally injured legally impaired drivers (i.e., those with BACs over 80 mg%), 37.5% were aged 20-25; 25.0% were aged 46-55 and over 55; and 12.5% were aged 26-45.

Within each of the age groups, fatally injured drivers age 26-45 were the most likely to have been drinking – 100.0% of drivers in this age group had been drinking. By contrast, 33.3% of the tested drivers aged 46-55 had been drinking.

13.2.2 Gender differences. Males dominate the picture – they account for 88.9% of all 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 (17 of the 20 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 (61.5% and 33.3%, respectively). All of the male drivers who were drinking had BACs over the legal limit while the one female drinking driver had a BAC under 80 mg%.

***13.2.3 Vehicle differences*.** Of all the fatally injured drinking drivers (i.e., those with a positive BAC), 55.6% were drivers of automobiles and 44.4% were truck/van drivers.

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

Within each of the vehicle types, 80.0% of fatally injured drivers of trucks/vans and 50.0% of drivers of automobiles were found to have been drinking.

13.2.4 Collision differences. Over two-thirds of the drivers killed (14 of the 20) were involved in single-vehicle collisions but these crashes accounted for all of the drivers who had been drinking (100.0%) and all of those who were legally impaired (100.0%).

The reason for this apparent disparity is because alcohol is overrepresented in single-vehicle crashes. Two out of three drivers involved in single-vehicle crashes (81.8%) were positive for alcohol, compared to none 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 1999 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, 279 drivers were involved in crashes in which someone was seriously injured, and among these 23.7% were alcohol-related crashes.

Table 13-3
Drivers in Alcohol-Related Serious Injury Crashes:
Newfoundland, 1999

Category of Drivers	Number of Drivers	Alcohol-Related Number	Alcohol-Related % of total	Alcohol-Related % of all drivers in alcohol-related crashes
Age				
<16	15	2	13.3	3.0
16-19	30	10	33.3	15.2
20-25	41	15	36.6	22.7
26-35	56	15	26.8	22.7
36-45	41	7	17.1	10.6
46-55	40	8	20.0	12.1
>55	36	5	13.9	7.6
unknown	20	4	20.0	6.1
Gender				
Male	204	56	27.5	84.8
Female	69	9	13.0	13.6
unknown	6	1	16.7	1.5
Vehicle Type				
Auto	137	38	27.7	57.6
Truck/Van	70	14	20.0	21.2
Motorcycle	15	3	20.0	4.5
Tractor Trailer	6	2	33.3	3.0
Other Hwy. Vehicle	2	1	50.0	1.5
Off-Road	41	7	17.1	10.6
Unknown	8	1	12.5	1.5
Collision Type				
Single-Vehicle	168	57	33.9	86.4
Multiple-Vehicle	111	9	8.1	13.6
TOTAL	279	66	23.7	100.0

13.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 22.7% were aged 20-25 and 26-35; 15.2% were aged 16-19; and 12.1% were aged 46-55. Drivers under 16 and over 55 accounted for only 3.0% and 7.6% respectively of those involved in alcohol-related serious injury crashes.

Within each of the age groups, one out of three drivers age 20-25 and 16-19 were involved in alcohol-related serious injury crashes (36.6% and 33.3%, respectively). The lowest incidence of involvement in alcohol-related serious injury crashes was found for drivers aged under 16 (13.3%) and over 55 (13.9%).

13.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 84.8% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (27.5% and 13.0%, respectively).

13.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 57.6% were automobile drivers; and 21.2% were truck-van drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for other highway vehicle drivers – 50.0% of these drivers were in crashes that involved alcohol, compared to 33.3% for tractor-trailer drivers, 27.7% for automobile drivers, and 20.0% for operators of trucks/vans and motorcycles.

