COLLABORATION ATLANTIQUE
POUR LA PRÉVENTION DES BLESSURES

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ATLANTIC COLLABORATIVE
ON INJURY PREVENTION

Alcohol & Injury

in Atlantic Canada

creating a culture of safer consumption

2010

The **Atlantic Collaborative on Injury Prevention (*ACIP*)** would like to thank **Research Power Inc.** for their hard work on developing this report. ACIP would also like to thank the many key informants and reviewers who contributed to **Alcohol and Injury in Atlantic Canada: *Creating a Culture of Safer Consumption*.**

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Executive Summary

Introduction

The Atlantic Collaborative on Injury Prevention (ACIP) is a non-government organization dedicated to reducing the burden of injury in Atlantic Canada. ACIP is conducting an environmental scan to develop evidence-informed recommendations with the ultimate goal of reducing alcohol-related injuries in Atlantic Canada. The specific goals of this project are to:

- Investigate the relationship between alcohol and injury in Atlantic Canada;
- Explore the unique culture of alcohol consumption in Atlantic Canada and its impact on injury;
- Inform injury prevention practitioners, advocates, and policy makers in Atlantic Canada of the impact; and
- Develop evidence-informed recommendations (e.g., policy recommendations) for reducing the burden of alcohol-related injuries in Atlantic Canada.

Methodology

The methodology used for this comprehensive environmental scan on alcohol and injury, included a literature review as well as key informant interviews. The literature review included a search, review and synthesis of the academic literature (peer reviewed journals) and grey literature. Key informant interviews were conducted via telephone with 21 key informants from across Atlantic Canada. Additionally, internal reports provided by stakeholders (those not publicly available via the internet) were reviewed and included, where appropriate.

Findings

The Burden of Injury

- Injuries cost Canadians $19.8 billion and 13,688 lives annually. Unintentional injuries account for 81% of injury costs[1]. The four Atlantic Provinces are engaged in injury prevention and control through the various government departments along with numerous non-government organizations.

The Link Between Alcohol & Injuries

- ***Alcohol & Motorized Vehicle Crashes:*** Motor vehicle collisions are responsible for over half of alcohol-related severe trauma hospitalizations in Canada[2]. Alcohol related injuries and fatalities are not limited to motor vehicles as there are links between risk of injury and operating snowmobiles, all terrain vehicles and motor boats while intoxicated[3]. Key informants identified drinking and driving as the most recognized link between alcohol and injury **(although increased awareness does not necessarily translate into changed behaviour)**; however, it continues to be an issue. Interviewees felt there was low public awareness around the risk of injury operating other motorized vehicles (e.g., ATVs, etc.) while intoxicated.
- ***Violence & Violent Injury:*** People are more likely to intentionally hurt others, or to have violence inflicted on them while under the influence of alcohol[4]. Studies have linked alcohol with domestic violence[5]. Further, the literature suggests that alcohol is also linked to sexual assault[6]. Key informants highlighted the connection between alcohol and violence including fights at bars, domestic abuse/violent assault, violent crimes and sexual assaults.
- ***Alcohol & Falls:*** Falls are the leading cause of injury admissions to Canada's acute care hospitals[7]. Acute alcohol use contributes to unintentional fall risk and accounts for at least a threefold increase in risk[8]. Some key informants linked alcohol to falls among youth, adults and seniors. Interviewees noted that injuries sustained as a result of falls may be viewed as a 'badge of honor', especially among youth/young adults.
- ***Alcohol & Suicide:*** There is an increased risk for suicide under the influence of alcohol (both chronic and acute use)[9]. Impulsivity and aggression are strongly implicated in suicidal behavior and people who are intoxicated are more likely to attempt suicide using more lethal means[10]. Some key informants witness the link between alcohol and suicide in their positions and many recognized the connection.
- ***Fetal Alcohol Spectrum Disorder (FASD):*** Perceptions of FASD are shifting from it being an alcohol-based disorder to a preventable brain injury[11]. There is evidence that adults with FASD are also at increased risk for injury[12].
- ***Poly Drug Use & Injury:*** The majority of cannabis users take the drug in combination with alcohol[13] which increases the risk of harm/injury which driving[14]. A few interviewees highlighted the use of illicit drugs in combination with alcohol as increasing, especially among youth.

Alcohol & Injuries in Specific Population Groups & Geography

- ***Alcohol & Youth:*** The loss of inhibitions and decision making skills paired with youths' 'lack of experience' with alcohol, place them at particular risk for alcohol related injuries including as violence, motor vehicle collisions and sexual coercion[15].
- ***Alcohol & Older Adults:*** Older people are susceptible to injury as a result of alcohol consumption, are at greater risk of falling and have reduced driving skills as a result of visual loss and slower reaction time[16].
- ***Aboriginal Populations:*** Aboriginal Canadians have a 4 fold greater risk of severe trauma than the non-Aboriginal population[16]. Some have attributed this increased rate of injury to alcohol use[17], although this link has not conclusively been made.
- ***Urban Compared to Rural Areas:*** Rural communities have higher rates of alcohol consumption than urban areas[18]. There are higher rates of alcohol consumption and adolescent injuries in more rural areas in Canada[19].

Awareness of the Link between Alcohol & Injury

- ***Awareness Among the Public:*** Most key informants felt that the link between alcohol and injury (other than drinking and driving) are not known, as people do not make the connection between their alcohol consumption as a cause of their injury.

- ***Variable Awareness Among Health Care Providers:*** Key informants felt that awareness of the link between alcohol and injury was high among certain health care providers (those working in emergency rooms, working in the field of addiction); however, other health care providers may not connect alcohol to injuries, unless the connection was overtly apparent. It was noted that some primary care providers might not ask questions around alcohol and injury, due to the stigma of asking questions about alcohol consumption.

The Culture of Alcohol in Atlantic Canada

- ***Socially Accepted & Expected:*** Key informants consistently noted that alcohol consumption is socially accepted across Atlantic Canada. It is the 'cultural norm' to drink at most social occasions and during recreational/leisure activities as it is often associated with fun, celebration, socialization and relaxation.

- ***Heritage & Industry:*** Many interviewees associated the culture of alcohol to the unique heritage in Atlantic Canada (Scottish, Irish, Gaelic and Celtic heritage). Interviewees highlighted the industry-based culture in Atlantic Canada as a contributor to the culture of alcohol (e.g., fisheries, mining, etc.). It was suggested that the culture of alcohol in Atlantic Canada stems from a "work hard, play hard" mentality, whereby Atlantic Canadians have traditionally made a living in challenging industries and use alcohol as a reward for a 'hard day's work'.

Patterns of Alcohol Consumption in Atlantic Canada

- ***Excessive Consumption & Intentional Over Consumption:*** Many informants described over consumption of alcohol across the Atlantic Canadian provinces. Among younger populations it is the 'norm' to drink excessively.

- ***Normalization of Intoxication:*** Some interviewees noted that reaching a state of intoxication (especially among youth) was often praised. Intoxication is only viewed negatively when it is linked with consequences such as injury, violence, etc. Atlantic Canada has the highest rate of people consuming 5 or more drinks in one sitting and compared to the national average, a high percentage of Atlantic Canadians drink in a manner which is considered hazardous (according to the AUDIT)[20].

Influences & Reasons for Alcohol Use

- ***Social:*** Interviewees highlighted social reasons for alcohol use including during social occasions (e.g., celebrations, etc.) and is consumed to fit in with the social norms and expectations around alcohol consumption.

- ***Emotional:*** Interviewees felt alcohol is consumed to relieve and cope with stress and anxiety, used to increase confidence in social situations, and is consumed to deal with life stresses related to the determinants of health.

- ***Environmental:*** Interviewees thought that alcohol advertising contributes not only to the type/brand of alcohol consumed, but also the patterns and normalization of its consumption (shapes associations with alcohol and lifestyle). Some interviewees felt that alcohol consumption is influenced by parents and their relationship with alcohol. Also it was believed that rural versus urban areas may not affect the reasons why alcohol is consumed or how is consumed but rather where it is consumed (urban areas bars versus house parties and outdoor recreational activities in rural areas).

- ***Demographic trends[21,22]:*** Males tend to drink more often and consume higher amounts during a single sitting. The age of onset of drinking has also been steadily declining to a younger age and younger drinkers tended to consume larger quantities at a single sitting (i.e., binge drinking).

- ***Price & Purchasing[21,22]:*** Over one-third of hazardous drinkers purchased sale-priced alcohol at the liquor store compared to about one-fifth of low-risk drinkers. Further "happy hour" discounts tend to attract younger drinkers with those 19-24 years old significantly more likely to be taking advantage of discounted prices for drinks than those in any other age category.

- ***Reasons for Consumption[21,22]:*** The primary reason cited by drinkers for why they consume alcohol was to be sociable. Other common responses included to enjoy the taste, to celebrate and to help relax. Drinking and overdrinking by young women (19-29 years) occurred more often in response to emotional situations or to reduce inhibitions. For those 19-29, intoxication is a planned outcome.

Current Work in Atlantic Canada to Address Alcohol & Injury

- Currently in Atlantic Canada, some examples of work being done are enforcement (e.g., ID checks, check points, zero tolerance for graduated licensing drivers, interlock programs); alcohol free events (recreational alcohol free facilities for youth, non-alcohol orientation week at university, etc.); education/awareness building (PARTY program, social marketing, guest speakers in schools, etc.); screening (CAGE questionnaire administered in emergency room); and provincial strategies to address alcohol and associated harms.

Suggestions to Address Alcohol & Injury

The following section provides a summary of **key informant suggestions** on how to address alcohol and injury. There was significant overlap and complement between the recommendations provided by key informants and the literature findings.

- ***Addressing Alcohol as a Drug:*** Several key informants indicated that the public does not view or treat alcohol as a drug and more work is needed to build the public's awareness of alcohol as a drug and the harms associated with misuse of this drug.

- ***Awareness Building:*** Many key informants felt that there was a need to build awareness regarding the link between alcohol and injury, especially around drinking and operating other motorize and recreational vehicles.

- ***Screening, Brief Intervention & Curriculum Enhancement:*** Key informants felt that primary care providers could play a greater role in addressing alcohol and injury through engagement in screening, brief intervention and motivational interviewing.

- ***Advertising:*** There is evidence of exposure to alcohol advertising and the onset of drinking amongst non-drinking youth, exposure to alcohol advertising and increased levels of consumption among existing youth drinkers and a dose-relationship with regards to the impact of advertising exposure[23]. The majority of key informants felt that alcohol advertising should be strictly regulated and some suggested a ban on advertising similar to tobacco products.

- ***Outlet Density:*** Alcohol consumption rates or prevalence of drinking-related problems are higher in jurisdictions with higher density of outlets (retail liquor outlets, bars, etc.)[24]. A few interviewees felt that changes to outlet density would help to reduce alcohol related injuries. Key informants described extremely high outlet density in urban areas in Atlantic Canada which they felt increased access to alcohol, especially among youth and university students.

- ***Hours***: Access to alcohol through extended retail liquor store hours may correlate with higher consumption and alcohol related harms/injuries[27]. Key informants felt that changes to hours of operation to reduce access to alcohol would not have a significant effect on consumption as people would adjust their consumption patterns to the hours in which alcohol is available/accessible.

- ***Price:*** There is strong evidence for the effectiveness of alcohol taxes in targeting young people and the harms done by alcohol[25]. Some interviewees felt that changes to the price would have little effect, believing that people's desire to consume alcohol would overshadow any increase in price. However, others felt that changes would have some effect, specifically at bars.

- ***Minimum Legal Drinking Age:*** Increases to the minimum legal drinking age may have some effect on alcohol and injury. For example, changes to the drinking age would affect traffic related crashes in young adults[26]. Most felt that changes to the minimum legal drinking age would have little effect on alcohol consumption and would not have an impact on underage drinking among youth.

- ***Liability:*** Interviewees felt that stronger enforcement such as increased party liability could be effective at addressing alcohol over consumption and associated harms.

Literature Recommendations to Address Alcohol & Injury

The literature review revealed that several jurisdictions have released evidence based, best practices or recommended practices to address alcohol and injury. The following section provides a summary of these recommendations.

Price/Taxes

- An *increase in prices* to curtail over consumption and differential tax rates on forms of alcohol which are particularly subject to abuse[27,28,29,30].

Access Restrictions

- Restrictions on *hours and days of sale* as well as outlet density to limit the availability of alcohol to the public[27,29,31,32].
- Raising *minimum legal age* for purchase of alcohol[27,30].

Advertising

- Partial or total *bans on alcohol advertising* and other forms of alcohol promotion[28].

Alcohol limits & Guidelines

- Improved enforcement and *lowering of the blood alcohol content* drunk driving limit[27,28,29,30, 33].
- Develop and promote *national alcohol drinking guidelines* to encourage a culture of moderation[31].

Brief intervention, Training & Access to Treatment

- Increase overall *focus on prevention and early intervention* – shift alcohol screenings to being performed by "helping professionals" who promote non-judgmental attitudes[29,31].
- Strengthen *alcohol curriculum* in undergraduate, post-graduate and continuing professional development programs[31].
- Greater investment in *brief intervention* and the development of brief intervention tools[27,28,30,31].
- Ensure adequate ongoing funding, quality training and accreditation for specialized addiction services.
- *Increased access to addiction services* (especially in isolated, rural and remote regions of Canada and for vulnerable populations)[31].

Controls & Enforcement

- Implement and support alcohol *ignition interlock* programs/initiatives[28,31,33].
- Implement and support *random breath testing, and sobriety checkpoints* and remind the public about the value of these checkpoints[27,29,31,33].
- Implement and support *administrative license suspension* as well as graduated licensing and zero tolerance for novice drivers[27,30,33].
- Enforcement of *serving regulations* and regulations directed at commercial vendors who sell to minors and ignore other restrictions can be effective, if the system can suspend or revoke a license[27,29].
- Increasing the *legal liability* of bar staff and owners for the actions of those they serve and clear penalties for violator[27,29].

Education & Awareness

- Priority should also be given to *educating the public* on the strong rationale that exists for alcohol policies[31,32,33].
- Encourage use of the *Safer Bars* program/initiatives[29,30,33].
- *Educational resources* should reflect balanced, factual information and should shift away from one way communication to a meaningful exchange to facilitate healthy action[34].

Change the Culture of Harmful Alcohol Consumption

- Develop, support and promote interventions using best practices in *social marketing techniques*[29].
- *Normalizing help-seeking* including removing the cultural barriers that prevent people from accessing programs and services to assist with alcohol abuse, misuse and addiction[34].

- *De-normalizing underage drinking* through shifting views of underage drinking so it is not seen as "normal" or a rite of passage among adolescents[34].
- De-normalize *binge drinking* and drinking to intoxication such that they are not socially acceptable[34].
- Shifting the view of Fetal Alcohol Spectrum Disorder (FASD) to a *community responsibility*, rather than a "women's" or "aboriginal" issue[34].
- Alcohol policy needs to *balance* the interests of health protection, harm prevention, health benefits of moderation and the economy[34].
- Promote local *alcohol free events*, for example, safe-grad events, municipal celebrations for New Year's Eve that don't involve sale or consumption of alcohol[29].

