

The case for parity in alcohol and cannabis beverage marketing, promotion, and distribution in Canada



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Executive Summary

Research data shows the consumption of alcoholic beverages adversely affects the Canadian economy to the amount of \$14.5 billion annually in health care, criminal justice, and lost productivity costs – a staggering 14 times the costs for cannabis (\$1 billion). As a known carcinogen, alcohol has been directly linked to many chronic health conditions, including cancer, diabetes, and liver disease, among others.

In October 2018, Canada enacted The Cannabis Act, allowing the legalization of recreational use of cannabis in bud and flower format. As the first G7 nation to federally legalize cannabis use, Canada has elected to further introduce legislation regarding edibles, ingestible products containing cannabis, but delayed its enactment up to 12 months later.

Harmful impact of alcohol: \$14 billion
vs. harmful impact of cannabis: \$1 billion

Cannabis is a substance with epidemiological evidence to support its use as an alcohol substitute. With many medicinal and therapeutic applications, using the more than 100 known cannabinoids (CBD's) of the plant, cannabis currently behaves as an alternative to polypharmacological health treatments. Use as a psychoactive ingredient in edibles with the inclusion of tetrahydrocannabinol (THC) transforms cannabis into a social stimulant in addition to the aforementioned medicinal effects.

The federal government's stated policy objectives for cannabis are driven by the dual aims of harm reduction and health protection, in addition to eliminating the black market. These aims will help to improve the effectiveness of limiting and restricting youth consumption, and reduce the impact of illegal activities, and their respective harms to society.

**Cannabis-infused beverages can
play an important role in Canada's
harm reduction and health protection strategies**

Harm reduction is a key objective of the Canadian government when considering alcohol use and abuse. Spanning several years of data collection, recommendations for the reduction of consumption have not considered the possibility of cannabis as an alternate beverage, as this was not legally possible at the time. With the opportunity to now offer healthier, less harmful beverages infused with cannabis, this document will demonstrate the many ways that these cannabis-infused beverages can play an important role in Canada's harm reduction and health protection strategies.

Central to the success of these policies is the requirement to make cannabis-infused beverages accessible to consumers in a convenient and open manner while controlling access to minors. This document recommends selling cannabis beverages alongside federally and provincially regulated alcohol products in the same retail environments. Liquor stores, beer stores, grocery stores, agencies, and restaurants should offer beverages containing cannabis as an alternative to their alcoholic counterparts.

Selling cannabis-infused beverages alongside alcohol products could save the Canadian government **\$4 billion annually**

Economically, allowing cannabis-infused and alcoholic products to co-exist on retail shelves together will produce a potential cost savings to the Canadian government in the region of \$4 billion annually.

Background

Use of alcohol in human culture dates back several thousand years, and archeological remains of its production exist in many regions globally. Arguably, for as long as people have used alcohol as a stimulant, it has also had the propensity to foster abuse, harmful health effects, and cause death. It has evolved into a large part of the social fabric, enjoyed with impunity in many cultures. While socially acceptable to consume alcohol, its use was called into question in the early part of the twentieth century, when alcohol underwent a period of legally restricted use. This period of Prohibition was short-lived, and alcohol has remained a legal substance ever since.

Cannabis has been documented as a medicinal botanical element as early 2737 B.C., according to Chinese legend.[i] Used to treat various medical conditions, cannabis' potency and use have produced stimulant effects and have been used for varying purposes for many years. Culturally, cannabis consumption has also been accepted in some regions of the world as a safe stimulant.

Yet cannabis' classification by the World Health Organization (WHO) as a Schedule 1 narcotic, alongside substances such as LSD and heroin, has historically relegated it to a prohibited product in many countries, including Canada. While medical use has been permitted in Canada since July 2001, the federal government waited until October 2018 to pass legislation in Canada allowing for recreational consumption of cannabis.[ii] With this federal change, Canada allows for use and decriminalization of the possession of the product, and strict controls remain in place for many elements of its availability, including permitted amounts, delivery, dosage, and format.

Intent

The intent of this document is to present evidence-based facts to support the opinion that, as a societal harm reduction strategy, **cannabis-infused, adult format beverages should be granted selling rights in all locations where alcohol is legally allowed to be sold in Canada.**

The *National Alcohol Strategy of the Canadian Government to moderate alcohol use* outlines the national need for alcohol use to be minimized. Cannabis-infused beverages can provide an alternative choice for Canadians that will offer stimulation similar to alcohol, but with far fewer negative health and societal impacts.[iii] Every time a consumer chooses a beverage infused with cannabis instead of alcohol, Canada's societal costs and harms will be reduced.

