

IMPAIRED DRIVING
Policy Background Paper

**Prepared by Christy Nickerson
for the AADAC Commission Board**

December 2005

AADAC Alberta Alcohol and Drug Abuse Commission
An Agency of the Government of Alberta

EXECUTIVE SUMMARY

The purpose of this paper is to inform revision of AADAC's *Policy on Impaired Driving*. It outlines the current situation with regard to impaired driving caused by alcohol or other drug use. Incidence levels in Alberta and Canada are provided along with a summary of existing legislation, a discussion of impairment by drugs other than alcohol, and a review of effective interventions for impaired driving.

In Canada in 2004, there were 247 impaired driving charges laid per 100,000 population. This was 33% lower than the rate a decade earlier. The rate of impaired driving charges in Alberta decreased each year between 1992 and 2002, yet alcohol continues to be a major factor in driving injuries and fatalities. In 2003, 38% of fatally injured Canadian drivers who were tested had alcohol in their systems, and 32% were legally impaired. In the same year, 40% of fatally injured drivers in Alberta had been using alcohol, and 33% were legally impaired.

Drug-impaired driving has become an issue of increasing public concern, but at present there is limited research in this area. A small number of Canadian studies conducted to date indicate that drugs may be found in 10% to 32% of fatally injured drivers. The drugs most commonly present were cannabis, benzodiazepines (minor tranquillizers) and cocaine. In 2002, 18% of Canadians surveyed reported driving within two hours of taking some type of medication or other drug that could potentially affect their ability to drive a vehicle safely.

Illegal, prescription and over-the-counter drugs all have the potential to impair driving ability. Drugs with a high risk of potential impairment are opioids, benzodiazepines, barbiturates, older types of antihistamines (those containing anticholinergics such as diphenhydramine) and certain antidepressants (amitriptyline, doxepin, and mianserin). The use of cannabis poses a moderate risk of impairment. Individuals under the influence of cannabis may be able to compensate for impairments while driving for short periods of time. However, they may be less able to compensate for impairments when driving is monotonous or prolonged, or in situations that require greater attention and skill.

A number of countermeasures have shown themselves to be effective in reducing alcohol-impaired driving. There is strong evidence that .08 blood alcohol content (BAC) laws are effective in reducing alcohol-related traffic fatalities. Administrative licence suspensions have been shown to be cost-effective and complementary to federal BAC laws in reducing impaired driving and alcohol-related traffic fatalities. Research has also indicated that random breath testing can deter drinking and driving, and that graduated licensing programs with zero BAC tolerance show positive results for driver safety and reduced involvement in motor vehicle collisions.

Some of the interventions that have been developed for alcohol-impaired driving may prove to be useful for drug-impaired driving. Overall, however, drug-impaired driving presents a more complex issue. Drug testing is able to identify that a person has used a particular drug or drugs, but does not have the sensitivity or specificity to determine exactly when the drug was used, how

much was used, or how the drug is currently affecting the user. Research suggests it cannot be assumed that the countermeasures for alcohol-impaired driving would be as effective for drug-impaired driving.

Impaired driving continues to be an issue of concern. Though rates have declined over the last 20 years, there are still a large number of impaired driving incidents. According to the Canadian public, impaired driving is the most serious traffic problem in the country. More research is needed to determine the extent of drug-impaired driving in Canada, and to develop effective countermeasures. Although drug-impaired driving is a growing problem, alcohol-impaired driving continues to pose a clearer and greater risk requiring ongoing and comprehensive efforts.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	4
ALCOHOL-IMPAIRED DRIVING.....	4
<i>Prevalence</i>	4
<i>Current Intervention</i>	5
<i>Public Concern</i>	6
DRUG-IMPAIRED DRIVING.....	7
<i>Prevalence</i>	7
<i>Impairment</i>	8
<i>Assessing Impairment</i>	9
<i>Current Legislation</i>	10
<i>Proposed Legislation</i>	11
INTERVENTIONS AND SOLUTIONS	11
<i>Alcohol</i>	12
<i>Other Drugs</i>	14
IMPLICATIONS	15
ENDNOTES	16

INTRODUCTION

Impaired driving continues to be an issue of concern in Alberta and around the world. Alcohol-impaired driving has been the focus of law enforcement, government policy and public awareness campaigns for a number of years. This has resulted in declining rates of alcohol-impaired driving over the last 20 years. Despite these efforts, there continues to be a proportion of the population who drive while impaired by alcohol.

Drug-impaired driving has more recently become an issue of concern. Although the risks related to drug-impaired driving have always been present, recent debate concerning proposed decriminalization of the possession of small amounts of cannabis has helped to increase public concern about these risks.

ALCOHOL-IMPAIRED DRIVING

Prevalence

Across Canada in 2004, there were 247 impaired driving charges laid per 100,000 population. This rate was similar to that found in 2003. Except for a small increase in 2001, the rate of impaired driving charges has been decreasing for the last 20 years. The rate in 2004 was 33% lower than it was a decade earlier.¹

In 2002 (the most recent year for which rates by province were available), the rate of impaired driving charges in Alberta was 417 per 100,000 population. At that time, Alberta was the province with the second-highest rate of impaired driving charges (after Saskatchewan, which had a rate of 618 per 100,000 population). The rate of impaired driving charges in Alberta has decreased each year since 1992.²

In 2002, the highest rates of impaired driving charges across Canada occurred among those aged 19 to 24. For this age group, there were 416 charges per 100,000 population, compared with a rate of 265 per 100,000 for the population as a whole. The rate for males was 87% higher than for females in 2002.