13.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 86.4% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 33.9% of these drivers, compared to only 8.1% 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: 1995-1999. 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 1999. 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, 1995-1999

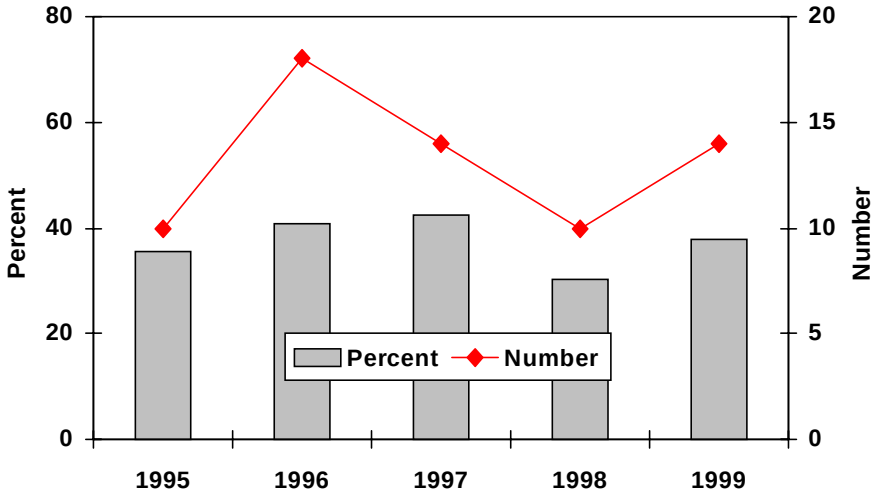
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	28	10	35.7
1996	44	18	40.9
1997	33	14	42.4
1998	33	10	30.3
1999	37	14	37.8

* 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, 1995-1999



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. There was a reduction to 10 alcohol-related fatalities in 1998 and then another increase to 14 in 1999. 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 reached a low of 30.3% before rising to 37.8% in 1999.

13.4.2 Fatally injured drivers: 1987-1999. Data on alcohol use among fatally injured drivers over the 13-year period from 1987-1999 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

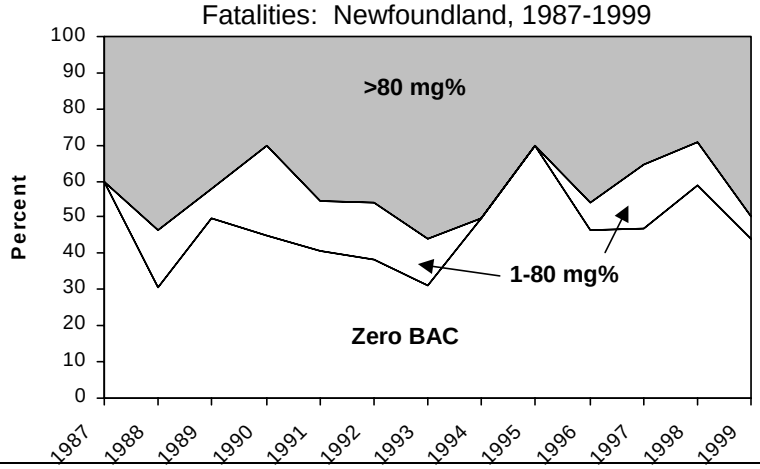
Table 13-5

Alcohol Use Among Fatally Injured Drivers:
Newfoundland, 1987-1999

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

* dying in less than six hours.

Figure 13-2
Trends in Alcohol Use Among Driver Fatalities: Newfoundland, 1987-1999



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.

As can be seen, the percent of fatally injured drivers with BACs over the legal limit peaked in 1993 (56.3%), reached a low in 1998 (29.4%) before rising to 50.0% in 1999. The percent of fatally injured drivers with zero BAC peaked in 1995 (70.0%), declined in 1996 (46.2%), rose to 58.8% in 1998, and fell to 43.8% in 1999. 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, and decreased to 6.3% in 1999.

13.4.3 Drivers in serious injury crashes: 1995-1999. 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 highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious injury crashes has been relatively stable. The percentage of drivers in serious injury crashes that involved alcohol decreased from 21.6% to 17.6% between 1995 and 1997 and then rose to a high of 25.2% in 1999.