Alcohol as a harmful substance - reference materials

In September 2018, the WHO released the *Global Status Report on Alcohol and Health 2018* about the impacts of alcohol consumption around the globe.[iv]

This report follows a correlational study *Alcohol use and burden for 195 countries and territories 1900-2016; a systematic analysis for the Global Burden of Disease Study 2016* released by medical journal The Lancet which describes the safe consumption levels of alcohol to minimize harmful impact.[v]

In June 2018 the Canadian Centre for Substance Abuse and the University of Victoria's Canadian Institute for Substance Use Research released a new report, *Canadian Substance Use Costs and Harms (2007-2014)*, covering many substances including alcohol, tobacco, cannabis, opioids, depressants, and other substances.[vi]

Unlike alcohol, cannabis offers medicinal, therapeutic, and social benefits, as well as societal harm reduction options

These references and others will be used to frame the concept that while alcohol is a legal and widely available substance, it causes greater harm to Canadian society from health, criminal justice, and economic perspectives than any other substance due its wide use, toxicity, and its specific effects on human physiology.

Cannabis, by comparison, offers medicinal, therapeutic, and social benefits, as well as societal harm reduction options when offered as an alternative to alcohol, and offers potential for significant reduction in public and human costs of substance abuse.

World Health Organization World Status report on Alcohol 2018

The release of the World Status report on Alcohol 2018 found more evidence than ever before that alcohol consumption has serious harmful impact. Yet there has also been a marked increase (16%) in liquor consumption during the period of 2005 to 2015.

“Within the age group of persons aged 15 and above, the worldwide per capita ingestion rate increased from 5.5 litres of pure alcohol in 2005 to 6.4 litres in 2016. It is projected that these rates will rise again during the period from 2016-2025. The average world consumption level is considered to be about 7 litres per capita.” (Note: pure alcohol measures the alcohol content from consumable beverages such as beer and wine.)

Further information from this report will demonstrate the harmful effects of alcohol in greater detail.

The Lancet

Published in August 2018, medical journal *The Lancet* released a study detailing alcohol impact on illnesses and death, which concludes there is no safe level of alcoholic intake to mitigate health risk.

The correlational study spanned 195 locations from 1990 to 2016, using 694 data sources of individual and population-level consumption, and 592 prospective and retrospective studies on the risk of alcohol use. Determining that the standard daily consumption level for the subject group would be 10 g of pure ethyl alcohol, researchers examined alcohol-attributed deaths and disability-adjusted deaths (DALYs). The researchers released improved estimates of alcohol use attributable deaths as well as DALYs, across a subject group aged 15 and older.

Alcohol use was the seventh leading cause of death and disability in 2016

The study found alcohol use was the seventh leading cause of death and disability globally in 2016. Among those aged 15-49 years, alcohol use was the leading global factor for risk-attributable disease burden, although the degree to which this applied varied by sex, age and the standard deviation index. Of note, the study does contemplate the protective effects of alcohol use on conditions like ischemic heart disease and diabetes in females; however, the study concludes these protective effects were offset by the risks associated with cancers, which increased with higher alcohol intake.

The researchers' findings indicate a higher health loss risk for men than women, with the attributable health burden for males charting three times more than for females. The study concluded that, upon evaluation of all of the associated risks, consuming zero standard (10 g) drinks per day is the only way to minimize the overall health risk.

As found within the context of the study:

"Failing to address harms from alcohol use, particularly at high levels of consumption, can have dire effects on population health. ... High and high-to-middle SDI locations [countries] need to consider stronger alcohol reduction policies, such as those recommended by WHO, in an effort to reduce population-level consumption."

"Conclusion

Alcohol use is a leading risk factor for disease burden worldwide, accounting for nearly 10% of global deaths among populations aged 15-49 years, and poses dire ramifications for future population health in the absence of policy action today. The widely held view of the health benefits of alcohol needs revising, particularly as improved methods and analyses continue to show how much alcohol use contributes to global death and disability. Our results show that the safest level of drinking is none. This level is in conflict with most health guidelines, which espouse health benefits associated with consuming up to two drinks per day. Alcohol use contributes to health loss from many causes and exacts its toll across the lifespan, particularly among men. Policies that focus on reducing population-level consumption will be the most effective in reducing the health loss from alcohol use."^[vii]

Canadian Substance Use and Harms (2007-2014)

Canada has developed a *National Alcohol Strategy* to deal with the many types of harm caused by alcohol. Identified as a national priority for action, alcohol is noted as the substance that causes the most harm to Canadians next to tobacco, with over \$14.5 billion in total costs for alcohol, compared to tobacco's \$12 billion. Over-consumption of alcohol can lead to chronic health conditions, injury, disease and death.