Measuring the blood alcohol content (BAC) of fatally injured drivers is an indicator of the prevalence of impaired driving. In Canada in 2003, 38% of fatally injured drivers who were tested had alcohol in their systems, and 32% had a BAC over .08 (the legal definition of alcohol impairment). Fatally injured drivers between 20 and 45 years of age were more likely to have tested positive for alcohol. Younger and older drivers were less likely to have a positive BAC reading. Males were more likely than females to have a positive BAC. Except for an increase in 2001, the percent of fatally injured drivers testing positive for alcohol use has been decreasing over the past decade.³

The prevalence of alcohol use among fatally injured drivers in Alberta is similar to the national findings. In 2003, 40% of fatally injured drivers in Alberta had been using alcohol, and 33% had a BAC over the legal limit. Those between 20 and 25 years of age were most likely to test positive for alcohol. Fatally injured male drivers were more likely to have used alcohol than female drivers. Between 1987 and 2002, there was an overall decline in the rate of alcohol use among fatally injured drivers in the province (from 49% to 40% for a positive BAC and from 41% to 33% for a BAC over .08).³

More recent statistics from Alberta Infrastructure and Transportation show that 19.1% of drivers involved in fatal collisions and 4.8% of drivers involved in injury collisions had consumed alcohol prior to the crash. More than one in ten drivers (11.3%) involved in fatality collisions and 2.5% of drivers in injury collisions had a BAC over the legal limit. In terms of involvement per 1,000 licensed drivers, males aged 18 to 24 were more likely to have consumed alcohol prior to the collision than any other age group. The percentage of drivers in alcohol-involved fatality or injury collisions has remained relatively the same since 2000, but reports show that as accident severity increases, so does alcohol involvement.⁴

Alcohol is also a significant factor in Alberta traffic collisions involving motorcyclists, pedestrians and bicyclists. In 2004, 7.7% of motorcycle drivers involved in injury or fatality collisions had consumed alcohol prior to the crash. Among pedestrians involved in injury collisions, 13.7% had consumed alcohol, and among those involved in fatal collisions, almost half (48.6%) had consumed alcohol. Pedestrians aged 20 to 24 had the highest rate of involvement (per 10,000 population) in alcohol-related injury or fatality collisions. Among bicyclists in Alberta involved in casualty collisions, 4.6% had consumed alcohol prior to the crash.

In a recent national survey, 17.8% of drivers reported operating a vehicle within two hours of consuming alcohol. Those aged 25 to 34 were most likely to report this behaviour (28%). Only 5.6% reported driving when they thought they were over the legal alcohol limit. When estimated over a one-year period, this amounts to 4.2 million incidents of impaired driving across Canada. Although this is a large number of impaired driving incidents, the proportion of drivers reporting this behaviour has decreased from 9% in 1998 to 4% in 2004.⁵

Data from the 2004 Canadian Addiction Survey differ slightly in self-reports of impaired driving. Overall, 11.0% of Canadians and 10.3% of Albertans reported that on at least one occasion in the year prior to the survey, they had driven a vehicle within two hours after consuming two or more alcoholic drinks. A higher proportion—17.8% of Canadians and 18.2% of Albertans—reported being a passenger in a vehicle driven by someone who had been drinking.⁶

Current Intervention

In Canada it is a Criminal Code offence to drive while impaired by alcohol. Impairment is legally defined as having a BAC over .08. It is also an offence to refuse to provide a breath test. All provinces have administrative sanctions that apply to drivers with BAC levels lower than .08. In Alberta, the level is .05.⁷

The Alberta Administrative Licence Suspension Program (AALS) was implemented in December 1999. This program allows for immediate suspension of a person's driving licence whether or not they are charged with impaired driving. A 24-hour licence suspension is given to those found with a BAC of .05 or higher. Those found to have a BAC over .08 or who refuse to provide a breath or blood sample are given a three-month licence suspension. A six-month suspension is given if the impaired driving incident resulted in bodily harm or death.⁸

In 2004, only one-third of Canadian drivers were aware of the lower BAC enforcement practices in their province. A recent evaluation of the AALS program found that public awareness had diminished since the program was first implemented. However, awareness was higher among those with higher rates of impaired driving, suggesting information targeted at this risk group has been effective.

As a condition of licence reinstatement, those convicted of impaired driving in Alberta must participate in an information session or a remedial treatment program. The Alberta Motor Association provides these programs. "Planning Ahead" is a one-day information session for first-time impaired driving offenders. It is offered at 35 locations throughout the province. The goals of the course are to increase knowledge of the effects of alcohol and of the laws concerning impaired driving, and to separate drinking and driving behaviour.⁹

The "IMPACT" program is required for repeat offenders (i.e., those who have had two or more convictions within a 10-year period). It is a weekend residential program led by clinical addictions counsellors. IMPACT is offered in four locations in the province. The goals of the program are to assess the level of alcohol use by the attendees and prepare them for further treatment through motivational interviewing techniques. For both the Planning Ahead and the IMPACT program, the attendees must pay a registration fee. To date, no evaluations of the effectiveness of either of these programs have been done.