Table 13-6

Number and Percent of All Drivers* in Serious Injury Crashes**
that Involved Alcohol: Newfoundland, 1995-1999

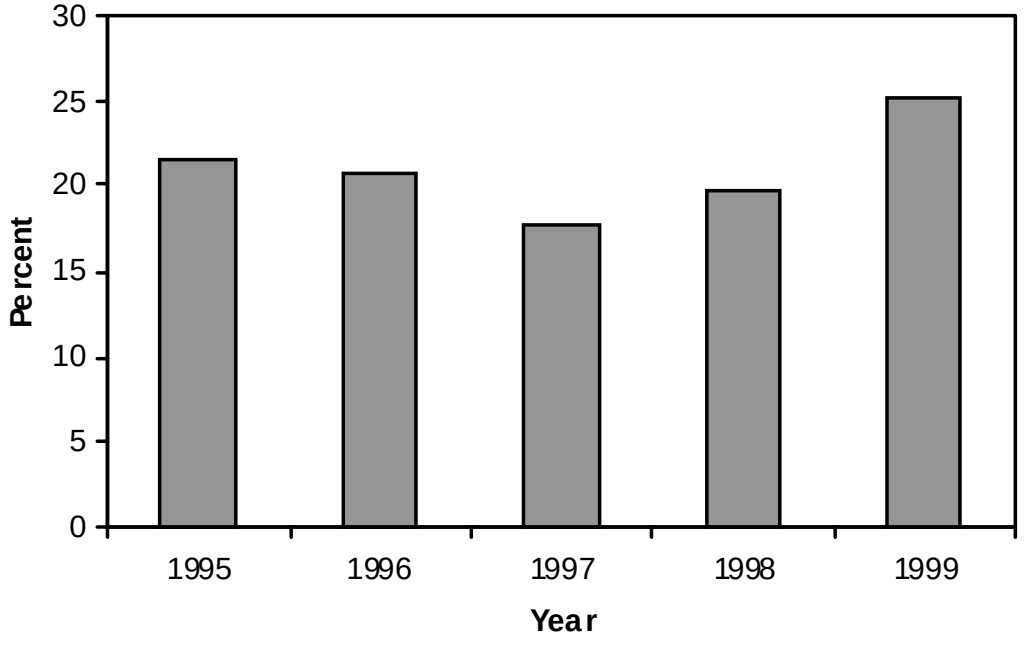
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	259	56	(21.6)
1996	296	62	(20.9)
1997	262	46	(17.6)
1998	243	48	(19.8)
1999	230	58	(25.2)

* 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, 1995-1999



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 1999. 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 Section 14.2 because the small number of drivers fatally injured – only eleven – makes the results unreliable.

14.1 DEATHS IN ALCOHOL-RELATED CRASHES

Table 14-1 presents information on people who died in alcohol-related crashes in the Yukon during 1999. 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, 2 people aged 20-25 were killed in motor vehicle crashes in the Yukon during 1999. And, in both cases (100.0%) it was possible to determine if alcohol was a factor in the crash.

The next column shows the number of people killed in crashes that were known to be alcohol-involved. For example, one person aged 20-25 died in alcohol-related crashes in the Yukon during 1999. 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 12.5% of all the people killed in alcohol-related crashes in the Yukon during 1999.

Table 14-1
Deaths* in Alcohol-Related Crashes: Yukon Territory, 1999

Category of Victim	Number of Deaths	Alcohol Use Known		Alcohol-Related Deaths		
		Number	% of total	Number	% of known	% of all alcohol-related deaths
Age						
<20	3	3	100.0	2	66.7	25.0
20-25	2	2	100.0	1	50.0	12.5
36-45	5	5	100.0	4	80.0	50.0
46-55	2	2	100.0	0	0.0	0.0
>55	5	5	100.0	1	20.0	12.5
Gender						
Male	11	11	100.0	5	45.5	62.5
Female	6	6	100.0	3	50.0	37.5
Type						
Driver/Operator	11	11	100.0	5	45.5	62.5
Passenger	5	5	100.0	2	40.0	25.0
Pedestrian	1	1	100.0	1	100.0	12.5
Vehicle Occupied						
Automobiles	4	4	100.0	2	50.0	25.0
Trucks/Vans	10	10	100.0	5	50.0	62.5
Motorcycles	2	2	100.0	0	0.0	0.0
(Pedestrians)	1	1	100.0	1	100.0	12.5
TOTAL	17	17	100.0	8	47.1	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, 17 persons died in motor vehicle crashes in the Yukon during 1999. In 17 (100.0%) of these cases, it was possible to determine if alcohol was a factor. Of these cases, *eight (47.1%) involved alcohol.*

14.1.1 Victim age. Of all the people who died in alcohol-related crashes, 50.0% (see last column) were aged 36-45; 25.0% were under 20 years of age; and 12.5% were 20-25 and over the age of 55.

