



Report on Alcohol Use in Peterborough City and County: Recommendations for a Healthier and Safer Community

Prepared By:

Suzanne Galloway
Health Promoter, Substance Misuse Prevention Program

October 2011

Report on Alcohol Use in Peterborough City and County: Recommendations for a Healthier and Safer Community October 2011

Acknowledgements: Thanks are due to those who reviewed drafts of this report (Hallie Atter, Andrew Kurc, Dr. Rosana Pellizzari, Larry Stinson), to Susan Chambo for her proof reading, to Joanne Racz-Hewitt for initial lay-out and to Alida Tanna for her additional hours of editing and graphic design support.

This report drew on a number of resource documents, including Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011) Alcohol in Canada: Reducing the toll through focused interventions and public health policies. *Canadian Medical Association Journal*. February 7, 2011 and a Draft Canadian Public Health Association Position Statement on Alcohol (June 14, 2011) authored by April, N. Beck., A., Bullock, S., Cantin, L., DePape, D., Giesbrecht, N., Penney, G. and Strang, R.



**Peterborough County-City Health Unit
10 Hospital Drive
Peterborough, Ontario, Canada K9J 8M1
Tel.: 1 (877) 743-0101 or (705) 743-1000
E-mail: info@pcchu.ca
Web site: <http://www.pcchu.ca>**

Individuals and organizations are invited to photocopy, in part or in whole, the contents of this report. Citation is appreciated.

Suggested Citation:

Peterborough County-City Health Unit (2011). *Report on Alcohol Use in Peterborough City and County: Recommendations for a Healthier and Safer Community*.

TABLE OF CONTENTS

- LIST OF FIGURES AND TABLES 5**
- EXECUTIVE SUMMARY 7**
- INTRODUCTION..... 9**
- 1.0 EFFECTS OF ALCOHOL ON HEALTH 10**
 - 1.1 Alcohol and Chronic Disease 10
 - 1.2 Synergistic Effects with Other Behaviours 11
 - 1.3 Gender 11
- 2.0 INJURY AND ILLNESS..... 13**
 - 2.1 Emergency Visits and Hospitalizations 13
 - 2.2 Overdoses 13
 - 2.3 Mental Health..... 14
 - 2.4 Collisions and Impaired Driving 14
 - 2.5 Water and Fire Related Deaths 15
 - 2.6 Violence and Victimization 15
 - 2.7 Unplanned or Unsafe Sex and Sexual Assault 16
 - 2.8 Infectious Diseases 16
 - 2.9 Pre-natal Exposure 16
- 3.0 SOCIAL COSTS..... 17**
 - 3.1 Fiscal Impacts..... 17
 - 3.2 Human and Social Impacts 18
- 4.0 HIGH RISK ALCOHOL USE IN PETERBOROUGH 19**
 - 4.1 Low Risk Drinking Guidelines..... 19
 - 4.2 Binge Drinking..... 20
 - 4.3 Treatment Seeking for Alcohol 21
 - 4.4 Increasing Alcohol Consumption and Related Harms in Ontario 22
- 5.0 PROVINCIAL TRENDS CONVERGING TO INCREASE ALCOHOL RELATED HARM 24**
 - 5.1 Extensive Integration of Alcohol into Social Contexts..... 24
 - 5.2 Increasing Access to Alcohol 24

- 5.3 More and Diversified Marketing 25
- 5.4 Lack of Provincial Strategy and Leadership 26
- 6.0 PROMISING EVIDENCE-BASED PRACTICES 27**
- 6.1 TIER 1 – POPULATION LEVEL INTERVENTIONS 28
 - 6.11 Implementing alcohol pricing policies..... 28
 - 6.12 Controlling physical and legal availability..... 28
 - 6.13 Curtailing Alcohol Marketing..... 28
 - 6.14 Maintain Current Government Control on Alcohol Retailing..... 28
- 6.2 TIER 2: FOCUSED POLICIES AND INTERVENTIONS 28
 - 6.21 Countering Drinking and Driving 28
 - 6.22 Changing the Drinking Context..... 29
 - 6.23 Educating and promoting behaviour change 29
 - 6.24 Increasing Access to Screening and Brief Interventions..... 29
- 6.3 SURVEILLANCE, RESEARCH AND KNOWLEDGE EXCHANGE AND SKILLS BUILDING 29
- 7.0 RECOMMENDATIONS 30**
- 8.0 CHALLENGES 32**
- CONCLUSION 33**
- APPENDIX 1 34**
- APPENDIX 2 37**
- APPENDIX 3 38**
- APPENDIX 4 39**
- APPENDIX 6 42**
- APPENDIX 7 43**
- APPENDIX 8 44**
- APPENDIX 9 45**
- REFERENCES..... 46**

LIST OF FIGURES AND TABLES

Figure 1	Per Capita Costs of Substance Abuse in Canada, 2002.....	7
Figure 2	10 Leading Risk Factors for Disease & Disability: High Income Economies (% total DALYs), 2004	10
Figure 3	Proportion of net deaths due to different disease categories attributable to alcohol consumption in the World	11
Figure 4	Proportion of substance misuse related ED visits by age group and sex, Peterborough and Ontario; 2003-2009	13
Figure 5	Harm experiences in the past 12 months resulting from others' drinking, 2004.....	15
Figure 6	Ontario adults who report last physical incident occurring in a licensed establishment.....	16
Figure 7	Estimated costs of substance use CELHIN (2007).....	17
Figure 8	Standard drink size for different types of alcohol, 2009	19
Figure 9	Proportion of Peterborough adults who drink, drinking in excess of the low risk drinking guidelines (2001-2008).....	19
Figure 10	Proportion of Ontario adults who drink, drinking in excess of the low risk drinking guidelines (2001-2008)	19
Figure 11	Past month Binge Drinking amongst High School Students by Sex	20
Figure 12	Prevalence of Peterborough adults who drink, with at least one episode of heavy drinking in the past 12 months, by age group 2001-2008.....	20
Figure 13	Prevalence of Ontario adults who drink, with at least one episode of heavy drinking in the past 12 months, by age group 2001-2008.....	20
Figure 14	Per capita alcohol consumption, in litres of absolute alcohol, Ontario & Canada, aged 15+	22
Figure 15	Relationship between alcohol consumption (litres per capita, 15+ yrs) and the percentage of liver cirrhosis deaths specified as alcoholic; men and women. Average figures for each province 1950-98.....	22
Figure 16	Projection of British Columbia hospitalization rates caused by alcohol use vs. tobacco use, based on current trends	23

Table 1	Percentage of Individuals Harmed by Drinking in the Past 12 Months: Canada, 2004.....	15
Table 2	Peterborough (2011) and Ontario (2008) Students Alcohol Use.....	21
Table 3	Substances presented when accessing treatment from Fourcast in Peterborough, 2010	21

EXECUTIVE SUMMARY

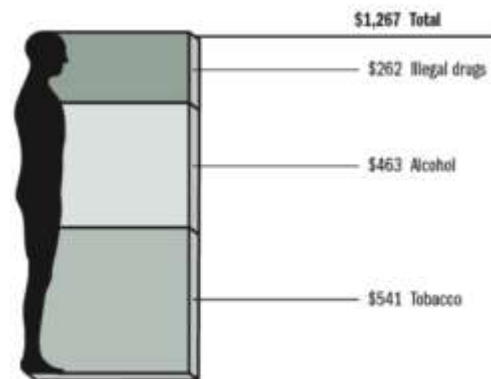
The World Health Organization recognizes alcohol use as the second largest risk factor for death, disease, and disability in high-income nations such as Canada (second only to tobacco). Still, the health hazards of alcohol are often overlooked, possibly because the health benefits of alcohol (which apply only for people over 45 years of age) have erroneously been promoted as outweighing the risks.

In reality, there is a growing body of research that shows that drinking even small amounts of alcohol may increase the chance of developing various chronic health problems including heart disease, stroke, and cancer. Impact can occur at less than two drinks per day and increases with the volume of alcohol consumed.

The injuries, violence and other social impacts associated with alcohol also often go unnoticed. In 2008, 7 of 18 accidental overdoses were due to alcohol alone and alcohol was a factor in other overdoses. The majority of visits (71.3%) to Peterborough Regional Health Centre's (PRHC) emergency department for substance use are related to alcohol; many are amongst females aged 15-19. Other alcohol related harms are violence, unwanted or unprotected sex; water and fire related deaths, impacts on mental health, fetal alcohol spectrum disorder and compromised social cohesion. Women, due to their different metabolizing of alcohol, are more at risk for these harms, as are other populations that have limited resources to support overall health or protect against the harms of alcohol.

The fiscal costs of alcohol use in Peterborough County and City are estimated at over \$51.42 million. Included in this estimate are the indirect costs of lost productivity (64%), with direct health care costs totaling 6% and "other" direct costs comprising 30%. Of these "other" direct costs, just 2% is devoted to "research, education and prevention", while the majority is spent on enforcement. It is anticipated that if current trends continue, the health costs of alcohol to every man, woman and child will eventually outweigh those attributable to tobacco. (See Figure 1.)

Alcohol-related chronic disease can be minimized through low risk drinking. Unfortunately, over a third of Peterborough adults drink in excess of established low risk drinking guidelines - a rate higher than the Ontario average. Peterborough drinkers also engage in binge drinking at rates 9% higher than the provincial average, ranking 9th highest in the province (amongst 36 health units). Since 2001, the prevalence of heavy drinking amongst adults has been steadily increasing in Peterborough and at a slightly faster rate than provincial estimates. In a recent high school study, 79% of Peterborough students report binge drinking at least once in the previous year. Of these, 18% percent report binge drinking weekly.



Source: Rehm et al. (2006). The Costs of Substance Abuse in Canada 2002: Highlights. Canadian Centre on Substance Abuse.

Figure 1: Per Capita Costs of Substance Abuse in Canada, 2002

While alcohol consumption has been increasing in Ontario and Peterborough County & City over the past fifteen years, alcohol controls have been eroded. Alcohol marketing has become increasingly sophisticated and ubiquitous, contributing to greater societal tolerance for high risk drinking. Recent changes to Ontario's liquor laws will likely further integrate alcohol use into many more social settings, as tobacco was years ago.

To stem the rising tide of alcohol harm, a multi-dimensional and comprehensive approach is required. This report provides a series of concrete recommendations, based on promising practices outlined in several recent municipal, provincial and federal reports. Overall, a two tiered approach is recommended. Actions on both tiers are necessary, as is surveillance to inform and evaluate action.

First tier policies aim to address population-level damage from alcohol use and high risk drinking. Evidence-based approaches include limiting availability of alcohol (in terms of price and physical access) and restricting alcohol marketing. Second tier policies are oriented towards specific populations, contexts, or risk behaviours including countering impaired driving, social marketing to youth about low risk drinking, changing the drinking context, and increasing alcohol screening by medical care providers.

Much of this work can be achieved by calling on the Ontario government to devise a provincial alcohol strategy that would include a cost-benefit analysis of alcohol use in Ontario and would fund prevention initiatives and ongoing surveillance. Other recommended evidence-based interventions at the provincial level include maintaining regulatory controls on alcohol, retaining government control of liquor retailing, ceasing expansion of liquor retailing outlets, and linking the costs of alcohol to the cost of living.

Both the provincial and federal governments must be called upon to develop stricter standards for alcohol advertising, especially as they pertain to youth. As well, mechanisms for responding to consumer complaints about alcohol advertising must be improved.

Municipal alcohol policies (MAP) are another tool to increase community health and safety when alcohol is made available on publicly-owned property (including events). Alcohol advertising, hours of sales, density of alcohol outlets, and methods to encourage responsible alcohol consumption can all be enshrined in a MAP. New requirements under the Liquor License Act (LLA) requiring municipalities to consult with health units about `special occasion permits` (for public events selling alcohol) will ideally lead to broader discussions about alcohol.

Other recommended approaches are social marketing to de-normalize harmful alcohol use, raising awareness of impaired driving countermeasures, supporting licensed establishments to foster responsible alcohol use, and increasing alcohol screening by medical care providers.

Addressing the normalization of high-risk drinking and the magnitude of alcohol-related health impacts will require more resources than are currently dedicated to this public health issue for community health promotion efforts.

INTRODUCTION

Addressing the harms of alcohol use is an urgent public health issue for Peterborough County and City. As a metabolic poison, alcohol use is associated with chronic illness including heart disease, stroke, and cancer. As an intoxicant, it causes dependency, injuries and trauma, as well as substantial social harms.¹

Drinking alcohol has become increasingly normalized in Ontario and across Canada, creating a challenge to profile alcohol as a high priority health issue.² Alcohol consumption is rising in Ontario and local data indicates that overall alcohol consumption and patterns of use are particularly concerning in Peterborough County and City.

At the same time as consumption has been rising, some legislative controls in Ontario have been eroded and alcohol marketing volume and techniques have expanded. Thus, the already high burden on health is expected to increase if the status quo persists.

A strategic and concerted effort by the public health community was required to establish an effective tobacco strategy for Ontario. It is imperative that similar efforts are mobilized to promote a “culture of moderation” for alcohol.

This report draws from numerous publications – including municipal, provincial, national and international reports to identify and summarize evidence-based recommendations to reduce alcohol-related harm in our Peterborough County and City.

Alcohol is a drug with lethal potential, causing well-documented risk and harm to individuals, communities and populations. Contrary to popular belief, the harms outweigh the health benefits. Alcohol consumption is causing a large and growing burden upon the health of Canadians. The evidence base that calls for an elevated population health approach to alcohol control and policy is broad.

CPHA, Draft Position Statement on Alcohol, 2011, p.2.