Other

- *Government-owned* (monopoly) alcohol outlets (i.e., off-premise monopoly systems) can limit alcohol consumption and alcohol-related problems[27].
- Influence Federal and Provincial *alcohol priorities* so that alcohol related injuries are on the agenda[29,35].

Evidence-informed Recommendations to Reduce the Burden of Alcohol-Related Injuries in Atlantic Canada

Based on the findings of the environmental scan, including the literature review and key informant interviews the following evidence-informed recommendations to address and reduce alcohol-related injuries in Atlantic Canada are proposed. Implementation of individual recommendations will be more effective if done within a comprehensive population health approach.

Decreasing Advertising

The environmental scan suggests that advertising contributes to the type of alcohol consumed and the patterns of use and normalization of its consumption and over consumption.

- Advocate for strict alcohol *advertising restrictions*, including print, radio, television and online, especially those which may reach children and youth.
- Advocate for a review of alcohol advertising practices in each of the Atlantic Canadian provinces with particular focus placed on *child and youth exposure to advertising*.
- Advocate that government liquor corporations be solely responsible for the procurement of alcohol to citizens and that the social and prevention responsibilities regarding the consumption of alcohol fall under the authority of *public health officials*.
- Monitor and ensure the *enforcement* of provincial liquor control acts pertaining to alcohol advertising as well as other policies and guidelines (e.g., CRTC guidelines)
- Advocate for an 'external' *non-governmental body to regulate* the marketing and advertising of alcohol as opposed to the current system of liquor corporation self-regulation.

Decreasing Alcohol Access

Policy changes related to access and availability are some of the most effective ways to affect change to the culture of alcohol use and associated harms:

- Support and advocate for retail liquor store and bar *outlet density restrictions*. Restrictions are especially needed in areas surrounding schools.
- Support maintaining the *minimum drinking age* and enforcement efforts (e.g., Check 25, bartender training, sobriety checkpoints, etc.).
- Advocate for regulated and restricted *days/hours of operation* for retail and bar alcohol outlets.
- Ensure all bars/pubs provide *server training* for alcohol including minimum age checks, drink cut offs, serving practices, etc.
- Support the implementation of the "Safer Bars" program and other innovative *harm reduction approaches* (plastic instead of glass, etc.).
- Develop, implement, support and promote *alcohol-free events* (e.g., safe-grad, youth drop-in/social/recreational centres, orientation week rather than alcohol based 'frosh week' activities, etc.).

- Work to build *government and political buy-in* and support for policy changes surrounding access and availability to alcohol.

- Facilitate and support partnerships, collaboration and linkages between community health care professionals, primary health care providers government departments of health/health promotion/wellness, and not for profit organizations (e.g., MADD, etc.) to *coordinate efforts* to reduce access and availability of alcohol.

- Advocate for *zero tolerance* graduated licensing guidelines.

- Explore the evidence of stricter *party liability* surrounding alcohol and associated harms.

Increasing Pricing

- Support *minimum drink prices* at bars/pubs and restrictions on discount drinks (e.g., reduced 'happy hours').

- Support *price regulations* at retail liquor outlets.

Create Support for Change

The literature has shown that social marketing campaigns can be effective in supporting the recommendations suggested above and contributing to an overall cultural shift in how alcohol is consumed and how its use is perceived by the public. While key informants also felt that social marketing (see definition in text box) was a key component to reducing alcohol-related injury, it appeared that social marketing was often viewed as primarily an awareness raising and educational strategy rather than a comprehensive behaviour change strategy. Therefore, the following is recommended:

- Employ social marketing techniques for increasing readiness for change in alcohol policies among
the public.

- Utilize social marketing techniques to *denormalize binge drinking, drinking to intoxication and underage drinking* until they are no longer socially acceptable.

- Utilize social marketing techniques *to normalize help-seeking* including removing the cultural barriers that prevent people from accessing programs and services to assist with alcohol abuse, misuse and addiction.

- Assess the current capacity of stakeholders' understanding of social marketing and best practices for reducing alcohol-related harms and work to build capacity where needed.

Health Care Providers

Health care providers are in an ideal position to address alcohol and injury; however, they may not provide early intervention due to the normalization of alcohol and discomfort addressing this issue with their clients/patients.

- Support the *training of health care professionals* (those in school through curriculum enhancement and working in practice through professional development) in brief intervention training and safer drinking practices.

Social Marketing is a behaviour change strategy that focuses on understanding, from the target audiences' perspective, why they behave a certain way. It's about understanding the social, cultural, and environmental influences on behaviour. It is about developing comprehensive approaches to addressing these behavioural influences including healthy public policies, supportive environments, and sometimes the use of communications and awareness campaigns. Social marketing is not just about awareness raising and education.

Conclusion

In Atlantic Canada, the unique culture of alcohol consumption has resulted in dangerous patterns of usage and disturbing trends of alcohol-related injuries. While the trends in alcohol consumption in the Atlantic region are in part related to heritage and industry, they are also influenced by the tactics of alcohol companies and distributors, including advertising strategies, pricing and outlet density. All of these factors combine to create a culture where over-consumption and intoxication is the norm, and put individuals and communities at risk for a variety of injury-related harms.

Although unsafe patterns of alcohol consumption are currently the norm in Atlantic Canada, it is possible to de-normalize over-consumption through a combination of best practice strategies. This report and its recommendations serve as a call to action for the governments of Atlantic Canada to work in partnership with non-government organizations to create a culture of safer alcohol consumption in the region. It is incumbent upon these stakeholders to balance the need for revenue generation with the best interests of the public's health.

References (Executive Summary)

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II

Introduction

Background & Purpose

The Atlantic Collaborative on Injury Prevention (ACIP) is a non-government organization dedicated to reducing the burden of injury in Atlantic Canada. The purpose of ACIP is to facilitate coordination of injury prevention activities in the region with a focus on policy development and advocacy, research and surveillance, and programming and evaluation. Based on research from other jurisdictions and anecdotal evidence from Atlantic Canada, ACIP is concerned with the burden that alcohol-related injuries present to society. As such, ACIP is looking to gain knowledge on the impact of alcohol on injury in Atlantic Canada as well as the unique regional culture of alcohol consumption.

ACIP is conducting a comprehensive environmental scan including a literature review of the peer-reviewed and grey literature and key informant interviews with select stakeholders from across Atlantic Canada. The purpose of the environmental scan is to develop evidence-informed recommendations with the ultimate goal of reducing alcohol-related injuries in Atlantic Canada. The specific goals of this project are to:

- Investigate the relationship between alcohol and injury in Atlantic Canada;
- Explore the unique culture of alcohol consumption in Atlantic Canada and its impact on injury;
- Inform injury prevention practitioners, advocates, and policy makers in Atlantic Canada of the impact; and
- Develop evidence-informed recommendations for reducing the burden of alcohol-related injuries in Atlantic Canada.

This report presents the results of the comprehensive environmental scan.

Methodology

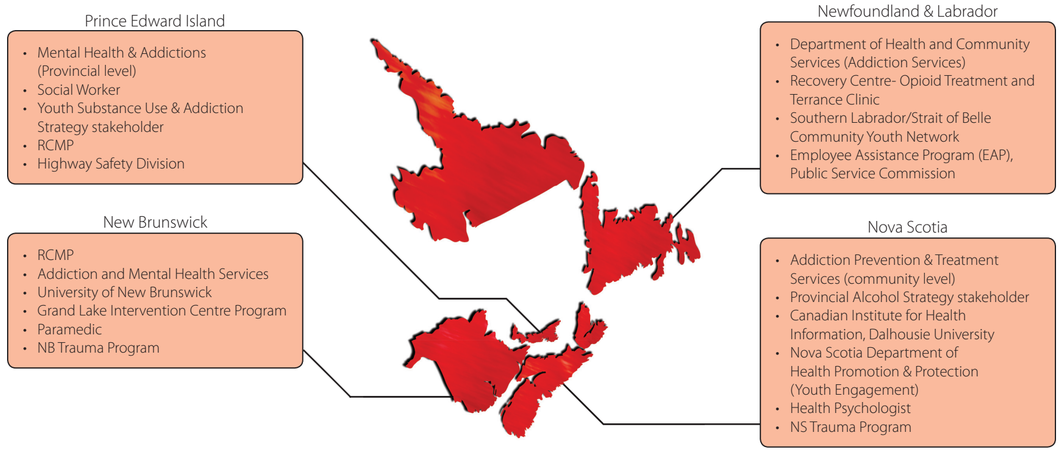
The following section presents the methodology employed for the environmental scan on alcohol and injury, including the methods used for the literature review as well as data collection and analysis of key informant interviews. The trustworthiness of the findings is also described.

Literature Review

The literature review included a search, review and synthesis of the academic literature (peer reviewed journals). Databases searched for this review included Prowler, PubMed, Science Direct, CINAHL, Cochrane Library, Academic Search Elite, EBSCO, and Proquest as well as individual searches within key journals (e.g., Journal of Studies on Alcohol and Drugs, Injury Prevention, etc.). Grey literature searching was also conducted to identify key reports including government documents and regional documentation pertaining to the search topic and review of reference lists within these documents. The search was limited to 'recent' literature (i.e. 1998-present). Full references are provided in the appendix of this report. Additionally, internal reports and documents were provided by stakeholders (those not publicly available via the internet) and were reviewed and included where appropriate.

Key informant Interviews

Telephone interviews were conducted between September and January 2010 with 21 key informants from across Atlantic Canada. Key informant selection was aimed at achieving multi-sectoral representation and diverse perspectives and included:



Data collection was completed by experienced research consultants from Research Power Inc. A lead researcher analyzed and compiled the data from the interviews into the final report. Each interview lasted approximately 30-45 minutes, was audio-recorded (with the permission of interviewees) and transcribed verbatim. An interview guide was developed by the research consultants, in collaboration with ACIP, to inform the interview discussions. A copy of the interview guide is presented in Appendix A. Once transcribed, the data was coded, that is, broken into meaningful pieces related to emerging themes and categories. Coding was done using the qualitative software package NVivo (version 7), which is frequently used in qualitative health research. Sub-themes that illuminated the data in ways not provided by the main codes/themes were created as needed and attached to the main themes.

Trustworthiness of the findings was assured through several methods including:

- Independent and systematic coding and data analyses;
- The use of direct quotations from interviews with key informants to substantiate the findings; and
- Peer review and debriefing between the research consultants conducting the analyses.

Qualitative methods, including interviews, are exploratory in nature and thus provide rich and valuable insight into people's views and feelings, but is not intended to be generalized or quantified. Verbatim quotations from key informants are used throughout the report to illustrate the findings. For each theme one or two quotes were selected for inclusion in the report. The number of quotes presented in this report **does not represent the strength of response for a given theme** but rather the quotes were selected as they best represent the overall theme being described. **The strength of response is reflected in the order that the themes are presented** in as well as descriptors of the number of respondents who spoke of specific themes (e.g., "many", "some", "a few").

III

Findings

Preamble/Considerations

The purpose of this report is to present the findings of an environmental scan to inform and develop general evidence-based recommendations with the ultimate goal of reducing alcohol-related injuries in Atlantic Canada. The report is not designed to make recommendations for specific injuries. The intent of the report is to serve as a resource to build awareness of the issue of alcohol and injury in Atlantic Canada and as a call to action to address alcohol and injury as a collective responsibility, requiring a collaborative effort by diverse stakeholders, sectors and communities. The findings represent a comprehensive literature review and interviews with 21 key informants, within the timeline and resources available.

Report Layout

The findings of this environmental scan are organized and presented as follows:

- The burden of injury
- The link between alcohol and injury
- The culture of alcohol in Atlantic Canada
- Current work to address alcohol and injury in Atlantic Canada
- Policy changes and best practice evidence to address alcohol and injury

For each section, the results of the literature review and key informant interviews are presented (each when available). The 'source' of the information (i.e., interview or literature) for each theme is identified in the left margin of the page. In most cases, the literature is presented first followed by the interview data to support or complement the literature review findings.

The Burden of Injury

The following section presents an overview of the literature on the burden of injury including economic impacts, mortality and morbidity, and a summary of some of the work underway in Atlantic Canada to prevent injury. The burden of injury was not covered in the interviews (the interviews focused on the link specifically between alcohol and injury); therefore, this section only includes literature findings.

Economic Impacts of Injury

Injuries cost Canadians $19.8 billion and 13,688 lives annually (SmartRisk, 2009). The economic burden of injury in Canada includes injury-related deaths, hospitalized treatment, non-hospitalized treatment, permanent partial disability and permanent total disability. Overall, injury costs Canada $10.72 billion annually in direct costs (healthcare costs related to injuries) and $9.06 billion annually in indirect costs (related to reduced productivity due to hospitalization, disability and premature death) (SmartRisk, 2009).

The following table illustrates the economic burden of injury specifically in Atlantic Canada and in comparison to Canada overall.

Table 1: Cost of Injury in Atlantic Canada, 2004 (SmartRisk, 2009)

Jurisdiction	Economic Burden (per capita)	Health Care Costs (per capita)	Potential Years of Life Lost (per 100,000)
New Brunswick	$616	$379	1,011.9
Newfoundland & Labrador	$513	$334	787.0
Nova Scotia	$552	$343	953.4
Prince Edward Island	$567	$328	1,106.9
Canada	$618	$337	968.6

Mortality & Morbidity Associated with Injury

Unintentional injuries, including those related to transportation, falls, drowning, fire/burns, poisoning, etc. account for 81% of injury costs (SmartRisk, 2009). The following table illustrates mortality rates and morbidity in Atlantic Canada.

Table 2: Injury Mortality & Morbidity in Atlantic Canada

Jurisdiction	Injury Deaths	Hospitalized Injuries	Total Annual Cost
New Brunswick	358	6,060	$463 million
Newfoundland & Labrador	135	3,268	$265 million
Nova Scotia	43	5,518	$518 million
Prince Edward Island	83	1,039	$78 million

Current Work to Address Injury in Atlantic Canada

The four Atlantic Provinces are engaged in injury prevention and control, covering a wide range of injury issues and age groups. Injury prevention is addressed through the various government departments along with numerous non-government organizations. The four provincial governments support and fund ACIP. In addition, provincial injury prevention coalitions are active in each of the four Atlantic provinces.

The provinces have taken a comprehensive approach to injury prevention including legislation and enforcement, programming, and research. In 2004, Nova Scotia became the first province in Canada to have an injury prevention strategy. In Newfoundland and Labrador, Prince Edward Island and New Brunswick, injury prevention is also a strategic priority.

Atlantic Canada has been a leader in implementing injury prevention policy. Legislation on child safety restraints in motor vehicles has been expanded to include booster seat regulations for older age groups in all four provinces. In addition, restrictions have been placed upon child use of all-terrain vehicles throughout the region. Three of the four Atlantic Provinces have all ages bicycle helmet legislation and two provinces have bans on use of hand-held cell-phones while driving.

The Link Between Alcohol & Injuries

The following section presents the literature and interview findings addressing the link between alcohol and injury. This section describes the alcohol patterns of use and links with injury; alcohol and specific categories of injury; and alcohol, injury and specific demographic population groups.

