ALCOHOL POLICY FRAMEWORK

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ABOUT CAMH

The Centre for Addiction and Mental Health (CAMH) is Canada's largest mental health teaching hospital and one of the world's leading research centres in its field. CAMH conducts groundbreaking research, provides expert training to health care professionals and scientists, develops innovative health promotion and prevention strategies and advocates on public policy issues with all levels of government.

CAMH's commitment to its Strategic Plan, *Vision 2020: tomorrow.today,* re-affirmed our commitment to promoting public policies that are responsive to the needs of people with mental illness and substance use issues. CAMH is committed to "Driving Social Change," one of the six pillars of this plan, by playing a leading role in transforming society's understanding of mental illness and substance use. CAMH aims to be a champion for health equity, social justice and inclusion. To help achieve these goals, CAMH communicates evidence-based policy advice to stakeholders and policymakers.

In the area of substance use, CAMH's mandate includes providing treatment, conducting research, offering prevention initiatives and proposing policy advice to reduce associated problems. For decades, CAMH has played a unique and important role in the field of alcohol policy in particular. This work has included:

- documenting patterns of alcohol use as well as societal attitudes toward alcohol
- studying the links between alcohol use and chronic diseases, injury and social problems
- assessing the impact of alcohol use on morbidity and mortality
- reviewing the impact of regulatory and public policy initiatives on alcohol-related problems
- working with the provincial government, NGOs and local communities to develop effective alcohol policies that maximize health promotion and mitigate alcohol-related harms.

ABOUT THIS DOCUMENT

This report is part of a series of policy framework documents that review evidence, summarize the current environment and propose evidence-informed principles to guide public policy in Ontario.* It updates CAMH's 2013 *Alcohol Policy Framework* to reflect and account for new evidence and recent policy developments. Its purpose is to provide a model for alcohol policies that effectively addresses the health and social harms that often accompany alcohol use and to inform provincial and local initiatives in this area.

* The other CAMH policy frameworks focus on cannabis, housing, mental health and criminal justice, prescription opioids, primary care and problem gambling. They can be found at https://www.camh.ca/en/driving-change/influencing-public-policy

WHY ALCOHOL POLICY IS IMPORTANT

Alcohol consumption is a major cause of mortality and morbidity in Canada. Nearly 15,000 deaths per year can be attributed to alcohol, and more hospitalizations are caused by alcohol than by heart attacks.[1] This is partly due to widespread consumption of alcohol, but evidence shows that alcohol use comes with significant short- and long-term risks, even at low doses and even compared to most illegal drugs.[2] It is clear that alcohol, despite its broad acceptance in our society, is "no ordinary commodity."[3]

There is a scientific consensus regarding how to reduce alcohol-related harms.[4] Controls on the price, physical availability and marketing of alcohol are particularly high-impact; they are also cost-effective and simple to implement.[5]

Historically, in Ontario, it has been recognized that government regulation of alcohol is required in order to reduce related problems. This recognition is reflected in our current retail system—a mixed public–private model in which sales, pricing and marketing are regulated. However, safeguards around alcohol have gradually eroded over the past couple of decades and this trend has accelerated in the last five years. While the recent expansion of alcohol sales to new retail channels such as grocery stores may not appear consequential, recent evidence suggests that this expansion has already led to an increase in hospitalizations.[6] The sale of alcohol in convenience stores, which has been considered but ultimately rejected by successive Ontario governments, is being planned at the time of writing. There is strong evidence to suggest that, if implemented, this will lead to an increase in consumption and harm.

With all of this in mind, this document offers recommendations for an evidence-informed approach to alcohol policy—one that recognizes the social and economic significance of alcohol in our society, while prioritizing public health and safety and the mitigation of harm.

What we know

Alcohol is consumed by a majority of Ontarians

Collectively, Canadians drink about 50% more than the worldwide average.[7] About 78% of Canadian adults report having consumed alcohol in the past year.[8] Prevalence is about the same in Ontario (see Table 1), with rates of past-year consumption relatively stable for the past 40 years.[9] Men drink more than women, and young adults are more likely to be past-year drinkers than older adults.

Alcohol use is common among Ontario youth. Just under half (43%) of the province's high-school students reported past-year alcohol consumption in 2017 (see Table 2), compared to 63% in 1999.[10] As well, past-year drinking prevalence increases by grade: from 11% for Grade 7 students to 68% for students in Grade 12. While males have been more likely than females to consume alcohol historically, this gap has been narrowing; among high-school students, males and females are now equally likely to drink.[11]

In Ontario, a minority of the adult population engages in high-risk drinking practices, with 16% reporting exceeding the Canadian Low-Risk Alcohol Drinking Guidelines (LRADGs) in the past year, 7% drinking daily and 7% reporting weekly heavy episodic drinking (often colloquially referred to as "binge drinking," and defined here as consuming five or more drinks on a single occasion) (see Appendix A for more information on the LRADGs). Young adults are more likely to engage in high-risk drinking than any other age group.[12]

It should also be noted that these numbers are likely to be underestimates: they are self-reported, and research suggests that adult survey respondents underestimate how much they drink by as much as 53%.[13]

Table 1: Alcohol consumption in Ontario—Adults (18 years of age and older), 2017[14]

	PAST-YEAR CONSUMPTION*	EXCEEDING LOW-RISK DRINKING GUIDELINES**	WEEKLY BINGE DRINKING***	DAILY CONSUMPTION	HAZARDOUS OR HARMFUL DRINKING****
All	79.5%	16.4%	6.9%	7.1%	12.5%
Trend since 1996	No significant change	Significant decline (data available since 2003)	Significant decline	Significant increase	No significant change
By gender					
Male	82.5%	21.3%	10.0%	9.3%	18.6%
Female	76.8%	11.9%	3.9%	5.2%	6.9%

Table 2: Alcohol consumption in Ontario—High-school students (Grades 7–12), 2017[15]

	PAST-YEAR CONSUMPTION*	MONTHLY BINGE DRINKING***	HAZARDOUS OR HARMFUL DRINKING****
All	42.5%	16.9%	14.1%
Trend since 1999	Significant decline	Significant decline	Significant decline
By gender			
Male	42.7%	17.6%	14.2%
Female	42.2%	16.1%	14.1%

* Consuming alcohol at least once in the past year

** Exceeding the Canadian LRADGs (see Appendix A) at least once in the past year (figures are from 2016)

*** Defined in this study as consuming five or more drinks on a single occasion

**** Refers to patterns of drinking that increase the likelihood of harm (e.g., chronic disease) or that are already causing harm (e.g., alcohol-related injuries), as per the Alcohol Use Disorders Identification Test (AUDIT); includes Grades 9 to 12 only

Alcohol consumption is associated with a variety of harms

RISKS AND HARMS TO INDIVIDUALS

When people consume alcohol, they generally do so without immediately experiencing harm or causing harm to others. There can be social benefits to drinking;[16] in addition, the alcohol industry and its related sectors, like agriculture, are economically important in Ontario. These benefits must be acknowledged, while also recognizing that in many ways, they are offset by the associated costs.

