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Alcohol & Drug Use Among Drivers

British Columbia Roadside Survey 2008

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EXECUTIVE SUMMARY

Following two decades of progress dealing with alcohol-impaired driving, greater attention is now being directed toward the issue of driving while impaired by drugs. Currently, there is far less information related to drug-impaired driving than alcohol-impaired driving. This report describes a study on the extent of drug use by drivers.

A random survey of drivers was conducted at pre-selected locations in British Columbia from Wednesday to Saturday nights in June 2008. The purpose was to collect information on the prevalence of alcohol and drug use among nighttime drivers. Those surveyed were asked to provide a voluntary breath sample to measure their alcohol use and an oral fluid sample to be tested subsequently for the presence of drugs.

Of the 1,533 vehicles selected, 89% of drivers provided a breath sample and 78% provided a sample of oral fluid. Key findings include:

- 10.4% of drivers tested positive for drug use
- 8.1% of drivers had been drinking
- 15.5% of drivers tested positive for alcohol, drugs or both
- Cannabis and cocaine were the drugs most frequently detected in drivers
- Alcohol use among drivers was most common on weekends and during late-night hours; drug use was more evenly distributed across all survey nights and times
- Alcohol use was most common among drivers aged 19 to 24 and 25 to 34; drug use was more evenly distributed across all age groups
- No drivers aged 16 to 18 were found to have been drinking
- While driving after drinking has decreased substantially since previous surveys, the number of drivers with elevated alcohol levels (over 80 mg%) was higher than in the past

The finding that drug use is now more common than alcohol use among drivers highlights the need for a societal response to the use of drugs by drivers comparable to that directed at drinking and driving over the past three decades.

New legislation came into effect in July 2008 providing police in Canada with the tools to enforce drug-impaired driving laws. The legislation calls for drivers to submit to a field test of impairment (Standardized Field Sobriety Test or SFST). If there is evidence of impairment, the driver must accompany the officer to the station for further evaluation of drug influence by an officer trained in the Drug Evaluation and Classification program, including providing a sample of bodily fluid for analysis of drug content. While enforcement is a key element in efforts to deal with drugs and driving, a comprehensive approach also includes public education, awareness and research.

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INTRODUCTION

BACKGROUND

Following two decades of progress on the alcohol-crash problem, safety advocates, policy makers, legislators, and enforcement agencies have begun to express greater concern about the use of drugs by drivers. Although the misuse of drugs has long been considered a major social problem, the acute and devastating consequences of driving while under the influence of drugs has only recently come to the forefront as a public health and safety issue.

Driving while impaired by drugs has been a criminal offence in Canada for many years (Section 253a, Criminal Code of Canada), yet only recently have the statutes provided police with tools to enforce the law. The enactment of Bill C-2 on July 2, 2008 gave police the authority to:

- demand that drivers perform tests of impairment;
- submit drivers to evaluation by an officer specially trained in the techniques of the Drug Evaluation and Classification (DEC) program; and
- collect samples of blood, oral fluid, and/or urine for analysis of drug content.

This law facilitates the apprehension and prosecution of drivers whose use of psychoactive substances poses a risk to themselves and other road users.

Rising concern has prompted questions about the prevalence of drug use among drivers and the associated negative effects. Although there is a body of scientific literature that documents the impairing effects of drugs and the elevated risk of traffic crash involvement following drug use (e.g., Beirness et al. 2006; Couper and Logan 2004), there is far less evidence on the topic than on alcohol and driving.

Epidemiologic studies of drug use among fatally injured drivers in Canada indicate that drugs, often in combination with alcohol, are detected in up to 30% of such cases (e.g., Brault et al. 2004, Cimbura et al. 1982, Mercer and Jeffery 1995). Public opinion surveys indicate that about 17% of Canadian drivers report having driven within two hours of using a potentially impairing drug (Beirness, Simpson and Desmond 2003). The Canadian Addiction Survey found that 4.8% of drivers in Canada admit to having driven within two hours of using cannabis at least once in the past year—a sharp increase from the 2.3% of Canadians who reported doing so in 1989 (according to the National Alcohol and Drug Survey). Among those aged 16 to 18, 20.6% reported having driven after using cannabis, slightly higher than the 19.6% who reported driving after drinking (Beirness and Davis 2007). These findings suggest that the drugs and driving problem is a significant one and may be worsening.

Objective information about the use of drugs by drivers has been difficult to obtain. Measuring the use of drugs is considerably more difficult than detecting the use of alcohol. For example, although alcohol can be easily and unobtrusively measured in breath samples, the detection of drugs requires a sample of blood, urine or oral fluid. These samples must then be sent to a laboratory for toxicological analysis.

Roadside surveys

Over the past 30 years roadside surveys of drivers in Canada have contributed a great deal to our understanding of drinking-driving behaviour, but have rarely been used to examine drug use among drivers.

Between 1999 and 2000 the only roadside survey of drug use among Canadian drivers was conducted in the province of Quebec. In addition to breath samples assessing alcohol levels, drivers were asked to provide urine samples to test for the presence of drugs. Unfortunately, only about half of all drivers volunteered to do so. Nevertheless, of the samples collected, 11% tested positive for drugs (Dussault et al. 2002). The most commonly detected drugs were cannabis (6.7%), benzodiazepines (3.6%), opiates (1.2%), and cocaine (1.1%).

Two factors limit the validity of the findings of the Quebec study. First, the high refusal rates limit the extent to which the results can be considered representative of the population of all drivers. Second, some drugs (e.g., cannabis) can be detected in urine samples for two or three weeks after consumption. Therefore a positive cannabis test result in urine does not necessarily mean that consumption was recent or had an impact on the ability to drive safely.

In recent years, however, oral fluid has emerged as a convenient and unobtrusive means to assess drug use. More importantly, drugs detected in oral fluid are more likely the result of recent drug use and active drug effects – including the impairment of driving performance. A recent roadside survey in the United States sponsored by the National Highway Traffic Safety Administration requested samples of oral fluid and blood from drivers to test for the presence of drugs (Lacey et al. 2007). Although final results have not yet been released, the initial findings from the pilot study indicate that about 80% of drivers provided oral fluid and about 40% volunteered a blood sample. The success of this project indicates that collecting oral fluid samples at roadside may be a viable way to determine the prevalence of drug use among drivers.

Purpose of this project

The roadside survey described in this report was designed to measure the use of drugs and alcohol among nighttime drivers. The results shed light on the magnitude of the problem, ideally providing a basis for guiding the development of prevention efforts and helping enforcement agencies deal effectively with drug-impaired driving behaviour. The survey also establishes a benchmark from which to assess the impact of the new drugs and driving legislation and the implementation of the DEC program. In addition, because the current survey is the fifth since 1995 to measure the prevalence of alcohol use by drivers in selected cities in British Columbia, the data can also be used to examine drinking and driving trends.

METHODS

Sample size: Previous roadside surveys in British Columbia had a target sample size of 800 driver interviews in each city. In the expected range of drivers with positive blood alcohol concentrations (BACs)—12% of drivers—the estimate would have a 95% confidence interval of ± 2.5%.

An overall estimate of the incidence of drinking and driving as well as drug use and driving for the sampled area can be obtained by weighting the data to adjust for the disparity in the populations of the three cities. Combining the data in this manner, however, will not provide provincial estimates of driving after drug or alcohol use. An overall sample size of 2,400 would provide an estimate of the prevalence of drug or alcohol use among drivers with a 95% confidence interval of ± 2.0%.

Collecting oral fluid samples was expected to increase the time required for each interview, thereby reducing the total number of interviews that could be completed in the allotted time at each site. This was expected to reduce the overall sample size and thereby decrease the accuracy of the estimates.

Site selection: Initial site selection in each city involved creating a grid on a map and numbering each section. Major roadway segments within each section were identified and numbered. Sections and roadway segments within those sections were then selected randomly. The designated roadways in selected sections were searched for suitable locations to serve as survey sites. A suitable site was a parking lot or open area off the travelled portion of the roadway with a separate entrance and exit. There had to be sufficient space for at least four survey lanes or bays. Ideally, the approach to the survey site was free of curves in the roadway, major intersections, obstructions to visibility, other potential safety hazards, and was free of other traffic during survey hours.