Within each of the age groups, the highest incidence of alcohol involvement (80.0%) occurred in crashes in which a person aged 36-45 died. The lowest incidence of alcohol involvement was

found among persons aged 46-55 and over 55 – none (0.0%) of the persons aged 46-55 and 20.0% of persons over 55 died in crashes involving alcohol.

14.1.2 Gender. Of all the people who died in alcohol-related crashes, 62.5% were males. However, the incidence of alcohol in crashes in which a female died (50.0%) was slightly greater than the incidence of alcohol in crashes in which a male died (45.5%).

14.1.3 Victim type. Of all the people who died in alcohol-related crashes, 62.5% were drivers/operators of a vehicle; 25.0% were passengers; and 12.5% were pedestrians.

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 45.5% of the crashes in which a driver/operator died and 40.0% of those in which a passenger died.

14.1.4 Type of vehicle occupied. Of all the people who died in alcohol-related crashes, 62.5% were in a truck/van; 25.0% were in an automobile.

Within each of these vehicle types, the incidence of alcohol involvement in which a truck/van occupant died was the same as the incidence of alcohol in crashes in which an automobile occupant died (50.0%).

14.2 ALCOHOL IN FATALLY INJURED DRIVERS

This section presents information on the presence of alcohol, exclusively among drivers fatally injured in the Yukon during 1999.

The Yukon had only 11 fatally injured drivers during 1999; 10 (90.9%) of these drivers were tested for alcohol. Of those who were tested five (50.0%) had been drinking and four of these had illegal BACs – 80.0% of fatally injured drinking drivers had BACs >80 mg%.

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 1999 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 14-2 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, 57 drivers were involved in crashes in which someone was seriously injured, and among these 17.5% were alcohol-related crashes.

14.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 40.0% were aged 26-35; 20.0% were aged 20-25; and 10.0% were aged 16-19, 36-45 and over 55.

Within each of the age groups, almost one-third of the drivers age 26-35 (30.8%), 28.6% of those aged 20-25 and 12.5% of those aged 16-19 and over 55 were involved in alcohol-related serious injury crashes.

14.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 70.0% were males. The incidence of involvement in alcohol-related serious injury crashes was also greater for males than for females (18.9% and 15.0%, respectively).

14.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 50.0% were truck/van drivers; 30.0% were automobile drivers and 10.0% were motorcycle operators and off-road vehicle drivers.

Table 14-2
Drivers in Alcohol-Related Serious Injury Crashes:
Yukon Territory, 1999

Category of Drivers	Number of Drivers*	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	2	0	0.0	0.0
16-19	8	1	12.5	10.0
20-25	7	2	28.6	20.0
26-35	13	4	30.8	40.0
36-45	10	1	10.0	10.0
46-55	8	0	0.0	0.0
>55	8	1	12.5	10.0
unknown	1	1	100.0	10.0
Gender				
Male	37	7	18.9	70.0
Female	20	3	15.0	30.0
Vehicle Type				
Auto	16	3	18.8	30.0
Truck/Van	34	5	14.7	50.0
Motorcycle	5	1	20.0	10.0
Off-Road	2	1	50.0	10.0
Collision Type				
Single-Vehicle	34	10	29.4	100.0
Multiple-Vehicle	23	0	0.0	0.0
TOTAL	57	10	17.5	100.0

*These numbers are slightly underestimated because about 8% of all injuries are recorded as “unspecified”.

The highest incidence of involvement in alcohol-related serious injury crashes was found for off-road vehicle drivers – one of the two (50.0%) off-road vehicle drivers was in a crash that involved alcohol; compared to 20.0% for motorcycle operators, 18.8% for automobile drivers, and 14.7% for truck/van drivers.

14.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% 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 – 29.4% of these drivers, compared to none of the drivers involved in multiple-vehicle crashes.