The safest level of drinking alcohol is none

As early as 2005, calls to action have been published surrounding mitigating the harmful impact of alcohol. In the *National Framework for Action to Reduce the Harms Associated with Alcohol and Other Drugs and Substances in Canada*, directives were delivered to drastically reduce the burdens associated with consumption.^[viii]

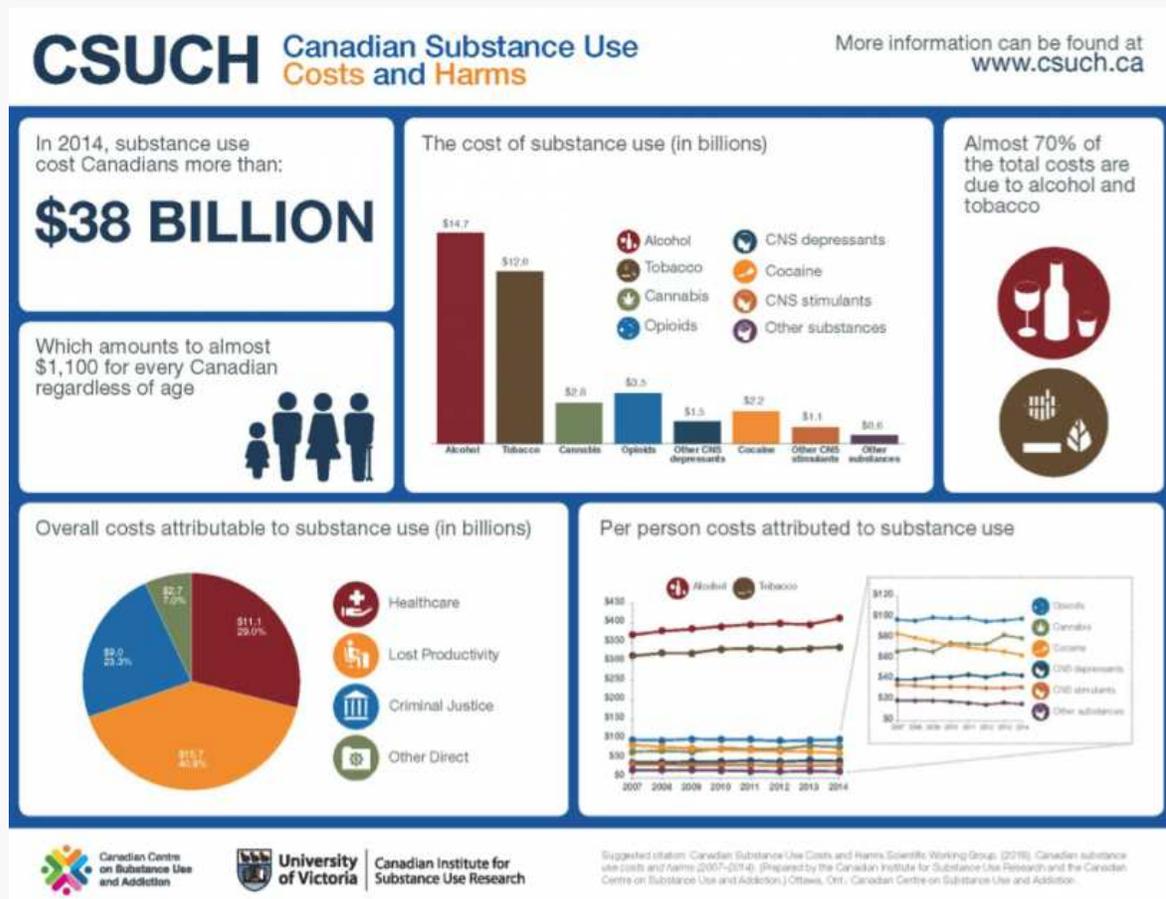
Focusing on the Canadian demographic, the CCSUH study delivered several key points:

- o Alcohol is by far the most common drug used by Canadians.
- o At least 20% of drinkers consume above Canada's Low Risk Alcohol Drinking Guidelines.
- o The use and risky use of alcohol by underage and young adults appears to be declining.
- o In Canada, there were around 77,000 hospitalizations entirely caused by alcohol in 2015-2016, compared to 75,000 hospitalizations for heart attacks in the same year.
- o In 2002, alcohol was responsible for 4,258 deaths in Canada, representing 1.9% of all deaths.[ix]

Alcohol accounted for **\$14.7 billion (39%)** of the \$38 billion abuse burden to Canadians

The Centre, together with the University of Victoria's Canadian Institute for Substance Use Research compiled data on the costs and harm of all substance abuse in Canada as at 2014.