Alcohol Pattern of Use and Impact on Injury Risk/Rates

According to the World Health Organization (WHO) (2003) *"involvement of alcohol in injuries has been demonstrated in numerous studies… recent trends show an increase in alcohol consumption, injury rates are extremely high, and appropriate public health policies have not been implemented".*

Injuries sustained while intoxicated may challenge physicians' ability to properly assess injuries:

- Slurred speech or poor memory resulting from intoxication may mimic symptoms of a head injury
- A patient's loss of balance may be easily attributed to the symptoms of intoxication and may mask an actual head injury

(AADAC, 2003)

It has been noted that harm and injuries associated with alcohol are not restricted to those who are regular heavy drinkers, as a substantial portion of the general population suffer acute harm through occasional high consumption (McLeod et al., 1999). The risk of injury exists even with relatively low levels of alcohol intake and this risk increases as alcohol consumption increases (Australia National Alcohol Strategy, 2003). Alcohol use within 1 hour prior to injury is associated with increased risk of an injury that leads to the emergency room (Borges, et al., 2004). The risk of injury increases 10-fold for people who consume six or more drinks during a 6 hour period (Borges, et al., 2006). The risk of injury increases by three-fold after consuming more than 60g of alcohol and five times after consuming 90g or more of alcohol (McLeod et al., 1999).

Further, the extent of injuries increases with higher blood alcohol content (BAC) levels (the BAC is a commonly used metric of alcohol intoxication for legal or medical purposes). A significant relationship exists with BAC levels of 80 mg% and the number of body regions injured (MacDonald et al., 2006). The severity of injury (e.g., head injuries) also increases with higher BAC levels (MacDonald et al., 2006). Alcohol volume is not the only variable which increases the risk of injury. A study by MacDonald et al. (2006) finds that alcohol related injuries are significantly more likely to occur at a restaurant or bar than any other setting. It has been suggested that the social/societal variables associated with alcohol also affects injury rates. Higher overall average consumption is associated with increased rates of alcohol-related injury; however, in societies with higher legal levels for intoxication while driving, there remains a high rate of alcohol-related injury (Cherpitel, et al., 2005).

How much is a drink???

1 standard drink (10g)

= 341 ml/12 oz can of beer (5%)
= 142 ml/5 oz glass of wine (13%)
= 34 ml/1.5 oz hard liquor (40%)

Alcohol & Specific Categories of Injury

This section discusses the links between alcohol and specific injuries including motorized vehicle collisions, violence/violent injury, falls, and suicide. The findings are compiled from both the literature and interviews.

Alcohol & Motorized Vehicle Crashes

Motor vehicle collisions are responsible for over half of alcohol-related severe trauma hospitalizations in Canada (CIHI, 2005). In an average year in Canada, impaired driving kills 1,212 persons, injures 71,532, and causes damage to 236,375 vehicles (ARES, 2009). This costs Canadians between $1.9-$11.28 billion (ARES, 2009). According to the Traffic Injury Research Foundation (TIRF) in 2007, 92 Atlantic Canadians were killed in a traffic crash involving a drunk driver. This represents a steady increase since 2004, which TIRF suggests is a halt in progress in the fight against drinking and driving. Recently, TIRF (2009) and the Nova Scotia Dept. of Transportation and Public Works (2007) found that:

TIRF:

- 15% of Atlantic Canadians admitted to driving after consuming any amount of alcohol in the past 30 days, up from the previous year (8.7%).
- 4.4% of Atlantic Canadians admit to driving when they thought they were over the legal limit.
- One quarter (25.6%) of Atlantic Canadians know of a family member or close friend who has been the victim of a drinking and driving collision that they did not cause.
- 15.8% of Atlantic Canadians indicated that they know of a family member or friend who was drinking and driving and caused a collision where they were at fault.

Alcohol causes physiological impairments which decrease a person's ability to operate a motorized vehicle including:

- Lower ability to divide attention
- Inability to track moving objects/stay in lanes
- Reduced eye movements
- Slower reaction time

(NHTSA, 2009).

Transportation and Public Works:

- 46% of male respondents drove within two hours of consuming alcohol.
- Drivers ages 26-30 drove an average of 22.4 times within two hours of consuming
- Most drivers (83%) reported having 1-2 drinks the last time they drove within 2 hours.
- Of those that drove over the legal limit (26%), the average was 10.7 times.

Over 30% of alcohol related motor vehicle collisions involved Canadian youth, under the age of 25 years (CIHI, 2005). The likelihood of death for a driver under the influence of alcohol who is younger than 25, is greater than that for any other age group. Of those who died as a result of trauma in a motor vehicle collision and had a positive alcohol level, 43% were under the age of 25 (CIHI, 2005). The relative risk of a fatal crash for 19-year-old Canadian drivers was over 12 times higher than for 19-year-olds in the United States (SmartRisk, 2009). SmartRisk (2009) notes that most Canadian provinces have a legal drinking age of 19, compared to 21 in the U.S.

It is important to note that alcohol related injuries and fatalities are not limited to on-road motor vehicles. Studies show links between a high risk of injury and operating snowmobiles while intoxicated (Landen et al., 1999). Links have also been established between alcohol use and all terrain vehicle (ATV) crashes. Hall et al. (2009) found that alcohol was involved in 50% of ATV crash victims and of those, 88% had blood alcohol concentrations greater than > 0.08%. Similarly, a study of the Nova Scotia Trauma Registry found that alcohol was involved in up to 56% of all ATV-related trauma incidents (Sibley & Tallon, 2002). These alcohol-related ATV injuries were reported to be more severe and result in longer hospital lengths of stay. Further, alcohol consumption significantly increases the likelihood of drowning during motorized aquatic activities (Injury Prevention, 2004). Alcohol is also estimated to be involved in approximately two-thirds motorboat/pleasure boat drownings in Canada (Chochinov, 1998).

Similar to the literature, key informants consistently identified the link between alcohol and injuries (e.g., fatalities, life threatening injuries, amputations, disabilities, disfigurements, etc.) resulting from motorized vehicle crashes. In each of the Atlantic provinces, key informants felt that drinking and driving is the most recognized link between alcohol and injury **(however, it is important to recognize that increased awareness does not necessarily translate into changed behaviour)**. However, despite this high level of public awareness, drinking and driving continues to be an issue. Further, in smaller communities people may be more reluctant to alert authorities to drinking and driving out of fear of getting friends/community members in trouble.

> …[in our small community] *drinking and driving is still considered a cultural norm, … The RCMP are continually saying, if you know so-and-so is drinking and driving, give us a call. The community is afraid to do that, because it feels like you're ratting out your friends.*

Key informants also expressed comparable concerns around drinking and injuries associated with recreational motorized vehicles including ATVs, snowmobiles and boats. It was noted that the public's awareness around not drinking and driving does not often extend to these other motorized vehicles. Several key informants described alcohol consumption as a key component to the culture of these leisure activities and therefore, it is often considered acceptable to drink and operate a recreational vehicle. A few interviewees also highlighted the risk of alcohol related injury while engaging in non-motorized recreational activities (e.g., canoeing, biking, etc.).

> There's a perception that as soon as you take a vehicle off the road, or a boat, or anything of that nature, even canoes, it seems that people seem to think that it's normal to consume alcohol as part of the culture of being off-road, it's away from the eyes of the law, the public, so what are a couple of beers going to hurt anybody?… . These [alcohol related injuries] are lifelong injuries that will cost the individual, the family and society for years and years to come.

Violence & Violent Injury

People are more likely to intentionally hurt others, or to have violence inflicted on them while under the influence of alcohol (AADAC, 2003). People with alcohol impairment are significantly more likely to be involved in violent injuries than any other cause (i.e., vehicle, falling, poisoning or burns) (MacDonald et al., 2006). Some researchers have gone as far as to conclude that *alcohol may be causally related to violence* (MacDonald et al., 2005; Rehm et al., 2003). For example, MacDonald et al. (1999) found that 42% of those with violent injuries had a BAC over 80 mg% compared with only 4% for those with unintentional injuries. Other examples include research which suggests that alcohol plays a role in approximately half of assaults (Borges, et al., 2003). It has been noted that alcohol may serve as a trigger for violent behaviour, especially by those with violent pre-dispositions (Cook, 2007). The Nova Scotia Trauma Registry reported (2005) 56 total assaults, 26 of which reported a high BAC. The Trauma Program in New Brunswick also reports that from April 2008-March 2009, 504 patients were seen at the Saint John Regional Hospital due to assault and 149 had documented alcohol involvement (NB Trauma Coordinator, Personal Communication).

Although the use of alcohol and rates of consumption differ across countries, the relationship between alcohol consumption (BAC over 80 mg%) and violence has been found across the United States, Canada, Mexico, Australia, Spain and Argentina (MacDonald et al., 2005). The odds ratio (odds of an event occurring) for being injured at a bar ranged from 6.1 for Mexico to a high of 12.1 for Canada (MacDonald et al., 2005).

Studies have linked alcohol use with the occurrence of domestic violence and intimate partner[i] violence (WHO, n/d). Evidence suggests that alcohol increases not only the occurrence of domestic violence, but also the severity (WHO, n/d). Women whose partners abused alcohol were 3.6 times more likely than other women to be assaulted by their partner (Demetrios et al., 1999). Further, the literature suggests that alcohol is also linked to sexual assault. In 2002 in the US, more than 70,000 students between the ages of 18 and 24 were victims of alcohol-related sexual assault (Hingson et al., 2002). Alcohol is the most common drug used in drug-facilitated sexual assaults (LoVerso et al., 2001). In the United States, at least one half of all sexual assaults involve alcohol consumption by the perpetrator, the survivor, or both (Abbey, 2001).

Alcohol increases the risk of engaging in violence and suffering violent injury because it:

- Reduces inhibitions/ self-control/impulsivity
- Decreases likelihood of thinking of consequences
- Increases aggression
- Increases likelihood of being placed in risky situations while intoxicated

(AADAC, 2003; Australia National Alcohol Strategy, 2003)

Key informants also highlighted the connection between alcohol and violence. During the interviews, key informants described a range of contexts in which alcohol contributes to violence including fights at bars and domestic abuse/ violent assault. A few highlighted links between alcohol and violent crimes such as robberies, break and enters, etc. Further, a few interviewees felt that alcohol was commonly involved in sexual assaults.

> … everybody reacts differently under the influence of drugs and alcohol. …you're really going to see all the behaviors emerge in people, family violence, the violence against the spouse, children, and even assaults upon third parties.
>
> I also have seen students who have been injured sexually. We've had sexual assaults, date rapes that have occurred [involving alcohol].

[i] Also called 'Domestic Violence', 'wife abuse' or 'battering' referring to the fact that for many women it occurs within the context of the home. The term intimate partner violence is used to emphasize that it is perpetrated by any intimate partner or ex-partner regardless of the legal status of the relationship (WHO)

Alcohol & Falls

Falls are the leading cause of injury admissions to Canada's acute care hospitals, accounting for 54% of all injury hospitalizations and 76% of all in-hospital deaths among people admitted for injuries (CIHI, 2002). In 2004, falls were also the leading cause of injuries resulting in permanent partial disability and total permanent disability and the leading cause of overall injury costs in Canada, accounting for $6.2 billion (or 31% of total costs) (SmartRisk, 2009). During 2007-2008, the average age standardized hospitalization rate for seniors in Atlantic Canada was 14.25 per 1000 population (CIHI, 2010).

In a study by Johnson and McGovern (2004), alcohol consumption was linked with greater incidence of falls resulting in craniofacial injury. The severity of both limb and head injury is greater and correlates directly with blood alcohol concentration. Recently Kool et al (2009) concluded from a systematic review of epidemiological studies that acute alcohol use (within 6 hours of the event) contributes to unintentional fall risk, resulting in serious injury among young and middle aged adults and accounts for at least a threefold increase in risk. The avoidance of alcohol is estimated to reduce the number of these injuries by up to 20% (Kool et al., 2008).

Correlations between alcohol consumption and falls, primarily due to alcohol's inhibition of protective reflexes

- When intoxicated, people who fall are inhibited to break their falls using their hands and therefore tend to suffer more sever craniofacial injuries

(Johnson & McGovern, 2004)

Some key informants linked alcohol to falls. Some spoke of falls resulting in injuries at bars and parties among youth and adults as well as falls by seniors. A few key informants suggested that in some cases injuries sustained as a result of falls may be viewed positively as an indication of a persons' level of intoxication and a 'badge of honor'.

> I think because alcohol has become so normalized, that injury related to alcohol is becoming more normalized as well. It becomes more of a 'war story' or a 'hero story' that reflects a badge of honor, that after people have over consumed and they fall off the sidewalk, and go to work or to school the next day with a cast, they're proud of the fact that they fell off the curb because they were drinking too much.

Alcohol & Suicide

The literature suggests an increased risk for suicide under the influence of alcohol (Borges, et al., 2003). Alcohol has been found in as many as 56% of suicides (Bilban & Skibin, 2005). Both chronic and acute alcohol use are associated with suicidal behaviour. Impulsivity and aggression are strongly implicated in suicidal behavior and these confer additional risk of suicide in people with alcohol dependence (Sher, 2006). People who are intoxicated are more likely to attempt suicide using more lethal means. Those who self-medicate anxiety with alcohol are more likely to attempt suicide (Bolton, et al., 2006). Further, alcohol may be an important factor in suicide among people with no mental health/psychiatric history (Sher, 2006).

Alcohol tends to be implicated in slightly more cases of suicide in men compared with women (WHO, 2002). Completed suicide rates were higher in zip code areas with greater bar densities (Johnson et al., 2009). A study undertaken by the Nova Scotia Department of Health Promotion and Protection (2009) found alcohol abuse (15.3%) was the most common of all substance abuse cases involving hospitalizations for suicide attempts.

Additionally, age appears to have a role in the association between alcohol and suicide. A recent study by Schilling et al. (2009) revealed that a marker for impulsive suicidal behavior among non-suicide ideating adolescents includes drinking alcohol while 'sad' or 'down' which results in a threefold increase in the risk of self-reported suicide attempts among youth.

Some key informants indicated that they witnessed the link between alcohol and suicide in their positions (primarily those in frontline/trauma/first response positions) and several recognized the connection. A few suspected that suicide threats may be more frequent when people are intoxicated.

> We see more people at risk of talking about suicide or expressing wishes to die when they're intoxicated… [we] hold them until they're sober and then we assess them.
>
> With suicide, alcohol is often a co-factor… and often a long term contributor to the end point of suicidal ideation

FASD

Fetal alcohol spectrum disorder (FASD) includes a range of health, developmental, intellectual and social concerns caused by prenatal exposure to alcohol. The literature review suggests perceptions of FASD are shifting from it being viewed as an alcohol-based disorder to a preventable brain injury (BC Ministry of Children and Family Development, 2009). Further, there is evidence that individuals (adults) with FASD are also at increased risk for intentional injury (USDHHS, 2009). This may be due in part to reduced inhibitions, high risk taking, and difficulty understanding consequences (FASD World, 2005).

Poly Drug Use & Injury

Pape et al. (2009) found that the majority of cannabis users take the drug in combination with alcohol, in other words, cannabis use is often a complement rather than a substitute for alcohol. Mixing marijuana and alcohol is more dangerous than using each drug separately. The combination of small amounts of marijuana with alcohol make the hazards/risks of injury more severe than if each were taken separately (CAMH, n/d).

A few interviewees also highlighted the use of illicit drugs in combination with alcohol as increasing, especially among youth.