14.4 TRENDS IN THE ALCOHOL-CRASH PROBLEM

The previous sections examined three indicators of the alcohol-crash problem: the number and percent of people who died in crashes that involved alcohol; the number and percent of fatally injured drivers who had been drinking; and the number and percent of drivers in serious injury crashes that involved alcohol. This section examines changes in these three indicators of the problem.

14.4.1 Deaths in alcohol-related crashes: 1995-1999. Table 14-3 and Figure 14-1 show the number and percent of people who died in crashes involving a drinking driver from 1995 to 1999. 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-

Table 14-3

Number* and Percent of Motor Vehicle Deaths**
Involving a Drinking Driver: Yukon Territory, 1995-1999

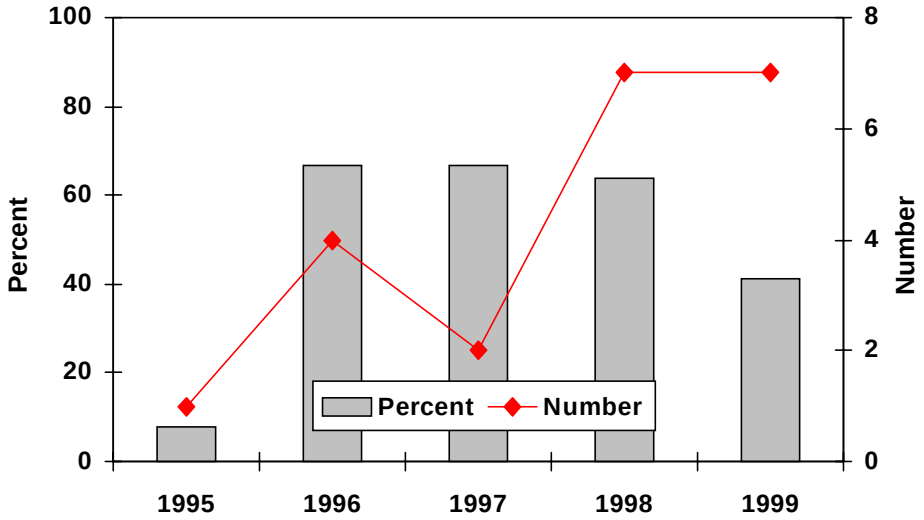
Year	Number of Deaths	Alcohol-Related Deaths	
		Number	% of total
1995	13	1	7.7
1996	6	4	66.7
1997	3	2	66.7
1998	11	7	63.6
1999	17	7	41.2

* 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.

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.

Figure 14-1
Number and Percent of Deaths Involving
a Drinking Driver: Yukon Territory, 1995-1999



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 and remained there in 1999. 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.

14.4.2 Fatally injured drivers: 1987-1999. Due to the small number of cases – e.g., only 11 fatally injured drivers in 1999 – any trends would be unreliable, and therefore, are not presented in tables and figures.

14.4.3 Drivers in injury crashes: 1995-1999. 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 14-4 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 highway vehicles.

Table 14-4

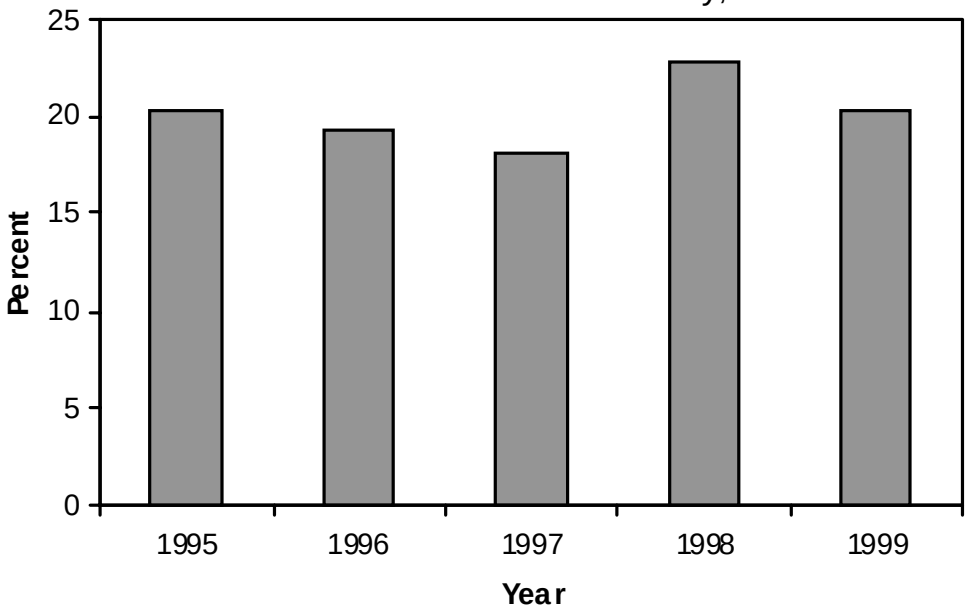
Number and Percent of All Drivers* in Injury Crashes**
that Involved Alcohol: Yukon Territory, 1995-1999

Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1995	341	69	(20.2)
1996	349	67	(19.2)
1997	287	52	(18.1)
1998	276	63	(22.8)
1999	306	62	(20.3)

* 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 14-2
Percent of All Drivers in Injury Crashes
that Involved Alcohol : Yukon Territory, 1995-1999



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 20.2% to 18.1%. In 1998 the incidence increased to 22.8% but decreased to 20.3% in 1999.

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 Northwest Territories and Nunavut during 1999. 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 12 – and drivers fatally injured – only two – makes the results unreliable.

15.1 DEATHS IN ALCOHOL-RELATED CRASHES

In the Northwest Territories and Nunavut during 1999, 12 persons died in motor vehicle crashes. In 11 of these cases (91.7%) it was possible to determine if alcohol was a factor. Of these known cases, six (54.5%) involved alcohol. Extrapolating this figure to the total number of motor vehicle fatalities (12 x .545) it can be estimated that *in the Northwest Territories and Nunavut during 1999, seven persons died in alcohol-related crashes*.

15.2 ALCOHOL IN FATALLY INJURED DRIVERS

In the Northwest Territories and Nunavut during 1999, only two drivers were fatally injured in motor vehicle crashes.

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 1999 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, 39 drivers were involved in crashes in which someone was seriously injured, and among these 33.3% were alcohol-related crashes.

15.3.1 Driver age. Of all the drivers involved in alcohol-related serious injury crashes, 30.8% were aged 36-45; 23.1% were aged 20-25; and 15.4% were aged 16-19 and 36-45. None of the drivers under 16 were involved in alcohol-related serious injury crashes.

Within each of the age groups, one-half of drivers aged 20-25, 36-45 and over 55 were involved in alcohol-related serious injury crashes (50.0%). The lowest incidence of involvement in alcohol-related crashes was found for the youngest age group of drivers – those aged under 16 (0.0%).

15.3.2 Driver gender. Of all the drivers involved in alcohol-related serious injury crashes, 92.3% were males. And the incidence of involvement in alcohol-related serious injury crashes was three times greater for males than for females (38.7% and 12.5%, respectively).

Table 15-1
Drivers in Alcohol-Related Serious Injury Crashes:
Northwest Territories and Nunavut, 1999

Category of Drivers	Number of Drivers	Alcohol-Related		
		Number	% of total	% of all drivers in alcohol-related crashes
Age				
<16	6	0	0.0	0.0
16-19	5	2	40.0	15.4
20-25	6	3	50.0	23.1
26-35	7	2	28.6	15.4
36-45	8	4	50.0	30.8
46-55	4	1	25.0	7.7
>55	2	1	50.0	7.7
unknown	1	0	0.0	0.0
Gender				
Male	31	12	38.7	92.3
Female	8	1	12.5	7.7
Vehicle Type				
Auto	4	3	75.0	23.1
Truck/Van	15	5	33.3	38.5
Motorcycle	1	0	0.0	0.0
Tractor Trailer	1	0	0.0	0.0
Off-Road	18	5	27.8	38.5
Collision Type				
Single-Vehicle	31	13	41.9	100.0
Multiple-Vehicle	8	0	0.0	0.0
TOTAL	39	13	33.3	100.0

15.3.3 Type of vehicle driven. Of all the drivers involved in alcohol-related serious injury crashes, 38.5% were off-road vehicle drivers and truck-van drivers; and 23.1% were automobile drivers.