Permission to use each site was obtained from property owners and/or managers. In most cases, this required a phone call to explain the nature of our request. In some cases a letter and/or personal visit from the project director was required.

Where possible, the same sites chosen for previous surveys in all three cities were used again. Each site was visited prior to the survey to ensure it had not changed in a way that would compromise its use in the survey. In a few cases, the original site was no longer adequate or permission to use it could not be secured. In each case, an alternative site was selected.

A total of 16 sites in each city were selected and confirmed for use in the survey.

Breath alcohol tests: Breath samples were analyzed for BAC using the Intoxilyzer 400D. This is a hand-held breath test instrument approved by the Attorney General of Canada for use by police. It is accurate to within ± 5 mg%[1] . Readings below 5 mg% were considered to be zero. The instruments were calibrated using a standard of 50 mg% prior to use in the field.

To collect a breath sample, the interviewer first placed a new mouthpiece on the Intoxilyzer. The driver was instructed to blow firmly and steadily into the mouthpiece until told to stop. The device provides an auditory signal to indicate whether or not an adequate sample of breath has been collected. Within a few seconds, the device provides a digital display of the driver's BAC.[2]

Oral fluid collection: The Quantisal oral fluid collection kit was used to gather samples to test for the presence of drugs. The device consists of a cellulose pad on a plastic stick. It collects a 1 ml sample of oral fluid. When a sufficient volume of fluid has been collected, a blue indicator appears on the plastic stick. Completed samples were sealed in separate vials containing a small amount of buffer fluid.

The oral fluid samples were sent by courier to ASL Laboratories for analysis. Samples were initially screened for cannabis, cocaine, opiates, amphetamines, methamphetamine and benzodiazepines using enzyme immunoassay technology. Samples with a positive screen were confirmed by gas chromatography/mass spectrometry (GC/MS). The detection thresholds for each substance are listed in Table 1. Results were reported as either positive or negative without quantification—i.e., the amount of the substance present was not determined. As a result, it is not possible to judge the possible extent of impairment among drug-positive cases.

[1]BAC is reported as mg alcohol per 100 ml blood, commonly abbreviated as mg%.
[2]When used by the police, the instruments are programmed to provide a digital display up to 49 mg%, and then display an "A" to indicate BACs between 50 and 99 mg%, and "F" for BACs of 100 mg% and over. Driving with a BAC in excess of 80 mg% is a criminal offence in Canada.

Table 1: Drug Detection Thresholds

Drug	Detection Threshold
Amphetamines	40 ng/ml
Benzodiazepines	10 ng/ml
Cannabis	5 ng/ml
Cocaine	5 ng/ml
Methamphetamine	40 ng/ml
Opiates	10 ng/ml

Survey procedures: The survey was conducted using the same data collection procedures employed in previous surveys conducted in British Columbia, which were based on those outlined by Transport Canada, with a few minor modifications to improve the efficiency of the operation (e.g., improved breath test technology).

Drivers were randomly selected from the traffic flow at pre-selected locations in four time periods (21:00-22:30; 22:30-00:00; 00:00-01:30; and 01:30-03:00) on Wednesday, Thursday, Friday, and Saturday nights. Drivers were asked a series of questions and information was gathered through observation about seat belt use, type of vehicle and occupant configuration. Drivers were then asked to voluntarily provide a sample of breath for analysis of alcohol content. The unique feature of the current survey was that drivers were also asked to provide a sample of oral fluid for subsequent analysis of drug content.

Two six-person crews carried out the survey. Each crew consisted of a crew chief, four interviewers, and one traffic controller. In addition, a police officer was assigned to each crew to direct traffic safely off the roadway into the survey site. An experienced supervisor was also on site to oversee field operations and assist the crew chief when required.

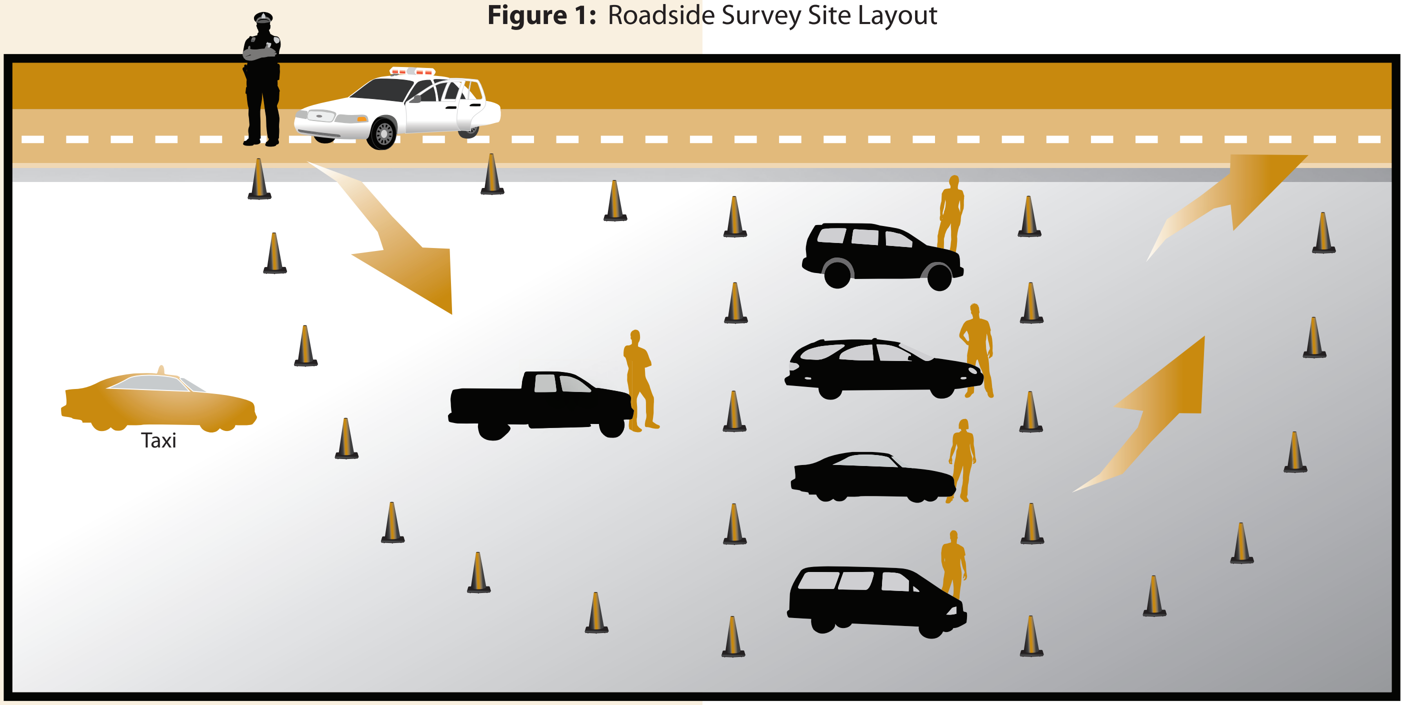
Both crews conducted interviews at two sites each night. One crew conducted interviews for 90 minutes at one site beginning at 21:00. At 22:30, this crew moved to another site and conducted interviews from midnight to 01:30. The second crew followed a similar schedule at different sites from 22:30 to midnight, and again from 01:30 to 03:00. With two crews each conducting interviews at two sites, a total of four sites were used each night.

The primary role of the police officer was to direct vehicles into the survey site as requested by the survey crew. The officer did not speak with drivers unless requested by a driver or member of the survey crew. When signalled by a member of the crew, the officer selected the next available vehicle approaching the survey site in the specified direction and directed it into the survey site. Commercial vehicles were not included in the survey.

The typical site layout is illustrated in Figure 1.

Collecting an oral fluid sample was the final step. Drivers were informed that this part of the survey required a few minutes and that if they agreed to participate they would be given a coupon for $10 worth of gasoline. To those who consented, the interviewer explained the procedure and opened a sealed package containing the oral fluid collection device. Drivers were instructed to place the cellulose pad under their tongue for about three minutes. During this time, drivers were asked to complete a pencil-and-paper questionnaire about alcohol and drug use behaviours.