Alcohol use is associated with a variety of health harms, both acute and chronic. It is known to play a causal role in more than 200 disease and injury conditions.[17] Figure 1 provides examples. As illustrated in Figure 2, there is a dose–response relationship for alcohol and these morbidity and mortality outcomes, meaning that the level of risk is directly related to the amount a person consumes: the more one drinks, the higher the risk.[18] (Conversely, the less one drinks, the lower the risk.)

Figure 1
Examples of potential health impacts

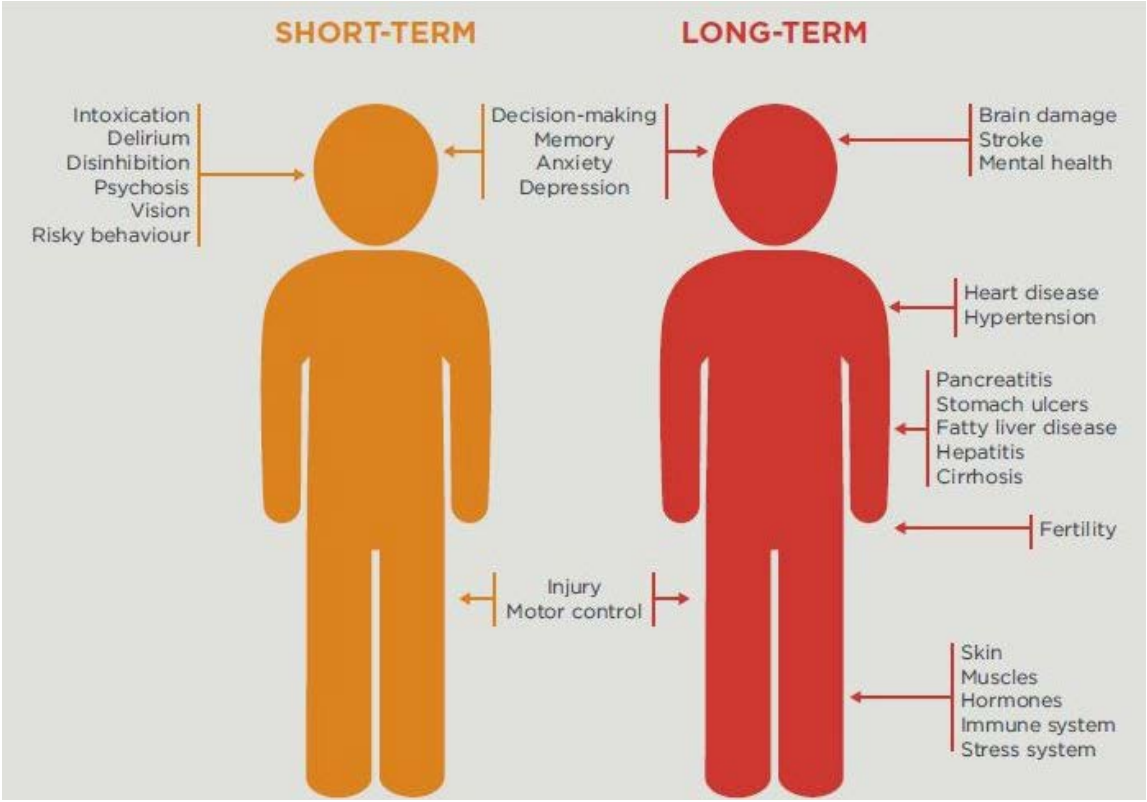

Figure 2
Dose-dependent health effects

An overview of the dose-dependent health and behavioural impacts of alcohol consumption

DIRECT EFFECTS	DISEASE AND CONDITIONS	FUNCTIONS AND SYSTEMS	BEHAVIOUR
Risky drinking can cause: • Alcohol use disorders • Amnesia (e.g., Korsakoff's syndrome) • Memory loss and blackouts • Delirium due to a severe form of withdrawal • Fetal Alcohol Spectrum Disorder (FASD)	Drinking alcohol is linked to: • Other drug use disorders • Brain damage • Liver disease • Various cancers • Pancreatitis • Mental health disorders • Suicide • Stomach ulcers • Hypertension • Stroke • Cardiovascular disease • Diabetes • Sexually transmitted infections	Drinking alcohol affects the following systems: • Immune • Stress • Memory, cognition • Digestion • Heart, blood, lungs • Brain • Hormones • Muscles • Fertility • Skin • Development	Risky drinking can lead to: • Risky behaviour • Impulsivity • Violence • Injury • Poor memory • Impaired decision-making • Lack of coordination • Poor academic performance • Impaired social and occupational functioning

Recent evidence suggests that the purported health benefits of alcohol have been overstated.[19] Further, it is increasingly clear that, for most adults, alcohol poses greater health risks than cannabis and many illegal drugs.[20] (For more details, see Appendix B.) It is also clear that the public is, for the most part, unaware of the range and scope of risks posed by alcohol. For example, alcohol is classified as a Group 1 carcinogen by the International Agency for Research on Cancer, meaning that it is known to promote the formation of cancer in humans.[21] Epidemiological studies have shown that even low levels of consumption increase the risk of developing certain cancers.[22] But a 2015 survey suggests that while nine of 10 Ontarians are aware that tobacco is a carcinogen and a majority associate alcohol use with diabetes and heart and liver problems, more than half believe that alcohol consumption has no impact on the risk of developing cancer.[23] In the same survey, 51% of Ontario respondents stated that they would reduce their alcohol consumption if they knew it increased their cancer risk, but nearly 40% reported that they currently consumed more alcohol than they believe to be safe. This illustrates another important factor: in Canadian society, people seem prepared to accept more risk for alcohol consumption than they do for other risky activities.[24]

For the individual drinker, it is not only overall consumption levels that matter, but also drinking patterns. High-risk drinking practices include:

- long-term, regular consumption of high levels of alcohol
- the consumption of large amounts of alcohol at one time (i.e., heavy episodic or "binge" drinking)
- the combination of alcohol with activities that require alertness, judgment and physical coordination, such as driving or boating
- the use of alcohol in combination with other drugs or medications, especially other depressants, such as opioids or benzodiazepines.