The highest incidence of involvement in alcohol-related serious injury crashes was found for automobile drivers – 75.0% of these drivers were in crashes that involved alcohol, compared to 33.3% for truck-van drivers and 27.8% for off-road vehicle drivers.

15.3.4 Type of collision. Of all the drivers involved in alcohol-related serious injury crashes, 100.0% of them were in single-vehicle crashes. The highest incidence of involvement in alcohol-related serious injury crashes was also found among drivers in single-vehicle crashes – 41.9% of these drivers compared to none 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: 1995-1999. 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 and this number rose to four in 1999.

15.4.2 Fatally injured drivers: 1987-1999. Due to the small number of cases – e.g., only two fatally injured drivers in 1999 – any trends would be unreliable, and therefore are not reported here.

15.4.3 Drivers in serious injury crashes: 1996-1999. Since data on serious-injury crashes for the Northwest Territories and Nunavut are not available for 1995, Table 15-2 and Figure 15-1 show information on drivers involved in alcohol-related serious injury crashes from 1996 to 1999. These results differ slightly from those in Section 15.3 because they exclude certain vehicle types – e.g., bicycles, snowmobiles, farm tractors and other highway vehicles.

As can be seen, the incidence of alcohol-involvement in serious crashes has been relatively volatile. Between 1996 and 1997 the percentage of drivers in serious injury crashes that involved alcohol decreased from 37.5% to 21.4%. In 1998 the incidence rose sharply to 61.1% before falling to 38.1% in 1999.

Table 15-2

Number and Percent of All Drivers* in
Serious Injury Crashes** that Involved Alcohol:
Northwest Territories and Nunavut, 1996-1999

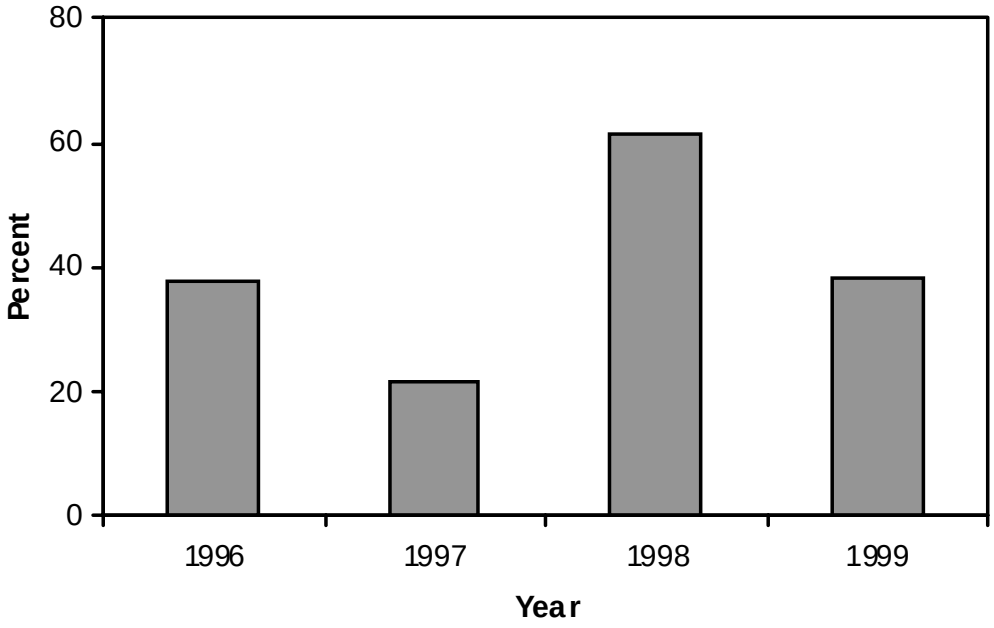
Year	Number of Drivers	Alcohol Related	
		Number	(Pct.)
1996	16	6	(37.5)
1997	14	3	(21.4)
1998	18	11	(61.1)
1999	21	8	(38.1)

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

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

Figure 15-1

Percent of All Drivers in Serious Injury Crashes that Involved Alcohol:
Northwest Territories and Nunavut, 1996-1999



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