Figure 1: Roadside Survey Site Layout



The interview process consisted of four parts: introduction, survey questions, a breath test and oral fluid sample collection. Once a vehicle was safely stopped in the survey site, the interviewer introduced him- or herself to the driver, briefly described the survey, and handed the driver a card explaining the survey and requesting his or her cooperation. (A copy of the information card is included in Appendix A.) While the driver was reading the card, the interviewer recorded observable information about the driver (e.g., sex), the vehicle (e.g., type) and any occupants (e.g., occupant configuration, sex).

The interviewer made it clear to the drivers that this was a voluntary and confidential survey. If the driver agreed to participate, he or she was asked a number of questions. (A copy of the survey questionnaire is included in Appendix B.)

The third part of the survey involved the driver providing a breath sample to measure alcohol content. The interviewer introduced the Intoxilyzer and instructed the driver how to provide a proper breath sample. A new breath tube was unwrapped, attached to the device and presented to the driver to provide a breath sample.

Drivers with a BAC of less than 50 mg% were thanked for their cooperation and reminded to drive safely as they left the survey site. Drivers with BACs of 50 mg% and over or who appeared intoxicated were asked to speak with the crew chief. The crew chief explained to the driver that they had consumed too much alcohol to drive safely and that they would be provided with safe transportation home. A second breath test was then administered to ensure the initial positive test was not the result of mouth alcohol and to assure the driver that the initial reading was not in error. Whenever possible, passengers with a BAC under 50 mg% were recruited to drive their companion(s) home. When a passenger with a BAC below 50 mg% was not available, a taxi was provided. In this case, the driver's car was parked in an area adjacent to the survey site. In some cases, the driver called a friend or relative and was picked up.

RESULTS

Response rates

A total of 1,533 vehicles were selected from the traffic flow for participation in the survey—513 in Vancouver, 490 in Saanich, and 530 in Abbotsford. Interviewers completed an average of 33 interviews in a 90-minute period. The number of interviews ranged from 13 to 45 and depended at each site on the volume and pattern of traffic, the number of refusals, the number of drivers who required transportation home, and the capacity of the survey crew to process drivers. The total number of interviews conducted was somewhat lower than in previous surveys. Much of this can be attributed to the time required to collect oral fluid samples.

Table 2 shows participation rates separately for each city. Among the 1,533 drivers selected, 89.2% provided a breath sample and 78.1% provided an oral fluid sample. Only 6.5% of all drivers refused any participation. Participation rates for the breath test and the oral fluid sample did not differ significantly by community (χ^2=3.07, df=2, p>.2 and χ^2=0.98, df=2, p>.6 for breath and oral fluid, respectively).

Table 2: Response Rates According to Community

	Vehicles Selected	Provided Breath Sample	Provided Oral Fluid
Total	1533	1368 89.2%	1197 78.1%
Vancouver	513	457 89.1%	394 76.8%
Saanich	490	429 87.6%	389 79.4%
Abbotsford	530	482 90.9%	414 78.1%

Despite the high participation rates, concern remains that drinking drivers and those using drugs are more likely to refuse to participate, thereby introducing a bias into the results. For example, Wilson and Chen (2000) reported that those who refused to participate in a roadside survey more often showed characteristics of drinking drivers than non-drinking drivers. In this survey, analysis of the observed characteristics (driver sex, vehicle type and occupant configuration) revealed that many who refused the breath test shared more characteristics with non-drinking drivers than drinking drivers. Drivers who refused to provide an oral fluid sample more often showed similar characteristics to those who had not used drugs than those whose oral fluid sample showed evidence of drug use. Refusal rates did not vary significantly across survey night or time. Hence, it is likely that any potential bias introduced by refusal rates was minimal.

Drivers who refused the interview were asked to indicate a reason for not participating. The most common reasons cited were "not interested" (23.5%), "in a hurry" (9.5%), "language barrier" (8.5%), and "other" (29.6%). Fear of prosecution was mentioned by only 4% of drivers who refused to participate. Many of the "other" comments included statements about not wanting to provide DNA. Some simply felt it was too invasive. Several drivers did not wish to put anything in their mouths and some claimed objections on religious grounds.

Characteristics of the sample

This section provides background information on the sample of drivers who participated in the surveys. For these analyses, the unweighted data from all drivers have been used.

Survey night: For the purposes of this report, a survey night is defined as the series of four sequential sites surveyed, beginning at 21:00 and ending at 03:00. For example, Wednesday is considered to include all interviews conducted between 21:00 Wednesday night and 03:00 Thursday morning. This convention facilitates the reporting of the results and is consistent with the reports of other roadside surveys.

Table 3 shows the number of drivers interviewed according to survey night and community. The distribution of interviews over the four nights did not differ according to community (χ^2=3.03, df=6, p=.80). More interviews were generally completed on Fridays and Saturdays—not surprising given the higher traffic volumes on those nights.

Table 3: Participants According to Community and Survey Night

	Vancouver	Saanich	Abbotsford	Total
Wednesday (%)	112 (21.8)	121 (24.7)	108 (20.4)	341 (22.2)
Thursday (%)	130 (25.3)	116 (23.7)	136 (25.7)	382 (24.9)
Friday (%)	136 (26.5)	130 (26.5)	143 (27.0)	409 (26.7)
Saturday (%)	135 (26.3)	130 (25.1)	143 (27.0)	401 (26.2)
Total (%)	513 (100.0)	490 (100.0)	530 (100.0)	1533

Time of night: Table 4 displays the distribution of interviews according to time of night and community. In general, more interviews were completed in the early sessions (i.e., 21:00 to 22:30) than the late ones (i.e., 01:30 to 03:00). Again, this can be attributed primarily to lower traffic volumes later in the evening—particularly on Wednesdays and Thursdays. This temporal pattern did not differ among the three communities (χ^2=4.23, df=6, p>.6).

Table 4: Participants According to Community and Time of Night

	Vancouver	Saanich	Abbotsford	Total
21:00 (%)	151 (29.4)	135 (27.6)	162 (30.6)	448 (29.2)
22:30 (%)	128 (25.0)	124 (25.3)	135 (25.5)	387 (25.2)
0:00 (%)	131 (25.5)	119 (24.3)	138 (26.0)	388 (25.3)
1:30 (%)	103 (20.1)	112 (22.9)	95 (17.9)	310 (20.2)
Total (%)	513 (100.0)	490 (100.1)	530 (100.0)	1533 (99.9)

Vehicle type: The distribution of interviews conducted according to the type of vehicle driven in each community is shown in Table 5. The overwhelming majority of vehicles selected for the survey were passenger cars (65.8%). Sport utility vehicles (SUVs) accounted for 14.6% of vehicles selected; pickup trucks 8.8%; vans and minivans 6.3% and 4.3% respectively. Fewer than 1% of vehicles were motorcycles and are not included in the table.

The distribution of vehicle types differed according to community (χ^2=33.0, df=8, p<.001). In Vancouver 70.5% of vehicles were cars—compared to 66.7% in Saanich and 60.5% in Abbotsford. Pickups were more common in Abbotsford (12.9%) than in Vancouver (3.8%) and Saanich (9.9%).

Table 5: Participants According to Community and Vehicle Type

	Vancouver	Saanich	Abbotsford	Total
Car (%)	356 (70.5)	324 (66.7)	310 (60.5)	990 (65.8)
Van (%)	30 (5.9)	28 (5.8)	37 (7.2)	95 (6.3)
Minivan (%)	18 (3.6)	19 (3.9)	27 (5.3)	64 (4.3)
Pickup (%)	19 (3.8)	48 (9.9)	66 (12.9)	133 (8.8)
SUV (%)	82 (16.2)	66 (13.6)	72 (14.1)	220 (14.6)
Total (%)	505 (100.0)	485 (99.9)	512 (100.0)	1502 (100.0)

Occupant configuration: Table 6 presents the different configurations of vehicle occupants according to community. Over half of drivers interviewed (55.9%) were alone. Drivers with one passenger of either the same sex (12.5%) or different sex (19.0%) were the next most common. Vehicles containing a family, same-sex group or mixed-sex group represented 4.1%, 3.1% and 5.3% respectively. There was no significant difference in the distribution of occupant configurations according to community (χ^2=17.9, df=10, p>.06).