In 2010, 7% of Canadian drinkers reported that, in the past year, they experienced harm as a result of their own alcohol consumption.[25] But the risks of alcohol are not limited to those using it. A 2012 survey indicated that approximately 14% of Canadian adults experienced harms as a result of someone else's drinking in the previous year.[26] Harm to others ranges from minor annoyances like being kept awake, to social disruption (e.g., family, work) or physical violence causing death.[27] It has been estimated that nearly 20% of violent crimes committed in Canada can be attributed to alcohol use.[28]

Alcohol consumed by a pregnant woman can interfere with normal developmental progression of the fetus, resulting in central nervous system and physical damage that subsequently has several lifelong health consequences. This irreversible damage leads to fetal alcohol spectrum disorder (FASD), an umbrella term used to describe people who experience disability as a result of prenatal alcohol exposure. In many cases, people with FASD require lifelong assistance from a wide range of services, and for this reason, FASD has a substantial economic impact on society. In North America, the lifetime cost for some cases of FASD has been estimated to be more than C$1 million.[29] A recent study reported that between 2% and 3% of elementary school students aged 7 to 9 in the Greater Toronto Area may have FASD.[30]

Consistent evidence also shows a strong link between alcohol and violence—including sexual aggression.[31] About 59% of Canadian university women reported experiencing sexual assault since age 14,[32] and at least half of these situations involved alcohol consumption by the victim, perpetrator or both.[33] Women frequently experience unwanted sexual contact and harassment in bars, clubs and restaurants. In one CAMH study, more than 50% of young women recruited from a bar district in Windsor, Ontario, reported experiencing unwanted sexual touching or unwanted persistent sexual advances on a single night out.[34]

The health harms of alcohol are disproportionately borne by people with lower socioeconomic status; in other words, for any given drinking pattern, people with lower socioeconomic status experience more alcohol-related harm.[35] The drivers of this phenomenon are not fully understood, but it suggests that evidence-based alcohol policy has the potential to improve health equity.[36]

POPULATION-LEVEL HARMS

Alcohol consumption is associated with substantial harms at the population level. It is the third leading risk factor for disease and disability worldwide,[37] with more than 5% of global deaths attributable to alcohol.[38] In Canada, nearly 15,000 deaths per year can be attributed to alcohol.[39] There are also more hospitalizations entirely caused by alcohol (excluding those ***indirectly*** caused by alcohol, like impaired driving) than by heart attacks.[40]

A relatively small proportion of drinkers are responsible for a majority of alcohol consumption, and risky drinking contributes substantially to the overall burden of disease and disability. However, there are more people drinking moderately than excessively, and people with more moderate drinking patterns also contribute to a significant share of alcohol problems.[41]

These harms can be quantified. A recent study found that in 2014, alcohol cost the Canadian economy nearly $15 billion in health care, lost productivity, criminal justice and other direct costs.[42]* These costs were estimated at more than $5 billion for Ontario alone—well above the net income accruing to the provincial government from alcohol sales that year ($3.9 billion).[43] Finally, the annual costs of FASD in Canada in terms of health care, special education, social services, children in care, law enforcement and productivity losses due to morbidity and premature mortality have been estimated at $1.8 billion.[44]

As alcohol availability rises, consumption and harm do too

The population-level drivers of alcohol-related harm are well known. Extensive international research has demonstrated that the ease with which alcohol can be obtained—where, when and by whom—has an impact on levels of consumption; in turn, alcohol consumption levels correlate with harm at the population level.[45] Canada-based research has come to the same conclusions.[46]

Alcohol availability has many dimensions. For the purposes of this discussion, availability (or accessibility) includes the following: the price of alcohol, the number and location of outlets where alcohol can be sold and/or consumed and the hours of sale and service at those outlets. All are linked to patterns of alcohol consumption and harm.

- **Price:** Decreases in the price of alcohol are associated with increases in alcohol-attributable morbidity[47] and mortality,[48] lower life expectancy[49] and an increase in impaired driving and related injuries and fatalities.[50]
- **Location (outlet density):** The number of outlets selling alcohol in a specific geographic area or per capita is often referred to as outlet density. Studies have found associations between increases in outlet density and higher rates of consumption by youth, property crime, injuries,

* By comparison, the same study found that tobacco, opioids and cannabis cost the economy $12 billion, $3.5 billion and $2.8 billion respectively.

violent crime and assault, homicides and impaired-driving fatalities.[51] The expansion of beer and wine sales to grocery stores in Ontario in 2015 has already been associated with an increase in emergency department visits attributable to alcohol.[52]

- **Hours of sale:** Extending the hours when alcohol is sold (both on- and off-premise)* is associated with increases in motor vehicle accidents, assaults, violent crime and hospitalizations.[53] Extensions of as little as one to two hours have been observed to result in these harms.[54]

Overall, it is clear that increasing access to alcohol, whether through lower prices or more physical availability, leads to significant increases in harm to people and society.

