

Impaired Driving in Nova Scotia

Road Safety Advisory Committee (RSAC) Report

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Nova Scotia
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Introduction

Road safety is a complex public health issue. Motor vehicle collisions (MVCs) are the leading cause of death and serious injuries for Nova Scotians under age 45 and are a leading cause of injury-related death across the lifespan. Each year between 70 and 100 Nova Scotians lose their lives as a result of MVCs. Over 5000 more are injured, and many of those suffer a permanent disability (~200). In 2004, MVCs accounted for more than half of all hospitalizations (58%), and emergency room visits (58%). In 2010, drugs and or alcohol impairment contributed to 34% of all fatal MVCs.

Applying the 34% to the following costs associated with MVCs caused by impairment, it is evident that the economic burden in Nova Scotia due to impaired driving is substantial. In 2004, the annual cost to Nova Scotia for all MVCs was over \$86 million. Of this amount, \$39 million represents the direct cost to the health care system and the remainder are indirect costs associated with lost productivity. As well, each serious injury costs approximately \$17,000 per person injured. These figures do not include the additional economic costs associated with the burden to families and communities, damaged infrastructure, and insurance claims.

One of the serious injuries associated with MVCs is brain injury. Brain injury prevention has been identified as a priority by the Minister of Health and Wellness. Statistics from the Nova Scotia Trauma Registry (2000-2010), show that MVCs are the leading cause of severe traumatic brain injury in Nova Scotia, resulting in an average hospital stay of 16 days. In addition to the ongoing social impact, these severe brain injuries increase hospital wait times, decrease bed availability, and tax the continuing care system and other social services.

A population of concern is youth who are disproportionately involved in MVCs. On average, 28 Nova Scotia youth are killed each year in MVCs, and many more are injured. Youth have a higher collision risk due to the combination of inexperience and higher risk-taking behaviour, partially the result of developmental differences in risk perception. In *Motor Vehicle Collision Injuries in NS 2002-2008 A Report*, it was found that between 2002-2008, MVC related injuries peaked amongst 15 to 19 year olds making up 24% of injury-related hospitalizations in that age group. As well, more than half of the injury related deaths amongst those under the age of 25 were related to MVCs.

The focus of this report is on the issue of impaired driving in Nova Scotia. For the purpose of this report, impairment will include alcohol, illegal, and legal drugs. The significant role that alcohol and drugs play in MVCs will be presented and supporting data will show the seriousness of the issue in Nova Scotia.

All MVCs due to impairment are preventable. They are not accidents.

Defining the Problem

There are far-reaching effects of alcohol and drugs in their relation to MVCs. Preventing impaired driving fatalities and serious injuries will make a significant contribution towards reducing the economic burden of injury. There is a solid history¹ of progress in addressing the issue of impairment in Nova Scotia. In addition, there are efforts underway to address the effect of the growing problem of harmful alcohol consumption among Nova Scotians on the rate of impaired driving.

To support the work of government, an RSAC Impairment Sub-Committee was struck to assess the current situation and provide a report back to government with respect to this issue. Nova Scotia statistics were compiled in order to paint the picture of the existing issue of impaired driving in the province, and research was conducted on best practice initiatives. A jurisdictional review of existing legislation has been carried out and outlined, and a comparison of Nova Scotia's initiatives to the evidence-based interventions outlined in Canada's Road Safety Strategy 2015 has been prepared.

Several influential government reports have identified and supported reducing deaths and serious injuries associated with impairment and MVCs within Nova Scotia. The *Renewed Nova Scotia Injury Prevention Strategy* (2009) identified motor vehicle crashes as one of three pillars within the strategy. *Changing the Culture of Alcohol Use in Nova Scotia* made a number of recommendations that if adopted would help reduce the overall consumption of alcohol that we see amongst Nova Scotians and the associated risk of injury that goes hand in hand with that consumption.

In 2007, Cabinet approved an *Alcohol Impaired Driving Sub-Strategy*. Several initiatives came out of the strategy. The province recognized the important role of enforcement in addressing the issue of impaired driving and additional training began. There are 300 front line police officers from 10 police agencies in Nova Scotia who have successfully completed the four day Standardized Field Sobriety Test course. Another 24-26 officers are scheduled to attend a courses in Amherst in May, and in Halifax in October of this year. Training positions are offered to every police agency in Nova Scotia, and 100% of the costs are borne by the agencies contributing students.

In each of the past three years there have been three to four Qualified Breath Testing (Datamaster) Courses run in the province, increasing the number of active Qualified Breath Technicians in Nova Scotia to 256. There have been 96 Qualified Breath technicians trained in the new Intox EC/IR II breath testing instrument that is being phased in throughout the entire country as the 20 year old Datamaster reaches the end of its life cycle.

Significant training has also taken place in the area of impairment by drugs in the province. There are presently 66 Drug Recognition Experts (DREs) in six police agencies from Yarmouth to Glace Bay. This

¹ The history includes programs (Alcohol Ignition Interlock), legislation (Lower BAC), and enforcement countermeasures (enhanced impaired driving enforcement teams working across the province).

is above the recommended number of 56 DREs as set out in the *DRE Needs Assessment Model* (LeCavlier and Beirness, 2009). DRE training in Nova Scotia continues to be offered to all police agencies, a concerted effort has been put toward the sharing of DRE resources between agencies. This has been successful not only in assisting agencies without such resources, it has also been beneficial in cutting down on additional policing costs between neighboring agencies that each have DRE resources.

DRE related drug impaired driving cases require an approach slightly different than a traditional alcohol impaired driving file. Over the past three years, the Public Prosecution Service (PPS) has supported our initiative by having nine of their prosecutors attend the two-week DRE course. Presently, there are at least two DRE trained prosecutors in each of the PPS's four prosecutorial regions. It should be noted that there are only 13 DRE trained prosecutors in the entire country, with nine being in Nova Scotia.

Additionally, the RCMP Lab in Halifax has three DRE trained toxicologists who not only provide toxicological analysis support but also act as subject matter experts in court related to the DRE program. While there are DRE trained toxicologists in forensic labs in Ontario, Manitoba, & British Columbia, none provide the level of service in DRE toxicological analyses and court support as is found with the Halifax RCMP Lab.

Given this, Nova Scotia stands out nationally, and has been requested to share their program methods and practice in Ottawa as an example of best practice.

In order to fully comprehend the issue of impaired driving in Nova Scotia, it is important to understand what is occurring on our roads. Statistics and research in the following section will provide a clear picture of the issue of impaired driving in Nova Scotia.

Impaired Driving in Nova Scotia

While overall rates of MVC deaths and serious injuries have been declining for more than ten years, fatalities and serious injuries associated with alcohol impaired driving in Nova Scotia have remained fairly consistent.