Alberta has a graduated licensing program with three driving stages: learner, probationary driver and fully licensed driver. A written test is required to become a learner, and two road tests are done to first become a probationary driver and then a fully licensed driver. At both the learner and probationary stage there is no allowable BAC level (i.e., BAC must be zero).¹⁰

On a regular basis, the Canadian chapter of Mothers Against Drunk Driving (MADD) evaluates each province's approach toward impaired driving. In 2005, Alberta received an assessment as "promising." MADD was supportive of Alberta's graduated licensing program and the implementation of the AALS. Recommendations for the province included increasing the age for obtaining a learner's permit from 14 to 16, and giving police more authority at roadside checkpoints (for example, by allowing use of passive alcohol sensors).¹¹

Public Concern

In a 2004 survey of Canadian drivers, 81% indicated that they were very or extremely concerned about drinking and driving. Drinking drivers and young impaired drivers were viewed as the two most serious traffic problems. (The third was red light running.) A 2002 survey focusing on drug-impaired driving showed that drinking and driving, and drivers impaired by illegal drugs, were the two traffic problems perceived to be the most serious. Drivers impaired by medication

were perceived as the tenth most serious traffic issue. This was much lower than the second-place ranking of drivers impaired by illegal drugs, even though the survey showed that driving after using prescription and over-the-counter drugs was much more common than driving after using illegal drugs.

DRUG-IMPAIRED DRIVING

There is limited research available to assess the extent and nature of drug-impaired driving in Canada. Based on what is known, drug-impaired driving is a serious problem in Canada and elsewhere in the world.¹² A variety of drugs have the potential to impair driving, including illegal, prescription and over-the-counter drugs. Drug impairment and driving is a more complex issue than drinking and driving because of the range of drugs that can impair and the difficulty of substantiating levels of impairment.¹³

Prevalence

A limited number of Canadian studies have been conducted to assess the prevalence of drug-impaired driving. Studies completed in Ontario (1982), British Columbia (1995) and Quebec (2002) have examined the presence of drugs in fatally injured drivers. Drugs were found in between 10% and 32% of cases. The drugs most commonly found were cannabis (15%–20%), benzodiazepines (5%–10%) and cocaine (4%–8%), and approximately half of fatally injured drivers with drugs in their system had also been using alcohol. A study of seriously injured drivers in Toronto (1993) reported that 41% had been using drugs; most also tested positive for alcohol. These findings indicate that drug use is common among injured drivers, but do not show how drug use was related to the accident.¹⁴

In Quebec, a roadside test was conducted on a random sample of drivers to determine the proportion who had been using drugs. Of this sample, 11.8% of drivers tested positive for drugs. Both alcohol and other drugs were found in 5.9% of positive cases. Cannabis (6.7%), benzodiazepines (3.6%), opiates (1.2%), and cocaine (1.1%) were the drugs found most often. Comparing these results with those from the fatally injured driver studies shows that the combined use of alcohol and other drugs is a significant factor in casualty collisions, and that other drugs alone are a risk factor for fatal crash involvement.

Self-reports are another means of determining the extent of driving after using drugs. In a 2002 survey of Canadians, 18% reported driving within two hours of taking some type of drug that could potentially affect their ability to drive a vehicle safely. The majority of respondents had used over-the-counter drugs such as cold medications and antihistamines (15.3%). The reported use of prescription drugs (2.3%), cannabis (1.5%) and other illegal drugs (0.9%) was less common. In more recent surveys, between 1% and 2% of Canadian drivers have reported using marijuana within two hours of driving.⁵ Because of the negative view of impaired driving, it is assumed that impaired driving rates based on self-reported behaviour would be lower than actual rates.

Drug-impaired driving by youth appears to be a growing problem, with self-reported rates that are generally higher than those among adults. For example, results from student surveys in Manitoba (2005), Ontario (2003) and Nova Scotia (2002) show that 15% to 30% of high school students reported driving after using cannabis.^{15, 16, 17} A recent re-analysis of 2002 survey data from Atlantic provinces revealed that among students in grade 10 to 12, past-year prevalence of driving under the influence of cannabis (15.3%) was higher than past-year prevalence of driving under the influence of alcohol (11.7%). Moreover, results showed that the risk of being involved in a motor vehicle collision was almost twice as high for students under the influence of cannabis as it was for students who were not driving under the influence of this drug.¹⁸

Very little research has examined the characteristics of drivers who use drugs. Some studies show that unmarried individuals under age 30, and particularly young males, are the most likely to drive after using cannabis or other illegal drugs. There are also studies suggesting that drivers who report using cannabis are as likely to report consuming alcohol. Understanding the various subpopulations who drive while impaired by drugs is a new area of research inquiry, and one that is essential to developing effective countermeasures. For example, prevention efforts targeted to young drivers who use cannabis are likely to be very different from interventions directed to older drivers using prescription and over-the-counter drugs.