Privatization tends to increase alcohol-related harm

Research shows that private retail systems for alcohol are associated with negative health outcomes compared with government-owned retail systems. Globally, it has been observed that the privatization of alcohol sales results in a sharp increase in the number of stores per capita, longer hours of sale and less attention to challenge-and-refusal protocols (i.e., preventing sales to minors and intoxicated adults)—with an associated increase in alcohol consumption and harms.[55] This trend has been observed in Canada as well:

- In British Columbia, the partial privatization of alcohol sales and resulting increase in retail density were associated with significant local increases in rates of alcohol-related mortality. For every 20% increase in private store density, alcohol-related deaths increased by 3.25%.[56]
- In Alberta, the privatization of alcohol sales resulted in higher mortality rates from suicide.[57]
- In both British Columbia and Alberta, studies have found that private retailers are less likely than government-owned retail locations to ask people who appear to be minors for identification.[58]
- It has been estimated that the privatization of alcohol sales in all provinces would result in substantial increases in Canada's alcohol-attributable burden of disease, including additional premature deaths and associated direct and indirect costs of between $828 million and $1.6 billion annually.[59] The lower estimate includes:
  - direct health care costs (e.g., acute care and psychiatric hospitalizations, outpatient and inpatient specialized treatment, ambulatory care, family physician visits) of about $468 million
  - productivity losses due to premature mortality, long-term and short-term disability (i.e., absenteeism and reduced productivity while at work) of about $258 million
  - direct costs of criminality (e.g., impaired driving, alcohol-attributable homicide and other violent crimes) of about $102 million.

* "On-premise" refers to locations selling alcohol for on-premise consumption (e.g., bars and pubs), while "off-premise" refers to locations selling alcohol for off-premise consumption (e.g., LCBO and The Beer Store).

What we can do about it

While the previous section focused on the drivers of alcohol-related harm, this section will emphasize the measures known to ***reduce*** alcohol-related harms. Research has confirmed the effectiveness of the following interventions.[60]

At the population level:

- **Maintaining or increasing the price of alcohol:** As the price of a standard drink* increases, consumption and harm decline, including among heavy drinkers.
- **Restrictions on availability:** Government control of retail sales, a minimum legal drinking age, restrictions on outlet location and density and limits on days and hours of sale are all associated with reductions in alcohol-related harm.
- **Limits on alcohol marketing:** Limiting exposure to alcohol advertising, sponsorships and promotion can reduce alcohol consumption, especially among youth.

At the individual level:

- **Impaired driving countermeasures:** Mandatory alcohol screening, lower blood alcohol concentration (BAC) limits, graduated licensing for novice drivers and administrative license suspension programs are all effective interventions.
- **Treatment:** Screening, brief interventions and referrals (SBIR) for at-risk drinkers can help prevent and mitigate alcohol-related harms. Alcohol use disorder (AUD) can be treated; both cognitive-behavioural treatment and pharmacological therapies can be effective.

The World Health Organization (WHO) has narrowed this list to three "best buy" policies—proven interventions that are high-impact, cost-effective and simple to implement (provided there is political will): alcohol tax increases, restrictions on availability and bans on advertising.[61]

The rest of this paper will expand on these points and outline CAMH's evidence-informed alcohol policy recommendations to all levels of government. Given the nature of both alcohol policy and of Canada's federal system, most of these recommendations are addressed to the provincial (Ontario) government. We recognize that there are factors other than health involved in the development of alcohol policy. There are certain policies with clear evidence of benefit that may not be politically feasible in the near term and for that reason are not recommended here.** The following recommendations are balanced, reasonable, achievable and would improve public health and safety in Ontario.

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* A "standard drink" contains 13.6 grams of alcohol. This is approximately equivalent to 12 ounces of beer or cider (5% alcohol), 5 ounces of wine (12% alcohol) or 1.5 ounces of spirits (40% alcohol).

** Examples include raising the minimum legal drinking age to 21 and implementing a complete ban on alcohol advertising. For a discussion of alcohol policy gold standards in the Canadian context, see the Canadian Alcohol Policy Evaluation (CAPE) project: https://www.uvic.ca/research/centres/cisur/projects/active/projects/canadian-alcohol-policy-evaluation.php

CAMH policy recommendations – highlights

Strengthen government control of the retail system	• establish and maintain a moratorium on privatization
Enhance Ontario's alcohol pricing system	• implement volumetric excise taxes and volumetric pricing across all beverage types and strengths • gradually increase minimum prices and close loopholes • ensure that excise taxes and minimum prices continue to automatically adjust for inflation
Maintain and extend formal controls on availability and access	• limit hours of sale and per-capita outlet density to current levels • empower municipalities to place restrictions on outlet density and hours/days of sale if desired
Restrict alcohol marketing	• update the CRTC Code to apply to all media (including digital), as well as to product labelling and packaging • place restrictions on the quantity and placement of advertising • require an independent pre-screening process for all alcohol advertisements
Continue addressing impaired driving	• lower the legal blood alcohol concentration limit to .05%
Reduce risk in licensed establishments	• encourage on-premise outlets to adopt evidence-informed policies and procedures for reducing physical violence, sexual harassment and assault • apply risk-based licensing and enforcement to all off-premise outlets • improve monitoring and enforcement of alcohol regulations
Build up Ontario's treatment capacity	• enhance access to – screening, brief interventions and referrals – treatment, including medications approved for alcohol use disorder – managed alcohol programs
Boost education and health promotion efforts	• require manufacturers to include, on all alcoholic beverage labels, information about – standard drinks – lower-risk drinking guidelines – health and safety risks associated with alcohol consumption
Implement a provincial alcohol strategy for Ontario	• develop a provincial alcohol strategy and create or designate an entity to coordinate and implement it • dedicate a portion of alcohol revenue to prevention and treatment • invest in monitoring and research

Strengthen government control of the retail system

As discussed above, research shows that private retail systems for alcohol are associated with negative health outcomes. Conversely, many of the key policy levers aiming to mitigate alcohol-related harm, such as minimum legal drinking age, pricing controls and restrictions on the number of outlets and on hours and days of sale, are more likely to be implemented and maintained in a retail system that is government-owned and operated.[62] Government control of the alcohol retail system is no guarantee of positive health outcomes; like private businesses, governments are motivated to raise revenues. But unlike private businesses, the priorities of governments include the need to balance alcohol revenues with related costs and to protect public health and safety more generally. In the words of Room, "a well-run government alcohol monopoly becomes a means not only of maximizing government revenues from alcohol, but also of maximizing the society's protection from alcohol-related damage."[63]