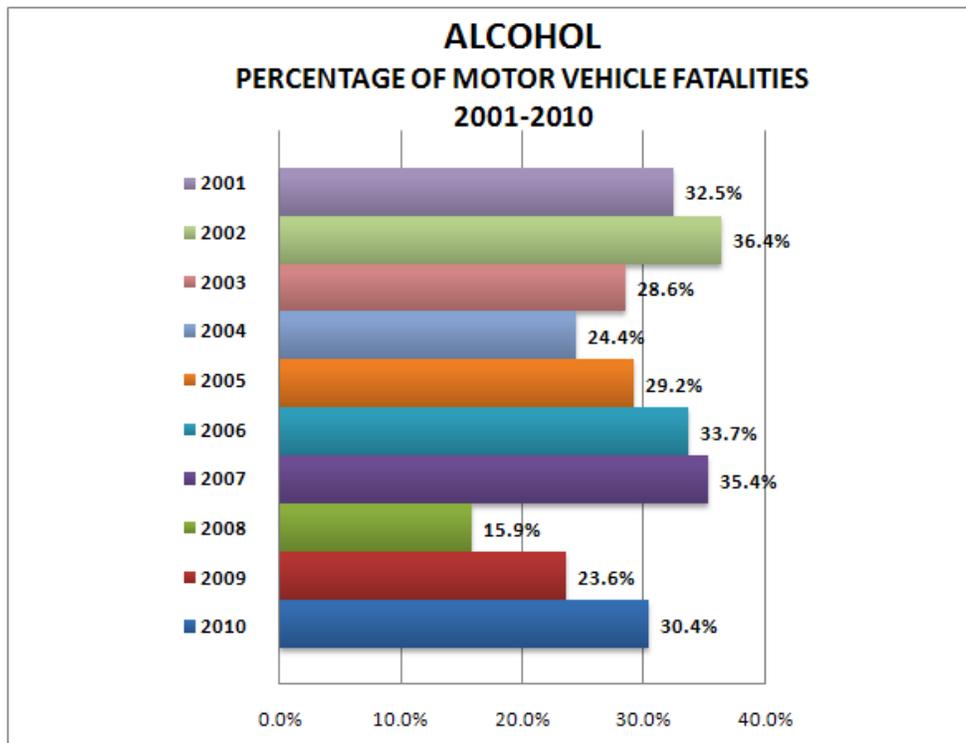


Figure 1 2010 Percentage of Fatalities Involving Alcohol Impairment 2001-2010²

Figure 1 shows that there has been a flow of increases and decreases over a 10-year period, with percentages increasing again since 2008. That said, fatalities associated with alcohol impairment have remained consistent over this 10-year period, despite efforts and initiatives in place to mitigate such events.

² (LaPointe, B. Fatality Statistics, TIR 2010)

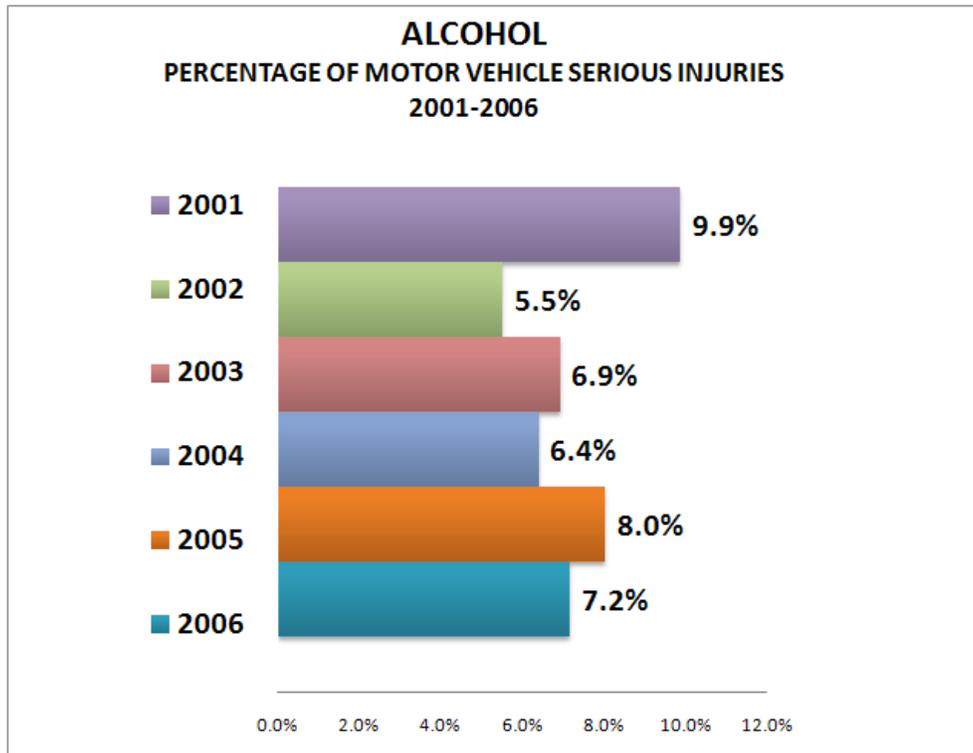


Figure 2 2010 Percentage of Serious Injuries Involving Alcohol Impairment 2001-2010³

Figure 2 illustrates that serious injuries associated with alcohol impairment showed a slight decrease between 2001 and 2002, with an increase from 2002 to 2003. Since 2003, the percentages have remained fairly consistent.

Note: Serious injury data from 2007 to 2010 has not been confirmed; therefore unable to be used in this report.

³ (LaPointe, B. Serious Injuries Statistics, TIR 2001-2006)

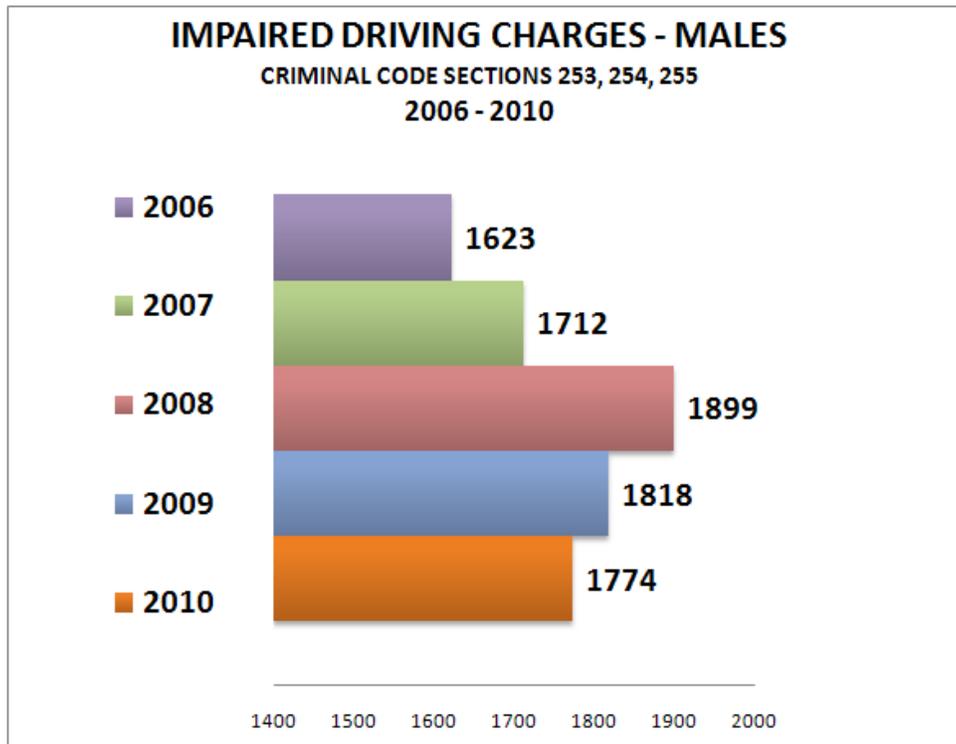


Figure 3 2010 Impaired Driving Charges in Males 2006-2010⁴

Figure 3 shows an increasing trend from 2006 to 2008 and then a slight decreasing trend until 2010.