Impairment

Cannabis is more commonly used than other illicit drugs. For this reason, it is of great concern as a potential cause of driving impairment. Research has shown that drivers under the influence of cannabis demonstrate more conservative driving behaviour such as driving more slowly, leaving greater space between themselves and the car ahead, and being less likely to pass other cars. Cannabis use appears to have a positive impact on some aspects of driving behaviour, but at the same time impairs other aspects of driving by slowing information processing and reaction times, and by reducing tracking abilities.^{12, 13} It seems that individuals under the influence of cannabis may be able to compensate for these impairments while driving for short periods of time. However, they may be less able to compensate when driving is monotonous or prolonged, or in situations that require greater attention and skill.¹⁹

Higher doses of cannabis can cause greater changes in driving ability such as those already outlined, but the changes to impairment do not follow a predictable dose-response relationship. That is, an incremental increase in the amount of cannabis used does not produce equal increases in the degree of impairment. In other words, two individuals who have consumed a similar amount of cannabis may not show similar levels of impairment. This is different from alcohol use, for which the dose-response relationship is quite well understood and is much more predictable. Individuals with similar blood-alcohol levels will present similar levels of impairment.¹²

Depressant and analgesic drugs (such as barbiturates, tranquillizers, opioids and some antihistamines) have a high propensity to impair driving performance. Many of these drugs cause drowsiness and affect concentration. Drivers under the influence of these types of drugs have longer reaction times and depressed reflexes, are inattentive, and have a reduced ability to perform multiple tasks. This impairment results in lane weaving, slower speed and a tendency to ignore road signs.

In general, stimulant drugs (such as cocaine and amphetamines) cause drivers to be inattentive and impatient. In low doses these drugs are less likely to cause impairment, and may even improve certain aspects of driving performance such as reaction time. However, drivers using higher doses of stimulant drugs are more likely to speed and engage in risky driving practices. The use of hallucinogens (such as ecstasy) produces similar effects on driving.¹⁹

The U.S. National Highway Traffic Safety Administration conducted a review of research on the risk of drug-impaired driving. The authors concluded that the types of drugs with a high risk of potential impairment were opioids, benzodiazepines, barbiturates, older types of antihistamines (those containing anticholinergics such as diphenhydramine) and certain antidepressants (amitriptyline, doxepin and mianserin). They also concluded that acute use of cannabis poses a moderate risk of impairment. Low doses of stimulants were found to pose a low risk of impairment, but higher doses were found to cause serious impairment of driving performance.^{13,}
19

Assessing Impairment

Determining levels of impairment by drugs poses a dilemma for enforcement officers and legislators. Detection of alcohol impairment has been well researched. Specific BAC levels have been linked with degree of impairment. Breathalyser tests provide a consistent and reliable measure of BAC with the convenience of roadside testing.

Testing for the presence of drugs can be done using blood, urine, saliva, sweat and hair. Each test offers different information about drug use. Some tests are able to detect the presence of a drug quite soon after use, but others take longer. Blood testing is likely the best method for determining the amount of drug consumed, but collection is considered to be invasive. Testing of saliva presents a better option for roadside collection.²⁰ For example, police in Victoria, Australia have begun a pilot project using roadside saliva testing as a means of randomly testing drivers for the presence of cannabis and methamphetamine. This test provides a measure of use, but not a measure of impairment.²¹

Legal levels of impairment have not been determined for any type of drug (other than alcohol) using these testing methods. Current testing methods are able to identify that an individual has used a particular drug or drugs, but testing does not have the appropriate sensitivity or specificity to determine exactly when the drug was used, how much was used, or how the drug is currently affecting the user. Different drugs affect the body in dramatically different ways.²⁰ Alcohol is the only drug for which there is an established legal level of impairment that can be measured using breath testing.

For this reason, the Canadian Human Rights Commission's *Policy on Alcohol and Drug Testing* does not allow for the use of drug testing as a means of determining impairment. The Commission recommends that drug testing should only be used as part of a broader medical assessment of use and impairment.²²

The Drug Recognition Expert (DRE) program is a method used for assessing impairment caused by drugs other than alcohol. The program incorporates Standardized Field Sobriety Tests (SFST) and accepted medical techniques for detecting the effects of drugs of abuse. It was developed to provide a standardized way for enforcement officers to assess drug impairment. Evaluations of the program have shown that DRE assessments correctly identify the presence of a specific drug in 80% to 90% of cases. Enforcement officers must undergo extensive training to be recognized as a DRE, and training appears to be a factor in accurate assessment.^{23, 24}

A DRE evaluation is conducted when an arresting officer suspects that a driver is impaired by something other than alcohol. An officer who has been trained as a DRE does the evaluation. This is a 12-step process that includes:

- a breath test to rule out alcohol as a major cause of impairment
- an interview of the arresting officer by the DRE
- a preliminary examination of the driver
- an eye examination
- a series of divided-attention tasks
- an examination of vital signs
- an examination of the driver's nasal and oral cavities, and of the driver's pupil size
- a check of muscle tone
- an examination of typical injection sites
- an interview with the driver
- the rendering of an opinion by the DRE
- provision and testing of a bodily fluid sample^{23, 25}

The Senate Special Committee on Illegal Drugs has reviewed the evidence on the effectiveness of the DRE program and recommended that Canadian police officers be trained in this program. DRE programs are already used in British Columbia, most U.S. states, Australia, New Zealand and some European countries.^{24, 26} In the United States, there have been a number of challenges to the admissibility of DRE evidence. The use of DRE evidence has been upheld in California, New York, Arizona, Colorado and Florida.²⁷ As yet, there have been no evaluations of the effectiveness of the use of DRE programs with respect to rates of drug-impaired driving.