At the time of writing, Ontario has a mixed system of public (Liquor Control Board of Ontario [LCBO]) and private (e.g., The Beer Store, Wine Rack) retail outlets overseen and regulated by the provincial government via the Alcohol and Gaming Commission of Ontario (AGCO). Part of the LCBO's mandate is to sell alcohol in a socially responsible manner. LCBO staff are trained in responsible sales and challenge-and-refusal protocols. The social responsibility initiatives of the LCBO—conducted in partnership with Mothers Against Drunk Driving, Best Start and other stake-holders—draw attention to risks of heavy drinking, drinking while pregnant, impaired driving and other alcohol-related problems. The LCBO has also been a major distributor of educational materials on Canada's LRADGs. As such, the LCBO fills an important role in reducing avoidable alcohol-related costs. But the public component of this system has been eroding for several years, notably since the introduction of alcohol to new, private retail channels such as grocery stores and farmers' markets in 2015. More recently, in 2019, the provincial government announced plans for partial privatization of retail sales and a substantial expansion of the places and times for which alcohol can be purchased and consumed.[64]

Ultimately, government control of the alcohol retail system allows for careful regulation of factors known to be associated with harm—most importantly, alcohol price and availability. Put simply, with increased privatization, we can expect more retail outlets and less attention to health and safety considerations, and thus more consumption, harm and related costs. Recognizing the differences between public and private retail systems and the importance of effective health-focused alcohol policies, we strongly recommend that the provincial government:

- **establish and maintain a moratorium on privatization**, ensuring there is no further privatization of the existing distribution system and no expansion of existing private retail channels.

If the Ontario government chooses to move ahead with privatization, in order to mitigate the risks, it should also:

- **evaluate any proposed expansion** of private alcohol sales for its health and safety impact prior to implementation
- **ensure that wholesale distribution remains exclusively under the purview of the LCBO** (similar to the role of the Ontario Cannabis Store)
- **empower the AGCO to oversee and regulate** the scope, scale and operations of the private alcohol retail system
- **give municipalities the ability to opt out** of allowing convenience stores* to sell alcohol in their community (as the province did for cannabis retail outlets).

Enhance Ontario's alcohol pricing system

The price of alcohol directly influences the level of consumption; correspondingly, increases in alcohol prices are associated with reductions in alcohol-related harms at a population level. In fact, pricing policy may be the single most effective lever for reducing alcohol-related harm.[65] Alcohol price increases and taxes lead to decreases in alcohol-related deaths, violence and crime, as well as large gains in health and life expectancy.[66] For these reasons, pricing policy represents a cost-effective approach to harm prevention and health improvement at the population level. The WHO recommends increasing prices as part of its Global Strategy to Reduce Harmful Use of Alcohol,[67] and Canada's National Alcohol Strategy also names pricing as a key tool to reduce harms.[68]

At the retail level, three main components make up a strong alcohol pricing system:

1. **Minimum prices** ensure that alcohol prices don't fall below a certain threshold. They are associated with significant decreases in alcohol consumption and reductions in acute and chronic alcohol-related harms. In Saskatchewan and British Columbia, raising minimum prices resulted in substantial reductions in alcohol-attributable morbidity,[69] mortality,[70] emergency department visits,[71] traffic violations[72] and crime.[73]

2. **Adjusting prices for alcohol content**—often called volumetric pricing—ensures that the price of a product is at least roughly proportional to the amount of alcohol it contains. Pricing for alcohol content creates an incentive for consumers to purchase lower-strength products, with the potential to reduce overall alcohol consumption and harms across the population.[74]

3. **Automatically adjusting prices to inflation** maintains the integrity of these pricing policies by ensuring that the price of alcohol does not become less expensive relative to other goods over time.

* Including LCBO Convenience Outlets.

Policies such as these can have a modest effect on alcohol prices but a significant benefit to public health. They also generate revenue for the federal and provincial governments, while leading to savings for provincial governments in the form of lower spending on health care, law enforcement, corrections and other issues related to alcohol problems. With increases in the price of alcohol, the heaviest drinkers are likely to reduce their alcohol expenditure and experience substantially reduced morbidity and mortality rates.[75]

Excise tax is one of the most effective and efficient mechanisms to influence the final price of alcohol because it is the first tax to be added to the wholesale price of alcohol, and markups and retail sales taxes multiply its effects. The excise tax adjustment implemented by the federal government in 2018, which is indexed to inflation, is an excellent example of an alcohol policy that can benefit both public health and government revenue.[76]

At the provincial level, Ontario has historically had a strong alcohol pricing system, with minimum prices annually indexed to inflation for all beverage products. More recently, however, the provincial government has reduced minimum prices for beer. The experiences of other jurisdictions indicate that this course of action will result in increased harms.[77]

Given the importance of pricing policy, we recommend the following actions:

- The federal government should **implement volumetric excise taxes across all beverage types and strengths.**
- The province of Ontario should:
  - **gradually increase minimum prices.** Research suggests that the following prices (in 2019 Canadian dollars) are likely to effectively reduce alcohol-related harms: $1.75 per standard drink for off-premise sales and $3.50 per standard drink for on-premise sales.[78]*
  - **close loopholes to minimum prices** (e.g., discounted gift certificates and delisted products), with minimum prices applied across all beverage types and sales channels.
  - **adopt volumetric pricing across all beverage types and strengths** in order to incentivize the purchase of lower-strength products over those with a higher alcohol content.
- Both levels of government should **ensure that excise taxes and minimum prices continue to automatically adjust for inflation.**

Maintain and extend formal controls on availability and access

As discussed above, there is a robust association between availability and harm. Conversely, research has found that restricting alcohol outlet density, reducing hours and days of sale and implementing or raising a minimum legal drinking age are all associated with decreases in alcohol

* At the time of writing, Ontario minimum prices per standard drink are approximately between $1.17 and $1.49 for off-premise sales and between $1.43 and $2.94 for on-premise sales. For details, see the CAPE project's Ontario overview: https://www.uvic.ca/research/centres/cisur/assets/docs/report-cape-on-en.pdf.

consumption and related harms—and that these measures are more likely to be implemented and maintained in a retail system that is government-owned and operated.