During the development stage of the *Alcohol Impaired Driving Sub Strategy*, qualitative research was conducted which included consultation with Nova Scotia police officers, and focus groups and a survey with males aged 18-25. Males 18-25 were selected based on the fact that they make-up a high risk demographic for impaired driving. From the focus groups and surveys came two key insights: a lack of understanding of what constituted impairment and the perception that there was little chance of being caught while driving impaired.

⁴ (LaPointe, B. Impaired Driving Charges, Male, DoJ JEIN system, 2010)

An intriguing trend is the number of females being charged with impaired driving in Nova Scotia.

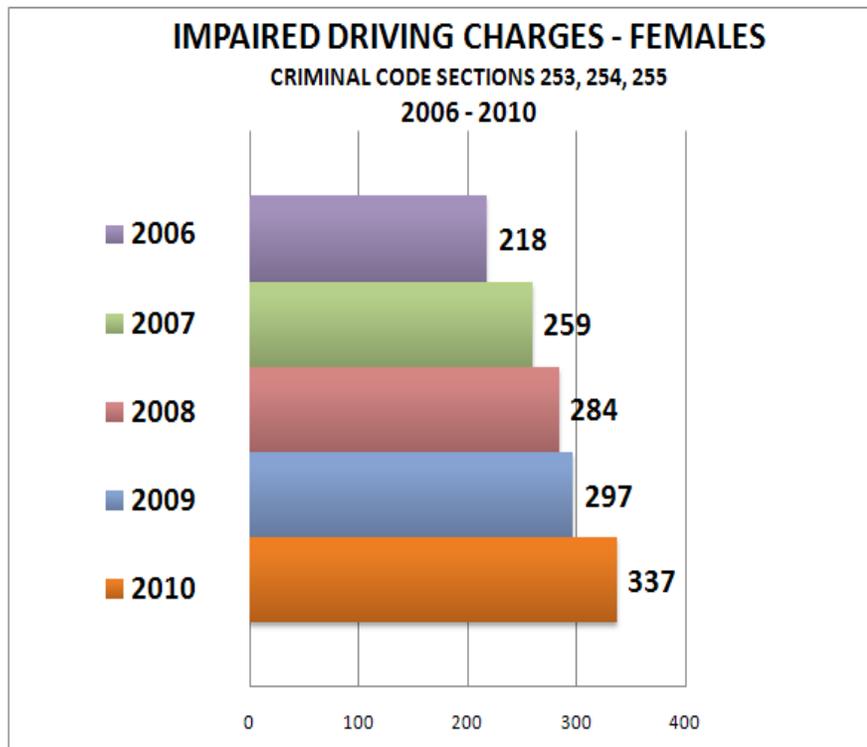


Figure 4 2010 Impaired Driving Charges in Females 2006-2010 ⁵

Figure 4 highlights an increasing trend in the number of females being charged with impaired driving since 2006. The increasing trend in impaired driving among females and the somewhat consistent rate among males is not entirely surprising. The international literature on alcohol policy has clearly shown that increased rates in the per capita consumption of alcohol result in increased alcohol related harms, including impaired driving. In the downtown core of Halifax alone, there has been a dramatic increase in alcohol outlet density over the last decade. Since 2000, the number of alcohol outlets has risen from five to 17 in the downtown core, and from seven agency stores to 52 across the province.

Additionally, women have been identified by the Nova Scotia Liquor Corporation as a target for increased sales (NSLC, 2009-2010 Annual Business Plan, updated August 17, 2009). Women of all ages are also being increasingly targeted by alcohol industry marketing from brewers and distillers. (EUCAM 2011, Chung et al. 2010, & Jernigan et al. 2004). As women are consuming more alcohol as a result of this explicit targeting, this may contribute or be related to the increase in impaired driving charges.

⁵ (LaPointe, B, Impaired Driving Charges-Female, DoJ JEIN System, 2010)

Between the years of 2006 and 2010, there were a number of impaired driving charges where the gender was not reported.

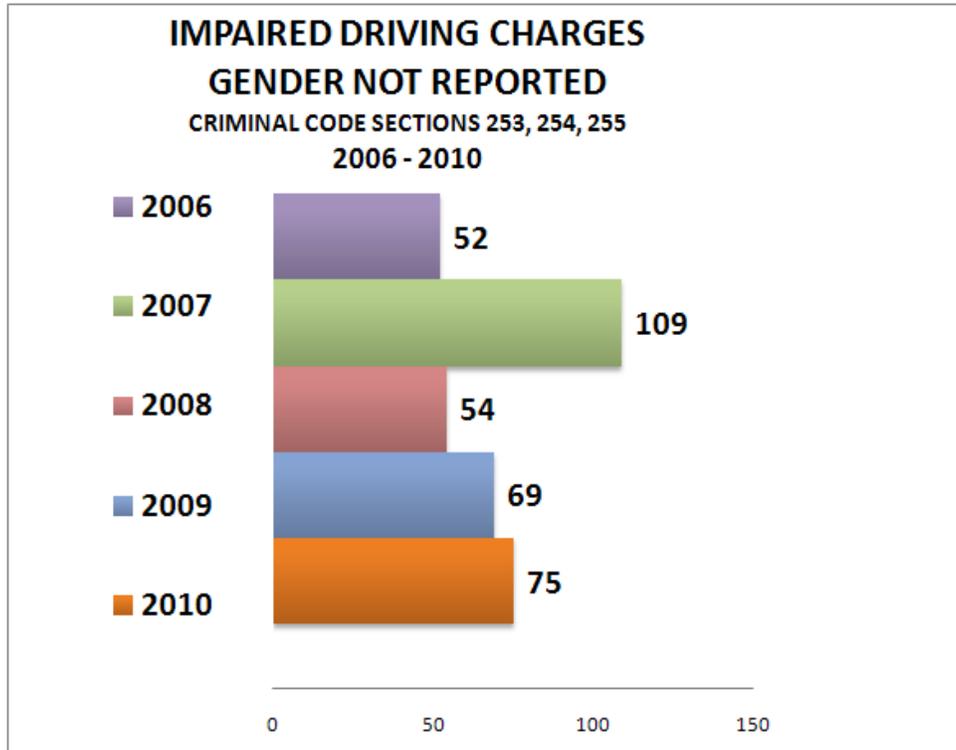


Figure 5 2010 Impaired Driving Charges Gender Not Reported 2006-2010⁶

Figure 5 shows the number of impaired driving charges in which gender was not reported. A noticeable increase and decrease is represented between the years 2006 to 2008.⁷

⁶ (LaPointe, B. Impaired Driving Charges – Gender Not Reported, DoJ JEIN System, 2010)

⁷The increase and then the decrease in the number of 'gender not reported' impairment charges demonstrates how improved reporting affects statistics and a need for accurate data. It is necessary to view Figure 5 with the above discussion in mind. Great strides in improving the methods of data collection and retention have been made in a variety of ways. Reporting forms are now more comprehensive and clearer to complete.