1.0 EFFECTS OF ALCOHOL ON HEALTH

1.1 Alcohol and Chronic Disease

The WORLD Health Organization (WHO) study of the burden of disease identified alcohol as the second-largest risk factor for death, disease and disability, with only tobacco causing more harm in high-income nations like Canada.³ (See Figure 2.) Globally, and in Canada, alcohol’s net effect is negative. After subtracting out the beneficial influences of alcohol from moderate consumption, approximately 3.8% of global deaths and 4.6% of DALYs (disability-adjusted life years^a) are attributable to alcohol.⁴ This places the burden from alcohol higher than that from other health risks, including unhealthy diet, physical inactivity, illicit drug use and others. Given the impact of effective policy interventions on tobacco, and the rising intake of alcohol, it is plausible that the health burden of alcohol could soon overtake tobacco harms in Canada.⁵

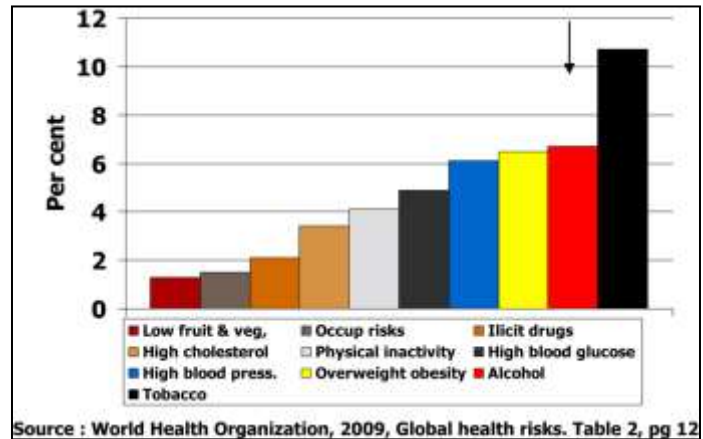


Figure 2: 10 Leading Risk Factors for Disease & Disability: High Income Economies (% total DALYs), 2004

There is a growing body of research that shows that drinking even small amounts of alcohol may increase the chance of developing various chronic health problems. A recent review of the research⁶ states:

Evidence of a causal impact of average volume of alcohol consumption was found for the following major diseases: tuberculosis, mouth, nasopharynx, other pharynx and oropharynx cancer, oesophageal cancer, colon and rectum cancer, liver cancer, female breast cancer, diabetes mellitus, alcohol use disorders, unipolar depressive disorders, epilepsy, hypertensive heart disease, ischaemic heart disease (IHD), ischaemic and haemorrhagic stroke, conduction disorders and other dysrhythmias, lower respiratory infections (pneumonia), cirrhosis of the liver, preterm birth complications and fetal alcohol syndrome. Dose-response relationships could be quantified for all disease categories except for depressive disorders, with the relative risk increasing with increased level of alcohol consumption for most diseases. (p. 817)

^a Disability Adjusted Life Years (DALYs) is a composite health summary measure that combines years of life lost (from life expectancy) to premature death with years of life lost due to disability. (Giesbrecht et al, 2011)

Appendix 1 gives an overview of chronic disease conditions and relative risks related to alcohol use. Figure 3 illustrates that proportion of alcohol-related deaths attributable to different diseases and injuries.

Overall, moderate consumption of alcohol has shown some protective effects for IHD, thyroid and prostate cancer and type 2 diabetes. However, these benefits are only for women and men 45 years and older⁷ and irregular heavy drinking episodes can erode these potential health benefits.⁸ Furthermore, drinking outside of meals is associated with an increased risk of cardiovascular events.⁹ Thus, the risks of alcohol consumption far outweigh the benefits.¹⁰

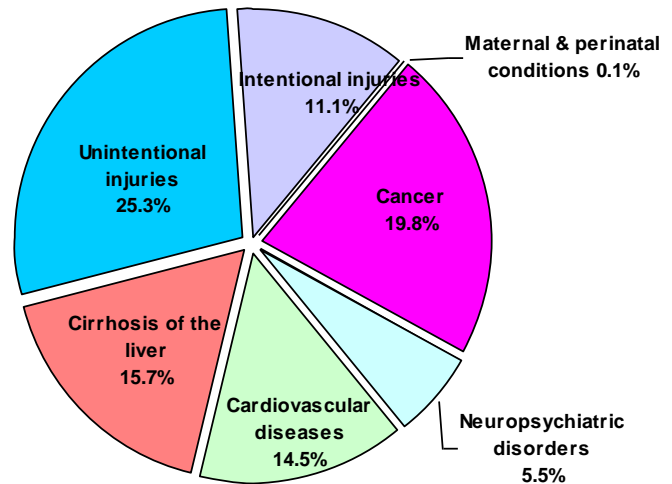


Figure 3: Proportion of net deaths due to different disease categories attributable to alcohol consumption in the World

Source: J. Rehm, J. Patra, D. Baliunas, S. Popova, M. Roereceke, B. Taylor, 2006

The increase in cancer risk associated with alcohol begins with low levels of consumption and increases with the volume of alcohol consumed, often in a linear and dose-response fashion. Impact can occur at less than 2 drinks per day, much lower than most people might expect. For example, average alcohol consumption of 25g/day (1 Canadian standard drink = 13.6g) has been found to be related to cancer of the pharynx, esophagus, larynx, liver, oral cavity and breast.¹¹ Daily consumption of around 50g of alcohol increases the risk of these cancers two to three times, compared with the risk in non-drinkers.¹²

1.2 Synergistic Effects with Other Behaviours

Alcohol can also interact synergistically with other risk factors and conditions, including tobacco use, unhealthy diet and physical activity.¹³ When tobacco and alcohol use are combined, the risk for certain cancers increases dramatically.¹⁴ (See Appendix 2 for combined tobacco and alcohol risk for different diseases.) The combination of drinking and obesity substantially increases the rates of liver, mouth and throat cancers.¹⁵ A 2006 Canadian study found that participants whose fruit and vegetable consumption was low had an even greater risk of lung cancer than other participants with similar average volume of alcohol consumed per week.¹⁶

1.3 Gender

Women develop medical problems related to alcohol use within a shorter period of time than men do. Women's bodies are generally smaller than men's, contain less water and metabolize alcohol at a slower rate than men. Because of this, it takes women's bodies longer to get rid of alcohol, and it takes less alcohol to affect women compared to men. For example, women who drink alcohol are at greater

risk than men drinking the same amount of alcohol for developing certain cancers, such as oral, rectal and breast cancer.¹⁷

This is especially well established for breast cancer which is a major health burden for Canadian women. Women who drink 1-2 alcoholic drinks a day increase their risk of breast cancer by about 10%. Women who drink on average 3 or more alcoholic drinks a day increase their risk of breast cancer by about 50%.¹⁸ Research also suggests these risks increase for women with a family history of breast cancer. One study found that women, who were daily drinkers and were also first-degree relatives of a woman with breast cancer, had 2.45 times the rate of breast cancer than never drinkers.¹⁹

Increasingly, research on the links between chronic disease and alcohol tells us that there are no safe levels of alcohol consumption. Rose (2008) warns that “a large number of people exposed to a small risk may generate many more cases [of harm] than a small number exposed to a large risk”.²⁰ With over 79% of Ontarians currently drinking alcohol²¹ and rising rates of both consumption and binge drinking, there is reason for concern.

“A large number of people exposed to a small risk may generate many more cases [of harm] than a small number exposed to a large risk”

Geoffrey Rose *et al.* (2008). *Rose's Strategy of Preventive Medicine Updated Edition*. P.59

2.0 INJURY AND ILLNESS

Injuries from alcohol include those due to acute intoxication, overdoses, falls, collisions, drowning, fire related death, and harm caused by alcohol-related physical and sexual aggression. Often these injuries are hard to quantify since they often go unreported or unrecorded. What data is available is summarized below.

2.1 Emergency Visits and Hospitalizations

In 2000, 29% of hospitalizations for major injuries in Ontario’s lead trauma hospitals were alcohol related. Of these, 54% were the result of vehicle collisions, 16% the result of falls, and 14% the result of interpersonal violence.²²

A review of emergency department visits to PRHC shows that between 2003 and 2009, there were 3368 substance misuse related emergency department visits (an average of 481 per year).²³ Alcohol misuse represented the most frequent reason (71.3% of all visits). In examining the most common substance misuse sub codes for an emergency department visit, acute alcohol intoxication accounted for just over a third (35.3%) of all visits. (See Appendix 3 for details.)

Peterborough residents aged 15 to 24 and 45 to 54 each accounted for roughly one quarter of all substance misuse visits between 2003 and 2009 (25.4% and 23.1%, respectively); persons aged 35 to 44 made up the next largest proportion of visits (17.5%). The distribution of visits among males and females was also significantly different: among males, those aged 45 to 54 made up the largest proportion of visits (26.5%), whereas females 15 to 24 comprise the largest proportion of visits (33.1%). The distribution of visits by age group in Peterborough is significantly different than the province: in Ontario persons aged 35 to 44 account for nearly one quarter (22.1%) of all visits, compared to 17.1% of visits in Peterborough. (See Figure 4.)

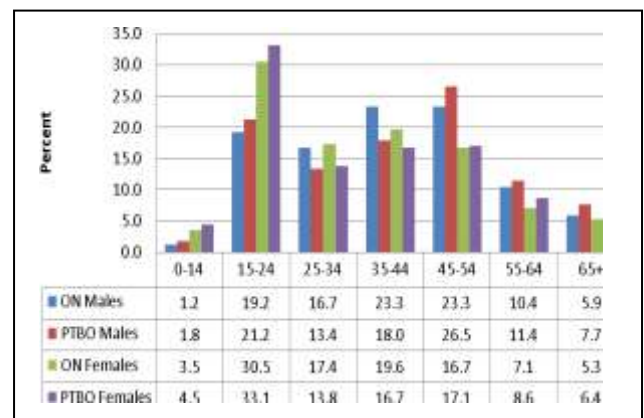


Figure 4: Proportion of substance misuse related ED visits by age group and sex, Peterborough and Ontario; 2003-2009

2.2 Overdoses

Deaths due to overdose is a major harm associated with substance use. Between 2004 and 2009 in Peterborough, there was an average of 15 deaths per year directly related to drug overdoses.²⁴ These numbers do not include most suicides as drug testing is not done for obvious suicides. Of 18 fatal drug overdoses in 2008, seven used alcohol alone and others involved alcohol.²⁵ Non-fatal overdoses also burden individuals’ health and the health care system.

2.3 Mental Health

There is extensive evidence of the impact of alcohol on mental health. Mental health conditions may stimulate heavy drinking, and excessive alcohol use may make it difficult to attain remission from depression. As well, alcohol is involved in a significant percentage of suicides and other intentional self-harm.²⁶ Globally, it is estimated that deaths from intentional injuries comprise 11.1% of net deaths due to alcohol. (See Figure 3.)

2.4 Collisions and Impaired Driving

Death, significant injuries, and damage to property result from driving vehicles (including ATVs, boats, and snowmobiles) under the influence of alcohol. In 2006, the numbers of drivers, who were drinking and involved in collisions in Peterborough County was nearly double that of the province (3.88% vs. 2.04%).²⁷

In 2000, 40% of snowmobile deaths in Ontario involved alcohol.²⁸ In the Central East Local Health Integration Network (CELHIN), the rate of injuries from snowmobiling was 30% higher than the province in 2006.²⁹ Thirty one percent of Ontarians that were hospitalized due to cycling between 1995 and 2000 had been drinking alcohol.³⁰

While there have been significant declines in rates of impaired driving, the 2009 CAMH Monitor^b found that 6.9% (95% Confidence Interval (CI): 5.5% to 8.5%) of Ontario adults with a valid driver's license reported driving an automobile after consuming two or more drinks in the previous hour at least once during the past 12 months. After controlling for other demographic factors, only gender and income were discernibly related to driving after drinking. The adjusted odds of driving after drinking among men drivers were 5.5 times higher than women drivers (11.6% vs. 2.3%). The rate of driving after drinking increased with income^c.

In the Ontario Student Drug Use and Health Survey conducted in 2007, 12 % of Ontario students (grade 7-12) reported using alcohol & driving and almost a quarter (23%) of students reported being in a vehicle driven by someone who had been drinking.

^b The 2009 cycle of the CAMH Monitor is based on telephone interviews with 2,037 adults aged 18 & older across Ontario – response rate – 57% of eligible respondents). The study has been conducted since 1977.

^c The adjusted odds comparisons show that compared to those with incomes of less than \$30 thousand, the odds of driving after drinking were 5.8 times higher among drivers with incomes of \$30,000 to \$49,999, 7.6 times higher among drivers with incomes of \$50,000 to \$79,999, 12.3 times higher among drivers with incomes of \$80,000 or more, and 3.5 times higher among drivers not stating their income.

2.5 Water and Fire Related Deaths

In Ontario, alcohol was also associated with 39% of water related deaths (1997-2001).³¹ The rate of drowning and near-drowning incidents in the CELHIN were double that of the province in 2006.³²

Nineteen percent of Ontarians that died from fire-related injuries between 1995 and 2001 were impaired by alcohol. Nearly 70% of the alcohol-related fire victims were between the ages of 25 and 54 and 78% were male.³³

2.6 Violence and Victimization

In the 2004 Canadian Addiction Survey one-quarter of former and current drinkers said their drinking had caused harm to themselves and others at some point in their lives. One-third of adult respondents said they had been harmed by other people's drinking in the past 12 months.³⁴ (See Figure 5.) Reporting of these harms generally decreased with age (see Table 1).

Remarkably, about 60% of young adults, under the age of 25 years of age, reported having been harmed by someone other's drinking!

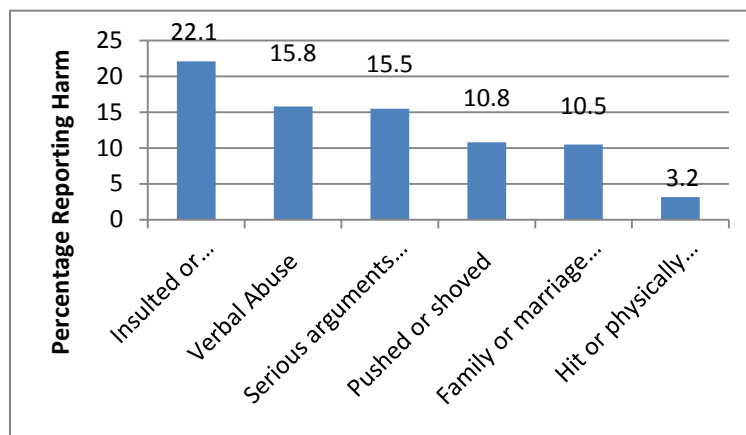


Figure 5: Harm experiences in the past 12 months resulting from others' drinking (2004) Source: Canadian Addiction Survey, 2005

Table 1: Percentage of Individuals Harmed by Drinking in the Past 12 Months: Canada, 2004 Source: Canadian Addiction Survey, 2005

Age Group	Harmed by Own Drinking	Harmed by Others' Drinking
15-17	21.8%	Not surveyed
18-19		62.6%
20-24		58.3%
25-34	7.8%	41.9%
35-44		32.7%
45-54	5.9%	30.4%
55-64		24.8%
65-74	2.8%	14.9%
75+		5.4%
All (15-75+)	8.8%	32.7%

Alcohol often leads to physical aggression and violence. It is remarkable how many Ontario adults state that their most recent experience of physical aggression took place in a licensed establishment. (See Figure 6.) There is also a strong link between alcohol use and domestic violence. The 2004 General Social Survey on victimization in Canada reported that during occurrences of spousal violence, 44% of

men and 24% of women involved were drinking (Statistics Canada, 2006). Women whose spouses who drank five or more drinks at least once per month reported one year rates of violence five times higher than those whose spouses drank moderately or not at all.³⁵ The Peterborough Lakefield Community Police Service report that more than half of the victims of intimate partner violence that they intervene with acknowledge the use of alcohol or other drugs by their partners.³⁶

2.7 Unplanned or Unsafe Sex and Sexual Assault

Alcohol is the drug used most often in drug facilitated sexual assault. Across many studies with different populations, researchers have found that use of alcohol involvement in sexual assault ranges from 34-74% amongst perpetrators and 30 to 79% amongst sexual assault victims.³⁷ It is important to emphasize, however, that although a woman's alcohol consumption may place her at increased risk of sexual assault, she is in no way responsible for the assault.