- **Density:** While the association between higher density of alcohol outlets and higher levels of harm is well established, research on the impacts of ***reductions*** on outlet density is more limited. However, the available evidence suggests that restricting outlet density curtails consumption, mitigates alcohol-related harms and improves public health and safety.[79]
- **Days and hours of sale:** Reducing the hours of sale at on-premise locations is associated with reductions in violence, assaults and homicides in surrounding areas.[80] Similarly, reductions in the days of operation at off-premise locations have resulted in reductions in alcohol-related assaults, domestic disturbances, hospitalizations and motor vehicle accidents.[81]
- **Minimum age:** Canadian studies have observed that minimum legal drinking age laws have an impact on alcohol-related mortality, morbidity, motor vehicle collisions and crime.[82] Studies from the United States further suggest that higher minimum legal drinking ages are associated with higher age of initiation, lower prevalence of drinking among youth and decreases in overall alcohol consumption and heavy episodic drinking among youth—all of which have longer-term protective effects against negative alcohol-related health outcomes in adulthood.[83] This evidence suggests that 21 may be the optimal minimum legal drinking age.

In order to mitigate harms related to alcohol availability, we recommend the following:

- In 2017, Ontario had 2.5 off-premise outlets and 14.8 on-premise outlets per 10,000 people aged 15 and older.[84*] In the short term, the province should **maintain (i.e., not exceed) current per-capita levels of outlet density.** Generally speaking, this means that retail expansion would occur only to the extent (and in the areas) that population growth takes place.
- In the longer term, Ontario should **develop and implement a system to manage alcohol outlet density.** This could take the shape of population-based (per capita) and/or regional (absolute) caps on alcohol licences (both on- and off-premise). The AGCO would be responsible for this system.
- Regulated hours of sale were recently extended for both on- and off-premise locations. **Hours of sale should not be further extended.**
- **Municipalities should be empowered by the province to place further restrictions on outlet density and hours and days of sale**, based on local conditions and needs.
- While there is evidence that raising Ontario's minimum legal drinking age would reduce alcohol-related harm, we recognize that such a change would be politically difficult. We recommend that the provincial government **maintain the current minimum legal drinking age of 19** and ensure that it is supported by enforcement policies that require two forms of valid ID for all patrons who appear to be 25 years of age and younger, across all points of sale.

* An error was corrected on October 30. The previous version of this document stated "In 2017, Ontario had 2.5 off-premise outlets and 14.8 on-premise outlets per capita."

Restrict alcohol marketing (advertising, sponsorships and promotion)

The link between exposure to advertising and consumption behaviour is well established. Exposure to alcohol marketing and sponsorship is associated with earlier initiation to drinking; it is also associated with increased consumption and harm—especially among young people.[85] A 10% increase in alcohol advertising expenditure has been observed to result in a 0.3% increase in alcohol consumption.[86]

The Canadian Radio-television and Telecommunications Commission (CRTC) regulates alcohol advertising through its ***Code for Broadcast Advertising of Alcoholic Beverages*** (hereafter referred to as the "CRTC Code"). The CRTC Code contains 17 provisions, including the stipulation that advertising for alcoholic beverages may not depict or imply the actual consumption of alcohol or its effects. It also states that alcohol advertising should not:[87]

- be directed at people under the legal drinking age or adult non-drinkers
- suggest urgency of need to use alcohol or "immoderate" consumption
- induce a consumer to prefer a beverage because of its higher alcohol content
- associate the purchasing or consumption of alcohol with the operation of vehicles or any activity requiring significant skill or alertness
- attempt to establish alcohol as a status symbol, imply that it can impart or enhance social acceptance or success or suggest that it is essential to enjoying an activity or event.

These guidelines, however, are not always followed. In Canada, the alcohol industry self-regulates its advertising and reviews have shown that violations of advertising guidelines are common when the industry is left to self-regulate.[88] In Ontario, a 2012 content analysis of TV, radio and magazine advertisements found a number of potential advertising violations.[89]

Most importantly, the CRTC Code has not kept pace with the emergence of digital alcohol marketing strategies. Direct and interactive marketing via social media are currently unregulated.

Because marketing, advertising and promotion are important drivers of substance-related harms, the WHO recommends "bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion."[90] Such a ban could be "one of the most effective and cost-effective approaches to prevention and health improvement."[91] However, we recognize that this may not be feasible in the short term. Our recommendations in this area are as follows:

- The federal government should **update the CRTC Code to apply to all media**, including print, television, radio, digital and social*.* The provisions in the CRTC Code **should also apply to product labelling and packaging.**

- The overall amount of alcohol advertising should be curbed. **There should be restrictions on the quantity and placement of advertising across all media.**
- Ontario should **require an independent pre-screening process for all alcohol advertisements** in order to ensure compliance with provincial and federal regulations.
- **Violations of any advertising or marketing regulation should be met with swift and effective monetary penalties**.

Continue addressing impaired driving

Canada has made progress in addressing alcohol-impaired driving. The federal government's recent introduction of mandatory alcohol screening, which allows police to request a breath sample without probable cause, will significantly reduce motor vehicle collisions and casualties.[92] But alcohol still causes many needless deaths on our roads each year. In 2014, there were 655 road traffic fatalities in Canada in which alcohol played a role.[93]

At the provincial level, Ontario has many good practices in place in this area. For example, it is the only province with increased impaired-driving penalties when other drugs are detected in combination with alcohol.[94] In addition, Ontario has an interlock program for impaired driving offenders and a comprehensive short-term roadside .05% BAC administrative license suspension program—both important interventions for reducing alcohol-impaired driving.[95]

Canada's current legal BAC limit of 80 milligrams of alcohol per 100 millilitres (.08%) has had an important and positive effect on road fatalities. However, scientific evidence indicates that hundreds more fatalities might be prevented each year by government action to lower the BAC limit to 50 mg (.05%) under the *Criminal Code*. Above this level, it is clear that safe driving skills are impaired and collision risks are substantially increased; furthermore, reducing the legal limit to .05% in other jurisdictions has provided substantial evidence of beneficial effects.[96] The potential impact on roadside fatalities would be substantial. In 1998, CAMH scientists estimated, based on effects seen in Australia and Europe, that introducing a .05% legal limit in Canada could prevent between 185 and 555 deaths per year on our highways.[97] Rigorous scientific research since that time has supported and strengthened that conclusion.[98] For these reasons:

- the federal government should **lower the legal BAC limit to .05%** in Canada's *Criminal Code*.