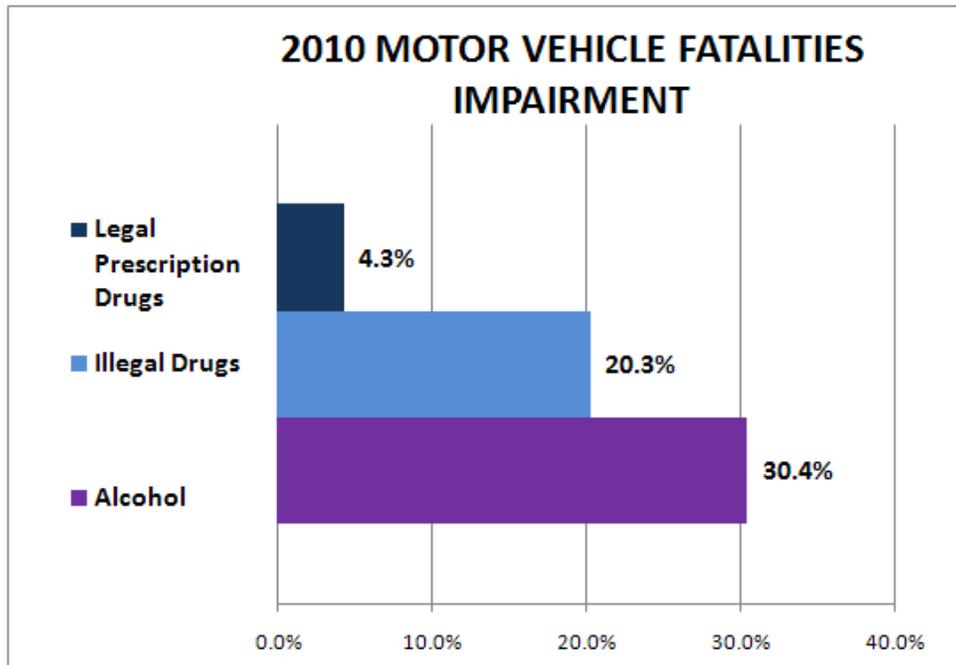


Figure 6: Motor Vehicle Fatalities caused by Alcohol, Illegal Drugs, and Legal Prescription Drugs in 2010.⁸

Figure 6 provides the percentages of fatalities caused by impairment in Nova Scotia in 2010. Alcohol was a factor in over 30% of all motor vehicle fatalities, an increase from 24% reported in 2009. Use of Illegal drugs saw a significant increase in 2010 from 2009. In 2010, illegal drug use was proven in over 20% of MVC deaths, an increase from 3% in 2009. Another noteworthy increase was seen in legal prescription drugs with an increase from 1% reported in 2009 to over 4% in 2010.⁹

Note: Due to poly drug use, combining these numbers would misrepresent the actual percentage because it would result in double counting of some fatalities. In 2010, drug and or alcohol impairment contributed to 39% of all motor vehicle fatalities.

⁸ (LaPointe, B. Motor Vehicle Fatality Statistics, TIR 2010)

⁹ Impairment related serious injury data from 2010 has not been confirmed; therefore unable to be used in this report.

Alcohol Impaired Driving in Nova Scotia

For the past three years, Nova Scotia has been conducting the Nova Scotia Road Safety Survey across all four regions of the province, with the third survey ready to be launched in June of this year. In the 2010 survey, 74% of respondents reported they had driven within two hours of consuming one drink, and 15% had driven within two hours of consuming two drinks. The survey also showed that 69% of Nova Scotia drivers who consumed alcohol and drove within 2 hours reported they were very confident they were capable of maintaining control of their vehicle.

In the 2007 Nova Scotia Student Drug Use Survey, 14% of students in grades 10 and 12 with a driver's license drove a motor vehicle after consuming alcohol on at least one occasion within that year. In the same survey, 26% of students from grades seven to 12 (excluding grade eight) indicated they rode in a vehicle at least once in the year with someone had had too much to drink.

Drug Impaired Driving in Nova Scotia

Another alarming trend is the presence of illegal or legal prescription medication in motor vehicle fatalities as shown in Figure 6. With individuals impaired by illegal or legal drugs there was a direct (100%) correlation with also being impaired by alcohol.

In the 2007 Nova Scotia Student Drug Use Survey, nearly 26% of students from grades seven to 12 (excluding grade eight) indicated that in the past year they have been a passenger in a vehicle whose driver had been using cannabis, and 23% of licensed senior high student drivers reported that they drove a vehicle within the past year within an hour of using cannabis. Students also reported that 32% had used cannabis during the year, and in the month before the survey, 5% had used cannabis.

In the 2010 Nova Scotia Road Safety Survey, 3% of respondents reported driving within 2 hours of using hashish or cannabis. This is an increase from the reported 1% in 2009. This may not seem like a significant percentage but when looking at raw numbers, the picture looks a little different. In Nova Scotia there are approximately 600,000 licensed drivers; 3% equates to 18,000 people on our roads driving after using cannabis or hashish. Caution should also be taken when reviewing these numbers as this is self reported data which could lead to the issue being under reported.

These data not only show the seriousness of the issue of impaired driving, but the reality of the situation here in Nova Scotia. The good news is that Nova Scotia is and has been working hard to address impaired driving. However, there is much more work to be done.

The collaborative approach being used in Nova Scotia is unique to the province and outlined is in the following section. A jurisdictional review will be presented and then research on evidence based best practice initiatives. The initiatives presented will provide insight into steps that Nova Scotia can take to address the issue of impaired driving in a more comprehensive manner.

Nova Scotia

Given the complexity of road safety, a horizontal governance structure embedded in and guided by shared goals, resources, and decision making, has been established. Nova Scotia addresses the issue of impairment through a focused and collaborative approach employing expertise across the four departments addressing road safety, Department of Justice, Service Nova Scotia Municipal Relations, Department of Health and Wellness, and Transportation and Infrastructure Renewal.

When compared to other jurisdictions and best practices initiatives as outlined in Canada's Road Safety Strategy 2015, Nova Scotia is doing well. However, given the magnitude of this problem, considerably more is required if we are to stem the growth of impaired driving.

Nova Scotia is currently working to address the impaired driving issue based on many of the initiatives identified within Canada's Road Safety Strategy 2015. The Strategy has outlined sections which identify initiatives in order to address impaired driving along with other contributing factors of MVCs. The three areas identified are: Road User, Infrastructure, and Vehicle. Identified initiatives to address the issue of impairment and those identified initiatives that Nova Scotia has implemented, are outlined in Appendix A.