> [Cannabis and alcohol is a problem] particularly among young people… who have this idea that cannabis and driving is ok.

Alcohol & Injuries in Specific Population Groups & Geography

This section describes the association between alcohol and injuries in specific populations including youth, the elderly and aboriginal populations. The section also describes some geographic differences in alcohol and injury.

Alcohol & Youth

Youth are not immune to the injury risks associated with alcohol. The loss of inhibitions and decision making skills paired with youths' 'lack of experience' with alcohol and the levels required for intoxication, place them at particular risk for alcohol related injuries including violence, motor vehicle collisions and sexual coercion (Australian National Alcohol Strategy, 2003).

> *"…for each year under age 21 that drinking onset is delayed, risk for later life injury diminishes."*
>
> – *Enoch Gordis, M.D., Director, National Institute on Alcohol Abuse and Alcoholism*

The average age of first use of alcohol amongst Atlantic Canadian youth is 12.9 years compared to the Canadian average of 15.6 years (Poulin & Elliot, 2007). Youth, aged 10-24 years, represent the highest proportion of people admitted to a specialized trauma hospital for alcohol related injuries (National Alcohol Framework, 2007). For provinces with a legal drinking age of 19, the rate for alcohol-related major injury among youth was 9 per 100,000 and remained virtually steady over the three-year period. In contrast, provinces with a drinking age of 18 showed a rate of major injury in this group that increased from 11 per 100,000 to over 15 per 100,000 in 2002–2003 (Insurance Canada, 2003). Research suggests that youth who begin drinking alcohol before age 14 are three times more likely to be injured by drinking than those who begin drinking at or after age 21 (NIAAA, 2000).

Alcohol & Older Adults

Much research attention has focused on alcohol consumption in the youth and adult populations; however, emerging research suggests that alcohol consumption and over consumption is increasingly being seen in the senior population. According to the Canadian Addiction Survey, 1 in 5 people aged 65 years and older consume alcohol more than 4 days a week. Alcohol may be an issue for seniors for several reasons including (AADAC, 2003):

- Alcohol has a greater effect on seniors due to changes in metabolism;
- Increase use of medication in the senior population increases the risk of possible alcohol – medication interactions/complications;
- Alcohol may be used by seniors to cope with emotional stresses (e.g., loss of a spouse, friends, their home, career, mobility, loneliness, depression, anxiety, etc.) and boredom; and
- Decreased day-to-day contact with family, co-workers, and neighbours may allow for alcohol issues to go unnoticed.

Older people are also susceptible to injury as a result of alcohol consumption. Older people are at greater risk of falling and have reduced driving skills as a result of visual loss and slower reaction time (Australian National Alcohol Strategy, 2003).

Aboriginal Populations

Aboriginal Canadians have a 4 fold greater risk of severe trauma than the non-Aboriginal population (Karmali et al., 2005). In First Nations' communities injury is the leading cause of death for people under the age of 45 (AFN, 2006). Some have attributed this increased rate of injury to alcohol use (Blackmer, M & Marshall, S.C., 1999), although this link has not conclusively been made (Karmali et al., 2005). Alcohol is a commonly cited factor in a variety of injuries among Aboriginal populations including motor vehicle crashes, drowning (e.g. safety and traditional lifestyle habits do not emphasize safety practices such as limiting alcohol consumption when in or on the water), suicides (e.g., due in part to more family alcohol abuse, with accompanying violence), and fires (e.g., alcohol increases smoking and cooking related fires) (AFN, 2006). The rate of alcohol related deaths for First Nations is 14.1 per 10,000 population, nearly four times the rate for the non-Aboriginal population (FNIHB collateral, n/d).

Urban Compared to Rural Areas

The Canadian Ministerial Advisory Council on Rural Health (2001) reports that rural communities have higher rates of alcohol consumption than urban areas. Jiang et al (2008) found higher rates of alcohol consumption and adolescent injuries in more rural areas in Canada. Similar trends have been found by Statistics Canada (2004) which reports that one in four male youth report heavy drinking practices in small metro regions, small cities, small towns and northern regions in contrast to their major metropolitan regional counterparts.

Awareness of the Link between Alcohol & Injury

During the interviews, key informants were asked if they felt people (e.g., public, health care providers, etc.) were aware of the link between alcohol and injury. The following section describes interview findings related to levels of awareness of alcohol and injury.

Awareness Among the Public

The risk of injury in driving while intoxicated is well known; however most key informants felt that the link to other injuries (e.g., falls, violence, injury risk while operating recreational motorize vehicles, etc.) was less known. A few also noted that often people do not make the connection between their alcohol consumption (or after effects such as a hangover) as a cause of their injury. Further, several key informants felt that the link between alcohol and injury was not taken seriously and was often viewed humorously if people injure themselves while intoxicated. As alluded to previously, injuries are commonly viewed as 'badges of honor' in terms of a person's level of intoxication.

> "I don't think the general public has an understanding of the issue, because a lot of times if somebody harms themselves while they're drinking, it's a joke. …I don't think people take it seriously and they don't truly understand the possible negative impacts that can come along with that.
>
> It gets downplayed, I think people disconnect having an injury and their alcohol use. … They don't think about the after effects of drinking, like being hung over the next day. … I would say a lot of people probably don't directly connect [alcohol with] some of the injuries they've experienced."

Variable Awareness Among Health Care Providers

When asked about the levels of awareness of the link between alcohol and injury by health care providers, many key informants felt that it was high among certain health care providers, including those working in emergency rooms/departments where they witness first hand the link between alcohol and assorted injuries. Health care providers working in the field of addiction were also thought to have a high level of awareness around the link between alcohol and injury. However, some key informants felt that other health care providers may not connect alcohol to injuries they may encounter, unless the connection was overtly apparent (e.g. drinking and driving). It was noted that some primary health care providers might not ask questions about alcohol and injury, because of the stigma in asking questions about alcohol consumption. In some provinces, physicians are required to report those who have acute alcoholism who are unfit to drive (for review of their license). However, in some Atlantic provinces such as Nova Scotia this responsibility is one that is discretionary and one in which physicians do not often engage in. Further, a few felt that alcohol and injury was not adequately addressed in health professional's school curriculum or in continuing education.

> *"Unsafe drivers often visit physicians and yet are rarely reported to licensing authorities even under mandatory reporting laws for preventive medical reporting."*
>
> – *Redelmeier, 2008*

> "In terms of health care providers, I think [they] look at the more obvious ones, like drinking and driving, but don't necessarily see the links for seniors who come in with broken hips. They're not asked if they had anything to drink [before the fall]… There's such a taboo around asking people about their drinking, those questions aren't being asked.
>
> I can't remember the last time we had continuing education on the alcohol and injury link. … in fact I'm wondering if it's even taught in medical school or nursing? …I don't think it's a commonly taught issue."

The Culture of Alcohol Use

Approximately 90% of people in Western countries use alcohol at some point in their lives (Sher, 2007). Alcohol is used in many ways in Canada including socialization and celebration. It has been cited that "*sociocultural variants are at least as important as physiological and psychological variants when … trying to understand the interrelations of alcohol and human behavior. Ways of drinking and of thinking about drinking are learned by individuals within the context* [of their culture and surrounding environment]" (Heath, 1982). The following section presents the findings related to the culture of alcohol use in Atlantic Canada as informed by the key informant interviews and the literature review. Also discussed, are patterns of consumption in Atlantic Canada as well as influences and reasons for consumption.

> *"The issue is not that Nova Scotians drink alcohol; it is that certain destructive patterns of drinking and contexts contribute to the burden of alcohol-related harms in Nova Scotia"*
>
> – *Changing the Culture of Alcohol in Nova Scotia*

Culture of Alcohol Use in Atlantic Canada

During the interviews, key informants were asked to describe the culture of alcohol use in their province. The findings revealed that alcohol is socially accepted and expected, and the culture of alcohol use in Atlantic Canada is linked to heritage and industry. Limited literature is available around the culture of alcohol use specifically in Atlantic Canada; therefore this section is primarily informed by key informant interviews.

Socially Accepted & Expected

It was consistently noted that alcohol consumption is socially accepted across Atlantic Canada. Many felt that it was the 'cultural norm' to drink alcohol at most social occasions and during recreational/leisure activities as it is often associated with fun, celebration, socialization and relaxation. Most described high acceptance of alcohol consumption at various social events and indicated that not only was alcohol accepted, it was expected that people drink at these social events. Many described that alcohol consumption is engrained in the culture such that many view those who choose not to drink as abnormal. It was suggested that the pressure to drink may initially begin as peer pressure during adolescence; however, this pressure extends into adulthood as the social, cultural and societal pressures normalizes expectations around alcohol consumption.

> "The culture of alcohol … you could describe it as a very integral part of lifestyle. … it's been engrained in the culture for so long that it's just accepted. …I think it's viewed as a way to enjoy yourself. There's very little stigma about drinking.
>
> Many social activities are open and accepting of drinking, whether that be going to the cabin, the boat, whether it be going on the ski-doos, going hunting and fishing… there's a real connection with alcohol use. [People say] 'relax and have a drink', and boy, if you don't have a drink there's something wrong. 'What's wrong with you, that you're not drinking?'"

Heritage & Industry

Many interviewees associated part of the culture of alcohol use, consumption patterns and reasons for consumption to the unique heritage in Atlantic Canada. Several key informants highlighted Scottish, Irish, Gaelic and Celtic heritage(s) across many Atlantic Canadian provinces as playing a role in the culture of alcohol. This history has contributed to and shaped perceptions about the Atlantic Canadian culture and high levels of social alcohol consumption (e.g., traditional pubs, ceilidh, kitchen parties, etc.). Further, some interviewees highlighted the industry-based culture in Atlantic Canada as a contributor to the culture of alcohol (e.g., naval, fisheries, mining, forestry, etc.). It was suggested that the culture of alcohol in Atlantic Canada stems from a "work hard, play hard" mentality, whereby Atlantic Canadians have traditionally made a living in challenging industries and use alcohol as a reward for a 'hard day's work'. Many large and popular beer manufacturers also have strong ties to the history in Atlantic Canada (e.g., Keith's, Moosehead, etc.) and continue to serve as a source of employment and tax revenue in these provinces. It was also noted that many Atlantic Canadian provinces have a long history with alcohol including prohibition and moonshine.

> "…we've got a large Irish culture that immigrated to Newfoundland, so certainly for the Ireland portion of the province we see a lot of [alcohol consumption]. We know that the Irish have a long history in alcohol, and maybe they brought some of that with them. …Culturally this is a province of people who fished all their lives. Where you worked from dawn until dusk, you got up, you went out, you fished, you probably did that for six days a week. And then come Saturday night, I think people worked so hard for so long, they just got into a pattern of just totally relaxing and letting go.
>
> Nova Scotia unfortunately is a real drinking culture. It always has been, primarily because of its naval history. It has established alcohol firmly in the center of traditional Nova Scotia life. We're a culture of socializing by parties, so the rural areas are based on kitchen parties and the urban area is based on the bar scene. Alcohol seems to be totally woven into the fabric of our society."

Patterns of Alcohol Consumption in Atlantic Canada

This section presents findings related to the patterns of alcohol consumption in Atlantic Canada including high/excessive consumption and intentional over consumption, and normalization of intoxication. The findings from each theme are presented below.

High/Excessive Consumption & Intentional Over Consumption

Many informants described over consumption of alcohol across the Atlantic Canadian provinces. Many felt that high consumption of alcohol is encouraged and those who can drink high quantities of alcohol are viewed positively (able to "handle their liquor"). It was noted that especially in younger populations (e.g., under age youth, university students, etc.) and during particular parts of the year (e.g., Christmas, summer, etc.), alcohol is being intentionally over consumed with the goal of intoxication. Younger populations often think it is the 'norm' to drink excessively and perceive that all their peers are engaging in this behaviour. Although most interviewees felt that adults do not necessarily purposefully drink to achieve intoxication, it was noted that there was a lack of awareness around the levels and patterns of consumption that can result in increased risk of harm and injury. Some interviewees felt that this is the result of a social-cultural environment in which the norm for alcohol consumption is higher than the safer drinking recommendations (i.e. the low risk drinking guidelines – Center for Addiction and Mental Health).

> "Nova Scotians over consume alcohol to a point that harms the public's health. Their alcohol consumption is not about morals or intelligence. Nova Scotians are hardworking, honest people who are intelligent, however, the culture with which they live, work and play is one that promotes, and enables the over consumption of alcohol… It is not normal, not to consume alcohol. As far as the heavy alcohol consumption which would be four to five drinks per sitting as an over consumption, Nova Scotians often exceed that and they exceed that on a regular basis.
>
> I don't think people would even think they're over consuming. I think people's idea of over consumption would be falling down drunk, or becoming violent. If you don't fall into any of those extreme categories, you're not over consuming. I think it's become so normalized, that gradually as we've progressed through the years, that over consumption has become normalized and it's part of our culture."

Normalization of Intoxication

Some noted that reaching a state of intoxication (especially among young males) was often praised. Several key informants indicated that intoxication is only viewed negatively when it is linked with consequences such as injury, violence, etc. otherwise, it is often socially accepted. Key informants highlighted that the context and setting often dictates the 'normalization' of drinking to intoxication. For example, drinking to intoxication while out to dinner would be less tolerated compared to a house party where it would be normal and accepted. Further, it was noted that people often differentiate between "normal intoxication" and addiction (e.g., people who drink excessively every day, drink to the point it affects their health). Specifically for youth and young adults (university age), interviewees felt that they consume alcohol with the intention of becoming intoxicated. However, it was noted that intoxication also occurs due to their lack of experience with alcohol.

> "… there's no social 'faux pas' to being intoxicated. Intoxication is not viewed as a health issue… intoxication is not viewed as a negative thing. It's much easier to be drunk in public than smoke a cigarette in public.
>
> …no one wants to be around someone who's like sort of violent or someone who's mean. That takes away from the fun of the party. So it ruins it when people [take it] to that extreme it. I think too, people look at an alcohol problem as being, an extreme, someone who drinks every single day, someone who has like their health [affected]."

According to the Canadian Centre on Substance Abuse's 2004 Canadian Addiction Survey, 79% of Canadians (over the age of 15 years) were current drinkers (someone who had a drink in the past year). Approximately 7% of current drinkers are 'heavy frequent' drinkers or those consuming 5 or more drinks per occasion at least once per week). The following table highlights the per capita consumption of alcohol in the four Atlantic Canadian provinces.

Table 3: Per Capita Consumption of Alcoholic Beverages in Liters Per Annum
(source: Brewers Association of Canada, 2007)

	Total alcohol	Beer	Wine	Spirits	Coolers
Canada	115.75	92.04	14.77	5.90	3.04
Newfoundland	117.76	100.02	5.99	8.48	3.27
Nova Scotia	107.36	86.67	10.10	7.04	3.55
PEI	106.86	85.98	9.29	7.43	4.16
New Brunswick	104.15	86.44	7.79	4.85	5.07

Results of the Canadian Addiction Survey (2004) regarding drinking frequency shows that rates of drinking 1-3 times per week range from 28%-33% in Atlantic Canada. When examining alcohol consumption trends, it is not only important to consider drinking frequency, but also the quantity consumed. The Canadian Addiction Survey (2004) reports that the Atlantic Canadian provinces have the highest rate of people consuming 5 or more drinks in one sitting (23%-31%). Further, compared to the national average, a high percentage of Atlantic Canadians drink in a manner which is considered hazardous (according to the AUDIT – "Alcohol Use Disorders Identification Test").