Reduce risk in licensed establishments

Alcohol-related violence, including physical and sexual violence, is common in licensed establishments.[99] Research has identified a number of factors associated with how drinkers will behave in and around licensed establishments, including the type of people present in the establishment (e.g., age and gender), the physical environment (e.g., the presence of bottlenecks or queues where

people bump each other), the social environment (e.g., environments where rules are unclear or where illegal activities are tolerated) and staff behaviour (e.g., anticipating and responding effectively to potential problems).[100] Regulations and staff training are the primary mechanisms for addressing these risk factors in licensed premises.

In Ontario, server training is done through self-completed online training (Smart Serve).* Overall, evidence of the effectiveness of server training is weak.[101] Although certain server training programs may have an immediate impact on serving practices, this impact is not sustained without ongoing enforcement that imposes penalties when serving patrons to intoxication or serving to underage persons does occur.[102] Smart Serve itself does not seem to have been evaluated for effectiveness.

The AGCO administers regulations under the *Liquor Control Act* that address potential issues in licensed premises.[103] These regulations are backed by warnings, monetary penalties and suspensions. The AGCO website and newsletter (*Licence Line*) also contain guidelines and educational materials for licensees, the AGCO hosts educational seminars and *Licence Line* reports license suspensions of 14 days or more. AGCO also requires on-premise licensees to be responsible for managing the environment immediately surrounding their location.

Another important approach adopted in Ontario is risk-based licensing, a targeted approach for addressing high-risk drinking contexts.[104] Risks are identified for both the premises (e.g., type, location, hours) and licensee (e.g., past conduct, infractions, experience). Explicit conditions may be imposed and licensees may be required to submit a plan for how they will address risks (e.g., a safety and security plan). This system seems promising, but to date, no formal evaluation of the impact of risk-based licensing on violence and other problems has been conducted.

The effectiveness of regulations depends not only on their content but also on their implementation: evidence-based regulations are unlikely to have an impact if they are not enforced. Thus, enforcement is a key feature of interventions to reduce contextual risks. Enhanced enforcement of liquor regulations has been shown to be effective in a number of studies. For example, a randomized controlled trial involving Californian universities included an intervention that involved nuisance party enforcement operations, "minor decoy" operations, impaired-driving checkpoints, social host ordinances and use of campus and local media to increase the visibility of environmental strategies.[105] They found significant reductions in intoxication associated with the intervention. Other studies of enhanced alcohol policy enforcement for alcohol service have also shown reductions on overserving.[106]

We recommend the following:

- **The effectiveness of the Smart Serve program should be evaluated in terms of enhancing the safety of drinking environments.**

* Regulations administered by the AGCO also require any retail (off-premise) employee involved in the sale of alcohol to take Smart Serve training. This applies across sales channels—public and private.

- **On-premise outlets should be encouraged to adopt evidence-informed policies and procedures for reducing physical violence, sexual harassment and assault.**
- **Risk-based licensing and enforcement should apply to all off-premise outlets** as well, so that licensing conditions and enforcement are informed by licence applicant and licence holder characteristics as well as compliance history.
- **Monitoring and enforcement of alcohol regulations should be enhanced.** To ensure compliance, each outlet should be inspected once per year at a minimum, with more frequent checks for higher-risk outlets.

Build up Ontario's treatment capacity

Alcohol use disorder (AUD) is highly stigmatized, so people with problems often do not seek treatment. In addition, primary care providers are often uncertain about engaging in conversations about alcohol with their patients and are unclear about treatment options. Because of these factors, AUDs are undertreated.[107]

Several psychosocial interventions have been found modestly effective, including cognitive-behavioural therapies, social network and environment-based therapies and behavioural couples therapy.[108] Effectiveness differs based on population (adult versus adolescent) and desired outcome (reduction versus cessation or abstinence). There is also a range of proven but underused pharmacological treatment options. For example, naltrexone and acamprosate have been determined effective and safe for the treatment of AUD; in conjunction with psychosocial approaches, these medications can help reduce relapse and discontinuation of treatment.[109] They are also cost-effective; evidence suggests that both medications can reduce the social costs of alcohol misuse, and that alcohol-dependent patients taking naltrexone have lower health care utilization rates than those who do not.[110] Finally, intensive day treatment programs and residential programs with aftercare to prevent relapse have a role in achieving short-term abstinence, sustaining the gains of intensive treatment and re-engaging those who relapse as soon as possible.

For people with severe AUD and challenges related to poverty and homelessness, managed alcohol programs (MAPs) can help reduce harm. Ivsins and colleagues note that:

> MAPs seek to reduce acute (e.g., seizures, injury) and chronic (e.g. liver disease) harms related to unsafe alcohol consumption patterns such as street-based drinking, high-intensity binge drinking, drinking in isolation, and drinking NBA (non-beverage alcohol) such as mouthwash, hand sanitizer, cooking wine, and rubbing alcohol, while also addressing harms related to structural vulnerability such as homelessness, violence, and cycling through social and health services. Alcohol harm reduction within MAPs is accomplished in various ways such as administering regular measured doses of alcohol throughout the day in a safe environment as an alternative to street-based and isolated drinking, providing

alcohol for purchase at minimal cost (e.g., through on-site alcohol brewing programs), and exchanging NBA for beverage alcohol.[111]

A 2017 review found that "long-term MAP residents reported that fewer alcohol-related harms in the domains of health, safety, social, legal and withdrawal."[112]

It is estimated that although 20% of the drinkers account for about 70% of the alcohol consumption, about 50% of the overall burden from alcohol is related to consumption by people who do not qualify as being dependent on alcohol.[113] For those who are at risk of harm from their alcohol consumption, screening, brief interventions and referrals (SBIR) are key. The aims of SBIR are threefold:[114]

- Identify patients who drink alcohol beyond low-risk consumption levels and further assess their at-risk status based on reported alcohol use and other relevant clinical information.
- Communicate the patient's risk status, help the patient identify goals and readiness to change and make referrals as appropriate.
- Follow up with patients, monitor withdrawal symptoms and review goals and progress.