The following chart summarizes the study's highlights.



Cannabis Use and Harm, from the same data, finds:

- o In 2014, cannabis use contributed \$2.8 billion (7.3%) to the overall cost of substance abuse.
- o Between 2007 and 2014, per person costs increased by 19.1% for cannabis
- o Between 2007 and 2014, cannabis-related healthcare costs increased by 27.9%
- o In 2015, cannabis was responsible for the third highest substance use-related crime costs (\$1.8 billion or 19.7%), of which 60% of costs were associated with violations of the *Controlled Drugs and Substances Act*.^[x]

When considering the health protection policy aims of Health Canada, we should focus on the cost of cannabis excluding criminal justice costs, as these costs will largely be eliminated in due course as a result of the recent legalization of the substance. This means the societal cost of cannabis should be measured as \$2.8 billion total cost, minus \$1.8 billion in criminal justice costs, for a total burden going forward of \$1 billion.

Further, according to the Colorado State Department of Criminal Justice, the legalization of cannabis in Colorado has resulted in reductions in treatment admissions over the past ten years, with the most significant reductions among the 18-20 year old age group, from 781 to 451 admissions per 100,000 people, representing a 42% decline.^[xi]

Use and abuse of alcohol in Canada



● Beer ● Wine
● Spirits
● Ciders, coolers, other

“According to the *Control and Sale of Alcoholic Beverages* report, in 2015–2016, 41.5% of the absolute value for total per capita sales in Canada was consumed in the form of beer, followed by 31.6% of wine, 23.1% in spirits and 3.8% in ciders, coolers and other refreshment beverages.

Liquor stores, agencies and other retail outlets sold 2,286 million litres of beer, equivalent to 229.5 bottles of beer per person over the legal drinking age in Canada (1 bottle = 341 ml, 5% alcohol content).^[xii]

Canada’s Low Risk Alcohol Drinking Guideline, developed in 2011 recommends that women should consume no greater than 2 drinks per day, 10 per week, and men should take no more than three drinks per day or 15 per week.

To reduce the acute alcohol-related harm risk, women should not exceed 3 drinks and men 4 drinks (referred to as binge drinking) on any single occasion. Higher ingestion levels are associated with an increased risk of multiple chronic health diseases, such as cancer, liver cirrhosis, heart disease and diabetes. Acute problems including violence, injuries and suicide arise with the use and abuse of alcohol, which contribute to the societal harm caused by alcohol.

Consumption data

Data taken from the 2015 *Canadian Tobacco, Alcohol and Drugs Survey* (CTADS) indicates that 77% (23 million) of Canadians aged 15 and up self-reported consuming alcohol at least once in the past year. The report finds that alcohol is the highest used substance in Canada.

According to the following chart, taken from the report, alcohol ranks as the highest usage against all age categories.

	#1	#2	#3	#4	#5
General Population (15 and over)	Alcohol (76.9%)	Cannabis (12.3%)	Cocaine/Crack Hallucinogens & Salvia (1.2%)	Ecstasy (0.7%)	Pharmaceuticals to get high† (0.5%)*
Youth (15-24)	Alcohol (71.8%)	Cannabis (25.5%)	Cocaine/Crack (3.5%)*	Ecstasy (3.4%)*	Hallucinogens & Salvia (2.7%)*
Adults (25 and over)	Alcohol (77.8%)	Cannabis (9.9%)	Hallucinogens & Salvia (0.9%)*	Cocaine/Crack (0.8%)*	Pharmaceuticals to get high (0.3%)*

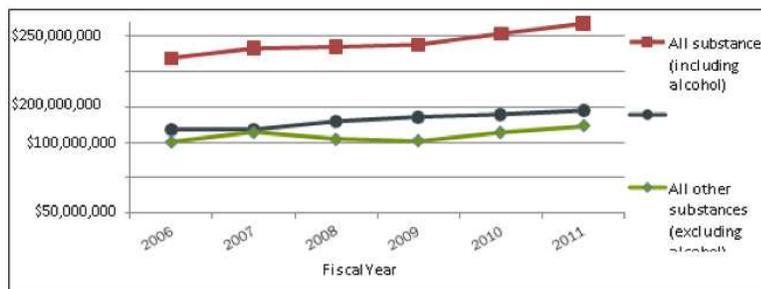
Source: CTADS, 2015

Note: Figures identified with an asterisk (*) should be interpreted with caution because of the small sample size.