Influences & Reasons for Alcohol Use

During the interviews, key informants were asked to describe some of the influences and reasons why they feel alcohol is consumed and over consumed in Atlantic Canada. The following table provides a summary of the findings.

Table 4: Influences & Reasons for Alcohol Consumption (Key Informant Interviews)

Description	Quote
Social	
• Commonly used during social occasions and celebrations	"I think of [alcohol] in social situations. If people are with family or friends, if they're at someone's house, alcohol [is] something that's [consumed] when people gather together."
• Commonly used during social occasions and celebrations	"I think of [alcohol] in social situations. If people are with family or friends, if they're at someone's house, alcohol [is] something that's [consumed] when people gather together."
• Consumed to fit in with the social norms and expectations around alcohol consumption (fitting in with peers during adolescence as well as meeting social expectations during adulthood)	"For female adolescents, it's an opportunity to fit in, and for males, it's an opportunity to be rebellious, act out. When we look at research and a marketing paradigm, we understand that youth consume alcohol to the point of harm to fit in with the culture".
Emotional	
• Consumed to relieve and cope with stress and anxiety (both for adults and youth)	"I think for a lot of people [alcohol] is probably consumed and seen as a stress reliever, like, 'I had a hard week and I deserve a break, and I'm going to drink and relax."
• It is used to increase confidence in social situations (both adults and youth)	"[Alcohol is] a social lubricant in that it allows [people] to reduce their inhibitions so that they can socialize more easily."
• It is consumed to deal with life stresses related to the determinants of health	"…to deal with, broader determinants of health. Things like stress, income inequities, sort of occupational and educational inequities." "I think given the demographics and the people that live in New Brunswick; some people who are low socioeconomic status, may use alcohol perhaps a little bit more than other people."
Environmental	
• Advertising contributes to not only the type of alcohol consumed (e.g., brands, etc.) but also the patterns and normalization of its consumption and over consumption	"The role the industry plays in the promotion of alcohol as a normal consumer product that should be in the house and at every event."
• Advertising shapes associations with alcohol and lifestyle (e.g., fun, etc.)	"I'm not one to always blame media for everything, but the commercials on TV and associating them with going out and having some beers and attractive women at a big party."
• Alcohol advertisers may target their products specifically to the culture within a province (e.g., Francophone, Anglophone culture, type of industry, etc.)	"The culture in New Brunswick is interesting… very interesting linguistic cultures … The brands that are specifically marketed to the French community, and those that are marketed towards the English community. And the industry is very savvy to those cultural divides. … for example, the number one selling beer in New Brunswick is Budweiser, and if you drill down that further, the number one selling beer in the French community is Alpine. … This province depends on alcohol revenues, one of the biggest breweries in the world, Moosehead Breweries is brewed in Saint John."
• Some felt that alcohol consumption is influenced by parents and their relationship with alcohol. Over consumption of alcohol by parents was thought to normalize this behaviour at an early age	"…they see their parents get together, they have a laugh, everybody's drinking and carrying on, and they have their own parties and alcohol is involved, and it just, it starts at a young age"
• Rural versus urban areas may not effect how much alcohol is consumed or reasons for consumption. However, in urban areas, bars were more common outlets for consumption versus house parties and drinking during outdoor recreational activities in rural areas. Alcohol may also be consumed more in rural areas because alternative entertainment options are less accessible.	"With something being more urban you'd have people perhaps going to a martini bar to clubs that are in town. Whereas, if it was more rural you may have people getting together at camps or cottages, or people's houses."

Several studies have been conducted around trends and reasons for consumption including the "Culture of Alcohol Use in Nova Scotia" and "Evaluative research and concept testing among young adults- assessment of low-risk drinking guidelines print materials", (Schrans et al., 2008). The findings illustrate aspects of the culture of alcohol:

Demographic trends

- Males tend to drink more often and consume higher amounts during a single sitting
- Adults 19 years of age and over report higher consumption rates than adolescents (ages 15-18), although it is important to note that two thirds of adolescents report consuming alcohol under age.
- The age of onset of drinking has been steadily declining to a younger age.
- Older individuals consumed alcohol more frequently than younger drinkers – almost one in every seven seniors who drank alcohol last year reported drinking four or more times a week as compared to only 1% of Past–Year drinkers aged 19-24 years.
- Although older drinkers tended to drink more often, younger drinkers tended to consume larger quantities at a single sitting (i.e., binge drinking).

Price & Purchasing

- Over one-third of hazardous drinkers purchased sale-priced alcohol at the liquor store compared to about one-fifth of low-risk drinkers.
- "Happy hour" discounts tend to attract younger drinkers with those 19-24 years old significantly more likely to be taking advantage of discounted prices for drinks than those in any other age category. Likewise, hazardous drinkers were three times more likely than low-risk drinkers to take advantage of "happy hour" discounts.
- Two-thirds of 19 to 24 year old drinkers consumed alcohol at a bar or nightclub last year compared to one-third or less for any other age group.

Reasons for Consumption

- The primary reason cited by drinkers for why they consume alcohol was to be sociable. Other common responses included to enjoy the taste, to celebrate and to help relax.
- Reasons for drinking varied depending on age. Three-quarters of 15-18 year olds reported drinking to celebrate compared to only one-third drinkers over age 65 years.
- Just over one-third of drinkers aged 15 to 24 years reportedly drink to get high or drunk versus less than 10% of drinkers aged 35+ years.
- Primary motivations reported for drinking for those aged 19-29 were to enhance fun and enjoyment, achieve social benefits or rewards, relax, increase confidence, and/or remove/reduce inhibitions.
- Drinking and overdrinking by young women (19-29 years) occurred more often in response to emotional situations or to reduce inhibitions
- For those 19-29, intoxication is a planned outcome. Unintentional or unplanned intoxication diminish with age and experience.
- Half of adults aged 45 years or older indicated that they consume alcohol to add to the enjoyment of a meal compared to only 11.4% of 15-18 year olds and 29.8% of those age 19-24 years.
- Hazardous drinkers were much more likely to consume alcohol to get high or drunk than low-risk drinkers. They were also more likely than those at low-risk to drink for the emotional benefits such as making them more relaxed, less worried and less inhibited.
- Youth tend to drink to 'get drunk' and engage in activities to achieve intoxication (e.g., shooting liquor, etc.).
- Alcohol consumption prior to the legal drinking age is considered "normal behaviour" (e.g., experimentation).

Current Work, Suggestions, Policy & Best Practices to Address Alcohol & Injury in Atlantic Canada

The following section presents the findings regarding current work to address alcohol and injury in Atlantic Canada (interview findings), suggestions on how to approach addressing this issue (interview findings), and policies as well as best practices to address the link between alcohol and injury (interview and literature review findings).

Current Work in Atlantic Canada to Address Alcohol & Injury

The following section provides some examples an overview of current work which key informants felt is addressing alcohol and injury in their province.

Enforcement

- ID checks are being enforced at liquor stores across Atlantic Canada
- Increased enforcement during 'high risk' times of the year (e.g., police check points, checks during long-weekends, etc.).
- Many provinces in Atlantic Canada have implemented an alcohol zero tolerance policy built into their graduated drivers' licensing program.
- Other programs to prevent and enforce drinking and driving such as interlock programs[ii].

Alcohol-free activities

- The Southern Labrador/Strait of Belle Community Youth Network provides youth with recreational activities in an alcohol free environment. The centre is successful; although has lower turn out on weekends when alcohol consumption is likely occurring.

[ii] A small, hand-held, breath-testing device fitted to a vehicle's ignition. The driver must blow into the device and if alcohol is detected and is higher than a pre-set limit, the vehicle will not start. The interlock device requires breath samples at random times while the engine is running. If the sample is not provided or the blood alcohol content is over the limit, the device will log the event, and trigger an alarm that will sound until the ignition is turned off.

- The University of New Brunswick, Saint John (UNBSJ) is changing activities commonly associated with alcohol, including changing the name of 'frosh week' to 'orientation week' and providing non-alcohol based activities.
- UNBSJ is also a member of BACCHUS Canada[iii] which works to address alcohol-related issues on post-secondary campuses across Canada.

Education/ Awareness building

- The PARTY Program (Prevent Alcohol and Risk-Related Trauma in Youth)- PARTY is thought to be more effective than traditional school-based health education approaches as it is more engaging and interactive
- Various social marketing campaigns are being developed and implemented to build awareness around safe alcohol consumption and reducing risk of injury
- Sample social marketing work underway in Atlantic Canada can be found at:
  - New Brunswick: http://revolutionstrategy.com/workfeatured.html
  - New Brunswick: http://www.hekilledmyfriends.com
  - Nova Scotia: http://www.gov.ns.ca/hpp/yellowflag
- Changes to the terminology used to address alcohol related injuries, particularly drinking and driving. Efforts are being made to label car "crashes" or "collisions" rather than "accidents" as this term does not imply that the incident could have been prevented.
- The Grand Lake Intervention Centre Program teaches about the harms associated with alcohol by having guest speakers speak to youth about how alcohol has adversely affected their lives and provides a forum for questions and discussion.

[iii] BACCHUS is a university and community based network focusing on comprehensive health and safety initiatives. It actively promotes student and young adult based, campus and community-wide leadership on healthy and safe lifestyle decisions concerning alcohol abuse, tobacco use, illegal drug use, unhealthy sexual practices and other high-risk behaviors.

Screening

- The South Shore District Health Authority (Nova Scotia) is working to screen, using the CAGE questionnaire, seniors for alcohol use when they present in the emergency room.

Provincial Strategies

- Nova Scotia has a provincial alcohol strategy which includes actions/priorities around addressing alcohol related harms. Other provinces in Atlantic Canada have broader "health" or "wellness" strategies which commonly address alcohol use.

Suggestions to Address Alcohol and Injury From Key Informants

During the interviews, key informants were asked what is needed to address alcohol and injury. The interviews revealed the need to address alcohol as a drug, social marketing and awareness building, screening and brief intervention, and curriculum enhancement. Each of these themes is described in greater detail below.

Addressing Alcohol as a Drug

Several key informants indicated that the public does not view or treat alcohol as a drug. It was noted that more work is needed to build the public's awareness of alcohol as a drug and the harms associated with misuse of this drug. Key informants suggested that changes are needed to include alcohol as a drug in school curriculum, provincial prevention strategies, social marketing, etc.

> "I think our education efforts needs to include drugs with alcohol. We've been talking about these two issues separately, for decades now, but they both contribute the same social problems. Especially in relation to injuries.
>
> … the provinces, the federal campaigns coming out focusing solely on illicit drug use, [but] alcohol is not included in those education campaigns, and almost implies to youth that that's safer or more accepted than marijuana or harder drugs."

Awareness Building

Many key informants felt that there was a need for increased awareness regarding the link between alcohol and injury (although a few noted that social marketing around drinking and driving has reached 'saturation'). It was noted that approaches similar to those used around tobacco and associated harms are needed to change the culture of alcohol. As previously noted, key informants also commended efforts in building awareness regarding drinking and driving and felt that further social marketing (see definition) was needed to build awareness and decrease complacency around drinking and operating other motorize and recreational vehicles (e.g., ATVs, snowmobiles, boats, etc.). Further, key informants highlighted that social marketing was needed as alcohol advertising is pervasive as well as other messaging around drinking for health benefits. It was noted that messaging should focus on harm reduction and building awareness around the costs associated with problematic use of alcohol (e.g., job performance, health care costs, health risks, injury, violence, etc.) rather than 'anti drinking' messaging.

> ***Social Marketing*** *is a behaviour change strategy that focuses on understanding, from the target audiences' perspective, why they behave a certain way. It's about understanding the social, cultural, and environmental influences on behaviour. It is about developing comprehensive approaches to addressing these behavioural influences including healthy public policies, supportive environments, and sometimes the use of communications and awareness campaigns. Social marketing is not just about awareness raising and education.*

> A campaign targeted to the public around their complacency around this, and what it's costing them. Similar to things we've done around tobacco and other drugs. And the social marketing campaign I would do in my own province would be around ATVs.
>
> If you're trying to change how people consume substance, people [need to] see the harms associated with the substance. …I don't think we're going to change the culture of drinking, but maybe what we can get a message out there about the things you can do to reduce the chance of injuries happening.

Screening, Brief Intervention & Curriculum Enhancement

Some key informants felt that primary care providers could play a greater role in addressing alcohol and injury. It was suggested that engagement in screening, brief intervention and motivational interviewing, could help primary care providers identify problematic alcohol use and prevent injury. A few felt that health care providers do not engage in screening and brief intervention due to discomfort in asking about alcohol because of the normalization of its consumption and over consumption in society as well as a lack of training to engage in screening and brief intervention. It was suggested that engagement of health/social professional schools' curriculum may help to better train and equip future health/social professionals to address alcohol and reduce injury.

> I think the alcohol education needs to start [in the health professional curriculum]. Build awareness, tackle the stigma around alcohol and alcohol use. Right now, physicians and health care providers, and anyone in the health profession – nobody is talking about alcohol, either with their colleagues or with their patients. So introducing it into the curriculum will help take away the stigma of talking about it, and it'll become okay to start asking people about their use. Brief intervention has been shown to be quite effective in helping people change their patterns of drinking.
>
> I think targeting health care providers, especially family physicians, primary health care providers, to do a better job of screening and counselling their patients.

Policy & Best Practice Evidence to Address Alcohol & Injury

The following section presents proposed policy changes to address alcohol and injury according to the literature and key informant interviews. The section also outlines evidence based, best practices or recommended practices to address alcohol, injury and alcohol-related harms according to the literature.

Advertising

In 2002, $1.9 billion was spent on alcohol advertising. Studies suggest that alcohol advertisments make use of techniques which specifally target and appeal to youth. Research shows that young people find many aspects of alcohol advertising attractive (Waiters et al. 2001; McCreanor et al, 2008). A recent systematic review of longitudinal studies on the impact of alcohol advertising on youth revealed the following correlations (Anderson, et al., 2009):

- Evidence of exposure to alcohol advertising and the onset of drinking amongst non-drinking youth.
- Evidence of exposure to alcohol advertising and increased levels of consumption among existing youth drinkers.
- Evidence of a dose-relationship with regards to the impact of advertising exposure.

> Seven Myths Alcohol Advertisers want Youth to Believe:
>
> 1. Everyone drinks alcohol
> 2. Drinking has no risks
> 3. Drinking helps to solve problems
> 4. Alcohol is a magic potion that can transform you
> 5. Sport and alcohol go together
> 6. If alcohol were truly dangerous, we wouldn't be advertising it
> 7. Alcohol companies promote drinking only in moderation
>
> – *Strasburger, 2002 (adapted from Kilbourne – Media and values)*

Several researchers have advocated for policy changes which restrict or ban alcohol advertising as the literature suggests that these changes may result in decreased consumption (among youth and adults) and alcohol related harms. Researchers Anderson & Baumberg (2006, p. 281) conclude: "… studies have suggested significant effects of alcohol advertising on alcohol related problems … Countries with partial restrictions had 16 per cent lower alcohol consumption rates and 10 per cent lower motor vehicle fatality rates than did countries with no restrictions, and countries with complete bans on television advertisements had 11 per cent lower consumption rates and 23 per cent lower motor vehicle fatalities than did countries with partial restrictions …After accounting for regional price differences and population variables such as income and religion, increases in alcohol advertising were found to be significantly related to increases in total and night-time vehicle fatalities across US states … It was estimated that a total ban on alcohol advertising might reduce motor vehicle fatalities by as much as 5,000 to 10,000 lives per year."