Additionally, *Changing the Culture of Alcohol Use in Nova Scotia (2007)* has identified key directions to be taken in order to change the rate of misuse and over-use of alcohol, thus leading to reduced numbers of impaired drivers. Each key direction had a number of suggested initiatives to undertake; two of which are: Community Capacity and Partnership Building, and Healthy Public Policy. As stated in the same document, "The greater the interactivity between the public and the policy process, the greater the influence on societal norms." (p.18)

The social norms of misuse and over use need to be addressed. Continuing to support and strengthen enforcement countermeasures in combination with efforts underway to address the effect of the growing problem of harmful alcohol consumption among Nova Scotians will lead to an overall impact on the number of deaths and serious injuries associated with impaired driving.

A number of other initiatives currently being implemented in Nova Scotia are outlined in Appendix B. However, this is not an exhaustive list.

The following section provides a jurisdictional review completed after conducting a national scan which can be found in Appendix C.

Jurisdictional Review

Across the country each province is working to address the issue of impairment within their context, with most employing similar initiatives. Coupled with research, a jurisdictional review provides insight into initiatives across Canada, implemented to address impaired driving.

When comparing provinces regarding lower BAC suspensions, Prince Edward Island has the longest suspensions times at 7, 30, and 90 days. As well, other provinces have higher monetary penalties and license reinstatement fees. However, Nova Scotia has taken a more comprehensive approach by coupling license suspensions with voluntary and mandatory alcohol ignition interlock for lower BAC. This comprehensive approach not only removes high risk drivers from our roadways, but at the same time provides support for any individual who may have underlying issues with alcohol. This best practice approach, is supported by a number of research articles as outlined by the National Highway Traffic Safety Administration 2005.

Given the positive steps Nova Scotia has already taken to address impairment in the province, research was also conducted on best practice initiatives and opportunities for future endeavours. The following section provides examples of a number of cost-outcome analysis based on impaired driving injury prevention initiatives, and an example of a comprehensive best practice approach to address impaired driving.

Research

Research shows that for every dollar invested in injury prevention initiatives, the rate of return equals \$15, a significant return on investment. This is supported by the Chief Medical Officer of Health of Ontario (2009 Annual Report) who states, “. . . there is a growing body of research that suggests that a focus on prevention is a necessary component of any strategy to restrain the growth of health care spending that is widely seen to threaten . . . fiscal stability” p.9. The return on investment has the potential to then be redirected to other road safety issues or in support of other government priorities.

The following examples provide a cost/outcome analysis for three prevention initiatives focused on impaired driving: (Children’s Safety Network, 2010)

- Sobriety check points costs \$12,000 and generates an average of \$82,000 in benefits to society
- A 20% Alcohol Tax yields an estimated cost savings of \$102 for an annual cost of only \$11 per drinker
- Initiatives in Australia that identify and correct high collision locations have shown a 4:1 return on investment

The above options may provide opportunities for future initiatives in Nova Scotia in order to reduce the number of deaths and serious injuries, and the economic burden associated with these MVCs. Similar

initiatives such as those in Australia for addressing high collision locations are currently underway in Edmonton, Alberta. Edmonton is planning to evaluate these initiatives and this evidence may be used by Nova Scotia to support future endeavours.

Additional research suggests that a comprehensive, combined approach focused on interventions and public health policies will work to reduce the number of MVCs caused by impairment. Geisbrecht et al (2011), suggests a two-tiered, multidimensional strategy to reduce the toll associated with alcohol-related harms. This evidence-based approach consists of the following tiers:

First Tier

- Pricing and Taxation
- Physical Availability
- Alcohol Advertising & Promotion

Second Tier

- Drinking-Driving Countermeasures
- Altering the Drinking Context
- Education and Persuasion
- Treatment and Early Intervention

Initiatives identified in the Second Tier have been in place for decades, and as illustrated in the 10 year trend in Figure 1, have shown limiting effects. The research is clear that the combination of the two tiers will be most effective. The First Tier initiatives are necessary in order to see decreases over time. To be fully effective, drinking-driving countermeasures need to be part of a comprehensive approach to alcohol policy. This approach is supported by the World Health Organization in the recent *Global Status Report on Alcohol and Health* (2011), in which governments are urged to “adopt and enforce” policies that include addressing, the availability of alcohol, prices and taxes, and advertising (p.40).

This Two-Tiered Multidimensional Approach can be found in Appendix D.

Youth are extremely sensitive to exposure to advertising, as well as the impact of price change and availability of alcohol. In Nova Scotia, the average age of first drink is now at 12.9 years. Research indicates that there is a link between this early age of onset and impaired driving. The need for policies as suggested in Tier One to mitigate this issue is supported in research conducted by Hingson et al. (2009) who conclude, “Starting to drink at an earlier age is associated with greater odds of experiencing motor vehicle crash involvement, unintentional injuries, and physical fights . . .” (p.783).

In a review conducted by Anderson et al. (2009) on the effectiveness and cost-effectiveness of policies and programs to reduce harm caused by alcohol, this two-tier approach is reflected in the following statement, “Making alcohol more expensive and less available are highly cost-effective strategies to reduce harm, . . . drink-driving countermeasures, and individually-directed interventions to drinkers already at risk are also cost-effective approaches.” (p.2234) Addressing alcohol impaired driving with

this comprehensive multidimensional approach will have an impact on reducing the number of serious injuries and fatalities in Nova Scotia.

At this time, the Saskatchewan Liquor & Gaming Authority (SLGA) is setting minimum prices based on amounts of alcohol contained in the product. The goal of this 'social reference pricing' is to reduce the over-consumption of high alcohol content products. This initiative began in April of 2010 and is expected to generate over \$18 million in additional revenue for the province. The SLGA revealed in consultation that it is too early to provide any evidence on how the new pricing is working but that they will be monitoring it. (Province of Saskatchewan, 09-10 Annual Report Saskatchewan Liquor & Gaming Authority) When available, Nova Scotia could use this evidence to support future initiatives.

Additional revenue from this type of initiative implemented in Nova Scotia could significantly off set the direct costs on health care and justice systems related to alcohol impaired driving. In 2006, the direct cost to the health care and justice systems here in Nova Scotia was \$242.9 million, whereas tax revenue from the sale of alcohol for the province was \$224.2 million.

Addressing MVCs in this province and the enormous real costs that they represent requires that we incorporate current and relevant research and take an evidence-based approach. Using it we can continue to build on our province's successes and explore research and best practices within other jurisdictions. And identify those with the potential to be adapted to suit the Nova Scotia context. At the same time, the continued movement towards development of a Nova Scotia Road Safety Action Plan is key, and with it the identification of "Impairment" as an important contributing factor in MVCs.

Future Opportunities

Road safety requires an Action Plan; a plan that will act as a road map to guide the efforts of government and our diverse stakeholders. Diverse stakeholders such as members of the enforcement, engineering, education and awareness communities, NGOs, District Health Authorities, Community Health Boards, and municipal policy makers. All who will have a role in working collaboratively to reduce the number of serious injuries and deaths associated with impaired driving. An Action Plan that not only guides, but supports the work of government, and all road safety partners. One that will not only review existing legislation and programs, but continue to strengthen both in order to address the issue of impaired driving. Interwoven throughout this Action Plan will be healthy public policies which create supportive environments and make the safe choice the easy one.