In a 2004 survey, Canadian college and university students reported high rates of adverse-alcohol-related consequences, such as having unplanned sexual relations (14.1%), having unsafe sex (6%), being sexually harassed (9.8%) and being sexually assaulted (10%).³⁸

2.8 Infectious Diseases

Alcohol consumption is also associated with infectious diseases. Several studies have identified that heavy drinkers are likely to have elevated risks of HIV and tuberculosis, due in part to living conditions and the negative impact of alcohol use on social arrangements and access to services.³⁹

2.9 Pre-natal Exposure

Maternal alcohol consumption plays a role in miscarriages, low birth weights, and still-born and premature births. Fetal Alcohol Spectrum Disorder (FASD) is estimated to affect up to 1 of 100 North American births and is the leading cause of preventable birth defects and developmental delay.⁴⁰

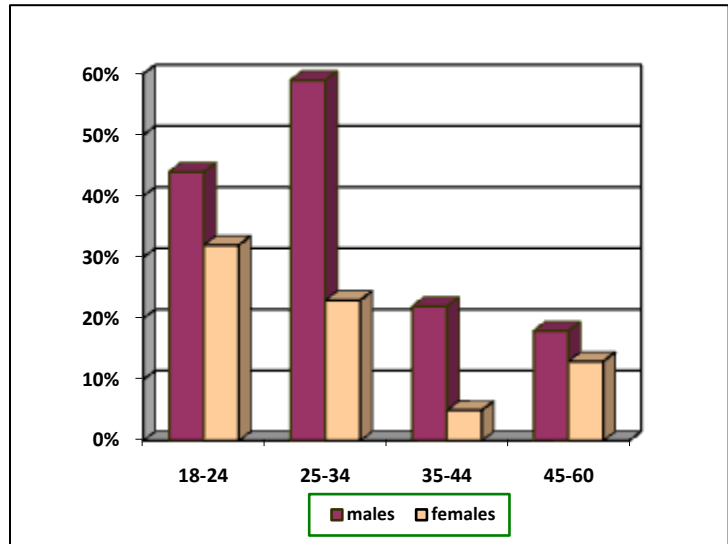


Figure 6: Ontario adults who report last physical incident occurring in a licensed establishment. Source: Graham, K. & Homel, R. (2008). Raising the Bar: Preventing aggression in and around bars, pubs and clubs.

3.0 SOCIAL COSTS

3.1 Fiscal Impacts

From a fiscal perspective, the harmful use of alcohol or other drugs has a significant impact on direct health care costs, law enforcement, property damage and lost productivity due to morbidity and premature mortality.

Alcohol abuse related costs in the Central East LHIN were estimated at \$548.9 million (in 2007 constant dollars), while illicit-drug abuse related losses amounted to \$361.4 million dollars.⁴¹ Thus, costs to Peterborough County and City for harms from alcohol use are estimated to be \$51.42 million (2007 constant dollars).

Of the costs of alcohol abuse in the Central East LHIN;

- 64% = Indirect costs of lost productivity
- 6% = Direct health care costs (including substance abuse treatment programs, physician & non-physician services, prescription drugs, hospitals & long term care, and community mental health). 80% of these costs are due to acute care hospitalization.
- 30% = Other direct costs (comprising: law enforcement, supportive housing, research, education & prevention, fire losses and capital costs for related hospitals and long term care facilities). Just 2% of these “other direct costs” are attributed to research, education, and prevention, while the vast majority of costs (93%) are law enforcement costs (see Figure 7). Indeed, Peterborough City & County police charges and calls related to alcohol far exceed those for illicit drugs (see Appendix 4).

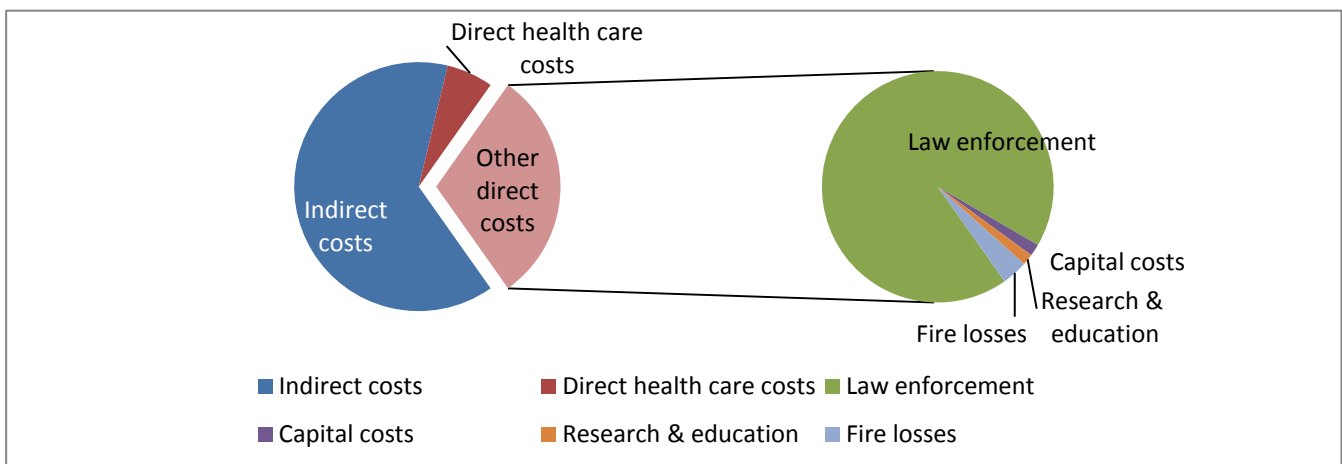


Figure 7: Estimated costs of substance use CELHIN (2007). Source: *The Costs of Alcohol and Illicit Drug Abuse and Mental Illness in CELHIN, 2007* (Sarnocinska-Hart, 2008)

3.2 Human and Social Impacts

The total societal harm is not adequately reflected in the fiscal costs tallied above, as many social problems and injuries from drinking are not included, especially the impact on people other than the drinker. The impacts of “second hand effect of drinking” include, but are not limited to:

- Disruption to individuals and their families (including crisis, loss of income, housing insecurity and homelessness, employment, impact on children, health, legal costs, etc.)
- Impact on work, studies, or employment opportunities
- Reduced sense of safety and disturbances in neighbourhoods
- Diminished health
- Impact on friendships and social life
- Financial hardship and/or poverty

The popular perception is that damage from alcohol is primarily related to drinking and driving and alcohol dependence. The good news is that alcohol related fatalities on Ontario roads have been declining⁴² and just 2.6% of Canadians are considered alcohol-dependent.⁴³ Indeed, stakeholders at recent consultations in Peterborough lamented that excessive drinking is widely perceived as harmless as long as the drinker is not driving.⁴⁴ However, these are certainly not the only, nor necessarily the most important manifestations of alcohol related harm. Impacts that are often not considered include injuries, violence and victimization, high fiscal costs (especially for enforcement), and significant impacts on quality of life.

4.0 HIGH RISK ALCOHOL USE IN PETERBOROUGH

Levels of alcohol consumption are on the rise in Ontario and a commensurate increase in alcohol related harms can be expected. Moreover, there is evidence that Peterborough residents are engaging in high risk drinking more than the Ontario average⁴⁵.

4.1 Low Risk Drinking Guidelines

The health risks associated with consuming alcohol can be minimized by not consuming alcohol or consuming within the Low Risk Drinking Guidelines (LRDG)⁴⁶, which currently are:

- **0** : Zero drinks = lowest risk of an alcohol-related problem (recommended for pregnant women or drivers)
- **2** : No more than 2 standard drinks (see Figure 8) on any one day
- **9** : Women, up to 9 standard drinks a week
- **14** : Men, up to 14 standard drinks a week



In Peterborough in 2007-8, approximately one third (30.8% CI: 26.4%-35.2%) legal drinking-age adults who drink alcohol, drank in excess of the LRDG, which appears to be slightly higher than Ontario estimates (26.9% CI: 26.1%-27.8%). (See Figure 9 & 10.)

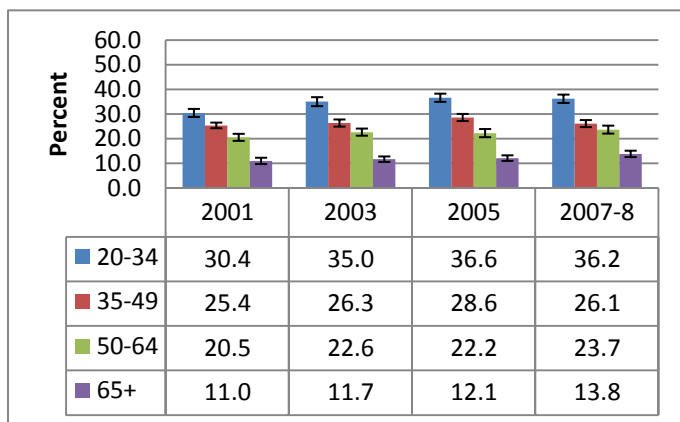


Figure 9: Proportion of Peterborough adults who drink, drinking in excess of the low risk drinking guidelines (2001-2008)* Estimates should be interpreted with caution due to large sampling variability. Source: Canadian Community Health Survey 2001-2008, Statistics Canada, Share File, Ministry of Health and Long-Term Care.

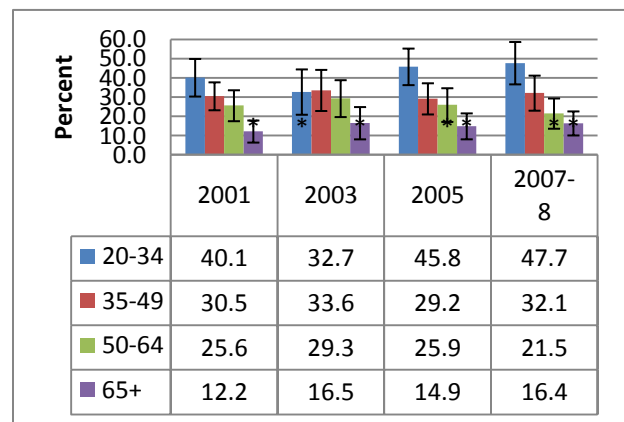


Figure 10: Proportion of Ontario adults who drink, drinking in excess of the low risk drinking guidelines (2001-2008) Source: Canadian Community Health Survey 2001-2008, Statistics Canada, Share File, Ministry of Health and Long-Term Care.

4.2 Binge Drinking

Binge drinking, also known as heavy drinking episodes, is classified as consuming five or more drinks on at least one occasion.⁴⁷ As summarized earlier, heavy drinking occasions are of particular concern because they are associated with increased risk of coronary heart disease, sudden cardiac death, intentional and unintentional injury, traffic collisions due to impaired driving,^{48 49} unwanted or unsafe sex, and violence.⁵⁰

The Peterborough County-City Health Unit area has the 9th highest prevalence of heavy drinking amongst 36 health units⁵¹. The Canadian Community Health Survey (2007) identifies that 52.9% (CI: 49%-56.8%) of adult drinkers in Peterborough engage in heavy drinking (males 55.2%; females 51.3%). This is 9% higher than the provincial average (43.8% CI: 42.9%-44.8%). Since 2001, the prevalence of heavy drinking amongst adults has been steadily increasing in Peterborough and at a slightly faster rate than provincial estimates.

Binge drinking is especially high amongst younger adults (20-34), particularly in Peterborough (79.8%) compared to Ontario (64.6%). (See Figures 12 & 13.) It is a concern that girls in Ontario high schools have almost matched the high rates of binge drinking undertaken amongst their male counterparts (see Figure 11).

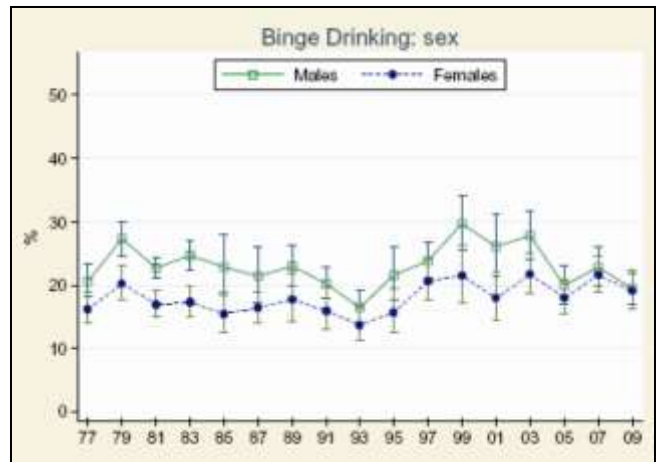


Figure 11: Past month Binge Drinking amongst High School Students by Sex. Source: OSDUHS 1977-2007 (Grades 7, 9, 11). Gilksman, 2009.

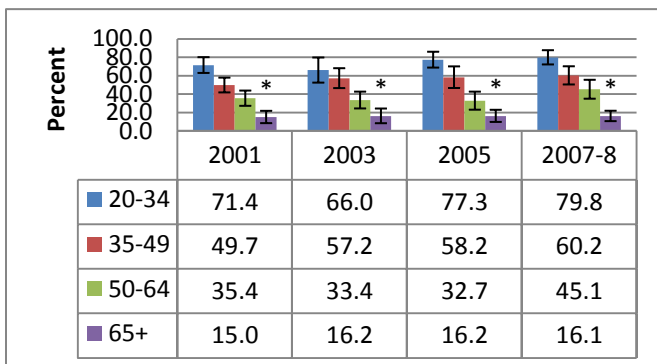


Figure 12: Prevalence of Peterborough adults who drink, with at least one episode of heavy drinking in the past 12 months, by age group 2001-2008.