During the interviews, it was consistently noted that changes around alcohol advertising were needed to impact the culture of alcohol, its normalization, over consumption and associated harms/injuries. The majority of key informants felt that alcohol advertising should be strictly regulated and some suggested a ban on advertising similar to tobacco products. It was noted that youth should not be exposed to any alcohol advertising. Key informants felt that advertising normalizes alcohol consumption at an early age and encourages consumption and over consumption among young adults through enticing ads which promote fun and socializing associated with alcohol. Further, some key informants highlighted conflicting priorities in government owned and operated liquor corporation(s)/commission(s). It was noted that government has the responsibility to regulate the marketing of alcohol; however it also is responsible for the sale of alcohol for profit. A few key informants also highlighted the revenue generated by alcohol sales sponsorship which funds many special events and festivals as negative.

> …[the] government body that sells alcohol and that looks to profit from the sale of alcohol, is also responsible for regulating its marketing. There's an inherent conflict of interest in that, the same organization will not work against itself to control any marketing of alcohol. … If we're looking at regulations period around alcohol marketing, it cannot be the same organization that is responsible for selling alcohol because it's in conflict with each other. There needs to be another body, an outside body that controls the regulation of the marketing since the marketing contributes so much to the normalization of alcohol and the normalization leads to over consumption, over consumption leads to harm.
>
> We need to clamp down, if you can't advertise tobacco, why should you be allowed to advertise alcohol. … If people want to buy alcohol, they're going to. To be honest, I don't think there should be any advertising, period. There needs to be an extreme clamp down on those advertising those commercials that market to the young crowd, who make you look fun and cool, and sexy, if you drink a certain type of alcohol.

Outlet Density

Studies have found links between outlet density (retail liquor outlets, bars, etc.) and the various injuries. For example:

- Neighborhoods with high alcohol outlet density also have high levels of alcohol consumption and violence (Scribner, 2000). It has been suggested that each additional alcohol outlet is associated with 3.4 additional assaults per year (Scribner, 1995).
- Alcohol outlet density is a much more important determinant in crime rates compared to other facts such as employment rates and income (LaBouvie et al, 1998).
- Treno and colleagues (2003) found that higher outlet density (measured as outlets per square mile) was related to higher levels of driving after drinking among youth.
- Tatlow et al. (2000) found a significant association between alcohol-related hospitalizations. For each unit increase in outlet density per 10,000 persons, there was a 0.48 increase in morbidity per 10,000 persons.
- In Boston, Weitzman et al. (2003) found correlations between outlet density and heavy drinking (5+ drinks) and frequent drinking among college students, and more drinking problems.
- In California, Treno et al. (2001) found that higher outlet density was associated with higher self-reported injuries as well as higher rates of driving under the influence and being in a passenger in a vehicle with an impaired driver, and traffic injury rates requiring hospitalization.

A recent systematic review conducted by Popova et al. (2009) found that alcohol consumption rates or prevalence of drinking-related problems are found to be higher in jurisdictions with higher density of outlets.

Similarly, a few interviewees felt that changes to outlet density would help to reduce alcohol related injuries. It was believed that changes to outlet density including bars and liquor stores would affect access to alcohol and excessive alcohol consumption. Key informants described extremely high outlet density in urban areas in Atlantic Canada which they felt increased access to alcohol, especially among youth and university students.

> "I was out with a group of high school students from [a] high school last week, and part of [the research was] to visit a liquor store. And before we even left the building, we sort of laughed and said, 'well which liquor store do we go to?' Within 10 minutes of [the] high school there are four liquor stores. …if you have a friend buying alcohol for you, there's four places within 10 minutes where they can go and get it for you.
>
> [We need] a moratorium on the number of outlets that we can open, then at least we can stay at the status quo. Ideally we'd like to reduce the number of places where people can buy alcohol. It is very accessible and we know from studies in Nova Scotia, that Nova Scotians believe that alcohol is very easily accessible and no one is complaining about it. So reducing access would be a good idea."

Hours

Research suggests that access to alcohol through extended retail liquor store hours may correlate with higher consumption and alcohol related harms/injuries. A literature review report by alcohol policy expert Dr. N Giesbrecht, found the following key findings from other jurisdictions on the impact of changing hours of sale or days of sale on alcohol consumption and associated harms:

- Australia – an increase in the hours of sale has been associated with an increase in the amount of alcohol purchased and an increase in monthly assault rates in those licensed premises with later hours of sale.
- Ontario – an increase in alcohol-related motor vehicle casualties in an area affected by the increase in hours of on-premise sales compared to a control area.
- Sweden – introducing Saturday sales in government retail stores has been associated with an increase in overall alcohol sales, and a significant increase in drunk driving.
- New Mexico – allowing off-premise sales on Sundays was linked with an increase in alcohol-related crashes, and conversely a reduction in crashes was found in those counties that reversed the decision and discontinued Sunday sales.

Several key informants felt that changes to hours of operation to reduce access to alcohol would not have a significant effect on consumption. It was believed that people would adjust their consumption patterns to the hours in which alcohol is available/accessible and would find ways to still consume excessively such as drinking at home prior to going out to the bars/pubs. However, a few key informants were aware of examples in other jurisdictions in which extended bar hours resulted in higher emergency room visits, and therefore concluded that changes such as decreased hours of operation and other safer drinking practices such as larger bar spaces, plastic cups, etc. would have an impact on alcohol and injury.

> "If they want [alcohol], they're going to get it. If it's only open say, five hours a day and now it's open 10, then they'll get it in those five hours. I don't see [changes to hours] making a major difference.
>
> Have safe drinking policies like plastic glasses in the bar, or having wide open bar spaces rather than narrow bar spaces, where people run into each other and starting to get into fights because they're impaired. Or having better active server training programs, to train servers not to give people who are apparently impaired any more alcohol to consume. Having earlier bar hours close. In the UK when they extended bar hours, have sort of 10 and 11 pub hours to sort of two or three in the morning, meant a catastrophe for emergency-related visits, an absolute disaster."

Price

Researchers Anderson and Baumberg (2006) have examined international research on the effects of changes to alcohol pricing and taxation. The following conclusion was drawn: *"An increase in the price of alcohol reduces alcohol consumption, hazardous and harmful alcohol consumption, alcohol dependence, the harm done by alcohol, and the harm done by alcohol to others than the drinker. The exact size of the effect will vary from country to country and from beverage to beverage. There is strong evidence for the effectiveness of alcohol taxes in targeting young people and the harms done by alcohol"* (p. 264).

When asked if changes to alcohol pricing would have any impact on alcohol and injury, key informants were mixed in their responses. Some felt that changes to the price would have little effect, believing that people's desire to consume and over consume alcohol would overshadow any increase in price. However, others felt that changes would have some effect, specifically at the bar scene. It was noted that price increase may decrease the amount of alcohol being consumed at the bars, although it may not necessarily decrease the overall consumption of alcohol (e.g., people drinking prior to going to the bar, home made alcohol, etc.). Although there was no consensus on the impact of increased prices on actual consumption, most key informants felt that changes such as those recently made in Halifax to implement minimum drink prices ($2.50 minimum drink price for 12 oz beer, cider or cooler; 1 oz of spirits; 5 oz of wine; 3 oz fortified wine) was positive at deterring over consumption at the bars. It was noted that changes such as minimum drink prices required significant buy in and support from government and politicians.

> "The minimum drink price will probably not show much of an effect. It's a great first step, but we know that it's just a first step and it's not going to cause huge change. But every little piece that helps contribute to decreasing access to alcohol, increasing, one of those is increasing prices, will have an affect I guess, in terms of alcohol policy in general, and that has an affect on injury.
>
> I think a lesson we learned from tobacco when you strategically raise the price, you diminish the number of people that have access to them, and we continue to see lots of avenues for youth to still drink cheaply, and I think we have to look at that as a measure to reduce consumption."

Minimum Legal Drinking Age

It has been suggested that increases to the minimum legal drinking age may have some effect on alcohol and injury. Evans (2004) indicates that changes to the drinking age would affect traffic related crashes in young adults. In the United States, traffic fatalities for people under 21 dropped by 43% (from 5,062 alcohol-related fatalities to 2,883) during the years 1987 through 1996 (in 1987 all states had to comply with the 21 minimum drinking age law) (National Highway Safety Administration, n/d). However, during this time, a 28% drop in alcohol-related traffic fatalities in the general population was also observed. Research on alcohol-related traffic fatalities in Canada where the minimum legal drinking age varies between 18 and 19 depending on province, has found similar reductions in alcohol-related traffic crashes among young drivers without raising the minimum purchase age (Kathryn Stewart Pacific Institute for Research and Evaluation, 1996).

Most key informants felt that changes to the minimum legal drinking age would have little effect on alcohol consumption, nor on alcohol and injury. Most felt that increases to the legal age would not have an impact on underage drinking among youth. It was believed that changes to the legal minimum drinking age would not have any effect on the culture of alcohol and the normalization of over consumption. Some key informants felt that additional research is needed in this area to determine the effectiveness of this type of policy change. Some highlighted that in other jurisdictions where alcohol is consumed at a young age (e.g., at meals, etc.) in an environment/culture in which alcohol is consumed in moderation, the allure of alcohol is lessened.

> … switch the drinking age to 21, [people] argue that it has a delayed onset. But young people drink early if they want to drink early, there's not really anything that stops it from happening. Basically what you do, is you're just delaying the kids who would drink responsibly anyway, from drinking responsibly to a later age.

Liability

A few interviewees felt that changes were needed to the liability associated with alcohol related harms. It was suggested that stronger enforcement such as increased party liability could be effective at addressing alcohol over consumption and associated harms.

> … there's interesting, party liability for parties we've seen emerge in other jurisdictions around people being held liable for people that get impaired at their party. If they go home and get into a collision, then the person who held the party and gave out the alcohol actually is up for civil liabilities and criminal liabilities. Making people aware that they could be responsible for somebody dying at their party. It's not well known and if people actually knew [it would] be something people would consider when they host a party and they serve alcohol.

Literature Recommendations to Address Alcohol & Injury

The literature review revealed that several jurisdictions have released evidence based, best practices or recommended practices to address alcohol, injury and alcohol-related harms. The following section provides a summary of these recommendations. Complete evidence based, best practices or recommended practices are provided in Appendix B.

Price/Taxes

- An *increase in prices* to curtail over consumption and differential tax rates (*proportional taxing* – pricing within the various beverage categories reflect the alcohol content of the specific products) on forms of alcohol which are particularly subject to abuse (Giesbrecht et al, 2008; Australian Government's National Drug Strategy; Ontario Injury Prevention Resource Centre Recommendations; Rehm et al., 2008)

Access Restrictions

- Restrictions on *hours and days of sale* as well as outlet density to limit the availability of alcohol to the public (Giesbrecht et al, 2008 Ontario Injury Prevention Resource Centre Recommendations; National Alcohol Framework; Shults et al., 2009)

- Raising *minimum legal age* for purchase of alcohol (Giesbrecht et al, 2008; Rehm et al., 2008)

Advertising

- Partial or total *bans on alcohol advertising* and other forms of alcohol promotion (Australian Government's National Drug Strategy)

Alcohol limits & Guidelines

- Improved enforcement and *lowering of the BAC* drink driving limit (Australian Government's National Drug Strategy; NSHPP, 2008; Giesbrecht et al, 2008; Ontario Injury Prevention Resource Centre Recommendations Rehm et al., 2008)

- Develop and promote national alcohol drinking guidelines to encourage a culture of moderation (National Alcohol Framework, 2007)

Brief intervention, Training & Access to Treatment

- Increase overall *focus on prevention and early intervention* – shift alcohol screenings to being performed by "helping professionals" who promote non-judgmental attitudes (Nova Scotia Alcohol Strategy; Ontario Injury Prevention Resource Centre Recommendations)

- Strengthen *alcohol curriculum* in undergraduate, post-graduate and continuing professional development programs (National Alcohol Framework, 2007)

- Greater investment in *brief intervention* and the development of brief intervention tools (Australian Government's National Drug Strategy; Giesbrecht et al, 2008; National Alcohol Framework, 2007; Rehm et al., 2008).

- Ensure adequate ongoing funding, quality training and accreditation for specialized addiction services. (National Alcohol Framework, 2007)

- *Increased Access to addiction services* (especially in isolated, rural and remote regions of Canada and for vulnerable populations) (National Alcohol Framework, 2007)

Controls & Enforcement

- Implement and support alcohol *ignition interlock* programs/initiatives (Australian Government's National Drug Strategy, NSHPP, 2008; Shults et al., 2009)

- Implement and support *random breath testing, and sobriety checkpoints* and remind the public about the value of these checkpoints (NSHPP, 2008, Giesbrecht et al, 2008; Ontario Injury Prevention Resource Centre Recommendations; National Alcohol Framework, 2007)

- Implement and support *administrative license suspension* as well as graduated licensing and zero tolerance for novice drivers (Giesbrecht et al, 2008, NSHPP, 2008; Rehm et al., 2008)

- Enforcement of *serving regulations* and regulations directed at commercial vendors who sell to minors and ignore other restrictions can be effective, if the system can suspend or revoke a license (Giesbrecht et al, 2008; Ontario Injury Prevention Resource Centre Recommendations)

- Increasing the *legal liability* of bar staff and owners for the actions of those they serve and clear penalties for violator (Giesbrecht et al, 2008; Ontario Injury Prevention Resource Centre Recommendations)

Education & Awareness

- Priority should also be given to *educating the public* on the strong rationale that exists for alcohol policies (NHSPP,2008; Shults et al., 2009)

- Encourage use of the *Safer Bars* program/initiatives (NSHPP, 2008 Ontario Injury Prevention Resource Centre Recommendations; Rehm et al., 2008)

- *Educational resources* should reflect balanced, factual information and should shift away from one way communication to a meaningful exchange to facilitate healthy action. (Nova Scotia Alcohol Strategy)

Change the Culture of Harmful Alcohol Consumption

- Develop, support and promote interventions using best practices in *social marketing techniques* (Ontario Injury Prevention Resource Centre Recommendations).