Table 6: Distribution of Vehicle Occupant Configuration According to Community

	Vancouver	Saanich	Abbotsford	Total
Driver only (%)	277 (54.3)	270 (57.4)	292 (56.0)	839 (55.9)
Family (%)	28 (5.5)	13 (2.8)	21 (4.0)	62 (4.1)
1 Psngr, Diff Sex (%)	97 (19.0)	82 (17.4)	106 (20.3)	285 (19.0)
1 Psngr, Same Sex (%)	65 (12.7)	56 (11.9)	67 (12.9)	188 (12.5)
Group, Diff Sex (%)	21 (4.1)	37 (7.9)	22 (4.2)	80 (5.3)
Group, Same Sex (%)	22 (4.3)	12 (2.6)	13 (2.5)	47 (3.1)
Total (%)	510 (100.0)	470 (100.0)	521 (100.0)	1501 (100.0)

There was, however, a significant effect of survey night on the distribution of occupant configurations (χ^2=37.12, df=15, p<.001). Vehicles with just a driver were more common on Wednesday and Thursday nights than on Friday and Saturday nights. Occupant configuration also varied according to site time (χ^2=56.4, df=15, p<.001). Vehicles with families were most commonly encountered at the earlier site times and rarely at later times. Vehicles with just a driver were more common later in the night than earlier. Drivers with an opposite sex passenger were also more common at earlier site times than later.

Characteristics of drivers

This section describes the characteristics of the drivers interviewed, once again using unweighted data.

Driver sex: Men comprised 66.9% of all drivers interviewed, outnumbering women by more than 2 to 1. The distribution of driver sex did not vary by community (χ^2=4.1, df=2, p>.12) nor did it vary according to the day of the week (χ^2=0.46, df=3, p>.92). There was, however, a significant difference in the proportion of male and female drivers according to the time of night (χ^2=21.48, df=3, p<.001): a male was more often behind the wheel later in the evenings. The proportion of female drivers fell from 40.4% at the 21:00 site time to 24.4% at the 01:30 site time.

Driver age: Table 7 presents the distribution of driver age according to community. The largest group of drivers interviewed (25.2%) was between the ages of 25 and 34, followed closely by the group aged 19 to 24 (24.0%). Drivers 55 and older and those younger than 19 made up the smallest proportions of the sample—14.5% and 2.2%, respectively.

Table 7: Distribution of Driver Age According to Community

	Vancouver	Saanich	Abbotsford	Total
16-18 (%)	6 (1.3)	8 (1.8)	16 (3.3)	30 (2.2)
19-24 (%)	85 (18.6)	96 (21.5)	152 (31.5)	333 (24.0)
25-34 (%)	146 (32.0)	95 (21.3)	108 (22.4)	349 (25.2)
35-44 (%)	80 (17.5)	90 (20.1)	89 (18.4)	259 (18.7)
45-54 (%)	72 (15.8)	78 (17.4)	64 (13.3)	214 (15.4)
55+ (%)	67 (14.7)	80 (17.9)	54 (11.2)	201 (14.5)
Total (%)	456 (100.0)	447 (100.0)	483 (100.0)	1386 (100.0)

The distribution of driver age varied by community (χ^2=46, df=10, p<.001). There was a higher proportion of drivers in the 19 to 24 age group in Abbotsford (31.5%) than in Vancouver (18.6%) or Saanich (21.5%). Vancouver had the highest proportion of drivers aged 25 to 34 (32.0%) compared to Saanich (21.3%) and Abbotsford (22.4%). Saanich had the largest proportion of drivers 55 years of age and over (17.9%) compared to Vancouver (14.7%) and Abbotsford (11.2%).

The age distribution of drivers was similar among men and women (χ^2=6.98, df=5, p>.2) and did not vary significantly according to day of the week (χ^2=10.28, df=15, p>.8). Driver age did, however, differ according to time of night (χ^2=81.22, df=15, p<.001). There were fewer drivers over the age of 55 at later times.

Driving after drinking

The unweighted data show that 9.6% of all drivers who provided a breath sample had a positive BAC (i.e., ≥ 5 mg%). Drivers with a BAC below 50 mg% comprised 3.7% of all drivers; 2.3% of drivers had BACs between 50 and 80 mg%; 1.2% had BACs between 80 and 100 mg%; 1.7% of all drivers had BACs between 101 and 159 mg%; and, 0.8% had a BAC over 160 mg%. Six drivers had a BAC in excess of 200 mg%. Over the course of this study, survey crews identified and removed from the road 81 drivers with elevated BACs, either by providing them with alternative transportation or having a passenger with a BAC below 50 mg% drive them home.

The raw data within each community were weighted to adjust for differences in the traffic volume at the various sites. This weighting procedure places greater emphasis on interviews from sites with higher traffic volumes. The weighted data thus provide better estimates of the extent of drinking and driving in each community than the raw (unweighted) data.

As noted previously, the three communities were not selected to provide a representative sample of all British Columbia drivers. Nevertheless, as a means to provide an overall estimate of the prevalence of drinking and driving in the three communities, the data were adjusted for population in each community and combined into a weighted total. This weighted total provides an estimate of the results of the survey across all three communities but should not be interpreted as a provincial estimate.

Table 8 shows the weighted distribution of the breath alcohol test results in each community. The first column (labelled 'Breath Test') shows the weighted number of drivers tested in each community; the second column ('Alcohol Positive') shows the number and percentage of drivers in each community who had an alcohol-positive breath test (i.e., BAC ≥ 5 mg%) along with the 95% confidence interval for the estimate. To adjust for the complex sampling design of the survey and provide a more accurate estimate of the variability of the point estimates, the confidence intervals include an estimated design effect factor of 2. The final three columns in Table 8 show the number and percentage of cases in the following three BAC categories: 5 to 49 mg%; 50 to 80 mg%; and over 80 mg%. The final row labelled 'Weighted Total' shows the combined results weighted for traffic volume and population in each city.

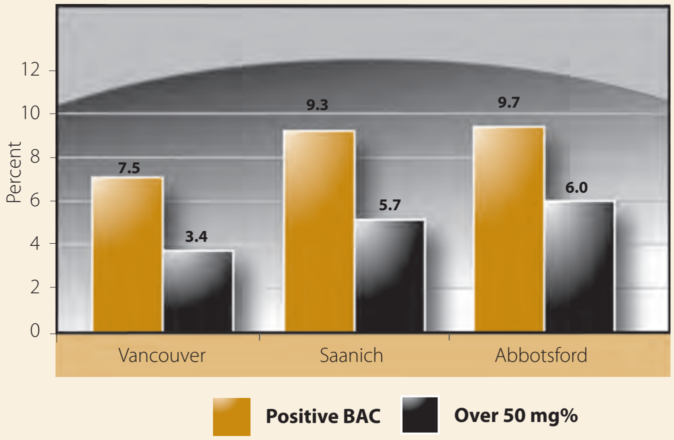
Table 8: Distribution of Driver BAC According to Community*

	Breath Test	Alcohol Positive	BAC distribution (mg%)		
			<50	50-80	>80
Vancouver	467	35 12.1 ± 4.6%	19 4.1 ± 3.5%	6 1.3 ± 2.1%	10 2.1 ± 2.4%
Saanich	440	41 10.4 ± 4.5%	16 3.6 ± 3.6%	11 2.5 ± 2.3%	14 3.2 ± 1.7%
Abbotsford	486	47 10.0 ± 4.5%	18 3.7 ± 3.1%	11 2.3 ± 2.4%	18 3.7 ± 2.4%
*Weighted Total***	1389	112 8.1 ± 2.9%	55 4.0 ± 2.0%	22 1.6 ± 1.3%	35 2.5 ± 1.6%

* weighted data
** Weighted total is a combined estimate from all communities.
(95% confidence intervals include an estimated design effect of 2)

The distribution of driver BACs did not differ by community (χ^2=14.03, df=12, p>.25). The weighted total indicates that 8.1% of drivers had been drinking (i.e., they had a positive BAC ≥ 5 mg%); 4.0% had a BAC below 50 mg%; 1.6% had a BAC between 50 and 80 mg%; and 2.5% had a BAC in excess of 80 mg%. Figure 2 shows the percentage of drivers with positive BACs, and BACs of 50 mg% and greater in each community.