Current Legislation

According to the *Criminal Code of Canada*, it is an offence to operate a motor vehicle if a person's ability to do so is "impaired by alcohol or a drug."²⁸ In principle, a driver can be charged, prosecuted and convicted for drug-impaired driving. Police officers have authority to issue a warrant to obtain a blood sample in cases where drug impairment is suspected and the driver is involved in an injury or fatality accident. Police officers can also request a roadside sobriety test, but in many provinces, drivers are under no obligation to participate in this assessment. Current legislation makes it possible to lay charges for drug-impaired driving (including refusal to provide a sample of body fluids), but difficult for law enforcement personnel to obtain the necessary evidence for conviction.

Proposed Legislation

In November 2004, the federal government proposed changes to laws regarding cannabis use and drug-impaired driving. Currently, possession of cannabis is a criminal offence with a maximum prison term of six months and maximum fine of \$1,000 or both. Under Bill C-17, An Act to Amend the Contraventions Act and the Controlled Drugs and Substances Act, possession and use of cannabis would remain illegal, but fines would replace criminal penalties for possession of small amounts of cannabis for personal use (i.e., 15 grams or less of marijuana and one gram or less of cannabis resin). This bill received first reading on November 1, 2004.²⁹

Bill C-16, An Act to Amend the Criminal Code (Impaired Driving), was proposed along with Bill C-17. It would provide for increased investigation of suspected drug-impaired drivers by trained police officers. Bill C-16 received first reading on November 1, 2004. This bill would legislate the use of Standardized Field Sobriety Tests (divided-attention tests that evaluate a subject's ability to multitask), the DRE program and collection of a sample of a bodily substance (blood, urine or oral fluid) in conjunction with the DRE evaluation. Refusal or failure to comply with any of these demands by police would be a criminal offence and would have the same consequences as refusing to provide a breath test for alcohol.³⁰ Implementation of the DRE program is based on the recommendations in the Senate's report on cannabis.

Not all agree that new legislation is needed to address drug-impaired driving. For example, the Canada Safety Council (CSC) has expressed concerns about Bill C-16. The Council suggests that provincial and territorial laws that provide police the power to suspend a driver's licence for any type of impairment should be used as sanctions against drug-impaired driving. CSC recommends that changes to the *Criminal Code* wait until defensible measurement tools are available for all impairing drugs, as is the case for alcohol.^{31, 32}

Funding to train enforcement officers in the DRE program was proposed along with Bill C-16. This funding would provide consistent training for officers across the country in detecting drug impairment. Although there are already DRE officers trained in some areas of the country, CSC recommends that additional training should occur immediately, and that it should not wait for implementation of Bill C-16.'

With dissolution of Parliament in December 2005, Bill C-16 and Bill C-17 will die on the order paper unless reintroduced by the newly elected Canadian government.

INTERVENTIONS AND SOLUTIONS

Alcohol-impaired driving has been the focus of much intervention and research. Countermeasures include legislation, enforcement and education. Not all countermeasures have been adequately evaluated, but there is accumulating evidence that individually, and together, these strategies are effective in reducing alcohol-related traffic accidents and impaired driving.

Alcohol

There is strong evidence that .08 BAC laws are effective in reducing alcohol-related traffic fatalities, including research supporting lower BAC limits to prevent traffic fatalities among young and inexperienced drivers.³³

In Canada, driving with a BAC of .08 or more has been a criminal offence since 1969.³⁴ A study of the effects of the criminalization of impaired driving in Canada showed a long-lasting decrease in alcohol-involved driving fatalities since that time. Using data from Ontario between 1962 and 1996, the authors of this study associated the legislative change with an 18% decrease in the rate of alcohol-involved fatalities between 1969 and 1996. Non-alcohol-involved fatalities did not decrease as substantially. The authors concluded that formal sanctions (impaired driving laws) have had a considerable impact on impaired driving behaviour. These formal sanctions have also served to shape informal sanctions such as public opinion against driving while impaired.

Evidence supports provincial administrative licence suspension as cost-effective and complementary to federal BAC laws in reducing impaired driving and alcohol-related traffic fatalities. Licence suspensions provide a general deterrent effect because the punishment immediately follows the crime.³⁵ The Alberta Administrative Licence Suspension Program allows for an immediate 24-hour licence suspension for drivers with a BAC of .05, and a suspension of three to six months for those with a BAC of .08 or higher.

A recent evaluation of the AALS program was favourable. From three years before implementation of AALS to three years after, there was a 6% reduction in the number of casualty collisions involving alcohol and a 12% reduction in the number of fatal collisions. (However, no changes were observed in the average BAC levels of drivers apprehended for impaired driving, or in the total number of alcohol-involved charges laid over the study period.) AALS also had a positive impact on the court processing system. There was a decrease in the amount of time to receive a court hearing date and the time between first and last court appearances was reduced.