- *Normalizing help-seeking* including removing the cultural barriers that prevent people from accessing programs and services to assist with alcohol abuse, misuse and addiction. (Nova Scotia Alcohol Strategy)

- *De-normalizing underage drinking* through shifting views of underage drinking so it is not seen as "normal" or a rite of passage among adolescents (Nova Scotia Alcohol Strategy)

- De-normalize *binge drinking* and drinking to intoxication such that they are not socially acceptable. (Nova Scotia Alcohol Strategy)

- Shifting the view of Fetal Alcohol Spectrum Disorder (FASD) to a *community responsibility*, rather than a "women's" or "aboriginal" issue. (Nova Scotia Alcohol Strategy)

- Alcohol policy needs to *balance* the interests of health protection, harm prevention, health benefits of moderation and the economy. (Nova Scotia Alcohol Strategy)

- Promote local *alcohol free events*, for example, safe-grad events, municipal celebrations for New Year's Eve that don't involve sale or consumption of alcohol. (Ontario Injury Prevention Resource Centre Recommendations)

Other

- *Government-owned* (monopoly) alcohol outlets (i.e., off-premise monopoly systems) can limit alcohol consumption and alcohol-related problems (Giesbrecht et al, 2008)

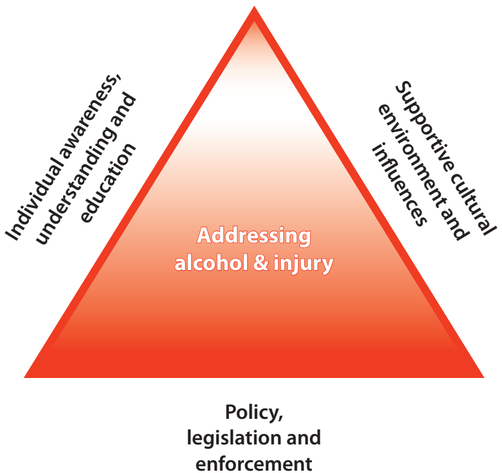
- Influence Federal and Provincial *alcohol priorities* so that alcohol related injuries are on the agenda (Ontario Injury Prevention Resource Centre Recommendations)

IV

Conclusion & Recommendations

Recommendations

Based on the findings of this comprehensive environmental scan, the following section presents evidence-based recommendations to address and reduce alcohol-related injuries in Atlantic Canada. It is important to note that in order to effectively address alcohol and injury, a comprehensive approach is needed. Therefore, implementation of individual recommendations will be more effective if done within a comprehensive population health approach including the triad of elements illustrated in the following figure:



Alcohol consumption and over consumption is socially accepted across Atlantic Canada, where it is the 'cultural norm' to drink and drink to excess. Therefore, the following recommendations are proposed to change the culture of alcohol (i.e. de-normalize social acceptance around over consumption) and help reduce alcohol related harms and injuries:

Decreasing Advertising

The environmental scan suggests that advertising contributes not only to the type of alcohol consumed, but also the patterns of use and normalization of its consumption and over consumption. Associations with alcohol consumption portrayed in advertisements (e.g., fun, parties, socializing, etc.) contribute to early normalization of alcohol consumption among youth and carries through to adulthood.

- Advocate for strict alcohol *advertising restrictions*, including print, radio, television and online, especially those which may reach children and youth.
- Advocate for a review of alcohol advertising practices in each of the Atlantic Canadian provinces with particular focus placed on *child and youth exposure to advertising*.
- Advocate that government liquor corporations be solely responsible for the procurement of alcohol to citizens and that the social and prevention responsibilities regarding the consumption of alcohol fall under the authority of *public health officials*.
- Monitor and ensure the *enforcement* of provincial liquor control acts pertaining to alcohol advertising as well as other policies and guidelines (e.g., CRTC guidelines)
- Advocate for an 'external' *non-governmental body to regulate* the marketing and advertising of alcohol as opposed to the current system of liquor corporation self-regulation.

Decreasing Alcohol Access

Policy changes related to access and availability are some of the most effective ways to affect change to the culture of alcohol use and associated harms:

- Support and advocate for retail liquor store and bar *outlet density restrictions*. Restrictions are especially needed in areas surrounding schools.
- Support maintaining the *minimum drinking age* and enforcement efforts (e.g., Check 25, bartender training, sobriety checkpoints, etc.)
- Advocate for regulated and restricted *days/hours of operation* for retail and bar alcohol outlets.
- Ensure all bars/pubs provide *server training* for alcohol including minimum age checks, drink cut offs, serving practices, etc.
- Support the implementation of the "Safer Bars" program and other innovative *harm reduction approaches* (plastic instead of glass, etc.)
- Develop, implement, support and promote *alcohol-free events* (e.g., safe-grad, youth drop-in/social/recreational centres, orientation week rather than alcohol based 'frosh week' activities, etc.)
- Work to build *government and political buy-in* and support for policy changes surrounding access and availability to alcohol
- Facilitate and support partnerships, collaboration and linkages between community health care professionals, primary health care providers government departments of health/health promotion/wellness, and not for profit organizations (e.g., MADD, etc.) to *coordinate efforts* to reduce access and availability of alcohol.
- Advocate for *zero tolerance* graduated licensing guidelines
- Explore the evidence of stricter *party liability* surrounding alcohol and associated harms.

Increasing Pricing

- Support *minimum drink prices* at bars/pubs and restrictions on discount drinks (e.g., reduced 'happy hours')
- Support *price regulations* at retail liquor outlets

Create Support for Change

The literature has shown that social marketing campaigns can be effective in supporting the recommendations suggested above and contributing to an overall cultural shift in how alcohol is consumed and how its use is perceived by the public. While key informants also felt that social marketing (see definition in text box) was a key component to reducing alcohol-related injury, it appeared that social marketing was often viewed as primarily an awareness raising and educational strategy rather than a comprehensive behaviour change strategy. Therefore, the following is recommended:

- Employ social marketing techniques to increase public support for changes to alcohol policies.
- Utilize social marketing techniques to *denormalize binge drinking, drinking to intoxication and underage drinking* until they are no longer socially acceptable.
- Utilize social marketing techniques to *normalize help-seeking* including removing the cultural barriers that prevent people from accessing programs and services to assist with alcohol abuse, misuse and addiction.
- Assess the current capacity of stakeholders' understanding of social marketing and best practices for reducing alcohol-related harms and work to build capacity where needed.

Health Care Providers

Although some health care providers may be in positions in which the link between alcohol and injury is apparent (e.g., emergency rooms, etc.), others may be less aware of these links. Further, health care providers are in an ideal position to address alcohol and injury; however, they may not provide early intervention due to the normalization of alcohol and discomfort addressing this issue with their clients/patients.

- Support the *training of health care professionals* (those in school through curriculum enhancement and working in practice through professional development) in brief intervention training and safer drinking practice.

Conclusion

In Atlantic Canada, the unique culture of alcohol consumption has resulted in dangerous patterns of usage and disturbing trends of alcohol-related injuries. While the trends in alcohol consumption in the Atlantic region are in part related to heritage and industry, they are also influenced by the tactics of alcohol companies and distributors, including advertising strategies, pricing and outlet density. All of these factors combine to create a culture where over-consumption and intoxication is the norm, and put individuals and communities at risk for a variety of injury-related harms.

Although unsafe patterns of alcohol consumption are currently the norm in Atlantic Canada, it is possible to de-normalize over-consumption through a combination of best practice strategies. This report and its recommendations serve as a call to action for the governments of Atlantic Canada to work in partnership with non-government organizations to create a culture of safer alcohol consumption in the region. It is incumbent upon these stakeholders to balance the need for revenue generation with the best interests of the public's health.

V

Appendices

Appendix A: Interview Guide

Atlantic Collaborative on Injury Prevention
Alcohol & Injury

Interview Guide
October 8, 2009 FINAL

Name of Interviewer: _____
Name of Interviewee: _____
Date: _____

PURPOSE OF THE FOCUS GROUP & GUIDE

The purpose of the focus group is to gather the perspective of key informants from across Atlantic Canada to explore the culture of alcohol as well as the link between alcohol and injury. This document will be used by the interviewer to guide the interview discussion.

INTRODUCTION & CONSENT

The Atlantic Collaborative on Injury Prevention (ACIP) is a non-government organization dedicated to reducing the burden of injury in Atlantic Canada. ACIP is concerned with the burden that alcohol-related injuries present to society and is looking to gain knowledge on the impact of alcohol and injury to Atlantic Canada as well as the unique regional culture of alcohol consumption.

ACIP is conducting a comprehensive environmental scan in order to develop evidence-based proposed recommendations with the ultimate goal of reducing alcohol-related injuries in Atlantic Canada.

Participation in this interview is voluntary, all the information provided will be kept confidential and answers will not be associated with any names in any reports written. To help with the analysis of the information, I would like to audio-record and transcribe this interview. The responses provided will be reported all together, and although individual responses may be used as quotations, no one will be personally identified.

Do I have permission to audio-record this interview?

☐ Yes ☐ No (If no, ask if notes can be taken)

Do you have any questions before we get started?

INTERVIEW QUESTIONS

The interviewer will begin the focus group using the scripts and questions outlined below.

To begin, I'd like to ask a general question about your position and any associations to alcohol.

1. Can you please briefly describe your job/position/role and its links to alcohol?

2. How would you describe the 'culture of alcohol' in your province?

Probes:

- Why do you think alcohol is consumed (positive and negative reasons)?
- What are main reasons for consumption and the reasons for over consumption?
- Do you think alcohol is being over consumed intentionally? If yes, why do you think this is occurring? What do you think are the perceived "benefits" to over consumption?

3. Does the culture of alcohol vary within your province? Please describe.

Probes:

- Do you think motivation for consuming alcohol differs by age? Youth versus young adults versus adults versus seniors?
- Is the culture different in urban versus rural settings?
- Does the culture of alcohol you've described differ from other Atlantic Canadian provinces or other Canadian provinces?

4. What do you think influences the way people view alcohol, its consumption and over consumption?

Probes:

- Do you think over consumption/intoxication is normalized? Please explain.
- Do the influences vary by age (e.g., high school students versus university) or by other variables? Please describe.

Now I'd like to talk about the link between alcohol and injury.

5. Have you ever witnessed the link between alcohol and injury in your role/job/position? Please describe.

Probes:

- What types of injuries have you encountered in relation to alcohol consumption? Motorized vehicle collisions, violence, falls, suicide, etc.?

6. Do you think the association between alcohol and injury is well known?

Probes:

- Do you think there is any group in which this linkage is not known (e.g., public, health care providers, etc.)

7. Based on the 'culture of alcohol' you previously described, do you think this culture has any effect on injury in your province?

Finally I'd like to discuss what can be done to address alcohol and injury.

8. In your position/role/job/area of work is there anything being done to address alcohol and injury?

9. What recommendations/suggestions would you have to address the impact of alcohol and injury in your province?

Probes:

- What do you think would help to inform injury prevention practitioners, advocates, and policy makers in Atlantic Canada of the impact of alcohol on injury? What about enhancement to health care professional's training/curriculum around alcohol and addiction?
- What are your thoughts on policy changes such as changes to access to alcohol (e.g., outlet density, etc.), drinking age, regulations around alcohol advertising, taxation?

Thank you so much for your feedback. In closing,

10. Do you have any final comments you would like to share about the culture of alcohol and links between alcohol and injury?

Thank you for your thoughtful input and for taking the time to participate in this interview.

Appendix B: Best Practice Research & Evidence to Address Alcohol & Injury

The Ontario Injury Prevention Resource Centre (2008) has provided numerous evidence informed practice recommendations including:

Table 3: Ontario Injury Prevention Resource Centre Recommendations

Recommendations	
Putting Alcohol Priorities on the Agenda	*Influence Federal and Provincial alcohol priorities* - Advocate for alcohol policies that impact on population health. In the early stages when policies are being discussed on the commercial agenda concerning alcohol distribution and promotion, public health could find a way to get to the table to discuss alcohol-related damage. - Collaborate with other stakeholders who have impacted on policy changes with alcohol and other substances. For example, tobacco control experiences may offer lessons to learn from or opportunities for creating similar linkages. - Seek alliances at the national and international level to further the exchange of research and promising practices and engage senior levels of government in policy change. - Develop advocacy opportunities by collaborating with alcohol policy monitoring and alcohol/drug/injury strategy groups federally and provincially to network with practitioners, NGOs and researchers. - Advocate for a national injury strategy that includes the role of alcohol. - Collaborate with researchers and other experts in this field so that findings are presented to policy makers through briefing notes, summaries, seminars and workshops. - Engage evaluation experts (e.g., CAMH, OIPRC, THCU) to monitor and report attitudes, practices and impact by regular surveys on alcohol issues and alcohol and injury behaviours. - Collaborate with key stakeholders (e.g., Canadian Centre on Substance Abuse) to support efforts to address policy issues that are based on a four pillar approach, evidence and that cross the sectors. - Review alcohol advertising research to determine the impact on youth, and inform policy makers about alcohol influences on youth. - Advocate for the creation of a more level playing field for health promotion messages competing for the attention of vulnerable audiences with alcohol advertising by addressing level and quality of alcohol advertising and CRTC guidelines. - Educate safety and injury prevention experts on the role of alcohol as a major risk factor that impacts on the increased risk of injury. - Advocate for additional resources for research on alcohol and effective prevention initiatives.

Recommendations	
Policy & enforcement initiatives	*Support the use of alcohol taxes for addressing alcohol consumption* - It is recommended that pricing within the various beverage categories reflect the alcohol content of the specific products (e.g., proportional taxing). Public health practitioners can help by informing their local boards of health and their MOH *Support the regulation of alcohol availability* - Work with partners and through committees and public education to inform others and counteract the erosion of government monopoly of retail sales (to avoid privatization). - Support outlet density restrictions. These would limit the availability of alcohol to the public by implementing measures to control the spacing of retail outlets, especially in local neighbourhoods and larger entertainment areas (e.g., could inform local city council, police and AGCO Liquor Inspectors on validity of doing so). - Support efforts to maintain minimum alcohol purchasing ages. Encourage more rigorous local enforcement of the current liquor license restrictions for selling, serving and giving alcohol to minors. - Support efforts to restrict hours and days of sale and limit the availability of alcohol to the public through local measures controlling the time of sales. - Promote local alcohol free events, for example, safe-grad events, municipal celebrations for New Year's Eve that don't involve sale or consumption of alcohol. *Develop, support and promote interventions that modify the drinking environment through:* - Server training, bar policies and alcohol regulations - Support enforcement of alcohol service policies and clear penalties for violator - Collaborate with community partners to monitor alcohol related violence and other injury related issues. - Encourage use of the Safer Bars program - Work with municipal governments and others to establish a municipal alcohol policy based on guidelines supported by the Ontario Recreational Facilities Association. *Develop, support and promote interventions that support drinking and driving countermeasures* - Inform and advocate with your local board of health and MOH for the need to support efforts to lower legal limits for blood alcohol concentrations for all drivers, and promote the need to enact a standardized zero BAC limit for all drivers under the age of 21 years. - Work with policy and media to support local enhanced sobriety check points and remind the public about the value of these checkpoints - Work with police and media to educate the public about administrative license suspensions, and the legal, financial, and social costs of a suspension

Recommendations	
Education and awareness	*Develop, support and promote interventions using best practices in social marketing techniques which include:* - Being part of a comprehensive approach that includes education/awareness, policy, enforcement, and penalties, (as well as potential engineering changes). - An analysis of the social and policy context - Maximizing the attractiveness of the ideal behaviour to the target audience and highlighting the flaws in messages which try to make negative behaviour appealing. - Using credible sources to communicate positive messages (it is important to exercise caution about who is being used to convey what message.) - Using more than one type of media when communicating messages. - Aiming to influence those who are in a position to educate or promote messages to the public - Eliminating negative messaging. - Generating positive drug and alcohol behaviour (e.g., compliance with low risk drinking guidelines, safe medication use) using the media. - Promoting messages using wording which will generate interest for individuals of all ages, gender, and ethnicities. - Working in partnership with other key stakeholders, including researchers, policy makers, NGO sector, media, and others. *Plan social marketing campaigns to:* - Promote low risk drinking guidelines. - Generate knowledge about the risks associated with alcohol and drug misuse. Involve the local public in addition to NGOs, local government, and other activists in the community. - Increase awareness of the injuries associated with drug and alcohol misuse by working with government departments and agencies (LCBO and NGOs). With the awareness of the strong potential injury risk, effective interventions can be implemented.
Reorientation of Services	*Be part of local coalitions and collaborate with key stakeholders to plan interventions that offer treatment and early intervention services:* - Encourage practitioners to adopt a population health approach to treatment for alcohol-related problems. - Re-orient services so there is an allocation of resources that reflect priorities for treatment and prevention efforts. - Support those working within the health care system as they plan brief interventions for hazardous drinkers during routine clinical visits, intended to provide early intervention with a goal of reducing alcohol consumption to a moderate level (e.g., by providing information).