Health implications

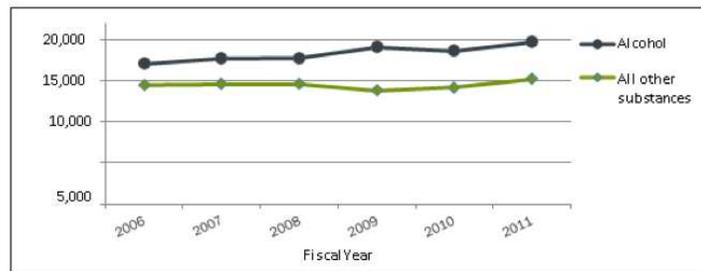
As previously noted, hospitalizations directly related to alcohol consumption amounted to 77,000 cases in Canada in 2015-2016. CCDUS reports also hospitalizations and the greatest use of hospital resources relate to those with a primary diagnosis of alcohol-related disorders in terms of number of stays, days in care, and related costs. In 2011, alcohol-specific admissions for mental health were the highest drain on hospital resources versus all other substance abuse disorders taken together.

Cost associated with hospitalizations for those with a primary diagnosis of mental and behavioral disorder due to use of alcohol versus all other substances excluding alcohol



Source: CCSA, *The Impact of Substance Use Disorders on Hospital Use*, 2014
[Retrieved from Canadian Drug Summary: Alcohol]

Number of all hospital stays with primary diagnosis of mental and behavioural disorder due to use of alcohol compared to all other substances



Note: Number of stays for all other substances, excluding alcohol, includes all disorder categories (cocaine, opioids, cannabinoids, other stimulants, sedatives or hypnotics, hallucinogens and volatile solvents), as well as the category "undetermined substance use disorder" and "tobacco."

Source: CCSA, *The Impact of Substance Use Disorders on Hospital Use*, 2014 [Retrieved from Canadian Drug Summary: Alcohol]

Mortality impacts

The WHO report states mortality from alcohol consumption is higher than those from diseases such as diabetes, HIV/AIDS, and tuberculosis. In 2016, the use of alcohol was the cause of death for 5.3% of the population, or some 3 million people worldwide, with men being at greater risk of death from alcohol consumption. The report further details life impact by disability-adjusted life years (DALYs), ranking at 132.6 million cases.

Of the deaths attributed to alcohol intake, the report shows:

- o **28.7%** due to injury,
- o **21.3%** due to digestive diseases
- o **19.0%** attributed to cardiovascular diseases,
- o **12.9%** related to infectious diseases,
- o **12.6%** due to cancers.

Disability-adjusted life years impacts include 49% of cases due to mental health and noncommunicable elements, and around 40% are due to injury. For persons aged 20-29 years, alcohol is directly associated with death in 13.5% of the population.[xiii]

Alcohol impacts the consumer in three ways:

1. Cellular intrusion toxicity, such as liver disease, cancer, cardiovascular involvement, diabetes and obesity;
2. Alcohol dependency and addiction; and
3. Intoxication.

Large bodies of epidemiological evidence support the statement that alcohol has direct and consequential impact on physiology. Numerous cancers are directly attributable to alcohol intake, including an increased risk of development of breast cancer in women with as little as 25 grams of pure alcohol.[xiv] Alcohol contributes directly to liver diseases and hepatocellular damage, with one in four Canadians who may be affected by liver disease. [xv]

Numerous cancers are directly attributable to alcohol intake

The WHO report points to large bodies of literature, which indicates alcohol intoxication can lead to harm in the form of mental illnesses and an increase in the suicide rate or ideation. Risk of suicide attempt rises seven times immediately after drinking, and can be as high as 37 times with heavy or binge drinking. Estimates state 18% of all suicides globally are attributable to alcohol intake.

Alcohol poisoning, or the consumption of excessive quantities of alcohol in such a short period of time that the body is incapable of processing it, can be symptomized by an increase in heart rate, difficulty breathing, engaged gag reflex, and spikes in temperature. Outcomes of this level of intoxication can lead to severe consequences, including coma and death.

Cannabis, by comparison has a much more moderate mortality and DALY rate. According to a 2012 report, the disease burden attributable to cannabis reflected globally, only 287 deaths were attributed to cannabis use and 66,346 DALYs, based on causal impacts of cannabis use disorders, schizophrenia, lung cancer, and road traffic injuries.[xvi][xvii]

Studies prove overconsuming cannabis is physiologically impossible

Overconsumption of cannabis has been proven to be physiologically impossible. There are no CBD receptors on the brain cortex to trigger either a gag reflex or an impact on the autonomic breathing reflexes. Asphyxiation caused by aspirating alcohol induced vomit, and slowing of the respiratory system to the point of failure are common causes of death in overindulgence in single event binge drinking cases. In order to die from a cannabis overdose, a human would need to ingest 1,500 pounds of cannabis in a single event.[xviii]

While harm impact of cannabis use cannot be measured solely on mortality rates and DALYs, the greatest measurement comparison between the extent of harm from alcohol vs cannabis comes from the distinct and direct impact on loss of life and disability.