Research suggests that increased enforcement and, in particular, police roadside sobriety checks are effective in preventing impaired driving and alcohol-related injury and fatality collisions.³³ In a review of research into effective interventions against alcohol-impaired driving, the authors concluded that certainty of penalties, rather than severity of penalties, has a greater impact on deterrence. These findings support increased enforcement and roadside checks as a form of deterrence.³⁶

Australia, New Zealand and some European countries have introduced random breath testing for drivers. In European countries, increased random breath testing has been associated with a decrease in alcohol-involved driving accidents.³⁷ Unlike the Alberta Checkstop or similar campaigns mounted by police during holiday weekends, drivers are routinely and randomly stopped, and must provide a breath test even if they are not suspected of impaired driving. Refusal to submit to the test is equivalent to failing. There is strong support in the research for the effectiveness of random testing to prevent drinking and driving.³⁸

Graduated licensing is a system for phasing in driving privileges. Twelve Canadian jurisdictions, including Alberta, have enacted graduated licensing systems. Most of these programs have lower BAC limits or zero alcohol tolerance for new drivers, along with driving curfews and other incremental restrictions. Reports suggest graduated licensing is well accepted where implemented. Although there are only a small number of sound evaluations to date on these programs, they show positive results in terms of driver safety and reduced involvement in motor vehicle collisions.³⁹

Both formal and informal programs exist to ensure safe transport for people who have been drinking. Designated driver programs encourage one person in a group to abstain from consuming alcohol and to assume responsibility for driving others. Ride service programs are voluntary, commercial or seasonal (e.g., Operation Red Nose), and provide transportation to intoxicated people who might otherwise drive. Designated driver programs are popular, but there is almost no research that examines their effectiveness in reducing impaired driving. A recent review of studies showed that these programs are able to increase the number of designated drivers, but that even with intensive promotion, this increase is only modest. The authors suggested that the benefit of these programs may be in educating the public and reinforcing social norms against impaired driving.⁴⁰

The alcohol ignition interlock is a breath-testing device attached to a vehicle's ignition system to prevent the vehicle from being started by someone who has been drinking. To start the vehicle, the driver must provide a breath sample that indicates a BAC below a set level (normally .04 or less). A number of Canadian provinces, including Alberta, require alcohol ignition interlock devices for people convicted of impaired driving. Studies to date suggest these devices are effective in reducing impaired driving. Until such devices are more widely adopted, however, their true potential cannot be adequately evaluated.⁴¹

Most Canadian provinces have remedial programs in place that require assessment and/or treatment for people convicted of impaired driving (e.g., the IMPACT program in Alberta). There is reasonably good evidence supporting the effectiveness of remedial treatment programs for impaired drivers. Research indicates these programs should be part of a comprehensive set of countermeasures. As well, they should be a condition for reinstatement of an offender's driver's licence.^{7, 42}

Best practice recommendations for remedial treatment and education programs suggest that because impaired drivers are not a homogeneous group, there should be a minimum of two levels of intervention, roughly corresponding to different levels of substance use and related problems. At the same time, all programs should incorporate educational and therapeutic components, regardless of the length of the program. All programs should also incorporate screening and assessment, and clinical follow-up after licence reinstatement should be required for all offenders mandated to treatment. Furthermore, evaluation should be an integral part of remedial measures, and more research should be completed on how best to provide effective programs and services to different age groups and ethno-culturally diverse populations.⁷

A major area of concern related to alcohol-impaired driving is a group of people often referred to in the literature as “hard-core drinking drivers.” These people have a disproportionate responsibility for the harm resulting from driving under the influence of alcohol. Overall, they make up less than one per cent of the driving population, yet they are responsible for two-thirds of drinking-driver fatalities. Failures in the system for controlling impaired driving can allow for repeat offenders to drive while impaired without being apprehended. Simpson, Beirness, Robertson, Mayhew and Hedlund make a number of recommendations for dealing with this issue:

- better training for enforcement officers to detect hard-core drinking drivers
- better training for prosecutors and judges in applying complicated impaired driving sanctions
- improved communication between the different components of the system (i.e., enforcement, prosecution, probation and treatment)
- up-to-date and integrated record systems
- use of improved technologies for breath testing, record keeping and supervision (e.g., ignition interlocks)
- legislation targeted at the hard-core drinking driver, such as administrative licence suspension, increased sanctions for repeat offenders and those with a BAC of 0.15 or higher, and vehicle sanctions such as impoundment
- increased resources for all aspects of the system used for dealing with impaired driving, including enforcement, prosecution, monitoring, probation and treatment⁴³

Canadian public support is quite high for impaired driving countermeasures such as zero BAC for offenders (84%), impairment tests (83%), impoundment (79%) and interlocks (79%). The public shows strong support for measures that are targeted against repeat offenders. There is less support for interventions such as spot-checks that target all drivers (66%).⁵

Other Drugs

Due to the relative novelty of drug-impaired driving as an issue of concern, it is not surprising that little has been done to develop and evaluate appropriate interventions. Research is still focused on assessing the extent of the problem, and on developing measures and methods for identifying drug impairment. The situation, context and circumstances of drug-impaired driving make it a quantitatively and qualitatively different issue from alcohol-impaired driving; this has important safety implications, as well as implications for developing effective countermeasures.’

14

Some of the interventions for alcohol-impaired driving may prove to be useful, but overall, drug-impaired driving presents a more complex issue. Because of the diversity of drugs that can impair driving, it may be necessary to develop unique strategies for broad drug categories. Also, the illegality of certain drugs presents a challenge. Drug-impaired driving legislation will need to be developed in conjunction with other drug laws, and in conjunction with other interventions like remedial treatment. It should not be assumed, however, that countermeasures for alcohol-impaired driving would be as effective for drug-impaired driving.