Canadian alcohol policy expert, Dr. N Giesbrecht and colleagues (Giesbrecht, Patra and Popova, 2008), suggests the following in effectively addressing the harms associated with alcohol including actions which affect physical availability and modifications to the drinking context:

Table 4: Actions to Address Alcohol Harms

Regulating Physical Availability	- Reductions in the hours and days of sale, numbers of alcohol outlets, and restrictions on access to alcohol are associated with reductions in both alcohol use and alcohol-related problems - Laws that raise the minimum legal purchasing age reduce alcohol sales and problems among young drinkers - Regulations directed at commercial vendors who sell to minors and ignore other restrictions can be effective, if the system can suspend or revoke a license - Government-owned alcohol outlets (i.e., off-premise monopoly systems) can limit alcohol consumption and alcohol-related problems
Limit drinking in the contexts or environments where alcohol is typically sold and consumed	- Enforcement of serving regulations - Increasing the legal liability of bar staff and owners for the actions of those they serve.

Dr. N Giesbrecht suggests the following best practices (those with good support and feasibility) to minimizing the harms associated with alcohol:

- Alcohol *taxes/prices* (a increase in prices curtails over consumption)
- Minimum legal purchase *age* (raising the minimum legal drinking age reduces traffic fatalities among those aged 18-20)
- Government *monopoly* of retail sales
- Sobriety *check points*
- Lowered *BAC limits*
- Administrative *license* suspension
- *Graduated licensing* for novice drivers
- Restrictions on *hours and days of sale*
- Restrictions on *outlet density*
- *Enforcement* of on-premise regulations
- *Brief interventions* for high risk drinkers

In 2008, the Nova Scotia Department of Health Promotion and Protection released "Best Practices for Preventing Substance Use Problems in Nova Scotia" (Roberts, 2008). Recommended practices specific to alcohol and reducing alcohol related harm include:

- Give priority to measures to control and reduce the physical and economic availability of alcohol and tobacco at the provincial and local levels given that they are among the most effective measures for reducing the harms and costs associated with these substances. Priority should also be given to educating the public on the strong rationale that exists for these measures (Recommended practice #4).
- Safer Bar Initiatives, Random Breath Testing, Sobriety Checkpoints, Alcohol interlock Systems, Zero Tolerance for Young Drivers, and 0.08 per se Laws, all have good supportive evidence as harm reduction measures.

Additionally, the Nova Scotia Alcohol Strategy provides recommendations to change the culture of harmful alcohol consumption including:

- ***Normalizing help-seeking:*** Currently there is a stigma associated with help-seeking for those with alcohol dependence. Normalizing help seeking is critical for removing the cultural barriers that prevent people from accessing programs and services to assist with alcohol abuse, misuse and addiction.

- ***De-normalizing underage drinking:*** There is a need to shift views of underage drinking as "normal" or a rite of passage among adolescents to a culture that has meaningful rites of passage for youth that do not involve alcohol.

- ***De-normalize binge drinking and drinking to intoxication:*** There is a subculture that normalizes and glamorizes drinking, intoxication and alcohol related consequences. The culture needs to shift to one in which binge drinking and intoxication are not socially acceptable.

- ***Fetal Alcohol Spectrum Disorder (FASD) as a community responsibility:*** The culture needs to shift to viewing FASD as a community responsibility, rather than a "women's" or "aboriginal" issue.

- ***Approaches to awareness and educational resource:*** Resources should reflect balanced, factual information and should shift away from one way communication to a meaningful exchange to facilitate healthy action.

- ***Increase focus on prevention and early intervention:*** There is a need to shift alcohol screenings to being performed by "helping professionals" who promote non-judgmental attitudes.

- ***Balanced approach to alcohol policy:*** Alcohol policy needs to balance the interests of health protection, harm prevention, health benefits of moderation and the economy.

A systemic review by Shults et al (2009) found that community mobilization efforts are effective in reducing alcohol-related crashes and suggest that such programs produce cost savings. The multicomponent programs generally included a combination of efforts including:

- Limit access to alcohol (particularly among youth)

- Responsible beverage service training

- Sobriety checkpoints or other well-defined enforcement efforts

- Public education

- Media advocacy designed to gain the support of both policymakers and the general public for reducing alcohol-impaired driving.

The National Alcohol Strategy (2007) also outlines several strategic areas for action. These areas for action are provided in the table on the following page:

Table 5: The National Alcohol Strategy (2007) strategic areas for action:

Aim	Recommendations
Health promotion, prevention and education	
Raise public awareness about responsible alcohol use and enhance the resilience of individuals and communities and their capacity to participate in a culture of moderation.	1. Develop and promote national alcohol drinking guidelines to encourage a culture of moderation, and aim for consistency and clarity of alcohol-related health and safety messages (Health Canada, all governments). 2. Develop a comprehensive, sustained and coordinated social marketing campaign with multi-sectoral partners to promote the national alcohol drinking guidelines. This would include building on existing social marketing campaigns, such as those targeting drinking and driving and high-risk drinking patterns (all governments, NGOs, alcohol and hospitality industries). 3. Support and fund local communities to develop and implement community-wide health promotion initiatives that emphasize the national alcohol drinking guidelines, and prevent and reduce alcohol-related harm (all governments, alcohol and hospitality industries). 4. For alcohol beverage containers, regulate standardized, easily visible labels that convey the number of standard drinks in each container (Health Canada). 5. With regard to underage youth, develop and evaluate policies and programs that are appropriate to youth stages of development and that promote: abstinence as a valid goal for everyone; adherence to the national alcohol drinking guidelines and avoidance of high-risk drinking for those who choose not to abstain from alcohol (all governments, NGOs, alcohol and hospitality industries). 6. With regard to young adults, through a national collaborative initiative, develop and evaluate policies and programs in schools, colleges and universities (all governments, NGOs, alcohol and hospitality industries).
Health impacts and treatment	
Reduce the negative health impacts of alcohol consumption and address its contribution to injury and chronic disease	7. Develop integrated and culturally sensitive screening, brief intervention and referral tools and strategies (P/T governments). 8. Ensure adequate ongoing funding, quality training and accreditation for specialized addiction services (P/T governments). 9. Improve access to addiction services in isolated, rural and remote regions of Canada and for vulnerable populations (all governments). 10. Evaluate treatment programs to determine promising practices and disseminate the findings (all governments, NGOs). 11. Coordinate the transfer of knowledge relating to the evaluation and research of prevention, treatment and population health policies and programs addressing alcohol (Canadian Centre on Substance Abuse). 12. Strengthen drug and alcohol curriculum in undergraduate, post-graduate and continuing professional development programs (P/T governments, NGOs, colleges, universities). 13. Disseminate FASD screening and diagnostic tools to, and promote their use by, family physicians, pediatricians and other health professionals (all governments, NGOs). 14. Regarding the contribution of alcohol to chronic diseases: a) Prepare periodic reports on the impact of alcohol on chronic disease within Canada and coordinate these with the ongoing Costs of Substance Abuse reports (Public Health Agency of Canada); b) Ensure that alcohol is consistently included in policies and programs focused on chronic disease (all governments, NGOs); c) Collaborate with the Chronic Disease Prevention Alliance of Canada (CDPAC) and others to improve the prevention of alcohol-related chronic disease, including implementation of a public awareness campaign (Public Health Agency of Canada). 15. Regarding research: a) Develop a national, coordinated, ongoing data-collection and reporting system of common indicators relevant to acute and chronic alcohol-related harm across Canadian jurisdictions (Health Canada). b) Develop a strategic national alcohol research program that is informed by a determinants of health approach and is directed at gaining a better under- standing of the risk and protective factors surrounding alcohol use (Health Canada, Canadian Institutes of Health Research (CIHR)). c) Collect data on alcohol-related health impacts and treatment outcomes specific to First Nations, Inuit and Métis, using appropriate research ethics (including ownership, control, access and possession principles). These data should be comparable to those collected for the general Canadian population (Health Canada, NGOs).

Aim	Recommendations
	Availability of alcohol
Implement and enforce effective measures that control alcohol availability	16. Maintain current systems of control over alcohol sales (P/T governments). Under these systems, it will be important to: a) Require liquor control boards to maintain a social-responsibility frame of reference for all matters pertaining to their operations and governance, and to maintain or increase their spending and programming in this area; b) Enhance staff training at outlets and implement ongoing enforcement compliance programs to ensure that alcohol is consistently sold in a socially responsible way and in accordance with the law; and c) Encourage the systematic re- examination and analysis of hours and days of alcohol sales and outlet density, recognizing that increased physical availability of alcohol can lead to increased harm. 17. Collaborate with liquor control boards to ensure alcohol cost and availability in high- risk communities are managed in a socially responsible manner (P/T and municipal governments). 18. Request all liquor licensing authorities and liquor control boards to collect and make public detailed information on both off- premise and on-premise alcohol-outlet density (P/T governments). 19. Conduct research to specify the magnitude and nature of third-party supply of alcohol in Canada (e.g. supply of alcohol outside the legal distribution system and in those jurisdictions where alcohol is banned) (all governments). 20. Evaluate the outcomes of trial alcohol- control measures in remote communities (particularly in the three territories), including total bans, limitations on importing alcohol into the community and severely restrictive selling practices (P/T and municipal governments, First Nation communities). 21. Implement server-training programs in Canada as a pre-condition for receiving and/or renewing licenses for serving alcohol. These training programs should include regular recertification of servers, ongoing enforcement compliance checks and periodic program evaluations to sustain and improve impacts over time. In addition, server training and compliance checks should be conducted more frequently for establishments with a history of service- related problems (P/T and municipal governments, First Nation communities). 22. Investigate the implications of making liability insurance mandatory for all licensed establishments in Canada, using options that do not place undue economic burdens on the hospitality industry (for example, self-insurance programs) (P/T governments). 23. Conduct research on the nature and extent of underage access to alcohol, including in licensed venues, and implement appropriate programs and policies to respond to the issue (P/T governments). 24. Given the relationship between legal purchase age and alcohol-related harm, consider increasing the legal purchase age of alcohol to 19 years (governments of Alberta, Quebec and Manitoba). 25. Strengthen enforcement and sanctions for people producing or using fake identification (P/T governments). 26. Adopt minimum retail social-reference prices for alcohol and index these prices, at least annually, to the Consumer Price Index (CPI). A competent body should review alcohol pricing throughout Canada, at least annually, and publish a report recommending increases where prices are not keeping pace with inflation (P/T governments). 27. Discourage the introduction or expansion of U-Brew and U-Vin industries. Where these industries currently exist, make licensing contingent upon matching the socially referenced price for beverage alcohol in that jurisdiction (P/T and municipal governments). 28. Create incentives, whether through tax or price adjustments, to promote the production and marketing of lower-alcohol content beers and coolers, with the overall goal of reducing the volume of absolute alcohol consumed per capita in Canada (all governments, alcohol industry). 29. Move towards alcohol volumetric pricing (based on the volume of ethyl alcohol in alcohol products) within each beverage class (all governments, alcohol industry). 30. Coordinate funding for research and publication of an annual report documenting the exposure of underage youth in Canada to alcohol advertising (Health Canada). 31. Review existing advertising regulatory systems with a view to updating the standards, especially as they pertain to youth, as well as the mechanisms of receiving and responding to consumer complaints about alcohol advertising (all governments).

Aim	Recommendations
	Safer communities
	32. Develop and adopt comprehensive policies for alcohol within every sector of the Canadian workforce, with special emphasis on safety-sensitive professions (all governments, NGOs, industries). 33. Partner with community groups to develop municipal alcohol policies and programs that address local issues (P/T governments, municipal governments, NGOs). 34. Implement the use of proven violence prevention programs in licensed establishments (P/T governments, alcohol and hospitality industries). 35. Develop a public awareness campaign to raise awareness about alcohol liability (all governments, NGOs, alcohol industry). 36. Amend or develop policies and programs that incorporate evidence-based solutions that reduce alcohol-related harm in colleges and universities (colleges and universities, NGOs). 37. Endorse and support the Strategy to Reduce Impaired Driving 2010 (all governments). 38. Adopt the Canadian Council of Motor Transport Administrators' (CCMTA) short-term suspension model and other proposed actions to address drinking drivers with lower BACs (P/T governments). 39. Re-invigorate law enforcement around drinking and driving (all governments). 40. Pursue approaches that focus on high-risk or alcohol-dependent drivers (i.e., with BACs of 0.15 percent or higher) to better deter and rehabilitate repeat offenders (P/T governments, NGOs). These would include: a) Technology-based solutions (e.g. ignition interlock systems); b) Education and public awareness initiatives; c) Improved assessment protocols; and d) Improved treatment and rehabilitation, drawing on harm reduction and medical models to better address the concurrent issues of chronic alcohol misuse and possible cognitive impairments. 41. Adopt, within their graduated driver licensing programs, zero-tolerance alcohol (0.00 percent BAC) provisions for all drivers until age 21 (P/T governments).

The Australian Government's National Drug Strategy has found strong evidence that substantial reductions in social costs could be achieved by implementing, or improving the implementation of, a range of interventions which include:

- Higher alcohol taxation, including differential tax rates on forms of alcohol which are particularly subject to abuse;
- Partial or total bans on alcohol advertising and other forms of promotion;
- A lower BAC drink driving limit;
- Greater enforcement of the BAC limit; and
- Much greater investment in brief interventions to reduce alcohol abuse.

There is also strong, but less quantifiable, evidence that resources should also be devoted to:

- Control of drinking environments;
- Alcohol ignition interlocks;
- Guidelines for low-risk drinking; and
- Standard drinks labeling and health warnings.

Centre for Addiction and Mental Health (Rehm et al., 2008) highlights proven effective population based interventions to reduce alcohol-attributable burden and its costs to Canada. Implementing these 6 interventions related to alcohol policy would result in a cost savings of $1billion in Canada per year. The interventions include:

- Pricing & Taxation (increase of 25%)
- Lowering BAC from 0.08% to 0.05%
- Zero BAC restriction for all drivers under 21 years of age
- Increase minimum drinking age from 19 to 21 years
- Safer Bars intervention
- Brief intervention

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ATLANTIC COLLABORATIVE ON INJURY PREVENTION

Alcohol & Injury in Atlantic Canada:

creating a culture of safer consumption