Figure 2: Percent of Drivers with Positive BACs and BACs ≥ 50 mg% in Each Community

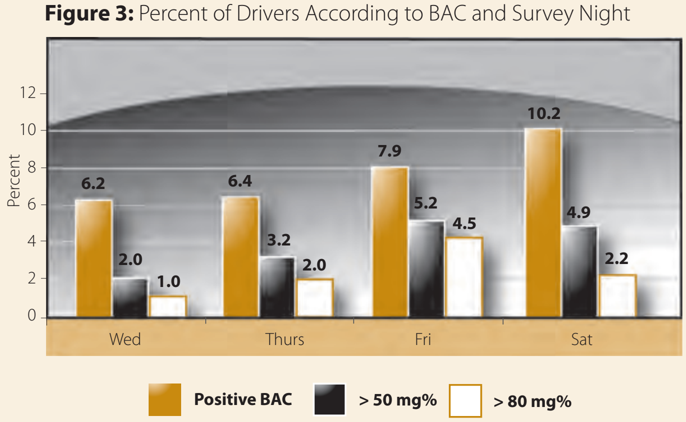


Characteristics of drinking and driving

This section examines the temporal and environmental circumstances surrounding drinking and driving behaviour—e.g., day of the week, time of day, type of vehicle and trip origin. These characteristics can help identify circumstances under which drinking and driving is most likely to happen.

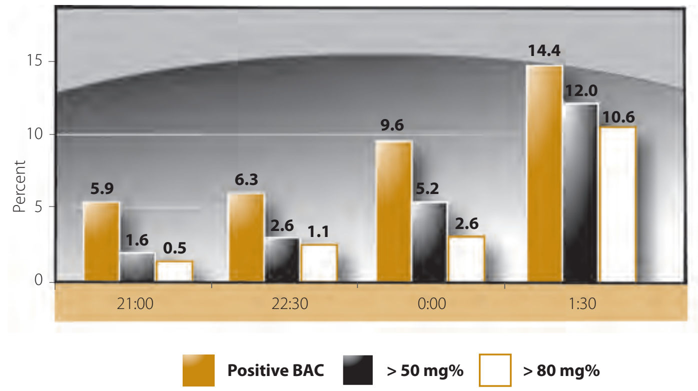
Survey night: Figure 3 displays the percentage of drivers with positive BACs, BACs of 50 mg% and higher, and BACs of 80 mg% and higher according to survey night. In general, drinking drivers became increasingly more common from Wednesday night through Saturday night. The percentage of drivers with BACs of 50 mg% and over was higher on weekend nights (Friday 5.2%, Saturday 4.9%) than on weekday nights (Wednesday 2.0%, Thursday 3.2%) (χ^2=4.91, df=1, p<.03). As well, the proportion of drivers with BACs in excess of 80 mg% was higher on weekend nights (Friday 4.5%, Saturday 2.2%) than on weekday nights (Wednesday 1.0%, Thursday 2.0%) (χ^2=5.23, df=1, p<.03). Over half of all drivers with illegal BACs (i.e., > 80 mg%) were found on Fridays.

Figure 3: Percent of Drivers According to BAC and Survey Night



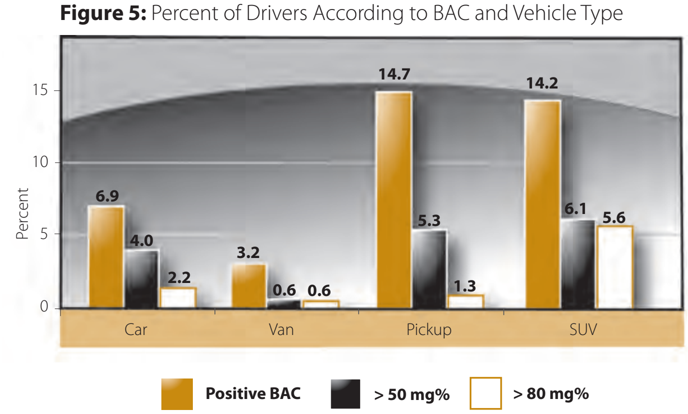
Time of night: Figure 4 shows the distribution of driver BACs according to the time of night (i.e., site time). In general, the percentage of drivers who had been drinking increased over the course of the night. Drivers with BACs of 50 mg% and higher increased from 1.6% at the first site of the night (i.e., between 21:00 and 22:30) to 12.0% at the last site (i.e., 1:30 to 3:00) (χ^2=38.16, df=3, p<.001). A similar pattern is evident among drivers with a BAC over 80 mg%.

Figure 4: Percent of Drivers According to BAC and Time of Night



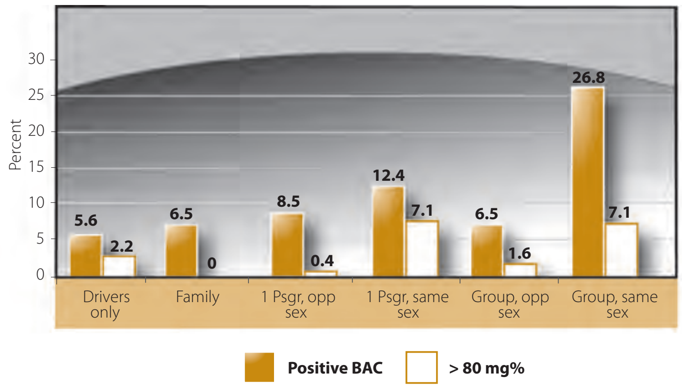
Vehicle type: Alcohol use among drivers varied considerably according to the type of vehicle driven (χ^2=36.9, df=9, p<.001). Figure 5 displays the percentage of drivers with positive BACs, BACs of 50 mg% and higher, and BACs greater than 80 mg% according to vehicle type. Due to small numbers, vans and minivans have been collapsed into a single category. Drivers of pickup trucks and SUVs were most likely to have been drinking (14.7% and 14.2% respectively). Drivers of SUVs were most likely to have a BAC over 80 mg%.

Figure 5: Percent of Drivers According to BAC and Vehicle Type



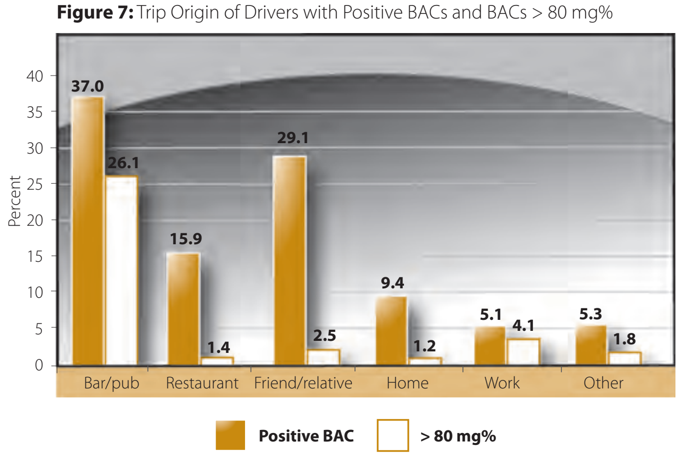
Occupant configuration: Alcohol use by drivers differed significantly according to the nature of other occupants in the vehicle (χ^2=36.6, df=5, p<.001). Figure 6 shows the percentage of drivers with positive BACs and BACs over 80 mg%, according to the configuration of occupants in the vehicle. More than one-quarter (26.8%) of all drivers interviewed who had a group of same-sex passengers in the vehicle had a positive BAC and were most likely to have a BAC above the legal limit (7.1%). Drivers with one same-sex passenger were next most likely to have been drinking (12.4%) and to have a BAC over 80 mg% (7.1%). No drivers with a family in the vehicle had a BAC greater than 50 mg%.

Figure 6: Occupant Configuration of Drivers with Positive BACs and BACs > 80 mg%



Trip origin: The alcohol level of drivers differed significantly depending on where they were coming from (χ^2=163.7, df=24, p<.001). Figure 7 shows the percentage of drivers with positive BACs and BACs over 80 mg% according to the reported origin of their trip. Drivers coming from a bar or tavern were most likely to have been drinking. In fact, 37% of drivers who reported coming from a bar or tavern were found to have a positive BAC and 26.1% had a BAC greater than 80 mg%. Among drivers coming from a restaurant, 15.9% had been drinking but only 1.4% had an illegal BAC. It is of interest that many drivers with elevated BACs who reported 'work' as their point of origin indicated that they worked at a bar or other licensed establishment.