WHO publishes a list of the *International Disease Classification 10* codes; of which 25 are readily attributable to alcohol usage. Epidemiological evidence exists, which indicates alcohol plays a role in the development of certain chronic diseases such as liver cirrhosis, ischemic heart diseases, cancer, and diabetes. An estimated 3.6% of all cancers are attributed to alcoholic intake. A causal link has been established between alcohol consumption and cancer of the oral cavity, pharynx, esophagus, colon, rectum, and 12.5 total oral cancers.[xix]

As a point of reference, in a Statistics Canada Community Health survey (2012), 3.2% of the Canadian population self-reported abuse or dependence in the past year (1.7% females; 4.7% males).[xx]

Criminal justice impact

The CCSU writes in their report, *Canadian Substance Use and Harms (2007-2014)*, that of the \$38 billion in alcohol harm impact, almost \$9 billion is in criminal justice costs of substance abuse. Further, 20% of all violent crime committed in Canada is related to alcohol use.[i]

Individuals who consume excess quantities of alcohol place themselves and those around them at great risk for behavior-induced violence, as well as open a possibility of committing crimes. WHO classifies domestic violence cases, or violent behaviour towards intimate partners, as acts of aggression, psychological abuse, forced sexual intercourse, or any other controlling behaviour.[ii]

20% of all violent crime committed in Canada is related to alcohol use

Public health data collection of the frequency and severity of these crimes indicate Canadian rates are rising. Taken also from the WHO report are the economic impact of alcohol abuse of intimate partners:

The economic costs of partner violence include those to health care and judicial systems, shelter for victims, and lost earnings.

Estimated costs for select countries are:

- **United States:** US\$12.6 billion a year. Perpetrators have been estimated to consume alcohol in 55% of cases.
- **England & Wales:** £5.7 billion in 2004, with an extra £17 billion estimated for emotional costs to the victim. Perpetrators have been estimated to consume alcohol in 32% of cases.
- **Canada:** US\$1.1 billion a year (direct medical costs to women). Perpetrators in one Canadian community had consumed alcohol in 43% of cases.

Impaired driving or operating a motor vehicle while under the influence of alcohol, drugs, or both, are serious crimes and major contributors to death by motor vehicle in Canada. Millions of dollars have been spent on awareness campaigns regarding the hazards of drinking and driving, with organizations like MADD Canada promoting this message through media and other outlets.

Each conviction for impaired driving carries stiff societal repercussions, and bears a carry-over impact on lost productivity, criminal justice costs, and incarceration if warranted. Limiting alcoholic intake and/or refraining from driving while under the influence can reduce this harm, as it is directly controllable. Long-standing roadside sobriety measurement devices have been used to prosecute those who choose to drive impaired. Similar tests are now being developed to monitor intoxication levels for cannabis use. Recent media reports indicate no spike in impaired driving due to the legalization of cannabis.

With the 2018 decriminalization of cannabis use in Canada, it is reasonable to expect that violations of the Controlled Substances Act will decline, and therefore, the overall harm impact will also decline. Assuming many of those costs were incurred for minor possession infractions, it is also reasonable to infer that a substantial portion of \$1.8 billion in costs incurred for criminal justice will be eliminated.

Possible outcomes of converting to cannabis beverages

Considering data presented within this document, health care costs of alcohol are among the largest financial harm impacts of consumption. Significant financial savings can also be realized in lost productivity and criminal justice costs by offering cannabis-infused beverages instead of alcohol.

Globally, a clearly defined cause and effect exist between the use of alcohol and societal harm. As the first G7 country to federally legalize the recreational use of cannabis, Canada is poised to become a world thought leader on how to minimize the impact of alcohol by using this now legalized substance.

Familiar formats like wine and beer allow Canadian consumers to buy regulated products in the same locations

With a growing body of scientific research to support the position that cannabis as an alternative to alcohol is overall a safer and less impactful solution, serious consideration needs to be given to accessibility. Using familiar formats such as wine and beer, the Canadian consumer can rely on prior knowledge and places of purchase to acquire trusted regulated product.