*Estimates should be interpreted with caution due to large sampling variability. Source: Canadian Community Health Survey 2001-2008, Statistics Canada, Share File, Ministry of Health and Long-Term Care.

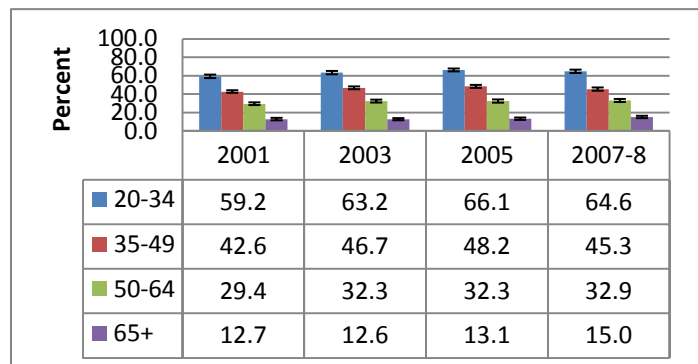


Figure 13: Prevalence of Ontario adults who drink, with at least one episode of heavy drinking in the past 12 months, by age group 2001-2008. Source: Canadian Community Health Survey 2001-2008, Statistics Canada, Share File, Ministry of Health and Long Term Care.

The Youth Smoking Survey (YSS) that was completed by 1,800 Peterborough high school students in the 2010/2011 school year also asked students about other substance use. Comparisons with YSS aggregate data for all of Ontario from 2008 are shown in Table 2. The average age that Peterborough students reported that they “drank more than a sip” is age 14; the average age to begin to binge drink is 15 years old. Amongst Peterborough high school drinkers, 79% reported binge drinking in the past 12 months, with 44% doing so 1-3 times per month.

Table 2: Peterborough (2011) and Ontario (2008) Students Alcohol Use. Source: Peterborough County-City Health Unit (2011). *Smoking Profile for a Sampling of Peterborough Area High Schools*. Waterloo, ON: Propel Centre for Population Health Impact & Health Canada. (2008/2009). Youth Smoking Survey.

Alcohol Use/Binge Drinking Frequency	Peterborough	Ontario
Alcohol Use		
Age of initiation	14 (drink);	N/A
Use in past 12 mos	55%	50%
Binge Drinking (5+ drinks on 1 occasion) amongst users		
In past 12 mos	79%	N/A
<1x/mo	38%	30%
1-3X/mo	44%	41%
1+x/week	18%	29%

There is also concern about the increasingly popular practice (especially amongst youth) of mixing alcohol with “energy drinks”. Research has correlated this practice to increased rates of injury.⁵² Other research has determined that the ingestion of an energy drink with alcohol reduced the drinker’s perception of the influence of the alcohol, while the energy drink did not in fact significantly reduce the deficits caused by alcohol on objective motor coordination and visual reaction time.⁵³

4.3 Treatment Seeking for Alcohol

Similar to most other communities, alcohol is most often cited as a problem substance for individuals seeking treatment in Peterborough City and County (see Table 3). Youth aged 16-24 who accessed treatment from Four County Addiction Services Team (Fourcast), identified in almost equal measure alcohol or cannabis as their problem substance.

Table 3: Substances presented when accessing treatment from Fourcast in Peterborough. Source: Drug and Alcohol Treatment Information System (DATIS) database September 16, 2010.

Substance	% of individuals
Alcohol	54%
Crack/cocaine	21%
Cannabis	26%
Opioids	18%
Other	7%
* %'s add up to more than 100 since often more than one problem substance is presented.	

4.4 Increasing Alcohol Consumption and Related Harms in Ontario

In general, per capita alcohol consumption is increasing in Ontario and Canada. Figure 14 depicts this trend, though actual alcohol consumption is likely underestimated since home-produced alcohol, smuggling and other sources of “unofficial consumption” are not included.

Long-term research has shown that increases in alcohol consumption lead to increases in injuries and chronic illness including alcohol specific mortality, liver cirrhosis mortality, fatal accidents, suicides, and homicides. For example, Ramstedt (2003) found a clear correlation between average alcohol consumption (1950-1998) in Canadian provinces and resulting deaths due to liver cirrhosis (see Figure 15).⁵⁴

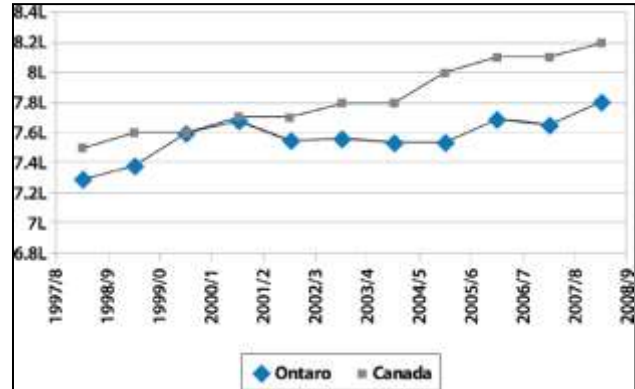


Figure 14: Per capita alcohol consumption, in litres of absolute alcohol, Ontario & Canada, aged 15+ Source: Manafò, Elizabeth & Giesbrecht, Norman (May 2011). Alcohol, Cancer and other Health Issues: An Action Plan for Prevention. Toronto Cancer Prevention Coalition.

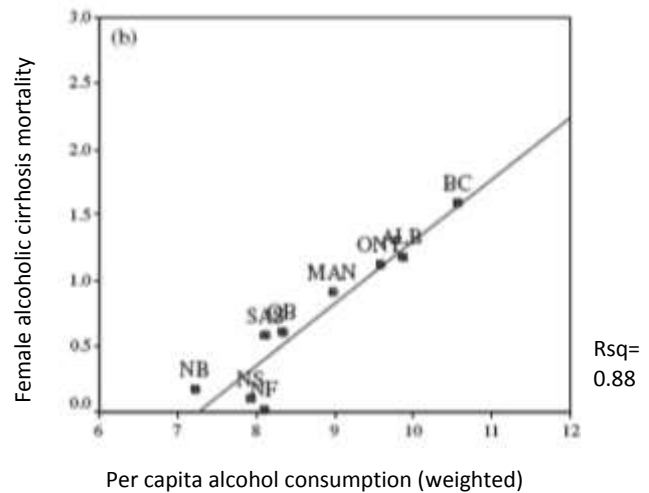
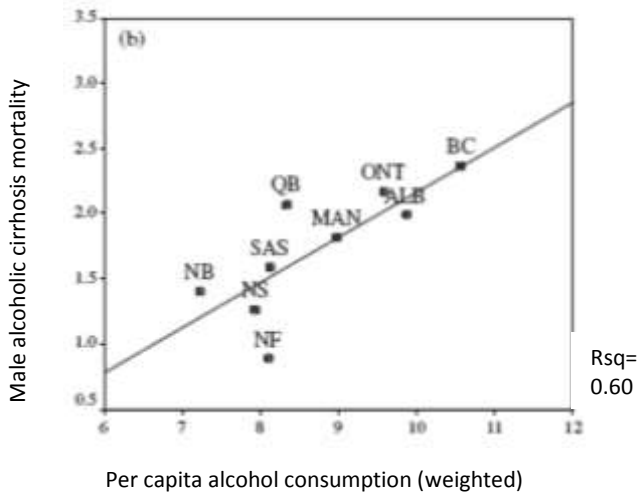


Figure 15: Relationship between alcohol consumption (litres per capita, 15+yrs) and the percentage of liver cirrhosis deaths specified as alcoholic; men and women. Average figures for each province 1950-98. Source: Ramstedt, M. (2003) "Alcohol Consumption and Liver Cirrhosis Mortality With and Without the Mention of Alcohol – the Case of Canada," *Addiction* 98, p.1267-1276.

Skog (2003) reviewed alcohol consumption between 1950 and 1998 in Canada and found that for every litre increase in per capita alcohol consumption, there was an increase in accident mortality of 5.9 males and 1.9 females per 100,000.⁵⁵

In British Columbia, partial privatization of the province’s alcohol retailing system has caused increased density of alcohol outlets in certain areas. A study found that these increased densities of private liquor stores were associated with a significant local-area increase in rates

of alcohol-related death.⁵⁶ A recent Canadian Public Health Association (CPHA) Draft Position Statement on Alcohol warns that “Projecting current trends, it is expected that alcohol-caused hospitalization rates in British Columbia will overtake tobacco-caused hospitalization rates around 2013”.⁵⁷

Conversely, research has shown that trauma and chronic problems decline during periods of restricted access to alcohol such as when alcohol retail outlets are closed due to labour strikes.⁵⁸

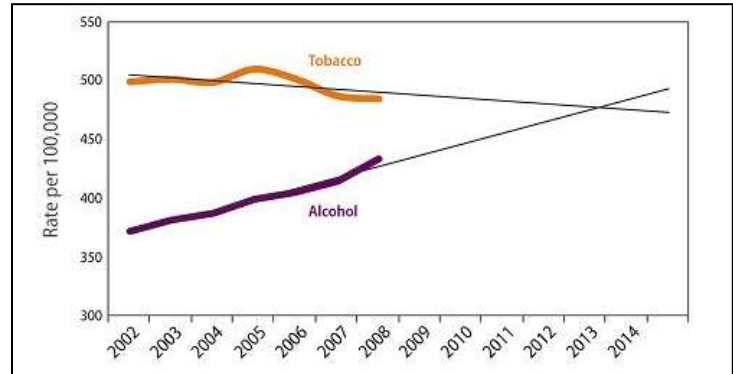


Figure 16: Projection of British Columbia hospitalization rates caused by alcohol use vs. tobacco use, based on current trends
Source: BC Centre for Disease Control and University of Victoria, 2010.

Alcohol use occurs across all sectors of Canadian society, regardless of age, levels of income or education or gender), though patterns of use differ (See Appendix 5). This means that all sectors of society are at risk for alcohol related trauma and disease. However, as with most health burdens, there is a greater impact on high-risk populations.⁵⁹

Those with higher disposable income or socio-economic status are likely to drink more, yet studies have found that alcohol related mortality is higher amongst blue collar workers.^{60 61} Amongst Canada’s Aboriginal population alcohol related harms such as suicide, violence and dependency are high, linked to considerable social disadvantage and historical oppression. Youth aged 15-29 years experience 33.6% of alcohol-attributable disability-adjusted life years (DALYs), compared to 22% in the 45-59 age group.⁶² This disparate impact speaks to the need for comprehensive strategies aimed at both high-risk groups and the population as a whole.

5.0 PROVINCIAL TRENDS CONVERGING TO INCREASE ALCOHOL RELATED HARM

At the same time as alcohol consumption has been rising, controls have been eroded.⁶³ Alcohol has become extensively integrated into many social contexts and settings and there exists a high societal tolerance of high-risk drinking. Ubiquitous marketing reinforces these trends. Currently, there is a lack of provincial leadership to address these trends that are working synergistically to increase alcohol related harms in Ontario.

5.1 Extensive Integration of Alcohol into Social Contexts

Changes made to the Liquor License Act (LLA) were enacted this past summer that will serve to increase availability of alcohol and integration of alcohol at more community settings. The LLA was amended to allow licensees to allow patrons to move freely into unlicensed areas (with some restrictions). Premises such as spas, hair salons, art galleries, book stores, etc., may now apply for a liquor license; whereas before, only premises where the primary business was the sale of liquor and food were illegible.⁶⁴ Licensees are now permitted to offer all inclusive travel packages. In response, at least one Toronto hotel is offering all you can drink weekend getaways.⁶⁵ The combined effect of these measures can only serve to increase both overall consumption and the perception that alcohol use is integral to public life.

The message that celebration requires alcohol was put forth when hours of liquor sales were extended during the World Cup Competition in Toronto in July, 2010. This was repeated for the Royal Wedding (of Prince William and Kate Middleton, April 29, 2011). There is evidence that previous extensions of hours of liquor service in Ontario have resulted in increased injuries.⁶⁶ Health agencies have expressed apprehension that these extensions for 'special occasions' could be a slippery slope and have repeatedly asserted that the costs of alcohol far outweigh revenues gained from extended hours.

5.2 Increasing Access to Alcohol

At the population level, alcohol consumption tends to be related to accessibility in terms of price and physical availability in terms of selling days/times, density of outlets and adherence to restrictions on sales.

Repeatedly, the Ontario government's proposed privatization of the LCBO has been met with concerted objections from health agencies and departments across Ontario^d. There remains concern that privatization of the LCBO would lead to increased availability of alcohol through expanded store locations and store hours which in turn will lead to increased consumption and alcohol related harms. Alcohol consumption in British Columbia increased 16% after their liquor control board was semi-privatized.⁶⁷ Privatization in Alberta led to increases in alcohol consumption and documented increases in suicide and criminal activity such as break-ins.^{68 69} Government-run retailing systems, while not flawless, have a stronger potential to prevent service to minors and intoxicated patrons due to the fact that staff are trained and the profit motive is not paramount.⁷⁰

^d PCCHU has sent advocacy letters in 1996, 2004, and 2010.

Currently, there is increasing industry and public pressure to allow convenience stores to sell liquor. A growing public campaign is being led by the convenience store industry to gather support for selling alcohol in convenience stores. A recent Angus Reid Public Opinion study, done on behalf of the Ontario Convenience Stores Association, claims that a majority of Ontarians (60%) support expanding the provinces alcohol retailing system to allow beer and wine to be sold by more types of retailers (www.freeourbeer.ca). A major political party leader currently vying for premiership of Ontario has voiced a desire to “bring back the days of a buck a beer”.⁷¹

Liquor prices have not kept up with inflation, thus making alcohol attractively priced.⁷² This is especially true in more remote regions of Ontario where standard LCBO pricing means that alcoholic beverages are competitively priced with non alcoholic beverages.