This complex public health issue requires an innovative approach. Innovation requires that we recognize status quo is not as effective as needed. Nova Scotia is in a position to take a bold stance and become a leader in addressing impaired driving. The collaborative approach currently employed in the province is a perfect foundation from which to begin. Nova Scotia has already made gains by using an evidence-based approach to such initiatives as Lower BAC and the Alcohol Ignition Interlock Program. By working within the existing structure and continuing to implement evidence-based solutions, Nova Scotia will stand out as a leader in addressing impaired driving.

At this time, Nova Scotia is working within an existing framework that provides supports and allows for this type of approach to take place. However, there are a number of other steps commonly used that could be adopted among road safety partners that would help drive the agenda. These steps would potentially lead to greater success when addressing the issue of impairment across the province.

Steps to consider are to focus on communities, or different populations. For example, youth, seniors, or females; look at what supports or hinders a particular community or population from making the 'right/safe' choice. Work with communities to identify issues, as well as in the development and implementation of programs and initiatives. This will further investments in addressing the issue of impaired driving at multiple levels and sectors.

RSAC is in a position to bridge the gap between current road safety stakeholders and new stakeholders that may be working on road safety issues within their communities such as, the District Health Authorities and Community Health Boards. Engaging multiple stakeholders at multiple levels will improve the sustainability of programs and initiatives implemented to address impaired driving. Road safety is everyone's responsibility and it will be through working together across the province that we begin to truly see a difference.

The specific focus on impaired driving in Nova Scotia, within the context of MVCs, also requires an examination of the role the alcohol industry plays, and the impact that increased alcohol consumption has had on rates of impaired driving in the province. By understanding the impact of alcohol pricing, advertising and access on patterns of consumption, we can better understand the strategic options available to us and the opportunities and challenges inherent within each of them. The evidence is clear that future action must integrate the Tier One approaches presented within this report to complement our current Tier Two initiatives.

Nova Scotia must continue to use a collaborative approach. Combining this approach within a comprehensive framework will lead Nova Scotia towards reducing the overall costs and preventable serious injuries and deaths of this complex public health issue.

Appendices

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Appendix A: Canada's Road Safety Strategy 2015 Proven Initiatives

Road User	Infrastructure	Vehicle
Random Breath Tests	Highway Messaging Signs ✓	Electronic Stability Control
911 ✓	Rumble Strips ✓	Crash Avoidance Technologies
GDL ✓	Divided Highways ✓	Ignition Interlock ✓
Selective Traffic Enforcement Programs (S.T.E.P.S) *	Median Treatments ✓	
Assessment and Treatment Programs ✓	Forgiving Roadsides ✓	Note: Can advocate for and support above recommended vehicle engineering.
Zero BAC ✓	Sign Conspicuity ✓	
Increase penalties for impaired driving if children in vehicle * in progress	Overpasses ✓	

✓ Indicates a Nova Scotia initiative

**At this time, Nova Scotia is working under the model of a team approach with enhanced impaired driving enforcement across the province*

Appendix B: Other Nova Scotia Initiatives

Initiative	Description	Lead and Status
Lower BAC	Legislation to toughen penalties for those with a BAC of .05-.08	All four departments
Drug Recognition Experts	Program that trains officers to be DREs. Nova Scotia currently has 66 trained DREs across the province	Justice
Alcohol Ignition Interlock	Installation of an ignition interlock device in vehicles of people who have lost their license because of an alcohol-related offence	SNSMR DHW - Addictions
PARTY	Prevent Alcohol and Risk Related Trauma in Youth program is delivered in high schools province wide	DHW
Operation Christmas	Annual event with law enforcement communities to raise awareness about the dangers of impaired driving	Justice
Research	Strategies	Other
Road Safety Surveys MWB Marketing Plan	Renewed Injury Prevention Strategy Nova Scotia Alcohol Strategy Crime Prevention Strategy	Road Safety Ministers request for a campaign demonstrating numbers tied to impaired driving

Appendix C: Jurisdictional Review

Note: The following information is based on published data only

Provincial Consequences	Test 0.05 to 0.08 BAC			Impaired Driving Convictions		
British Columbia	*Vehicle impoundment officers discretion			* Breath sample above 0.08 or refusal to provide		
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	3 days	7 days	30 days	*90 days		
Monetary Penalty	\$200	\$300	\$400	*		
Licence Reinstatement	\$250	\$250	\$250			
AIIP				* "fail" range, or 3 times within 5 yrs in the "warn range – 1 yr & participate in Responsible Driver Program		
Fine on conviction				\$500		
License suspension on conviction				1 yr	3 yrs	5 yrs
7-Day Vehicle Impoundment	*	*	No	*30 days	Yes	Yes
GDL						
Alberta	Note: anyone charges with having a BAC over .08 or refusal to provide a sample receives an automatic three-month suspension.					
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence (within 10 yrs)	3 rd & subsequent
Roadside suspension	causing bodily harm or death automatic 6 months					
Monetary Penalty						
Licence Reinstatement				Yes	Yes	Yes
AIIP				Voluntary – min. 6 months Requires approval from the Alberta Transportation Safety Board	Voluntary– min. 6 months	Voluntary– min. 6 months
Fine on conviction						
License suspension on conviction				1 yr	3 yrs	5 yrs
7-Day Vehicle Impoundment						
GDL	1 month	1 month				

Provincial Consequences	Test 0.05 to 0.08 BAC			Impaired Driving Convictions		
Manitoba						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	24 hours	3 months If refusal to comply or provide samples				
Monetary Penalty						
Reinstatement fee	\$50					
AIIP				*Mandatory if causing death or bodily harm or transporting children	Yes	Yes
Fine on conviction				\$1000		
License suspension on conviction				1 year	5 year	10 yrs *4 or more, lifetime
7-Day Vehicle Impoundment		Yes			30 days	90 days
GDL	24 hours Any amount of alcohol-attend a hearing					
Saskatchewan Note: If convicted, may be required to attend - Drive Without Impairment program (\$150 fee)						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	24 hrs (over .04)	15 days DWI course	90 days Alcohol Addiction and Screening Assessment			
Monetary Penalty	May lose 4 demerit points	\$200				
Reinstatement Fee						
AIIP				Voluntary	Voluntary	Voluntary
Fine on conviction				Minimum \$1000	Minimum \$1000	Minimum \$1000 No maximum
License suspension on conviction				1 yr	3 yrs	5 yrs
7-Day Vehicle Impoundment						
GDL	30 days Any amount of alcohol-required to take a DWI course	90 days Complete an Alcohol Addiction & Screening Assessment				