IMPLICATIONS

Impaired driving continues to be an issue of concern. Prevalence studies show that although rates have declined over the last two decades, there are still a large number of impaired driving incidents every year. According to the Canadian public, impaired driving is the most serious traffic problem in the country. While alcohol-impaired driving has received a great deal of attention, the risks related to drug-impaired driving are emerging. Proposed changes to laws regarding cannabis possession have increased public concern about drug-impaired driving. Improvements in the ability to test for drug use have increased research in this area, and are contributing to an increased understanding of the extent of the problem.

The issue of impaired driving remains a problem that warrants AADAC's attention and involvement in intervention. AADAC can readily support those countermeasures for alcohol-impaired driving that have proven to be appropriate and effective. These measures should be part of a comprehensive approach that balances legislation, enforcement, treatment, harm reduction, prevention, and education.

AADAC also has a direct role in providing effective treatment options to impaired drivers who are experiencing problems related to their alcohol and other drug use. AADAC will need to continue to provide accurate, up-to-date, accessible information about the harms associated with alcohol and other drug use as it relates to impaired driving.

Regarding drug-impaired driving, it is important that AADAC stay abreast of developments in this area. Understanding of the drug-impaired driving problem is still in its infancy. AADAC should support research into the nature and magnitude of this problem and the development and evaluation of countermeasures for drug-impaired driving, and the Commission should maintain a position on drug testing that upholds the guidelines outlined by the Canadian Human Rights Commission (i.e., testing should only be used as a part of a broader assessment of use such as the DRE program).

Finally, any initiatives supported or undertaken by AADAC regarding drug-impaired driving should not undermine efforts to address alcohol-impaired driving. Concern regarding drug-impaired driving is increasing, but the extent of the issue does not compare with the impact that alcohol-impaired driving continues to have. Currently, alcohol-impaired driving poses a clearer and greater risk to public health, and requires ongoing and comprehensive efforts by AADAC, government, enforcement agencies and other stakeholders.

ENDNOTES

- ¹ Sauve, J. (2005). Crime statistics in Canada, 2004 (No. 85-002-XPE). *Juristat*, 25(5). Ottawa, ON: Statistics Canada.
- ² Janhevich D., Gannon, M., & Morisset, N. (2003). Impaired driving and other traffic offences – 2002 (No. 85-002-XPE). *Juristat*, 23(9). Ottawa, ON: Statistics Canada.
- ³ Traffic Injury Research Foundation. (2005, October). *The alcohol-crash problem in Canada: 2003*. Ottawa: Transport Canada.
- ⁴ Alberta Infrastructure and Transportation (2005). *Alberta traffic collision statistics 2004*. Edmonton, AB: Author.
- ⁵ Beirness, D. J., Simpson, H. M., Desmond, K., & Mayhew, D. R. (2005). *The Road Safety Monitor 2004: Drinking and Driving*. Ottawa, ON: Traffic Injury Research Foundation.
- ⁶ Alberta Alcohol and Drug Abuse Commission. (2005, January). *Canadian Addiction Survey 2004* [Custom data tabulation]. Edmonton, AB: Author.
- ⁷ Health Canada. (2005). *Best practices: Treatment and rehabilitation for driving while impaired offenders*. Ottawa, ON: Author.
- ⁸ Howard Research. (2005). *Evaluation of the Alberta Administrative License Suspension Program: Executive summary*. Edmonton, AB: Alberta Traffic Safety.
- ⁹ Alberta Motor Association. (2001). *Alberta impaired drivers' program*. Retrieved September 10, 2005, from http://www.ama.ab.ca/cps/rde/xchg/SID-53ED365B-9312D7A8/ama/web/advocacy_safety_Alberta-Impaired-Drivers-Program.htm
- ¹⁰ Alberta Motor Association. (2001). *Graduated driver licensing*. Retrieved September 21, 2005, from http://www.ama.ab.ca/cps/rde/xchg/SID-53ED365B-9312D7A8/ama/web/everything_auto_4032.htm
- ¹¹ Mothers Against Drunk Driving. (2005). *Rating the provinces and territories: The 2005 progress report*. Oakville, ON: Author.
- ¹² Weekes, J. (2005). *Drugs and driving: FAQs*. Ottawa, ON: Canadian Centre on Substance Abuse.
- ¹³ Beirness, D. J. (2005). Drugs and Driving. In *Substance abuse in Canada: Current challenges and choices* (pp. 16–21). Ottawa, ON: Canadian Centre on Substance Abuse.
- ¹⁴ Beirness, D. J., Simpson, H. M., & Desmond, K. (2003). *The Road Safety Monitor 2002: Drugs and driving*. Ottawa, ON: Traffic Injury Research Foundation.
- ¹⁵ Patton, D., Mackay, T., & Broszeit, B. (2005, May). *Alcohol and other drug use by Manitoba students*. Winnipeg, MB: Addictions Foundation of Manitoba.
- ¹⁶ Adlaf, E. M., & Paglia, A. (2003). *Drug use among Ontario students 1977–2003*. Toronto, ON: Centre for Addiction and Mental Health.
- ¹⁷ Poulin, C. (2002). *Nova Scotia student drug use survey 2002: Technical report*. Halifax, NS: Nova Scotia Department of Health.
- ¹⁸ Asbridge, M., Poulin, C., & Donato, A. (2005). Motor vehicle collision risk and driving under the influence of cannabis. Evidence from adolescents in Atlantic Canada. *Accident Analysis & Prevention* (in press).
- ¹⁹ Couper, F. J., & Logan, B. K. (2004). *Drugs and human performance fact sheets* (DOT No. HS 809 725). Washington, DC: National Highway Traffic Safety Administration.
- ²⁰ Jones, R. K., Shinar, D., & Walsh, J. M. (2003). *State of knowledge of drug-impaired driving*. (DOT No. HS 809 642). Washington, DC: National Highway Traffic Safety Administration.
- ²¹ Davis, M. (2004, May 28). World-first saliva tests aim to lick drug-driving. *The Australian*. Retrieved May 28, 2004, from <http://www.theaustralian.news.com.au/printpage/0,5942,9678373,00.html>
- ²² Canadian Human Rights Commission. (2002). *Policy on alcohol and drug testing*. Ottawa, ON: Author.