5.3 More and Diversified Marketing

There is evidence that exposing young people to alcohol marketing encourages some to start drinking sooner and increases consumption amongst those already drinking.⁷³ Alcohol promotion also contributes to the normalization of alcohol use, especially among young people.⁷⁴ In the past decade, the frequency and channels of marketing and advertising alcohol has increased and is becoming increasingly sophisticated, especially on the Internet where no age controls are in effect. Even the government-owned entity, the Liquor Control Board of Ontario (LCBO), has dramatically increased its advertising levels, with a seemingly narrow conception of social responsibility.⁷⁵

Controls on alcohol promotion have been eroded in the past decade. In 2006, screening of proposed electronic alcohol advertising became voluntary, whereas before industry was required to submit proposed alcohol advertising for review by the Canadian Radio-Television Broadcasting Commission.⁷⁶ It would likely surprise many to know that the AGCO’s Liquor Advertising Guidelines require that an alcohol ad “does not imply that consumption of liquor is required in obtaining or enhancing: (a) social, professional or personal success, (b) athletic prowess, (c) sexual prowess, opportunity or appeal, (d) enjoyment of any activity, (e) fulfilment of any goal, or (f) resolution of social, physical or personal problems”.⁷⁷



PCCHU, along with community partners recently launched a successful campaign to have the above billboard removed. While Old Milwaukee agreed, the campaign was likely already over by the time the billboards were removed.



Advertisement for Sky Vodka. Clearly questionable “caution” about the “spirit of gender equality”.

It is also highly questionable as to whether the Advertising Standards Canada Gender Portrayal Guidelines are being followed. They advise that “caution should be taken to ensure that the overall impression of an ad does not violate the spirit of gender equality”.⁷⁸ A public complaint about advertising takes several weeks to be processed. By this time, the advertising has had its impact – and often more extreme ads live on in social media sites.⁷⁹ Clearly, regulation of alcohol advertising in Ontario is far from adequate.

5.4 Lack of Provincial Strategy and Leadership

There is no provincial strategy in Ontario focusing on alcohol, while they exist in British Columbia, Nova Scotia and Quebec. Manafo & Giesbrecht (2011) state “In addition to the funds required, a substantial increase in leadership and commitment on this issue remains a challenge” (p. 34).^{80 81} However, there is a groundswell of concern on this issue, as evidenced by an increasing number of international, national and provincial alcohol-specific initiatives that seek to promote policies and prevention strategies to reduce the burden associated with alcohol.

6.0 PROMISING EVIDENCE-BASED PRACTICES

There have been several promising developments both internationally and within Canada. A National Alcohol Strategy was developed by the Canadian Centre on Substance Abuse, Health Canada and other partners in 2007⁸² and the proposed 41 recommendations are beginning to be implemented. On June 13, 2011 Ontario's Association of Local Public Health Agencies endorsed a resolution calling on the provincial government to conduct a formal cost benefit analysis of alcohol in Ontario and to develop a provincial alcohol strategy. On June 14, 2011, the Canadian Public Health Association began discussions on their draft position statement on Alcohol that recommends a multi-dimensional and comprehensive response and outlines several evidence-based interventions. Most recently, Toronto's Board of Health endorsed recommendations outlined in the Toronto Cancer Prevention Coalition's "Alcohol, Cancer and other Health Issues: An Action Plan for Prevention" report.

The following builds on the recommendations of these recent reports and outlines evidence-based approaches and strategies that should be pursued in the Peterborough area. A summary of the impact and evidence behind various interventions is provided in Appendix 6. Many recommendations call for action on the part of federal, provincial, and municipal governments, as well as other community partners. Most recommendations would be addressed by creating a thorough Provincial Alcohol Strategy and by creating or updating Municipal Alcohol Policies (MAPs) in the City of Peterborough, eight townships, and two First Nations Band Councils. PCCHU last supported municipalities in devising MAPs in 2005. New requirements under the LLA will require municipalities to consult with health units about `special occasion permits` (for public events selling alcohol), potentially creating a platform for broader discussion on alcohol.

An effective response must be multi-faceted, including a combination of population-level policies, targeted interventions, services for those who are high-risk drinkers (such as youth) or dependent on alcohol, and informed by local surveillance to measure trends and impacts. Overall, a **two-tiered approach** is recommended to stem the increasingly negative impact of alcohol use.

First tier policies aim to address population-level damage from alcohol use and high risk drinking.

Second tier policies are oriented towards specific population, contexts, or risk behaviours.⁸³ Actions on both tiers are necessary. Without enactment of population level policy change, efforts to control the damage from alcohol use will have only a modest impact. Similarly, further liberalization of provincial regulatory controls could undermine all other efforts (Appendix 7 summarizes these potential gains and losses).

6.1 TIER 1 – POPULATION LEVEL INTERVENTIONS

6.11 Implementing alcohol pricing policies

Raising the price of alcohol, either through direct price changes or taxation is the intervention that promises the greatest impact on reducing alcohol consumption and related harms. Extensive evidence (including a meta-analysis published in 2009, based on over 112 studies) provides strong support for this intervention.⁸⁴ Alcohol pricing needs to be structured so that the price increases as the percent alcohol content increases and needs to be indexed to the cost of living.⁸⁵

6.12 Controlling physical and legal availability

There is substantial research establishing that high density of outlets and extended hours and days of sale are associated with high-risk drinking and alcohol-related problems.^{86 87} Reducing the density and restricting hours of sales is an important strategy. Maintaining the minimum drinking age (19 years) or even raising it are recommended to stem alcohol related harm amongst youth.⁸⁸

6.13 Curtailing Alcohol Marketing

Our current environment is saturated with increasingly sophisticated and diverse alcohol marketing, some of it produced by government-owned retailers. Restricting the marketing of alcohol products through advertising, promotion and sponsorship, as has been done for tobacco, is recommended as a policy for controlling the harms from alcohol.

6.14 Maintain Current Government Control on Alcohol Retailing

Experience in Canadian provinces and internationally consistently show that privatization of alcohol retailing results in increased density of outlets, increased consumption, and increases in alcohol-related harm.^{89 90} The Board of Health has repeatedly advocated with the provincial government to maintain its monopoly on liquor sales. In May, 2011, PCCHU's Medical Officer of Health joined a chorus of other public health officials expressing concern that proposed changes to Ontario's Liquor License Act were being undertaken in the absence of a full cost-benefit analysis and without the protection of health as a key objective. Regardless, changes were enacted in June 2011 that greatly liberalized access to alcohol in many new settings.

6.2 TIER 2: FOCUSED POLICIES AND INTERVENTIONS

6.21 Countering Drinking and Driving

Efforts to reduce impaired driving owe their success to a “comprehensive health promotion approach” including policy and legislation, social marketing, skill building and ongoing surveillance. Approaches in Ontario have been particularly broad including check points, lower legal BAC limits (to 0.05 BAC), ‘zero tolerance’ for young drivers, roadside license suspensions, counseling, the use of ignition interlock systems, and graduated licensing for novice drivers.⁹¹

6.22 Changing the Drinking Context

Drinking contexts can be modified by appropriately training bar staff and implementing in-house policies relating to responsible beverage service.⁹² At minimum, licensed establishments in Ontario are required to have Smart Serve training for their staff. PCCHU has hosted additional trainings for licensed establishments on alcohol liability and house policy development in 2005, 2007, and 2009. It is also important that existing legislation on responsible service, establishment capacity, and public disturbances be enforced by relevant authorities.

6.23 Educating and promoting behaviour change

There is ample research evidence to show that reliance on education alone will not reduce alcohol-related problems and costs, especially given the ubiquitous presence of pro-alcohol marketing.⁹³ Resources should be redirected to evidence-based education programs. Most school-based programs do not demonstrate a substantial public health impact on drinking behaviour or damage from alcohol, although some intensive programs in universities are beginning to show some promise.⁹⁴ On-line self-assessments are also showing promise, especially because they are less resource-intensive to repeatedly implement.

Messaging should be oriented to increasing awareness of population-level damage from alcohol and focused on changing social norms, to avoid reinforcing stigma.⁹⁵ Given the new accountability agreements, it is important that health units focus on encouraging adoption of the low-risk drinking guidelines. There may be opportunity for PCCHU to collaborate on addressing binge drinking with neighbouring public health partners, as Halliburton, Kawartha, Pine Ridge Health Unit has identified this as a unit-wide priority.

6.24 Increasing Access to Screening and Brief Interventions

Extensive body of literature shows that brief screening and interventions by a health care provider can greatly influence alcohol use/patterns.⁹⁶ Yet physicians have been slow to adopt these effective and cost-saving interventions. In 2009-10, PCCHU obtained funding for a "Stroke Strategy" that in part, developed tools and provided training to area health care providers on brief interventions on alcohol and risk of chronic disease. Primary care providers can play a greater role, as they have done with smoking.

6.3 SURVEILLANCE, RESEARCH AND KNOWLEDGE EXCHANGE AND SKILLS BUILDING

Ongoing surveillance is critical to informing interventions and measuring success.

7.0 RECOMMENDATIONS

The Board of Health request local Councils (elected representatives) to:

- update and revise their Municipal Alcohol Policies or Band Council resolutions, and
- develop consultation mechanism with public health on applications for liquor licence permits, as required by recent changes to the Liquor Licence Act.

The Board of Health request the Premier, the Minister of the Attorney General, the Minister of Health and Long Term-Care and the Minister of Health Promotion and Sport to create a provincial alcohol strategy that would include:

- undertaking a thorough geographic inventory of alcohol retail outlets (with a ban on permitting additional retail outlets or extensions of hours until such a review is completed),
- not permitting the sale of alcohol in convenience stores,
- maintaining the legal age for alcohol use at 19 years of age,
- ensuring that alcohol regulatory authorities have appropriate capacity for adequate enforcement of on-premise laws, over-service and minimum age restrictions,
- requiring training of owners, managers and staff as a condition of licensing/re-licensing.
- investment in the development of a comprehensive and sustainable surveillance system to monitor and detect changes in access to alcohol, alcohol consumption patterns, and alcohol-related disease, injury and social outcomes,
- increasing capacity for problem drinking screening and brief intervention in both primary health care and emergency room settings,
- ensuring adequate capacity for community-based and inpatient treatment for both harmful drinking and alcohol addiction,
- funding social marketing campaigns to de-normalize the acceptability of the harmful use of alcohol,
- restricting alcohol advertising and sponsorship incrementally, with the ultimate goal to be equivalent to restrictions for tobacco products,
- exploring legal options for provincial restrictions on alcohol advertising and promotion, including strengthening existing provincial regulations on advertising by licensed establishments (e.g., allowing advertising of drink specials and happy hours inside the venue only),
- ending marketing and advertising by the LCBO, including the use of the Internet and social media, promotions, and product placement,
- reviewing and update mechanisms of receiving and responding to consumer complaints about alcohol advertising,
- maintaining full government control on the sale of alcoholic beverages,
- establishing or adjusting the mandate of the LCBO to make the protection of public health and safety a key priority,

- establishing a single provincial alcohol tax or social reference price based on the percentage of absolute alcohol in a standard drink such that the higher the alcohol content, the higher the tax. This structure should be indexed annually to the Consumer Price Index,
- establishing a minimum reference price for retail sales and a maintain the minimum reference price for licensed establishments (currently it is \$2.00 per standard unit drink). Reference prices should be adjusted periodically to reflect the Consumer Price Index,
- ensuring that pricing at U-Brew and U-Vin establishments are consistent with the retail minimum reference price, and
- establishing a provincial surtax on alcoholic beverages that are targeted for youth consumption (e.g., alcoholic beverages with high sugar content and artificial flavouring, large volume beer containers).

The Board of Health request federal Members of Parliament advocate for:

- additional funding be directed to implementation of the National Alcohol Strategy, and
- federal excise duties be linked to the Consumer Price Index and apply federal excise duties based on alcohol content so that taxes would increase proportionally as alcohol content increases.

8.0 CHALLENGES

The problematic use of alcohol is often not “on the radar” as a major public health issue.⁹⁷

Much of the public communication about alcohol tends to emphasize the health and social benefits of alcohol consumption, giving repeated support to the false notion that the benefits outweigh the risks. In reality, the often cited research demonstrating the limited benefit of “moderate” alcohol consumption is partially based on flawed studies (see Appendix

8). Furthermore, alcohol has become extensively integrated in many social contexts through increased availability, marketing, and consumption behavior, as smoking was decades ago. Alcohol sales are recognized for their economic benefit, despite studies that show that alcohol consumption creates a net loss for Ontarians. (See Appendix 9.) Within this cultural and economic context, there can be a reluctance to assert that “alcohol is no ordinary commodity”.⁹⁸

Drinking has become normalized to the point where choosing to abstain, whether for an event or longer term is considered abnormal and in need of justification.⁹⁹ Altering this public perception without invoking criticisms of engendering a ‘nanny state’ or seeming to criticize people’s personal choices will be a challenge. It is important to remember that support for alcohol measures can be a call for a “culture of moderation” and need to not be associated with a prohibitionist stance, nor a requirement of personal abstention from alcohol in order to effectively advocate for policy change.^{100 101}

An even larger challenge is our own limited resources as a local public health agency. The Peterborough County-City Board of Health has limited staffing capacity and other resources (i.e. epidemiology) to devote to the implementation of the comprehensive approach and surveillance recommended in this document and mandated by the Ontario Public Health Standards. Addressing the normalization of high-risk drinking and the magnitude of alcohol-related health impacts will require an amassing of resources that are not currently dedicated to this concern within community health promotion efforts.

Currently, there is a great inconsistency between the evidence documenting alcohol related harm and prevention and protection response efforts. This ‘gap’ may in part be due to the existing misconceptions of alcohol risks and benefits...

Manafa & Giesbrecht, 2011, p. 28

CONCLUSION

This report recommends specific evidence-based interventions to increase and maintain regulatory measures for alcohol, restrict the promotion and normalization of harmful alcohol use, and inform and support healthier choices around alcohol at the individual and community level. Most of these recommendations call for action on behalf of provincial and municipal governments, making public health ideally situated and connected to instigate and influence adoption of a comprehensive approach to alcohol harm reduction.

If the normalization of harmful alcohol use through lack of consumer awareness of risks, ubiquitous marketing and regulatory erosion is allowed to continue, it is predicted that the burden of health from alcohol will supercede that attributable to tobacco. The interventions recommended in this report will help reduce incidents of alcohol-related cancer and other chronic illness, injuries, violence, and death. Given the high rates of high risk drinking Peterborough County and City, undertaking these interventions is particularly important.

APPENDIX 1

Definition of Drinking Categories in Canada based on pure alcohol consumption in grams per day

Drinking Category	Women	Men
Abstainer	0<.25g./day	0<.25g./day
Drinking Category I	.25g.<20g./day	.25g.<40g./day
Drinking Category II	20g.<40g./day	40g.<60g./day
Drinking Category III	>40g./day	>60g.g./day

A standard drink is 13.6grams of pure alcohol. 0.25g/day equates to somewhat less than 1 glass of wine per month.