Provincial Consequences	Test 0.05 to 0.08 BAC			Impaired Driving Convictions		
Ontario						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	3 days	7 days	30 days	90 days	90 days	90 days
Monetary Penalty	\$150	\$150	\$150	\$150	\$150	\$150
Reinstatement Fee						
AIIP			6 months	1 yr min	3 yrs min	Lifetime
Fine on conviction				\$1000	Judge's discretion	Judge's discretion
License suspension on conviction				1 yr	3 yrs	Lifetime suspension-reducible to 10 yrs if certain conditions
7-Day Vehicle Impoundment				Yes	Yes	Yes
GDL	24 hrs Possible fine between \$60-\$500 if Convicted could received 30-day license suspension.					
Quebec						
	1 st offence	2 nd offence	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	Immediate 90 days if pulled over for impaired, refuse to provide a breath or blood sample or to submit to a physical coordination test regardless of BAC					
Monetary Penalty				\$1000		
Reinstatement fee						
AIIP				1 year 2 yrs if BAC above 160mg/ml	2 yrs 3 yrs if BAC above 160mg/ml	3 yrs Mandatory for life if BAC above 160mg/ml
Fine on conviction				\$1000		
License suspension on				1 yr 3 yrs if BAC	3 yrs 5 yrs if BAC	5 yrs

Provincial Consequences	Test 0.05 to 0.08 BAC			Impaired Driving Convictions		
				above 160mg/ml	above 160mg/ml	
conviction						
7-Day Vehicle Impoundment				If BAC above 160mg/ml or refusal to provide samples or submit to physical coordination test		
GDL	90 days plus 4 demerit points which adds an additional 3 months. Fine could range between \$300-\$600					
New Brunswick Failure to provide a sample may result in 90 day suspension						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	24 hrs			Exceeding .08 BAC may receive 90 days		
Monetary Penalty						
Reinstatement fee						
AIPP				9 months	30 months	48 months
Fine on conviction						
License suspension on conviction				1 yr	3 yrs	5 yrs
GDL	24 hrs - Under the age of 21 – any amount of alcohol					
Prince Edward Island Alcohol/Drug assessment if 2 or more convictions – possible treatment						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	7 days	30 days	90 days			
Monetary Penalty						
Reinstatement fee						
AIPP						
Fine on conviction				\$1000		
License suspension on conviction	90 days			1 yr	3 yrs	5 yrs
7-Day Vehicle Impoundment						

Provincial Consequences	Test 0.05 to 0.08 BAC			Impaired Driving Convictions		
	GDL	Under 19 yrs of age-24 hrs in addition to 90 days.				
Newfoundland						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence	3 rd & subsequent
Roadside suspension	24 hour	24 hour	24 hour	90 days	90 days	
Monetary Penalty				\$600		
Reinstatement Fee	\$100	\$100	\$100			
AIPP						
Fine on conviction						
License suspension on conviction				1 yr	3 yrs	5 yrs
7-Day Vehicle Impoundment						
GDL	2 months	4 months	6 months			
Nova Scotia						
	1 st offence	2 nd offence (within 5 yrs)	3 rd & subsequent	1 st offence	2 nd offence (within 10 yrs)	3 rd & subsequent
Roadside suspension	7 days	15 days	30 days			
Monetary Penalty						
Reinstatement Fee	\$89	\$89	\$89	\$112.09	\$112.09	\$112.09
AIPP						
Fine on conviction				\$600 to \$2000	\$600 to \$2000	\$600 to \$2000
License suspension on conviction				1 yr	3 yrs	Indefinite – Minimum 10 yrs
7-Day Vehicle Impoundment						
GDL	6 demerit pts & 6 months suspension					

Appendix D: Two-tiered Multidimensional Strategy

Table 2: A two-tiered, multidimensional strategy to reduce the toll of alcohol-related harms in Canada			
Tier	Dimension	Intervention	Recent examples
1.	Pricing and taxation ^{10,13, 15, 25, 27-29}	<ul style="list-style-type: none"> Impose minimum prices in all provinces and territories for both retail establishments and licensed premises for on-premise sales^{13,28} Index alcohol prices to cost of living^{14,25,27} Eliminate discount pricing²⁷ Apply excise tax graduated by volume of ethanol^{10,27} 	Indexed minimum pricing for retail establishments under legislation removing administrative discretion (Ontario); automatic indexing of prices for beer (Quebec); implementation in April 2010 of a comprehensive system of minimum pricing (Saskatchewan); minimum prices imposed on licensed premises (Nova Scotia, Alberta)
	Physical availability of alcohol ^{10,13,28}	<ul style="list-style-type: none"> Reduce density of outlets and hours of sale^{10,13,16,25} Assess impact of outlet concentration in entertainment districts 	Substantial increases in geographic density of various privately run liquor stores (British Columbia)
	Marketing, advertising and sponsorship ^{10,13,27}	<ul style="list-style-type: none"> Eliminate marketing of alcohol oriented to youth Reduce marketing by government liquor boards and agencies and by the private sector Implement effective, efficient interventions for breaches of advertising policy Limit or ban alcohol industry sponsorship of cultural or sporting events²⁷ 	Extensive advertising (in various provinces) of alcoholic beverages by alcohol producers, private retailers and government liquor boards or commissions via electronic media, special magazines, newspaper inserts and on public transit vehicles
	Control system ^{10,13, 25, 28}	<ul style="list-style-type: none"> Impose moratorium on partial or full privatization of off-premise alcohol retailing^{26,28} Enhance emphasis on a control mandate for government liquor control agencies and boards^{10,13,26} 	Only Alberta has fully privatized retail alcohol sales (for “off premise” consumption). Most other jurisdictions (e.g., Quebec, British Columbia) have combined public-private systems. New Brunswick, Prince Edward Island and Northwest Territories have an exclusive government monopoly in the organization of retail alcohol sales.
	Drinking-and-driving countermeasures ^{10,13, 19, 27}	<ul style="list-style-type: none"> Implement strategies recommended by Mothers Against Drunk Driving in all provinces and territories¹⁹ Increase resources for random roadside spot checks^{10,27} Implement a legal BAC limit of 0.05^{10,25} 	Biannual rating of provinces and territories has contributed to concerted efforts to implement effective interventions. ¹⁹ British Columbia has enhanced penalties for 0.05 BAC infractions, including repeat offences.
2.	Minimum age ^{10,28}	<ul style="list-style-type: none"> Raise minimum legal age for purchasing alcohol to 19 in all provinces and territories^{10,28} 	Legal purchase age is 18 in Alberta, Manitoba and Quebec, and is 19 in all other jurisdictions.
	Altering the context of drinking ^{25,27,28}	<ul style="list-style-type: none"> Increase ratio of liquor inspectors to outlets Implement “Safer Bars” and other evidence-based interventions^{25,27} Use only evaluated server training programs in all provinces and territories 	“Safer Bars” is being implemented in Alberta after successful trial in Toronto.
	Education and persuasion ^{10,13, 20, 28, 29}	<ul style="list-style-type: none"> Orient resources to school and college-based programs with proven positive impact on drinking or drinking-related harms^{10,20} Educate policy-makers about evidence of damage and costs from alcohol and high-impact interventions, and enhance role of public health specialists in alcohol policy deliberations²⁰ 	National low-risk drinking guidelines were finalized under the National Alcohol Strategy. ²⁸
	Screening, brief intervention and referral ^{10,13, 21, 22, 25, 29}	<ul style="list-style-type: none"> Increase access to screening and brief interventions via clinics, university health care services and hospitals and online^{10,25} Orient resources to treatment interventions with evidence of positive impact^{10,13} 	An online resource was developed (also under the National Alcohol Strategy) to support health professionals in delivering brief assessment and intervention. ²⁸
Note: BAC = blood-alcohol concentration.			