One of the largest concerns around cannabis edibles (where alcohol-alternative beverages fall) in Canada is accessibility and marketing to children. Of greatest concern is the manufacture of gummies, chocolates, brownies, cookies, and ice creams, which in their unwrapped formats are virtually indistinguishable from their non-infused counterparts.

Children can and regularly do mistake cannabis edibles for candies. While child resistant packaging can be a barrier to consumption, the unwrapped format represents the greatest threat for ingestion by children. A bowl of gummies, or a plate of cookies on a dining room table is a clear signal of a treat for both adults and children to enjoy. The inability to distinguish these products from infused versions represents a great risk for accidental consumption, and is most often the kind of overdose from cannabis reported in major media.

In adult-format beverages, such as beer, wine, and cocktails, consumers have already established understanding that these substances are available for purchase at existing reputable licensed outlets, and with strict guidelines surrounding their sale, marketing, and distribution. This also extends to their staff, who are well-educated that alcoholic beverages are not intended for sale to persons under the legal drinking age.

With dosage, format, and delivery of great concern, beer, wine, and cocktail style beverages are extremely well positioned to address any issues regarding accessibility by minors. Given Health Canada's mandate that no two stimulants may exist within the same beverage, alcohol-free wines, cocktails, and beers make ideal conduits for cannabis beverages.

Cannabis beverage production can vary widely in its manufacture. It is expected that Health Canada will define the maximum allowable dosage of the psychoactive ingredient THC, and will also regulate the inclusion of non-psychoactive cannabinoids per serving. Yet some producers will have difficulty consistently meeting these requirements.

In U.S. states where cannabis is legal, alcohol consumption rates declined by up to 22%

For example, those who brew beer or produce wine using parts of the plant will find predictable consistency of dosage extremely difficult, as the concentration of active ingredients varies widely from plant to plant, even when using the exact same strains grown in the same greenhouse. This variance can best be considered as similar to the terroir of grapes, where vineyards quality output can vary greatly from one year to the next based on the weather.

Only those with micro-dosing capabilities available through infusion will be able to reliably manufacture consistent experiences for consumers to exacting standards from one batch to the next. Consumers need to rely on licensed producers of edible products to feel confident their consumption and intoxication experience will be predictable and reliable each time they partake, and best manufacturing and quality practices must prevail.

By infusing cannabis into an alcohol-free beverage such as a wine, beer or cocktail format, an existing consumer category now offers a tangible alternative to alcohol. Producers with the capability to control cannabis dosages and comply with federal regulations should have the ability to distribute these products as a harm-reduction strategy to alcohol.

Consumption data presented within the context of this document clearly demonstrates that Canadians over-consume both beer and wine according to the established moderate use guidelines. Offering an alternative with fewer health risks could have a significant positive influence on lowering alcohol consumption rates. In fact, in all U.S. states where cannabis consumption is legal for adult use, alcohol rates have declined as much as 22%.

With alcohol readily available at government administered stores, grocery outlets, and licensed restaurants, a case can be made that in order to incorporate a moderated consumption incentive, cannabis-infused beverages need to be as widely available as alcoholic products. In each instance where an alcoholic version of a beverage appears on a retail shelf or a menu, a cannabis-infused alternative should exist in tandem to offer consumers the choice of a less harmful alternative.

This affords consumers the ability to make an informed decision about their intake and reinforce messaging regarding moderation and risk. For occasions where beer, wine, and spirits are served, cannabis-infused beverages can provide the same “social lubricant,” with a similar onset and duration – and a greatly reduced health impact risk.

Potential consumer demand

A report published by Deloitte, *A Society in Transition- an industry ready to bloom- 2018 cannabis report* surveyed Canadians about attitudes and responses to the legalization of cannabis consumption. Defining current users demographically as younger risk-takers, and probable users as older, more conservative users, Deloitte found attitudes towards cannabis use included an open willingness to try, with frequency of use varying by category.

Within the edibles category, beverages ranked among the highest interest for consumption.

Deloitte also surveyed consumers’ interest in format, among other factors, finding:

- **60%** of current [cannabis] consumers and **49%** of probable ones consider the range of available products (e.g., edibles, pre-rolls, oils) to be an important purchasing criterion.
- **64%** of consumers typically partake through rolled joints today.
- **58%** of likely consumers plan to purchase and use edibles, although edible products won't be available until a year after dried cannabis and oils make their legal debut.
- **34%** of current consumers say they're likely to try new and different products; however, only **20%** of probable future consumers say they'll do the same.[xxii]

Nearly three in ten (28%) respondents noted they had heard of the category, and 31% said they would be interested in using the product. Almost half (48%) of respondents further noted they would be most comfortable purchasing their cannabis products from a retail store.