Figure 7: Trip Origin of Drivers with Positive BACs and BACs > 80 mg%

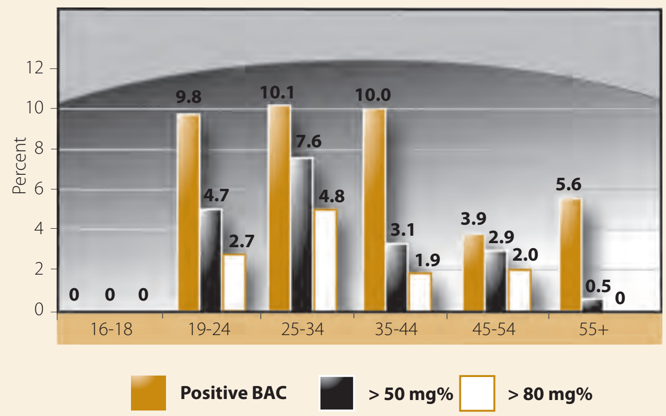


Characteristics of drinking drivers

Driver sex: Male drivers were overrepresented among drinking drivers. Although men comprised about two-thirds (67.1%) of all drivers interviewed, they accounted for 78.4% of all drinking drivers. Among male drivers, 9.4% were found to have been drinking; 5.3% of female drivers had been drinking (χ^2=6.9, df=1, p<.01). However, men were only slightly more likely than women to drive with a BAC of 50 mg% or higher (4.6% versus 3.1%, respectively), and with a BAC greater than 80 mg% (2.8% versus 2.0% respectively). Neither difference was statistically significant.

Driver age: Driving after drinking differed significantly according to age (χ^2=34.7, df=15, p<.005). Figure 8 illustrates the differences in driver BACs according to age group. None of the drivers between the ages of 16 and 18 had a positive BAC. Drivers between the ages of 25 and 34 were most likely to have a BAC of 50 mg% or higher (7.6%) and to have an illegal BAC (4.8%).

Figure 8: Percent of Drivers According to Age Group and BAC



Drugs and driving

An examination of the raw (unweighted) data reveals that 121 (10.1%) of the 1,197 drivers who provided an oral fluid sample tested positive for drugs. Of the drug-positive cases, 87.6% involved a single drug and 12.4% tested positive for more than one drug. Cannabis was the most frequently found substance, accounting for 49.4% of drug-positive cases. Cocaine was detected in 29.3% of cases and opiates 14.8%. Cannabis and cocaine was the most common polydrug combination, accounting for 8.3% of all positive drug cases.

As was done with the alcohol data, the raw data within each community were weighted to adjust for differences in traffic volumes at the various survey sites. The weighted data provide better estimates of the extent of drug use by drivers in each community.

Data from the three communities can also be combined and weighted to account for population differences to estimate overall drug use by drivers across the three communities. Again, this estimate should not be interpreted as representative of the entire province.

Table 9 shows the weighted drug test results in each community as well as the overall estimate across communities. The first column (labelled 'Oral Fluid Samples') shows the weighted number of drivers in each community who provided an oral fluid sample. The second column (labelled 'Drug-positive') shows the number and percentage of drivers who tested positive for drugs along with the 95% confidence interval for the estimate. To adjust for the survey's complex sample design, the confidence intervals for the estimates include a design effect factor of 2. The final three columns in Table 9 present the number and percentage of cases that tested positive for cannabis, cocaine and opiates—the three most commonly found substances. Other drugs found (amphetamines, methamphetamines, and benzodiazepines) are not shown. The last row (labelled 'Weighted Total') shows the combined results weighted for traffic volume and population in each city.

The weighted data show that 10.4% of drivers who provided an oral fluid sample tested positive for at least one potentially impairing substance other than alcohol. Cannabis (4.6%) and cocaine (4.6%) were the most commonly detected substances, followed by opiates (0.9%). Amphetamines, methamphetamine and benzodiazepines were detected in less than 1% of drivers (not shown).

The percentage of drug-positive cases (χ^2=3.18, df=2, p>.2) differed little among the three communities. There was also little difference in refusal rates for providing oral fluid samples (χ^2=4.18, df=4, p>.38). Although the numbers are small, there were no major differences in the types of drugs found in drivers in the three different cities.

Table 9: Distribution of Drug Positive Cases According to Community*

	Oral Fluid Samples	Drug Positive	Drug Detected***		
			Cannabis	Cocaine	Opiates
Vancouver	399	45 10.8 ± 6.1%	17 3.5 ± 3.6%	22 5.3 ± 4.4%	4 0.8 ± 1.7%
Saanich	402	42 10.2 ± 5.9%	25 5.2 ± 4.4%	14 3.5 ± 3.6%	7 1.5 ± 2.4%
Abbotsford	417	37 8.9 ± 5.5%	19 4.3 ± 3.9%	13 2.9 ± 3.2%	9 1.7 ± 2.5%
Weighted Total**	1199	124 10.4 ± 3.4%	55 4.6 ± 2.4%	56 4.6 ± 2.4%	13 0.9 ± 1.1%

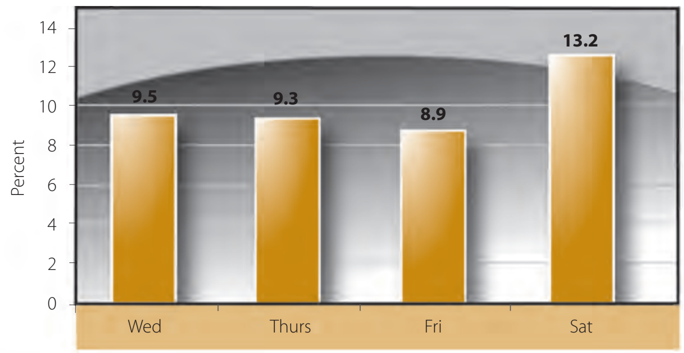
* weighted data
** Weighted total is a combined estimate from all communities.
(95% confidence intervals include an estimated design effect of 2)
***Some cases were positive for more than one substance. Not all drug categories included.

Characteristics of drug use and driving

This section examines the temporal and environmental circumstances of drug-driving behaviour—e.g., day of the week, time of day, type of vehicle and trip origin. These characteristics can help identify circumstances under which driving after drug use is most likely to occur. For these and subsequent analyses, the data were weighted and pooled across cities.

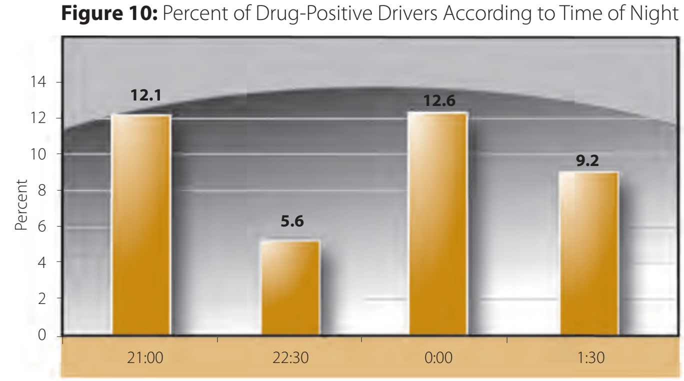
Survey night: Figure 9 shows the percentage of drivers who tested positive for drugs according to survey night. The small differences between nights were not statistically significant (χ^2=4.26, df=3, p>.2). There was no apparent difference in the types of drugs used by drivers according to survey night.

Figure 9: Percent of Drug-positive Drivers According to Survey Night



Time of night: In contrast to the findings on drinking drivers where alcohol was more likely to be found among drivers later in the evening, Figure 10 indicates that this was not true for drug-positive drivers. The percentage of drivers who tested positive for drugs varied considerably over the course of the night and there was no systematic pattern (χ^2=2.8, df=3, p>.42). Once again, there was no apparent difference in the types of drugs used by drivers according to the time of night.