Table 3: Alcohol-attributable chronic disease categories and sources for determining risk relations including alcohol-attributable fractions (AAFs) and relative risks

Condition (ICD-10 code)	Relative Risks			References for meta-analysis or AAF
	Drinking Category I	Drinking Category II	Drinking Category III	
Malignant neoplasms				
Mouth and oropharynx cancers (C00 – C14)	M/W 1.45	M/W 1.85	M/W 5.39	(Gutjahr, Gmel, & Rehm. 2001)
Oesophageal cancer (C15)	M/W 1.80	M/W 2.38	M/W 4.36	(Gutjahr, Gmel, & Rehm. 2001)
Colon and rectal cancers (C18-C21)	M/W 1.00	M 1.16 W 1.01	M 1.41 W 1.41	(Cho, Smith-Warner, Ritz, et al. 2004)
Liver cancer (C22)	M/W 1.45	M/W 3.03	M/W 3.60	(Gutjahr, Gmel, & Rehm. 2001)
Laryngeal cancer (C32)	M/W 1.83	M/W 3.90	M/W 4.93	(Gutjahr, Gmel, & Rehm. 2001)
Breast cancer (C50)	<45 yrs W 1.15 45+ yrs W 1.14	<45 yrs W 1.41 45+ yrs W 1.38	<45 yrs W 1.46 45+ yrs W 1.62	(Ridolfo & Stevenson. 2001)
Other neoplasms (D00-D48)	M/W 1.10	M/W 1.30	M/W 1.70	(Rehm, Room, Monteiro, et al. 2004)
Diabetes mellitus (E10-E14)	M 0.99 W 0.92	M 0.57 W 0.87	M 0.73 W 1.13	(Gutjahr, Gmel, & Rehm. 2001)

Table 3: Alcohol-attributable chronic disease categories and sources for determining risk relations including alcohol-attributable fractions (AAFs) and relative risks

Condition (ICD-10 code)	Relative Risks			References for meta-analysis or AAF
	Drinking Category I	Drinking Category II	Drinking Category III	
Neuropsychiatric conditions				
Alcoholic psychoses (F10.0, F10.3 - F10.9)				100% AAF per definition
Alcohol abuse (F10.1)				100% AAF per definition
Alcohol dependence syndrome (F10.2)				100% AAF per definition
Unipolar major depression (F32 - F33)				(Rehm, Room, Monteiro, et al. 2004)
Degeneration of nervous system due to alcohol (G31.2)				100% AAF per definition
Epilepsy (G40 - G41)	M 1.23 W 1.34	M 7.52 W 7.22	M 6.83 W 7.52	(Gutjahr, Gmel, & Rehm. 2001)
Alcoholic polyneuropathy (G62.1)				100% AAF per definition
Cardiovascular diseases				
Hypertensive disease (I10 - I15)	M 1.33 W 1.15	M 2.04 W 1.53	M 2.91 W 2.19	(Corrao, Bagnardi, Zambon, & Arico. 1999)
Ischaemic heart disease (I20 - I25)	M/W 0.82	M/W 0.83	M 1.00 W 1.12	(Rehm, Room, Monteiro, et al. 2004); (Corrao, Rubbiati, Bagnardi, Zambon, & Poikolainen. 2000)
Alcoholic cardiomyopathy (I42.6)				100% AAF per definition
Cardiac arrhythmias (I47 - I49)	M/W 1.51	M/W 2.23	M/W 2.23	(Gutjahr, Gmel, & Rehm. 2001)

Table 3: Alcohol-attributable chronic disease categories and sources for determining risk relations including alcohol-attributable fractions (AAFs) and relative risks

Condition (ICD-10 code)	Relative Risks			References for meta-analysis or AAF
	Drinking Category I	Drinking Category II	Drinking Category III	
Heart failure and ill-defined complications of heart disease (I23, I25.0, I50 – I52, I97.0, I97.1, I98.1)†				
Cerebrovascular disease (I60 - I69)	M 0.97 W 0.70	M 1.08 W 0.80	M 1.76 W 1.96	(Reynolds, Lewis, Nolen, Kinney, Sathya, & He. 2003)
<i>Ischaemic stroke (I60 - I62)</i>	<i>M 0.94 W 0.66</i>	<i>M 1.13 W 0.84</i>	<i>M 1.19 W 1.53</i>	<i>(Reynolds, Lewis, Nolen, Kinney, Sathya, & He. 2003)</i>
<i>Haemorrhagic stroke (I63 - I66)</i>	<i>M 1.12 W 0.74</i>	<i>M 1.40 W 1.04</i>	<i>M 1.54 W 1.94</i>	<i>(Reynolds, Lewis, Nolen, Kinney, Sathya, & He. 2003)</i>
Oesophageal varices (I85)	M/W 1.26	M/W 9.54	M/W 9.54	(Gutjahr, Gmel, & Rehm. 2001)
Digestive diseases				
Alcoholic gastritis (K29.2)				100% AAF per definition
Cirrhosis of the liver (K70, K74)	M/W 1.26	M/W 9.54	M/W 13.0	(Rehm, Room, Monteiro, et al. 2004)
Cholelithiasis (K80)	M/W 0.82	M/W 0.68	M/W 0.50	(Gutjahr, Gmel, & Rehm. 2001)
Acute and chronic pancreatitis (K85, K86.1)	M/W 1.30	M/W 1.80	M 3.20 W 1.80	(Corrao, Bagnardi, Zambon, & Arico. 1999)
Chronic pancreatitis (alcohol induced) (K86.0)				100% AAF per definition

Note: Categories in *italic* are subcategories of cerebrovascular diseases.

†This is an unspecific category with no identification of underlying pathology, and the relationship between average volume of alcohol consumption cannot be determined by usual meta-analysis.

APPENDIX 2

Estimated effects of alcohol and tobacco^o on aerodigestive cancer risks

Tobacco consumption (cig/day)	Cancer types	Alcohol consumption (drinks/day)		
		0	>0-4	4 +*
0	Oropharynx	1‡	1.5	7.2
	Pharynx	1	1.7	12.6
	Larynx	1	1.4	4.5
	Esophagus†	1	1.4	4.2
>0-30	Oropharynx	1.3	2.0	9.7
	Pharynx	1.3	2.3	16.7
	Larynx	1.8	2.4	7.9
	Esophagus	1.4	1.8	5.6
30+*	Oropharynx	2.9	4.5	21.2
	Pharynx	2.8	4.8	35.6
	Larynx	7.7	10.6	34.6
	Esophagus	3.1	4.1	12.7

^oCategory midpoints were used for the estimation of OR.

*Midpoints for the upper categories : 55 cigarettes per day and 9.5 drinks per day.

†SCC and mixed cell type.

‡Reference category.

Source: A. Zeka *et al.* 2003. *Cancer Causes and Control*, v. 14

APPENDIX 3

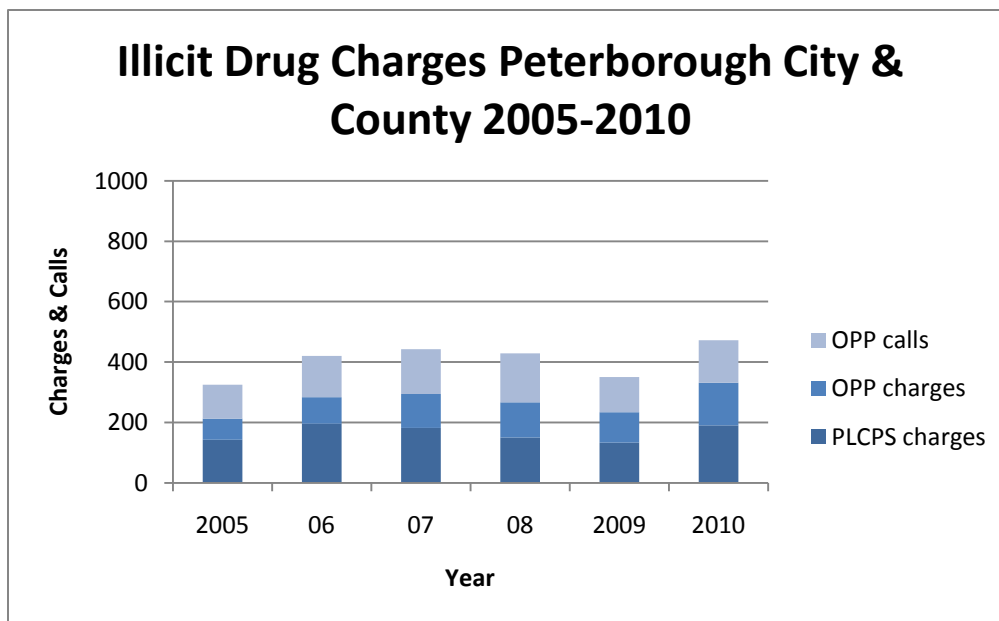
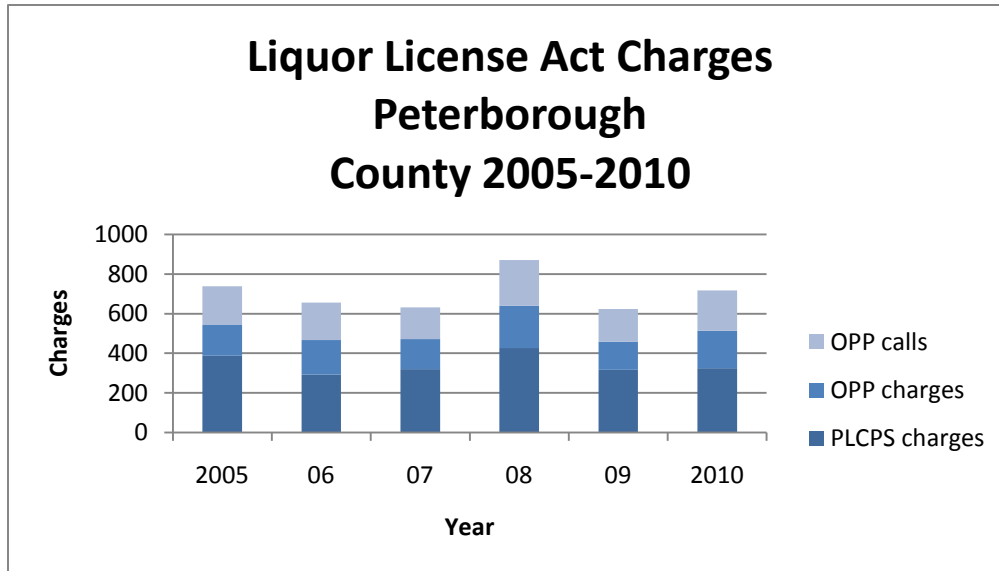
Most commonly coded substance misuse ED visits, Peterborough and Ontario; 2003-2009

Reason for Visit	Peterborough			Ontario		
	Males n (%)	Females n (%)	Total n (%)	Males n (%)	Females n (%)	Total n (%)
Acute alcohol intoxication	724 (33.5)	465 (38.5)	1,189 (35.3)	72,532 (35.8)	38,967 (39.8)	111,499 (37.1)
Harmful alcohol use	354 (15.0)	151 (12.5)	475 (14.1)	32,351 (15.9)	13,912 (14.2)	46,263 (15.4)
Alcohol use dependence syndrome	321 (14.9)	128 (10.6)	447 (13.3)	18,752 (9.2)	7,065 (7.2)	25,817 (8.6)
Alcohol use withdrawal state	177 (8.2)	73 (10.6)	250 (7.4)	19,303 (9.5)	5,552 (5.7)	24,855 (8.3)
Harmful cocaine use	110 (5.1)	57 (4.7)	167 (5.0)	8,900 (4.4)	4,006 (4.1)	12,906 (4.3)
Opioid use withdrawal state	85 (3.9)	78 (6.5)	163 (4.8)	5,054 (2.5)	3,696 (3.8)	8,750 (2.9)
Harmful use of multiple drugs	81 (3.7)	36 (3.0)	117 (3.5)	13,320 (6.6)	6,022 (6.1)	19,342 (6.4)
Multiple drug use withdrawal state	41 (1.9)	51 (4.2)	92 (2.7)	4,062 (2.0)	3,698 (3.8)	7,760 (2.6)
Multiple drug use dependence syndrome	60 (2.8)	30 (2.5)	90 (2.7)	5,386 (2.7)	3,041 (3.1)	8,427 (2.8)
Opioid use dependence syndrome	26 (1.2)	15 (1.2)	41 (1.2)	2,531 (1.2)	1,666 (1.7)	4,197 (1.4)

Source: *Emergency Department Data.* Ambulatory Hospital Data, IntelliHEALTH, Health Planning Branch, Ontario Ministry of Health and Long-Term Care.

Data retrieved using the International Classification of Diseases Version 10 (ICD-10) codes *F10-F19 – Mental and behavioural disorders due to psychoactive substances*, including all relevant sub-codes using the extraction variable “ICD10 (4 char) MPDx Code ONLY”; search query: Match pattern “F1%”

APPENDIX 4



Sources:

Farquharson, Tim, Inspector, PLCPS (2009). A Proactive Approach to Address the Community Drug Problem, Peterborough Lakefield Community Police Service (PLCPS) & Farquharson, Tim (2011) Year End--2010--Crime Statistics.

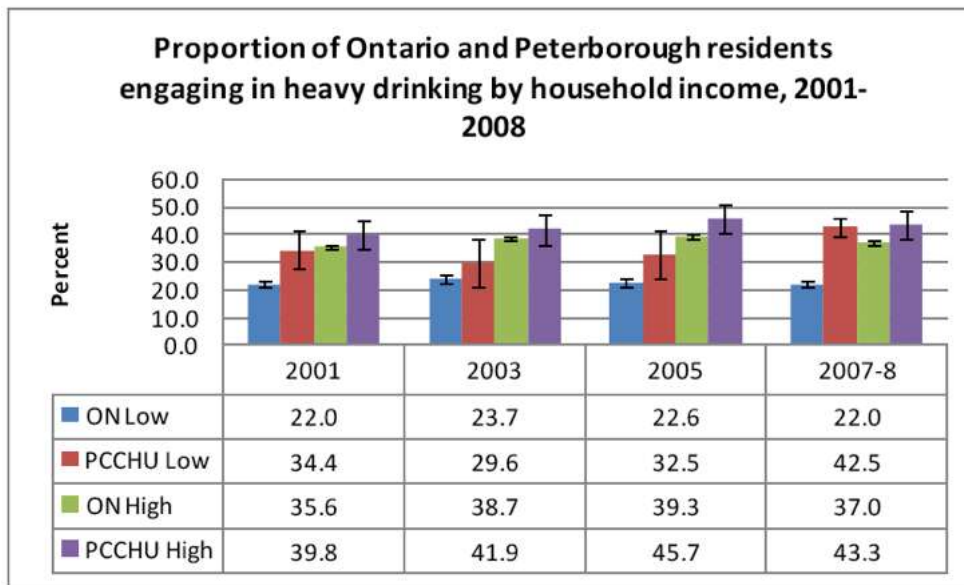
Martin, Jeff. A/S/Sgt Operations Manager Peterborough County O.P.P. (personal communication March 14, 2011).