References

Alberta Traffic Safety Plan (2006). Saving lives on Alberta roads. Retrieved February 14, 2010 from www.transportation.alberta.ca/Content/.../trafficsafetyplan.pdf.

Anderson, P, Chisholm, D, & Fuhr, D.C. (2009). Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *The Lancet*. (373). 2234-2246.

Atlantic Collaborative on Injury Prevention (2010). Alcohol & Injury in Atlantic Canada: Creating a culture of safer consumption. Atlantic Collaborative on Injury Prevention, Halifax, NS.

Beirness, DJ, & Davis, CG. (2005). Driving under the influence of cannabis: Analysis drawn from the 2004 Canadian Addiction Survey. Canadian Centre on Substance Abuse: Health Canada and Canadian Executive Council on Addictions.

Beirness, DJ, & Porath-Waller, AJ. (n.d.). Clearing the smoke on cannabis: Cannabis use and driving. Report from the Canadian Centre on Substance Abuse..

Canadian Council of Motor Transport Administrators (2005). STRID strategy to address lower BAC drinking drivers. CCMTA's STRID 2010 Task Force and Standing Committee on Road Safety Research & Policies.

Canadian Council of Motor Transport Administrators (2011). Canada's road safety strategy 2015. CCMTA, Ottawa: ON.

Carlson-Gielen, A. & Sleet, D. (2003). Application of behaviour-change theories and methods to injury prevention. *Epidemiology Review* (25), 65-76.

Centre for Disease Control and Prevention (2011). Cost of transportation-related injuries and deaths in the United States, 2005. Retrieved February 24, 2011 from, <http://www.cdc.gov/motorvehiclesafety/data/cost-estimates.html>.

Centre for Disease Control and Prevention. (2010). Cost amounts to nearly \$500 for each U.S. licensed driver in one year. Retrieved from <http://www.cdc.gov/media/pressrel2010/r100825.htm>.

Chief Medical Officer of Health of Ontario (2009). Public health-Everyone's business. 2009 Annual report. Ottawa: ON.

Children's Safety Network (2010). Injury prevention: What works? A summary of cost-outcome analysis for injury prevention programs (2010 update). Retrieved February 14, 2011 from, http://www.childrensafetynetwork.org/publications_resources/PDF/data/InjuryPreventionWhatWorks.pdf

Chung, P. et al.(2010). Association between adolescent viewership and alcohol advertising on cable television. *American Journal of Public Health*, 100(3), 555-562.

Cukier, S. (2010). *Big Alcohol Close to Home: The Research/The Plan/The Action*. Presented at the Alcohol Policy Forum, Halifax, Nova Scotia, May 7, 2010.

European Centre for Monitoring Alcohol Marketing (EUCAM) 2011. EUCAM reports. Retrieved March 1, 2011 from <http://www.eucam.info/eucam/home/marketing-products-and-reports.html?bericht2248=1099>.

Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R., Thomas, G. (2011). Alcohol in Canada: reducing the toll through focused interventions and public health policies. Retrieved February 16, 2011 from <http://www.cmaj.ca/home/analysis.dtl>.

Goertzen, M., Kurilic, G., LeBlanc, V, & Thomas, B. (2010). *Marketing Plan: Drink Driving Prevention in Nova Scotia*. Report presented to TIR from Masters students in Management Without Borders program at Dalhousie University.

Green, M (2010). *This Power Point Has Been Rated*. Focus group conducted with youth on alcohol advertising. Presented at the Youth Alcohol Policy Forum, Halifax, Nova Scotia, May 6, 2010.

Hingson, R.W. et al. (2009). Age of drinking onset and injuries, motor vehicle crashes, and physical fights after drinking and when not drinking. *Alcoholism: Clinical and Experimental Research*, (33), 5, pp.783-790.

Jernigan, D.H. et al. (2004). Sex differences in adolescent exposure to alcohol advertising in magazines. Retrieved February 24, 2011 from, <http://archpedi.ama-assn.org/cgi/content/abstract/158/7/629>

Johnson, MB, & Clapp, JD. (2010). Impact of providing drinkers with “know your limit” information on drinking and driving: a field experiment. *Journal Study Alcohol Drugs*, 72(1), pp. 79-85.

LeCavalier, J.G. & Beirness, D.J. (2009). The Development of a national framework for the drug evaluation and classification (DEC) program: DRE needs assessment model. Canadian Centre on Substance Abuse, Ottawa: ON.

Maxwell, HG., Dubois, S., Weaver, B., & Bedard, M. (2010). The Additive effects of alcohol and benzodiazepines on driving. *Canadian Journal of Public Health*, September/October 2010, pp. 353-357.

Mayhew, DR., Brown, SW>, & Simpson, HM. (2010). The Alcohol-crash problem in Canada: 2008. The Traffic Injury Research Foundation of Canada, Ottawa: Ontario.

Naumann, RB., Dellinger, AM., Zaloshnja, E., Lawrence, BA., & Miller, TR. (2005). Incidence and total lifetime costs of motor vehicle-related fatal and nonfatal injury by road users type, United States, 2005. Traffic Injury Prevention. Retrieved from <http://dx.doi.org/10.1080/15389588.2010.486429>.

Nessman, P et al. (2011). Motor vehicle injuries in Nova Scotia (20020-2008): A Report [Draft]. New Mexico Department of Health (n.d). Toxicology Bureau Fact Sheet: Drug Impaired Driving Retrieved March 2, 2011 on line from, http://jec.unm.edu/resources/benchbooks/dwi/extras/D-1_Drug-Impaired_Driving.pdf

Nutt, DJ., King, LA>, & Phillips, LD. (2010). Drug harms in the UK: a multi-criteria decision analysis. The Lancet, Retrieved from <http://www.sciencedaily.com/releases/2010/11/101101162138.htm>.

Popova et al. (2009). Hours and days of sale and density of alcohol outlets: Impacts on alcohol consumption and damage: A systematic review. Epidemiology and Policy, (44) 5, 500-516.

Poulin, C. & McDonald, W. (2007). Nova Scotia drug use 2007 highlights report. Retrieved February 24, 2010 from www.gov.ns.ca/hpp/publications/NS_Highlights_2007.pdf

Public Health Agency of Canada (2009). Investing in prevention the economic perspective: Key finding from a survey of the recent evidence.

Shults, RA et al. (2009). Effectiveness of multi component programs with community mobilization for reducing alcohol-impaired driving. American Journal of Preventive Medicine, 37(4), pp. 360-371.

SMARTRISK (2009) The Economic burden of injury in Canada. Retrieved January 27, 2010 from, <http://www.smartrisk.ca/index.php/burden>

Traffic Injury Research Foundation of Canada (2008). Strategy to reduce impaired driving 2010: STRID Monitoring report: Progress in 2005 and 2006. CCMTA, Ottawa: ON.