Figure 10: Percent of Drug-Positive Drivers According to Time of Night



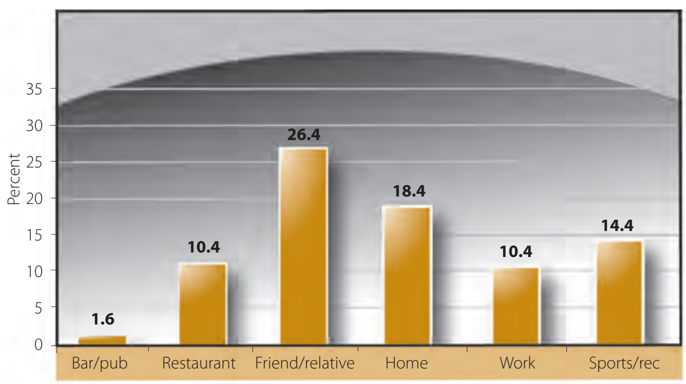
Vehicle type: Drivers of pickup trucks were the most likely to test positive for drug use (15.9%) followed by drivers of SUVs (11.0%) and cars (10.2%). Drivers of mini-vans were least likely to test positive for drugs (6.6%). These differences, however, were not statistically significant (χ^2=3.09, df=4, p>.5).

Occupant configuration: Drivers of vehicles with a same-sex group of passengers were most likely to test positive for drugs (19.6%) followed by drivers with a single same-sex passenger (12.9%). Drivers of vehicles containing a family (i.e., with children) were least likely to have been using a psychoactive substance (6.0%). These differences, however, were not statistically significant.

Trip origin: Drivers coming from home and those coming from the house of a friend or relative were among the most likely to test positive for drugs (11.7%). Just over 10% of drivers coming from a restaurant tested positive for drugs. Among those who had been at a bar, pub or nightclub, only 5.3% tested positive for drugs.

An alternative way to examine the data on trip origin is to isolate those drivers who were found to have a positive oral fluid sample. Figure 11 displays these results. This approach finds about one-quarter (26.4%) of all drug-positive drivers reported coming from a friend or relative's house. Home (18.4%) was the next most common source of drug-positive drivers followed by sports/recreation events (14.4%). Less than 2% of all drug-positive drivers came from a bar or pub.

Figure 11: Trip Origin of Drug-Positive Drivers



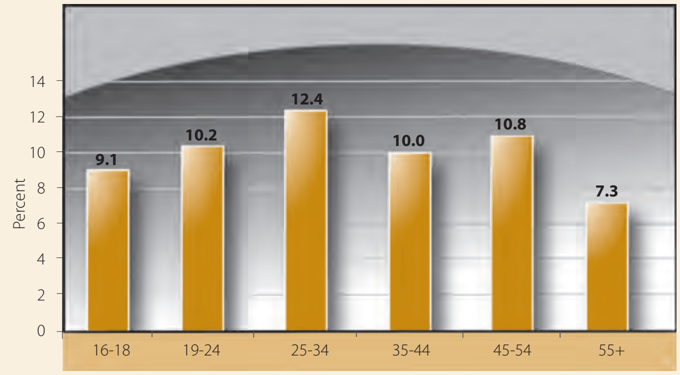
Characteristics of drug-drivers

Driver sex: Male drivers were significantly more likely to test positive for drugs (13.2%) than females (5.1%) (χ^2=18.6, df=1, p<.001). There was no difference between the types of drugs consumed by men and women. All cases of polydrug use involved male drivers and the only drugs that females tested positive for were cannabis, cocaine and amphetamine.

Driver age: Figure 12 shows the percentage of each group of drivers that tested positive for drugs. The proportion of drivers who tested positive for drug use was similar across all age groups (χ^2=3.64, df=5, p>.6).

Cannabis and cocaine were found among all age groups whereas opiates and amphetamines were confined almost exclusively to those aged 35 and over.

Figure 12: Percent of Drug-Positive Drivers According to Age Group



Alcohol and drug use: The concurrent use of alcohol and drugs by drivers was relatively rare. By far the majority of those who tested positive for drugs had not consumed alcohol (83.2%). Of the 16.8% of drug-positive drivers who also tested positive for alcohol, just over half (52.0%) had a BAC of at least 50 mg%; 23.8% had a BAC in excess of 80 mg%.

Among drivers who tested positive for cannabis, 22% had also consumed alcohol. Half of these drivers had a BAC in excess of 80 mg%. No drivers who tested positive for opiates had been drinking. All but one of the drivers who tested positive for more than one drug had not been drinking.

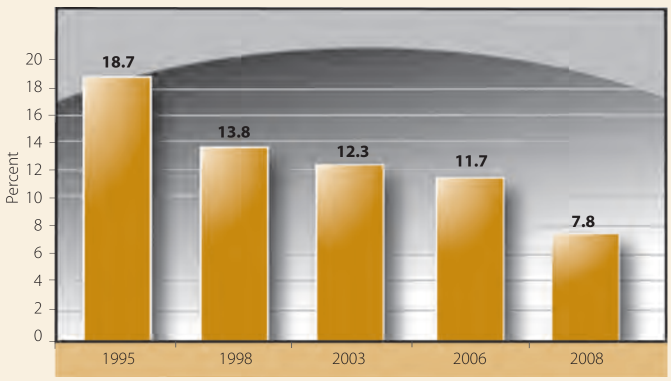
Trends in drinking and driving

Previous roadside surveys of alcohol use by drivers were undertaken in 1995, 1998, 2003 and 2006 in Vancouver and Saanich.[3] Abbotsford was only included in 2003 and 2006. With the exception of the collection of oral fluid samples, which was unique to the 2008 survey, the same methods were used in all. This makes it possible to compare the alcohol test results from Vancouver and Saanich to examine trends in alcohol use among drivers since 1995.[4]

[3]In 1995 and 1998, surveys were conducted in June and again in the fall. To ensure comparability of the various surveys, only the results from the spring surveys in 1995 and 1998 have been included here.
[4]See Beirness et al. 1997; 1999; 2000; 2003; 2006.

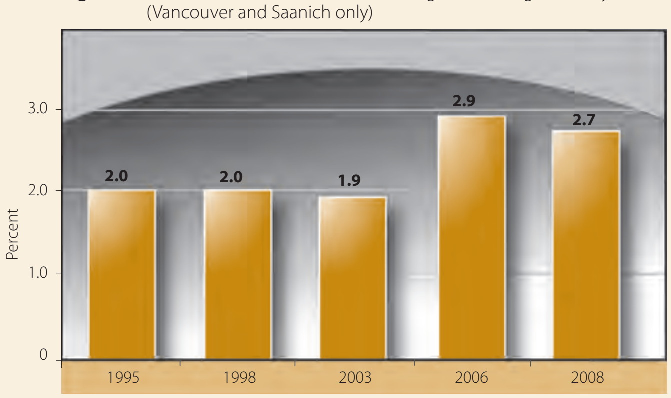
Figure 13 shows the percentage of drivers with positive BACs in Vancouver and Saanich over the course of the five surveys. Of note, the 1995 survey was conducted prior to the start of an enhanced enforcement campaign in both cities. This campaign involved an intensive program of enforcement checkpoints combined with media awareness activities over the summer months and into the fall (Beirness et al. 1997). It is apparent that driving after drinking has decreased substantially in these two cities—from 18.7% in 1995 to 7.8% in 2008, a reduction of 58% (z=8.17, p<.001).

Figure 13: Percent of Drivers with Positive BACs According to Survey Year (Vancouver and Saanich only)



While overall drinking-driving has decreased, Figure 14 shows that driving while legally impaired (i.e., with a BAC in excess of 80 mg%) has not changed appreciably since 1995. In fact, the incidence of BACs over 80 mg% has actually increased slightly in recent years—from 2.0% in 1995 to 2.7% in 2008. In the most recent survey, six drivers with a BAC over 200 mg% were identified, more than in any of the previous surveys.

Figure 14: Percent of Drivers with BACs > 80 mg% According to Survey Year (Vancouver and Saanich only)



DISCUSSION

Historically, roadside surveys have been conducted as a means to obtain an objective, scientifically valid estimate of the extent of driving after drinking within specified geographic and temporal parameters. Using a well-developed, standard technique, the roadside survey is a valuable tool for determining the magnitude and characteristics of the drinking and driving problem—and for monitoring changes over time. In addition, roadside surveys can be an important approach to evaluate the impact of countermeasure programs and policies.