APPENDIX 5

Alcohol Consumption in Different Demographics

Income

In Ontario, heavy drinking (having 5 or more drinks on at least one occasion in the past 12 months) is more often engaged in by high income individuals (37%) than low income individuals (22%).

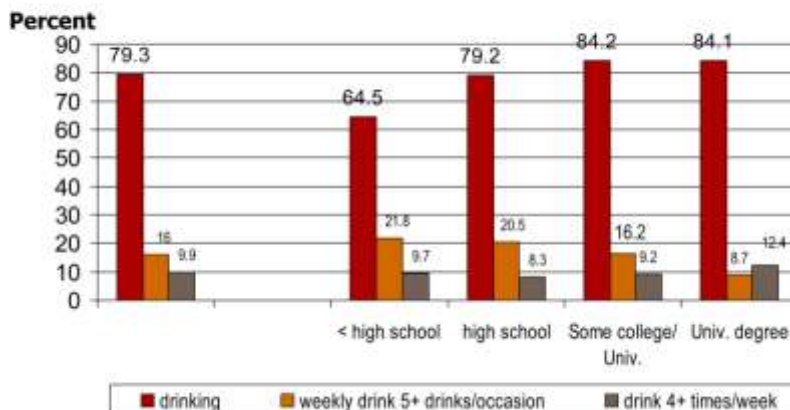


Source: CCHS2001---2008, Statistics Canada, Share File OMHLT

Education

The Canadian Addiction Study (2004) found that patterns of drinking differ for people with different levels of education. Those with a university degree reporting the highest frequency of drinking four or more time a week and the lowest rate of binge drinking; while the inverse was reported by those who had only attended high school (CCSA, 2005).

Percentage of Canadians drinking alcohol in the past 12 months – by education

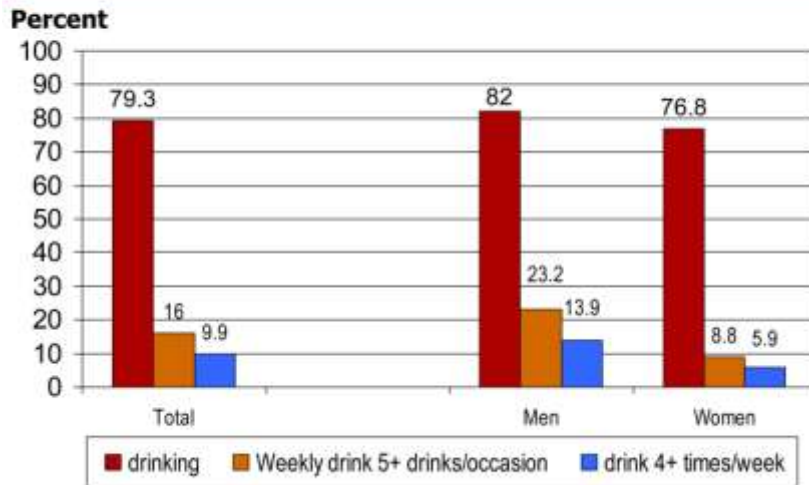


Source: Canadian Addiction Survey, 2004 (Canadian Centre on Substance Abuse 2005)

Gender

In general, men drink more alcohol and engage in occasion of heavy drinking more frequently than women.

Percentage of Canadians drinking alcohol in the past 12 months in 2004 – by sex



Source: Canadian Addiction Survey, 2004 (Canadian Centre on Substance Abuse 2005)

APPENDIX 6

Ratings of alcohol policy-relevant strategies & interventions

Policy – strategy	Effectiveness	Breadth of research support	Cross-cultural Testing	Cost to implement
Retail monopoly	+++	+++	++	Low
Restrict outlet density	++	+++	++	Low
Increase alcohol taxes	+++	+++	+++	Low
No service to intoxicated	+	+++	++	Moderate
Server liability	+++	+	+	Low
School programs	0	+++	++	High
Warning labels	0	+	+	Low
Min. legal purchase age	+++	+++	++	Low
Drivers <21 'zero tolerance'	+++	+++	++	Low
Brief intervention-at risk	++	+++	+++	Moderate

Source: Adapted from T. Babor et al, *Alcohol: No ordinary commodity (Table 16.1)*, 2003, by T. Greenfield, et al. 2007.

APPENDIX 7

Net Savings of Alcohol-Attributable Mortality, Years of Life Lost (YLLs) and Morbidity Due to Implementation of Selected Interventions in Canada (based on 2002)

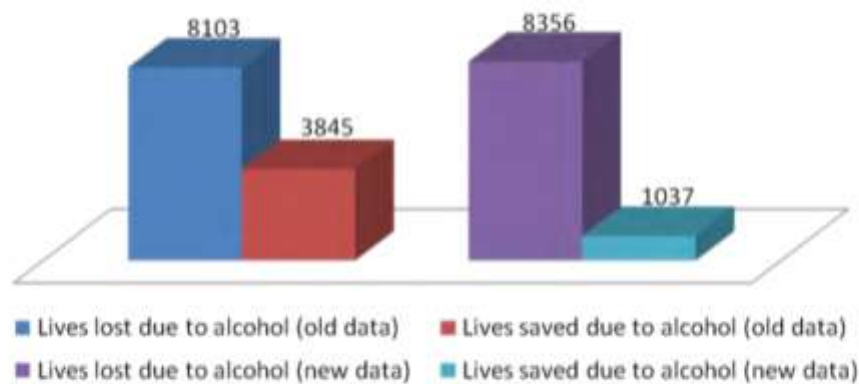
Selected Interventions	Mortality	YLLs	Acute care hospital days
Increase in alcohol taxes by 25%	2.7%	1.9%	2.3%
Lowering BAC from 0.08% to 0.05%: 12% reduction in collisions fatalities	4.1%	5.0%	0.2%
Zero BAC under age 21 years	0.7%	1.1%	0.1%
MLDA increased from 19 to 21 yrs	2.7%	3.4%	0.1%
Safer bars intervention: 10% of bar related crimes	0.0%	0.0%	0.0%
Brief interventions: 7.7% reductions in alcohol consumption among hazardous drinkers	8.5%	6.1%	4.5%
Privatization of alcohol retailing: 10% increase in alcohol consumption	-16.5%	- 8.4%	-8.2%
Relative change between baseline and all interventions [Privatization was excluded because the estimates present an additional burden not savings]	18.7%	17.4%	7.1%

Source: J. Rehm, W.H. Gnam, S. Popova, J. Patra, A. Sarnocinska-Hart (2008) *Avoidable Costs of Alcohol Abuse in Canada 2002*. Table 3. Centre for Addiction and Mental Health, Toronto.

APPENDIX 8

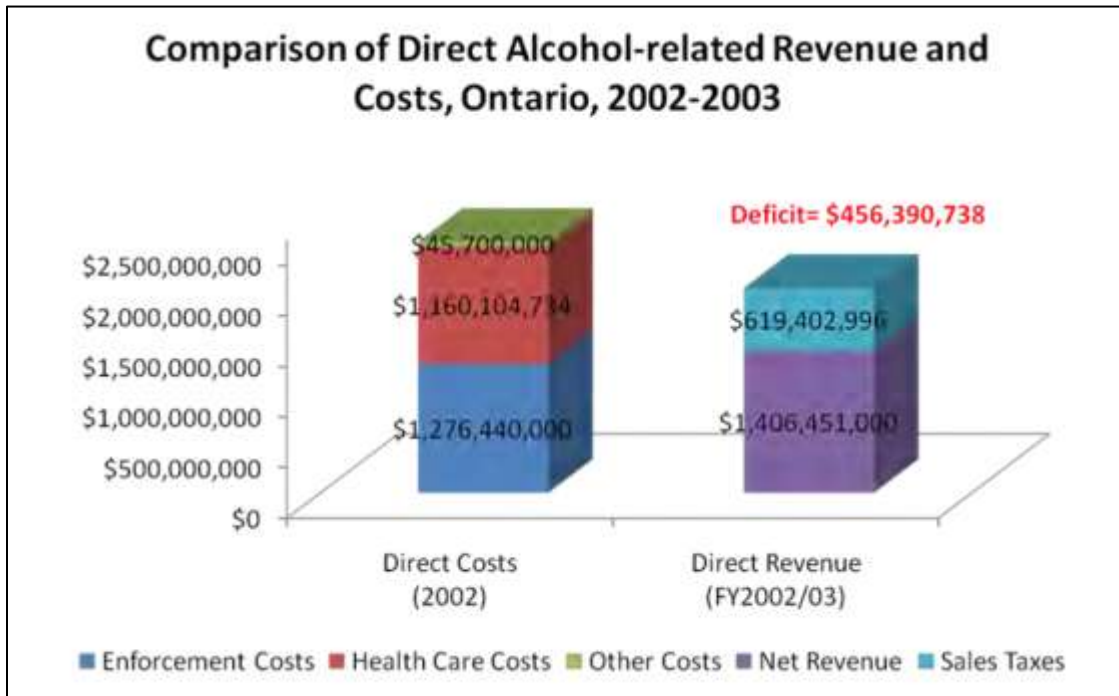
Some of the evidence tauting the health benefits of alcohol is based on flawed studies, for example, where former drinkers – who might have been heavy drinkers at one time – are lumped in with lifetime abstainers, thus inflating the risk of cardiovascular disease associated with the mislabelled abstainer group (CPHA, 2011). It is important to note that whatever potential benefits can be realized they do not apply to youth or young adults. For older adults, they can be achieved by other means. Furthermore, the potential benefits involve only modest amounts of alcohol of one or two “standard drinks” per day, or even less for women (CPHA, 2011).

Comparison of lives lost and lives saved due to alcohol under different assumptions, Canada, 2002



Source: Stockwell, T., Chikritzhs, T., Bostrom, A., Fillmore, K., Kerr, W. Rehm, J., et al. (2007). Alcohol-caused mortality in Australia and Canada: Scenario analyses using different assumptions about cardiac benefit. *Journal of studies on alcohol and drugs*, 68(3):345–352.

APPENDIX 9



Source: Thomas, Gerald. (2010). "What's the big deal about alcohol?" Presentation at Alcohol No Ordinary Commodity Forum 8.

REFERENCES

-
- ¹ Flegel, K.; MacDonald P.; Hébert, C. (2011). "Binge drinking: all too prevalent and hazardous". *Canadian Medical Association Journal*. January 17, 2011.
- ² Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ³ World Health Organization. (2011). Global status report on alcohol and health. Geneva: World Health Organization. Retrieved from: www.who.int/substance_abuse/terminology/who_lexicon/en/ (Accessed June 5, 2011).
- ⁴ Rehm, J., Mathers, C., Popova, S., Thavorncharoensap, M., Teerawattananon, Y. and Patra, J. (2009a). "Alcohol and Global Health 1: Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders," *The Lancet* 373: 2223–33.
- ⁵ Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁶ Rehm J, Baliunas D, Borges GL, Graham K, Irving H, Kehoe T, Parry CD, Patra J, Popova S, Poznyak V, Roerecke M, Room R, Samokhvalov AV, Taylor B. (2010). "The relation between different dimensions of alcohol consumption and burden of disease: an overview." *Addiction*. 2010 May;105(5):817-43. Epub 2010 Mar 15.
- ⁷ Roerecke, Michael; Haydon, Emma; Giesbrecht, Norman. (2007). *Alcohol and Chronic Disease: An Ontario Perspective*. Toronto: Alcohol Policy Network, Ontario Public Health Association.
- ⁸ Rehm J, Baliunas D, Borges GL, Graham K, Irving H, Kehoe T, Parry CD, Patra J, Popova S, Poznyak V, Roerecke M, Room R, Samokhvalov AV, Taylor B. (2010). "The relation between different dimensions of alcohol consumption and burden of disease: an overview." *Addiction*. 2010 May;105(5):817-43. Epub 2010 Mar 15.
- ⁹ Roerecke, Michael; Haydon, Emma; Giesbrecht, Norman. (2007). *Alcohol and Chronic Disease: An Ontario Perspective*. Toronto: Alcohol Policy Network, Ontario Public Health Association.
- ¹⁰ Manafò, Elizabeth & Giesbrecht, Norman. (2011). *Alcohol, Cancer and other Health Issues: An Action Plan for Prevention*. Toronto, ON: Toronto Cancer Prevention Coalition.
- ¹¹ Roerecke, Michael; Haydon, Emma; Giesbrecht, Norman. (2007). *Alcohol and Chronic Disease: An Ontario Perspective*. Toronto: Alcohol Policy Network, Ontario Public Health Association.

- ¹² International Agency for Research on Cancer (2007). ARC Monographs Volume 96, 6-13 February 2007. Report of Working Group.
- ¹³ Canadian Public Health Agency. (2011). Draft CPHA Position Statement on Alcohol. June 14, 2011.
- ¹⁴ Centre for Addiction and Mental Health. (2010). Alcohol and chronic health problems. Retrieved from:
[http://www.camh.net/About Addiction Mental Health/Drug and Addiction Information/alcohol_chronic_health.html](http://www.camh.net/About_Addiction_Mental_Health/Drug_and_Addiction_Information/alcohol_chronic_health.html).
- ¹⁵ Canadian Public Health Agency. (2011). Draft CPHA Position Statement on Alcohol. June 14, 2011.
- ¹⁶ Roerecke, Michael; Haydon, Emma; Giesbrecht, Norman. (2007). *Alcohol and Chronic Disease: An Ontario Perspective*. Toronto: Alcohol Policy Network, Ontario Public Health Association.
- ¹⁷ Centre for Addiction and Mental Health. (2010). Alcohol and chronic health problems. Retrieved from:
[http://www.camh.net/About Addiction Mental Health/Drug and Addiction Information/alcohol_chronic_health.html](http://www.camh.net/About_Addiction_Mental_Health/Drug_and_Addiction_Information/alcohol_chronic_health.html)
- ¹⁸ Giesbrecht, N. (2007). Trends in Alcohol Consumption and High Risk Drinking in Ontario 1996-2006: Implications for the Prevention of Alcohol-Related Cancer Presentation at Ten Years Later. Toronto Cancer Prevention Coalition 10th Anniversary Celebration, Toronto, November 6, 2008.
- ¹⁹ National Institute of Health. (2004). National Institute on alcohol abuse and alcoholism report on moderate drinking. *Alcoholism: Clinical and Experimental Research*, 28 (6), 829-847. Retrieved from Ovid, U of A library. Ontario Injury Prevention Resource Centre. (2008). Alcohol related injury: Evidence based practice synthesis document. Retrieved from:
<http://www.oninjuryresources.ca/downloads/misc/AlcoholReview-D8.pdf>
- ²⁰ Rose, Geoffrey; Khaw, Kay-Tee; Marmot, Michael. (2008). *Rose's Strategy of Preventive Medicine Updated Edition*. New York: Oxford University Press.
- ²¹ Ialomiteanu, A.; Adlaf, E.; Mann, R.; Rehm, J. (2011). CAMH Monitor eReport: Addiction and Mental health Indicators Among Ontario Adults, 1977-2009. CAMH Research Document Series No.31. Toronto: Centre for Addiction and Mental Health.
- ²² Ontario Injury Prevention Resource Centre. (2008). Alcohol related injury: Evidence based practice synthesis document. Retrieved from:
<http://www.oninjuryresources.ca/downloads/misc/AlcoholReview-D8.pdf>
- ²³ Peterborough County-City Health Unit. (2011). Briefing Note: Substance misuse related emergency department visits.