Bearing these finding in mind, interpretations of the size of the market can be drawn. Drawing from earlier reported consumption data from the *Control and Sale of Alcoholic Beverages* report:

- **41.4%** of all alcoholic consumption involved beer
- **229.5** bottles of beer per capita was sold by liquor stores, agencies and other retail outlets during the 2015-2016 reporting period
- **23.3 million** Canadians were over the legal drinking age at the time.

The *Control and Sale of Alcoholic Beverages* report indicates that, based on the 2015-2016 survey showing an adult population of 23.3 million, 76.6% of respondents above legal drinking age self-reported alcohol use in the 12 months prior. Assuming that percentage remains consistent, current levels of alcohol ingestion would be based on 19,916,000 persons.

Consumption of beer at 254.75 (371 ml size) bottles per capita equates to 5,073,501,420 bottles of beer per annum. And if 31% of the population is interested in using cannabis beverages, cannabis-infused beer volume would be estimated to be 1,572,785,440 bottles (or 65,534,013 standard cases of 24 bottles) at full market penetration and adoption. As noted, beer represents only 41% of alcohol purchased during the timeframe; the study does not account for wine, spirits or cocktails.

Calculating demand for cannabis-infused beer

19,916,000 consumers who drink alcohol

254.75 (371 ml size) bottles per capita

5,073,501,420 bottles of beer per annum

If **31%** of the population considers using cannabis beverages, demand would be:

1,572,785,440 bottles (or 65,534,013 standard cases of 24 bottles) of cannabis-infused beer per year

Harm reduction from cannabis-infused beverages

Using the data from the estimated interest in cannabis-infused beverages, 31% of current alcohol drinkers could theoretically convert from consuming alcoholic beer to cannabis-infused beer.

Converting from beer with alcohol
to cannabis-infused beer alone
could reduce costs of societal harm by **\$4 billion**

Drawing again from the CCSU report on substance abuse costs, it is therefore reasonable to assume that, at a minimum, 31% of the costs of use and abuse of alcohol could also be recovered.

Of the \$14.1 billion of societal costs created by alcohol, Canada could realize:

- **\$4.37 billion** in related harm reduction savings
- **25,700** fewer hospital visits
- **7%** reduction of all violent crime.

If we consider the relative cost of \$1 billion in health and social costs from cannabis (adjusted for the elimination of criminal justice costs of \$1.8 billion), and the respective increase in consumption, a projected increase of \$500 million in social costs due to increase consumption of cannabis is reasonable to assume. This reasoning projects a potential cost reduction of \$3.8 billion in social costs to Canadians.

Conclusion

- ✓ **\$14.1 billion** in costs directly attributed to harmful effects of alcohol (vs. **\$1 billion** for cannabis)
- ✓ **31%** of Canadians over legal drinking age are willing to try cannabis beverages
- ✓ **\$4 billion** cost reduction is possible from conversion to cannabis-infused beer alone.

With large bodies of global scientific evidence to demonstrate that alcohol poses a serious threat to Canadians' health and social well-being, it is critical to consider that a viable opportunity to significantly reduce this threat now exists in the form of cannabis-infused beverages. This opportunity is of great importance, as while the volume of research available on alcohol is substantial, the corresponding research on cannabis is limited.

This lack of research is due to the illegal nature of the substance in much of the world; however, it is reasonable to expect more research will be published as governments lift bans on the plant. Given the results of readily available and emerging research, it is logical to conclude that scientific studies will uncover further benefits of cannabis use.

In Canada, \$14.1 billion is directly attributed to the harmful effects of alcohol use. Yet only \$1 billion is attributable to cannabis after the elimination of criminal justice costs. There is no foreseeable mechanism to reduce the criminal justice impact of alcohol use and abuse. With 26 million Canadians over the legal drinking age in Canada, 31% of whom are willing to try cannabis beverages, a sizable market exists for alcohol-alternative beverages. As consumers gain awareness of cannabis' harm reduction compared alcohol, it is reasonable to expect the market for cannabis products to increase beyond 31%.

A sizable market exists for alcohol-alternative beverages

As the acceptance of cannabis-infused beverages grows, the costs for alcohol substance use and abuse will decrease. An expected \$4 billion cost reduction is possible from conversion to cannabis-infused beer alone.

With widespread availability of cannabis-infused beer and wines wherever alcoholic beverages are sold, enabling consumer choice becomes paramount. Consumers know and trust the instituted purchasing locations for alcohol, and to achieve normalization of cannabis-infused beverages as a healthier alternative to alcohol, these products must become widely and readily available in consistently reliable formats and dosages.

References

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