As established at the outset of this report, the most recent BC roadside survey expanded on the typical method to include the collection of oral fluid samples from drivers as a means of estimating the extent of driving after drug use. Oral fluid provides what may well be an ideal compromise between blood and urine as the medium of choice for drug testing in field settings. Although blood remains the gold standard for drug testing with respect to analytic methods and ease of interpretation, oral fluid can be easily and unobtrusively collected and provides a reasonable approximation of blood-drug concentrations.

It should be noted, however, that in this survey the drug results were qualitative only—i.e., the analytic technique was limited to the detection of the presence of specific substances above the analytic threshold value and did not quantify the concentration of the drug. The presence of a substance in oral fluid indicates recent drug use but does not necessarily imply the driver's ability to operate a vehicle was impaired. Nevertheless, it is likely that most drivers who tested positive were affected to some degree by the substance, thereby increasing the risk of adverse consequences to themselves and other road users.

The analytic procedure tested for a limited set of substances most likely to be used by drivers—i.e., cannabis, opiates, cocaine, amphetamines, methamphetamine and benzodiazepines. To the extent that other substances may have been used by drivers, the present findings should be viewed as a conservative estimate of the prevalence of drug use.

The results of the survey revealed that drug use is as common as alcohol use among nighttime drivers. This exposes a dimension of the impaired driving problem that has been largely ignored up to now. The fact that the frequency of drug use by drivers rivals that of alcohol use demands a societal response comparable to that directed at drinking and driving over the past three decades. Specific public awareness and education programs and enhanced enforcement efforts are needed to help curb the extent of driving after drug use and improve public safety.

The patterns of drug use by drivers differed considerably from the well-known patterns of drinking and driving. For example, whereas the incidence of alcohol use by drivers increases during late-night hours and is more common on weekend nights, drug use among drivers appears to be more consistent across day and time. This suggests a need to expand the deployment of enforcement resources to include weeknights and earlier hours.

The overall reduction in the proportion of drinking drivers on the roads is tempered by the continued high rates of drivers with elevated BACs. This seems to indicate that fewer drivers are choosing to drive after drinking, but that those who do tend to do so after consuming greater quantities of alcohol. Ongoing drinking-driving countermeasure programs would appear to be having an impact on socially responsible drinkers who have either stopped driving after drinking altogether or drive only after consuming small amounts of alcohol. It also appears that heavier drinkers have not been dissuaded from driving after drinking large quantities of alcohol. Moreover, there seems to be resurgence in this behaviour in recent years. This is a disturbing trend that requires a fresh approach for dealing effectively with this group of heavy drinkers.

Another positive finding was the complete absence of alcohol use among drivers aged 16 to 18. Although the numbers were relatively small, this high-risk group of drivers appears to be complying with the "zero tolerance" restrictions of the graduated licensing program. A small proportion of drivers in this age group did, however, test positive for drug use, suggesting that young drivers either do not know or understand the risks associated with drug use and driving. Given the apparent success of drinking and driving countermeasures among this age group, it seems appropriate to expedite comparable approaches for drug use and driving across all age groups.

The information provided by this survey is of particular relevance for the planning of drug-driving prevention and enforcement activities. The fact that drug use by drivers actually exceeds that of alcohol use should provide the impetus for action. There is a need to expand impaired driving countermeasures to include impairment by drugs.

Over the past 25 years, we have learned a great deal about the types of measures that can be implemented to reduce alcohol-impaired driving. While much can be gleaned from this experience, drug use presents a series of additional challenges. For example, there are literally hundreds of unique substances—illegal drugs, prescription medications, over-the-counter remedies—that can impair driving ability. There are many different population subgroups that use various substances, each of which requires a unique approach to awareness and prevention activities. The circumstances of drug use also vary considerably by type of substance and population group. There is a great deal of work that remains to be done.

The implementation of new drugs-and-driving legislation in July 2008 was an important step in overall efforts to deal effectively with this issue. The new laws provide police with the tools necessary to detect and apprehend drug-impaired drivers and serve to level the field between alcohol- and drug-impaired driving. The immediate task is to ensure adequate resources are available to train police officers in the techniques of the Drug Evaluation and Classification (DEC) program, and that every effort is made to enforce the new laws through special patrols and spotchecks. The data from the current survey can also be used as a baseline or benchmark for evaluating changes in drug-impaired driving associated with the new legislation and the implementation of the DEC program.

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APPENDIX A: Information Card

British Columbia 2008

ALCOHOL & DRUG DRIVING SURVEY

Please help in our effort to improve road safety

A few minutes tonight ... will help save lives tomorrow

We are asking for your help in a voluntary driver safety survey that deals with alcohol, drugs and driving. Your vehicle was selected completely at random for this survey—you are not suspected of any traffic violation.

The survey takes about 6 or 7 minutes. If you choose to participate, a researcher will ask you a few questions and will ask you to provide a breath sample to measure the amount of alcohol in your system. You are not suspected of drinking and driving—this information is requested from all drivers. If the breath test should happen to show that you have had too much to drink to drive safely, you will be asked to let a non-impaired passenger drive, or we will provide you with a safe ride home.

You will also be asked to provide a sample of oral fluid (saliva). These samples will be sent to a laboratory to test for the presence of drugs. The collection of oral fluid takes about 3 minutes. Should you agree to provide a sample and complete a brief questionnaire, we will give you a coupon for $10 worth of gasoline.

Your answers to the questions and the results of your breath test and the oral fluid test will be anonymous and will be kept by the Canadian Centre on Substance Abuse. No identifying information will be kept in the data file.

This research is supported by the British Columbia Automobile Association Traffic Safety Foundation, Office of the Superintendent of Motor Vehicles, the Government of Canada, Police Services Division, the RCMP, and your local police.

Any questions you have about this survey can be directed to the Project Director, Dr. Doug Beirness (dbeirness@ccsa.ca), or Mr. Allan Lamb (604-297-2151).

If you'd like *further information* on alcohol and drugs or if you feel you need assistance and support with these issues please contact:

Alcohol and Drug Information and Referral Service
From the Lower Mainland: 604-660-9382
From the rest of BC: 1-800-663-1441
www.vcn.bc.ca/isv/adirs.htm

APPENDIX B: Roadside Interview Questionnaire

ROADSIDE INTERVIEW QUESTIONNAIRE - 2008

ID: ___________

Time: ___________

Driver sex: M F

Vehicle type: Car Van Minivan Pickup SUV Motorcycle

Occupant Configuration:

1. Driver only
2. Family (with kids)
3. 1 psgr, diff. sex
4. 1 psgr, same sex
5. Group, diff. sex
6. Group, same sex

Seat Belt Use:

Driver	Y	N
Pass	Y	N

1a. **Where are you coming from?**

1. work
2. home
3. friend/relative
4. restaurant
5. bar/pub/nightclub
6. movie
7. sports/recreation
8. other________________________

1b. **How long ago did you leave there?** _______ minutes

1c. **Where are you going to?**

1. work
2. home
3. friend/relative
4. restaurant
5. bar/pub/nightclub
6. movie
7. sports/recreation
8. other________________________

2. **In what year were you born?** _________

3. **How likely do you think it is, that if a person drives after drinking too much, they will be stopped by the police?** [where **1** = *not at all likely* **7** = *extremely likely*] ______

4. **How likely do you think it is, that if a person drives after using drugs, they will be stopped by the police?** [where **1** = *not at all likely* **7** = *extremely likely*] ______

Now I have a question about alcohol.

5. **Have you had anything to drink in the last 12 hours?**
   2 = No
   1 = Yes → **How long ago did you finish your last drink?**
   _____hrs. ______min.

6. **Where did you do most of your drinking tonight?**
   1 Bar
   2 Restaurant
   3 Own home
   4 Friend/relative's house
   5 Other ___________________________

BAC: ___________ (3 digits)

Incentive # __________

PAS __________

IF REFUSED: **Interview / BAC / Saliva**

1. language
2. in a hurry
3. not interested
4. civil rights
5. fear of prosecution
6. other ______________________