²⁴Clarke, Peter, Regional Coroner for the Central East Region. Personal Communication, September 2010.

²⁵Ibid.

²⁶Canadian Public Health Agency (2011). Draft CPHA Position Statement on Alcohol. June 14, 2011.

²⁷Ministry of Transportation. (2010). *Ontario road safety report, driver condition by class of collision 2002-2006*, Peterborough County-specific data supplied by Paul Allore, Ministry of Transportation.

²⁸Ontario Injury Prevention Resource Centre (2008b, December). Snowmobiling Injuries. *Compass: An analysis of Injury Statistics in Ontario*, 5 (12). Retrieved from:
<http://www.oninjuryresources.ca/downloads/Compass/2009/2008-11-01CompassSnowmobiles%3C5.pdf>

²⁹ Ibid.

³⁰ Solomon, R.; Organ, J; Abdoullaeva, M.; Gwyer, L.; Chiodo, S. (2009). *Alcohol, Trauma and Impaired Driving* 4th edition, 2009. Oakville, ON: MADD Canada. Retrieved from:
http://www.madd.ca/english/research/real_facts.pdf

³¹Ibid.

³²Ontario Injury Prevention Resource Centre. (2009, September). Drowning and near drowning. *Compass: An analysis of Injury Statistics in Ontario*, 6 (9). Retrieved from:
<http://www.oninjuryresources.ca/downloads/Compass/2009/2009-09-01Compass-Drowning%3C5.pdf>

³³US Fire Administration (2003) (USFA)/National Fire Data Center, "Case Study: Contribution of Alcohol to Fire Fatalities in Ontario" (2003) 3(5) Topical Fire Research Series. Retrieved from:
<http://www.usfa.fema.gov/downloads/pdf/tfrs/v3i5.pdf>

³⁴ Adlaf, E., Demers, A., and Gliksman, L. (2005). *Canadian Campus Survey 2004*. Toronto, ON: Centre for Addiction and Mental Health. Retrieved from:
http://www.camh.net/Research/Areas_of_research/Population_Life_Course_Studies/CCS_2004_report.pdf

³⁵ Statistics Canada (2006). *Statistical Trends: Alcohol abuse. Measuring Violence Against Women*. Catalogue no. 85-50-XIE. Ottawa, ON: Statistics Canada.

³⁶ Farquharson, Tim (2009). *A Proactive Approach to Address the Community Drug Problem*, Peterborough Lakefield Community Police Service. (Analysis of Victim Services 200 reported cases in 2007).

- ³⁷ Abbey, Antonia; Zawacki, Tina; Buck, Philip O.; Clinton, Monique A.; and Pam McAuslan. (2001). "Alcohol and Sexual Assault" Alcohol Health and Research World Volume 25, Number 1; National Institute on Alcohol Abuse and Alcoholism (NIAAA).
- ³⁸ Adlaf, E.M., Begin, P., & Sawka, E. (2005). Canadian Addiction Survey (CAS): A national survey of Canadians' use of alcohol and other drugs: Prevalence of use and related harms: Detailed report. Ottawa: Canadian Centre on Substance Abuse. Retrieved from: <http://www.ccsa.ca/2005%20CCSA%20Documents/ccsa-004028-2005.pdf>.
- ³⁹ Canadian Public Health Agency. (2011). Draft CPHA Position Statement on Alcohol. June 14, 2011.
- ⁴⁰ Goh, Y.I., Hutson, J.R., Lum, L., Roukema, H., Gareri, J., Lynn, H. & Koren, K. (2010). Rates of fetal alcohol exposure in newborns in a high-risk obstetric unit. *Alcohol*, 44, 7-8 p.629-634.
- ⁴¹ Sarnocinska-Hart, Anna & Strike, Carol, (July 2008). The Costs of Alcohol and Illicit Drug Abuse and Mental Illness in CE LHIN, 2007, Centre for Addiction and Mental Health.
- ⁴² Ministry of Transportation. (2009). Ontario Road Safety Annual Report (ORSAR) 2008. Toronto: Ministry of Transportation. Retrieved from: <http://www.mto.gov.on.ca/english/safety/orsar/orsar08/minister-message.shtml>
- ⁴³ Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R., and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁴⁴ Peterborough County-City Health Unit (2011). *Smoking Profile for a Sampling of Peterborough Area High Schools*. Waterloo, ON: Propel Centre for Population Health Impact.
- ⁴⁵ Peterborough County-City Health Unit (2010). *Community Assessment Report 2010: prepared for the purposes of Healthy Communities*. Peterborough, ON.
- ⁴⁶ Canadian Mental Health Association (2009). Low Risk Drinking Guidelines. Retrieved from: http://camh.net/About_Addiction_Mental_Health/Drug_and_Addiction_Information/low_risk_drinking_guidelines.html
- ⁴⁷ Tjepkema, M. (2004). Alcohol and illicit drug dependence (Statistics Canada Catalogue No. 82-003). *Supplement to Health Reports*, 15, 9 –19.
- ⁴⁸ Flegel, K.; MacDonald P.; Hébert, C. (2011). "Binge drinking: all too prevalent and hazardous". *Canadian Medical Association Journal*. January 17, 2011.
- ⁴⁹ Murray, R. P., Connett, J. E., Tyas, S. L., Bond, R., Ekuma, O., Silversides, C. K. & Barnes, G. E. (2002). Alcohol volume, drinking pattern, and cardiovascular disease morbidity and mortality: Is there a u-shaped function? *American Journal of Epidemiology*, 155 (3), 242- 248.

- ⁵⁰Flegel, K.; MacDonald P.; Hébert, C. (2011). "Binge drinking: all too prevalent and hazardous". *Canadian Medical Association Journal*. January 17, 2011.
- ⁵¹Public Health Division Ministry of Health and Long-term Care. (August 2009). Initial Report on Public Health. Retrieved from:
http://www.health.gov.on.ca/english/public/pub/pubhealth/init_report/pdfs/initial_rep_on_public_health_rep_20090821.pdf
- ⁵²McCoy, T. P., Rhodes, S., Wagoner, A., & Wolfson, M. (2007, November 6). Energy drink 'cocktails' lead to injury risk, study shows." *ScienceDaily*. Retrieved from:
<http://www.sciencedaily.com/releases/2007/11/071104191538.htm>
- ⁵³Ferreira, S.E., de Mello, T., Pompéia, S., & de Souza-Formigoni, M.L.O. (2006). Effects of energy drink ingestion on alcohol intoxication. *Alcoholism: Clinical and Experimental Research*, 30 (4), 598-605.
- ⁵⁴Ramstedt, M. 2003. "Alcohol Consumption and Liver Cirrhosis Mortality With and Without the Mention of Alcohol – the Case of Canada," *Addiction* 98: 1267-1276.
- ⁵⁵Skog, O.J. (2003). "Alcohol consumption and fatal accidents in Canada, 1950-98". *Addiction* 2003 Jul;98(7):883-93.
- ⁵⁶Stockwell, T. Chao, J., Macdonald. S. *et al.* (2011). "Impact on alcohol-related mortality of a rapid rise in density of private liquor outlets in British Columbia: a local area multi-level analysis," *Addiction*. doi: 10.1111/j.1360-0443.2010.0331.x
- ⁵⁷ Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R.. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁵⁸Canadian Public Health Agency. (2011). Draft CPHA Position Statement on Alcohol. June 14, 2011.
- ⁵⁹Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R.. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁶⁰Manafò, Elizabeth & Giesbrecht, Norman (2011). Alcohol, Cancer and other Health Issues: A n Action Plan for Prevention. Toronto, ON: Toronto Cancer Prevention Coalition.
- ⁶¹Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁶² Ibid.

- ⁶³Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁶⁴Alcohol and Gaming Commission of Ontario. (2011). "Liquor Licence Act Regulatory Reform" *Licence Line Special Edition, Summer 2011*. Toronto: Alcohol and Gaming Commission of Ontario.
- ⁶⁵Wong, T. (2011). "Who needs the Caribbean? Downtown Toronto will do fine" *Toronto Star*, July 21, 2011.
- ⁶⁶Vingilis, E., McLeod, A. I., Stoduto, G., Seeley, J. & Mann, R. E. (2007). Impact of extended drinking hours in Ontario on motor-vehicle collision and non-motor-vehicle collision injuries. *Journal of Studies on Alcohol and Drugs*, 68(6). 905-911.
- ⁶⁷Statistics Canada. (2008, etc.) The control and sale of alcoholic beverages. Ottawa.
- ⁶⁸Zalcman, F. and Mann, R. (2007) Effects of privatization of alcohol sales in Alberta on suicide mortality rates. *Contemporary Drug Problems*, 34: 589-605.
- ⁶⁹Laxer, G., *et al.* (1994) *Out of Control: Paying the price for privatizing Alberta's Liquor Control Board*. Canadian Centre for Policy Alternatives, Ottawa.
- ⁷⁰Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁷¹Canadian Public Health Agency. (2011). Draft CPHA Position Statement on Alcohol. June 14, 2011.
- ⁷²Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011.
- ⁷³Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). *Alcohol: No ordinary commodity – research and public policy*, revised edition. Oxford: Oxford University Press.
- ⁷⁴Jernigan, D.H. (2010). "The extent of global alcohol marketing and its impact on youth," *Contemporary Drug Problems* 37: 57-90.
- ⁷⁵Giesbrecht, N. (2007). *Trends in Alcohol Consumption and High Risk Drinking in Ontario 1996-2006: Implications for the Prevention of Alcohol-Related Cancer Presentation at Ten Years Later*. Toronto Cancer Prevention Coalition 10th Anniversary Celebration, Toronto, November 6, 2008.

- ⁷⁶Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁷⁷Alcohol and Gaming Commission Of Ontario. (2011.) Alcohol and Gaming Commission Of Ontario Liquor Advertising Guidelines: Liquor Sales Licensees And Manufacturers. Toronto: Alcohol and Gaming Commission Of Ontario. August 2011. Retrieved from: http://www.agco.on.ca/pdfs/en/guides/3099_a.pdf
- ⁷⁸ Advertising Standard of Canada. *Gender Portrayal Guidelines*.p. 1. Retrieved from, <http://www.adstandards.com/en/Standards/genderPortrayalGuidelines.aspx>
- ⁷⁹Thomas, Gerald. (2010). "What's the big deal about alcohol?" Presentation at Alcohol No Ordinary Commodity Forum 8.
- ⁸⁰Manafò, Elizabeth & Giesbrecht, Norman (2011). Alcohol, Cancer and other Health Issues: A n Actlon Plan for Prevention. Toronto, ON: Toronto Cancer Prevention Coalition.
- ⁸¹Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁸² Sawka, E., Liepold H., Lockhart, N., Song, S. & Thomas, G. (2007). Reducing Alcohol-Related Harm in Canada: Toward a Culture of Moderation. Synopsis of a Proposed National Alcohol Strategy. National Alcohol Strategy Working Group.
- ⁸³ Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁸⁴Wagenaar, A., Salois, M. and Komro, K. (2009). "Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies," *Addiction* 104(2):179-90.
- ⁸⁵Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁸⁶Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). Alcohol: No ordinary commodity – research and public policy, revised edition. Oxford: Oxford University Press.

- ⁸⁷Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁸⁸Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). Alcohol: No ordinary commodity – research and public policy, revised edition. Oxford: Oxford University Press.
- ⁸⁹Manafò, Elizabeth & Giesbrecht, Norman (2011). Alcohol, Cancer and other Health Issues: An Action Plan for Prevention. Toronto, ON: Toronto Cancer Prevention Coalition.
- ⁹⁰Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R.. and Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. Feb. 7. 2011. Giesbrecht et al, 2011.
- ⁹¹Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). Alcohol: No ordinary commodity – research and public policy, revised edition. Oxford: Oxford University Press.
- ⁹²Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). Alcohol: No ordinary commodity – research and public policy, revised edition. Oxford: Oxford University Press.
- ⁹³Thomas, Gerald. (2010). "What's the big deal about alcohol?" Presentation at Alcohol No Ordinary Commodity Forum 8.
- ⁹⁴Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). Alcohol: No ordinary commodity – research and public policy, revised edition. Oxford: Oxford University Press.
- ⁹⁵Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.
- ⁹⁶Ibid.
- ⁹⁷Ibid.

- ⁹⁸Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Grube, J., Hill, L., Holder, H., Homel, R., Livingstone, M., Österberg, E., Rehm, J., Room, R. and Rossow, I. (2010). *Alcohol: No ordinary commodity – research and public policy*, revised edition. Oxford: Oxford University Press.
- ⁹⁹Groff, P. (2009). *Alcohol and Injuries: Research into practical application*. Presentation to Alcohol: No Ordinary Commodity Forum 6, March 5, 2009: Toronto, ON.
- ¹⁰⁰Manafa, Elizabeth & Giesbrecht, Norman (2011). *Alcohol, Cancer and other Health Issues: An Action Plan for Prevention*. Toronto, ON: Toronto Cancer Prevention Coalition.
- ¹⁰¹Giesbrecht, N., Stockwell, T., Kendall, P., Strang, R. & Thomas, G. (2011). "Alcohol in Canada: Reducing the toll through focused interventions and public health policies," *Canadian Medical Association Journal*. February 7, 2011.