- ²³ Page, T. E. (1998). *The Drug Recognition Expert (DRE) response to the drug-impaired driver: An overview of the DRE program, officer and procedures*. Los Angeles, CA: Los Angeles Police Department Drug Recognition Expert Unit.
- ²⁴ Senate Special Committee on Illegal Drugs. (2002). *Cannabis: Our position for a Canadian public policy. Vol. I, Parts I & II*. Ottawa, ON: Author.
- ²⁵ Department of Justice Canada. (2004, April). Drug Recognition Expert testing. *NewsRoom*. Retrieved April 28, 2004, from http://canada.justice.gc.ca/en/news/fs/2004/doc_31166.html
- ²⁶ Goatcher, S. (2004). *Briefing note: Cannabis reform legislation (Bill C-17) and drug-impaired driving (Bill C-16)*. Edmonton, AB: Alberta Alcohol and Drug Abuse Commission.
- ²⁷ Arizona Department of Public Safety. (2003). *Drug Recognition Expert program*. Retrieved September 19, 2005, from <http://www.dps.state.az.us/safety/impaireddriving/dre/default.asp>
- ²⁸ Criminal Code of Canada, RSC 1985, c. C-46, s. 253.
- ²⁹ Parliament of Canada. (2004). *House government bills*. Retrieved September 14, 2005, from http://www.parl.gc.ca/common/Bills_House_Government.asp?Language+E&Parl=38&Ses=1
- ³⁰ Department of Justice Canada. (2004). *Backgrounder: Strengthening drug-impaired driving investigations*. Retrieved September 14, 2005, from http://canada.justice.gc.ca/en/news/nr/2004/doc_31280.html
- ³¹ Canada Safety Council. (2005). *Drug driving legislation premature*. Retrieved September 14, 2005, from <http://www.safety-council.org/info/traffic/impaired/drug-driving.html>
- ³² Canada Safety Council. (2005). *Presentation to the Standing Committee on Justice, Human Rights, Public Safety and Emergency Preparedness. Bill C-16: An act to amend the Criminal Code (impaired driving)*. Ottawa, ON: Author.
- ³³ Waller, S., Naidoo, B., & Thom, B. (2002). *Prevention and reduction of alcohol misuse. Evidence briefing*. London, England: Health Development Agency.
- ³⁴ Asbridge, M, Mann, R. E., Flam-Zalcman, R., & Stoduto, G. (2004). The criminalization of impaired driving in Canada: Assessing the deterrent impact of Canada's first per se law. *Journal of Studies on Alcohol*, 65(4), 450–459.
- ³⁵ Thomas, G. (2004). *Alcohol-related harms and control policy in Canada*. Ottawa, ON: Canadian Centre on Substance Abuse.
- ³⁶ Paciocco, D. M., & Roberts, J. (2005). *Sentencing in cases of impaired driving causing bodily harm or impaired driving causing death with a particular emphasis on conditional sentencing*. Ottawa, ON: Canada Safety Council.
- ³⁷ Sweedler, B. M., Biecheler, M. B., Laurell, H., Kroj, G., Lerner, M., Mathijssen, M. P. M., et al. (2004). Worldwide trends in alcohol and drug-impaired driving. *Traffic Injury Prevention*, 5(3), 175–184.
- ³⁸ Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Graham, K., et al. (2003). *Alcohol: No ordinary commodity. Research and public policy*. New York: Oxford University Press.
- ³⁹ Mayhew, D. R., Simpson, H. M., & des Groseilliers, M. (1999). *Impact of the graduated licensing program in Nova Scotia*. Ottawa, ON: Traffic Injury Research Foundation.
- ⁴⁰ Ditter, S. M., Elder, R. W., Shults, R. A., Sleet, D. A., Compton, R., & Nichols, J. L. (2005). Effectiveness of designated driver programs for reducing alcohol-impaired driving: A systematic review. *American Journal of Preventive Medicine*, 28(5), 280–287.
- ⁴¹ Beirness, D. J., & Marques, P. R. (2004). Alcohol ignition interlock programs. *Traffic Injury Prevention*, 5(3), 299–308.
- ⁴² Wild, T. C. (1999). Compulsory substance-user treatment and harm reduction: A critical analysis. *Substance Use & Misuse*, 34(1), 83–102.
- ⁴³ Simpson, H. M., Beirness, D. J., Robertson, R. D., Mayhew, D. R., & Hedlund, J. (2004). Hard Core Drinking Drivers. *Traffic Injury Prevention*, 5(3), 261–269.