Evidence supports offering SBIR in both emergency departments and primary care.[115]

To enhance the ability of the health care system to deliver a continuum of interventions, we recommend that the provincial government **enhance access to:**

- **screening, brief interventions and referrals** by:
  - supporting health professionals in primary care and emergency department settings by establishing or funding training programs as well as the development of best practice guidelines and other resources
  - making SBIR accessible through community health centres, university and workplace health care services and digitally (both mobile and online).
- **treatment.** In particular, there should be better integration of AUD treatment at the points where people access the health care system, especially primary care and emergency departments.
- **medications approved for AUD** (e.g., naltrexone, acamprosate, disulfiram and topiramate). For example, naltrexone and acamprosate are currently covered in Ontario as "limited use" medications. Evidence supports extending coverage under the Ontario Drug Benefit/Trillium Drug Program.
- **managed alcohol programs.** Harm reduction is an essential part of a comprehensive response to substance use, including alcohol use. Research into the effectiveness of these programs should be supported.

Boost education and health promotion efforts

Education and the provision of information have not been shown to result in sustained behavioural change.[116] This is especially true of "responsible drinking" messaging from the alcohol industry.[117] But the provision of clear, accurate health information by credible sources can play a supportive role in a broader, comprehensive approach to reducing alcohol-related harms. For example, in Ontario, there is low awareness of both the national LRADGs and of the definition of a standard drink.[118] A 2018 study found that that alcohol labels that included standard drink information and the national guidelines allowed people to make more accurate estimates of their alcohol intake and better understand how their consumption relates to those guidelines, compared to labels that displayed alcohol by volume (which is the current practice).[119] Similarly, some jurisdictions (including Ontario) require premises licensed to sell alcohol to display warnings about the risks of alcohol during pregnancy. Like other education and public information measures, health warnings on their own do not change behaviour, but they do seem to raise awareness, and "the effect in terms of increasing awareness alone cannot be discounted, as awareness is proposed as a preliminary step towards behaviour change."[120]

Clear, accessible information on these topics can give people tools to monitor their drinking and to adjust it if needed or desired. Ideally, such education measures also serve as a counterpoint to widespread alcohol marketing. For these reasons we recommend the following:

- The federal government should pass legislation **requiring manufacturers to include, on all alcoholic beverage labels, information about standard drinks, lower-risk drinking guidelines, and the health and safety risks associated with alcohol consumption.**
- The provincial government should:
  - **develop an evidence-informed education campaign designed to improve Ontarians' awareness and understanding of the health risks and harms of alcohol**—both short-term (acute) and long-term (chronic)
  - **develop an evidence-informed education campaign designed to improve Ontarians' awareness and understanding of a standard drink**
  - **support local health promotion initiatives** by ensuring that the province's public health agencies are well funded.

It is important to reiterate that these measures are of limited value on their own. They are no replacement for (and, at best, an adjunct to) controls on the price and availability of alcohol.

Develop and implement a provincial alcohol strategy for Ontario

In Ontario, as elsewhere, alcohol policy involves balancing interests that are often conflicting. As a result, alcohol policy can be fragmented and health is sometimes an afterthought. But

alcohol-related harms and costs are borne by many government ministries, from Health and Long-Term Care to the Solicitor General. There is a need for government coordination and leadership: coordination to ensure that the ministries are working together and that linkages to other initiatives and strategies are being made, and leadership so that alcohol policies are implemented and effective. This can be facilitated by a provincial alcohol strategy.

We recommend the following for the province of Ontario:

- **Develop a provincial alcohol strategy** in consultation with stakeholders in the public health and safety sectors and independent from the alcohol industry.
- **Create or designate an entity responsible for coordinating and implementing Ontario's alcohol strategy.** Such an entity would ensure that mechanisms are in place to ensure coordination across the many ministries whose portfolios touch on alcohol, as well as the non-governmental organizations and stakeholders in the health sector.
- **Ensure that any change to alcohol policy is examined for its potential to reduce or increase health equity.** The effectiveness of any policy measure should be assessed by looking not only at its population-level effects, but also at its impact on health equity.[121]
- **Dedicate a portion of alcohol revenue to prevention and treatment.** This could involve earmarking a percentage of existing revenues or modestly increasing prices. It has been estimated that adding $0.05 to the price of a standard drink and directing that revenue to alcohol treatment and prevention initiatives would double Ontario's current investment in that area at no cost to the province.[122]
- **Invest in monitoring and research.** To understand the impact of its alcohol policies, the province must be able to examine alcohol consumption patterns. Ensuring Ontario's alcohol policies are effective will require a modernized approach to monitoring and evaluation. The provincial government should systematically track alcohol sales and alcohol-related harms (both health and social).
  - This should involve tracking sales by channel (e.g., LCBO, The Beer Store, grocery stores). While the LCBO is required to be transparent about its sales, other retail outlet types are not, leaving no way to determine patterns of consumption. To that end, **private retailers should be required to share alcohol sales data**. This could be accomplished by implementing an open information system similar to the LCBO Sale of Data program, or by retailers providing the government with monthly aggregated beverage sales by volume of absolute alcohol (as opposed to by revenue).

We also recommend the following for the federal government:

- In keeping with Call to Action 19 of the Truth and Reconciliation Commission, the federal government should, "... in consultation with Aboriginal peoples,… **establish measurable goals to identify and close the gaps in health outcomes between Aboriginal and non-Aboriginal**

communities, and … publish annual reports and assess long-term trends. Such efforts would focus on indicators such as infant mortality, maternal health, suicide, mental health, addictions, life expectancy, birth rates, infant and child health issues, chronic diseases, illness and injury incidence, and the availability of appropriate health services."[123]

- This process could begin with the establishment of three working groups—First Nations, Inuit and Métis—to acknowledge the Indigenous determinants of health with regard to alcohol, and to co-create a health equity lens for research, monitoring, data collection, treatment and aftercare.

CONCLUSION

Government decisions on alcohol should be informed first and foremost by the net costs of alcohol to people and society. Currently, alcohol costs the province of Ontario—through health care and law enforcement expenditures and lost productivity—more than it brings in. Approaching alcohol through a commercial or customer convenience lens will increase those costs. We are confident that the policies and interventions proposed in this document strike the right balance, acknowledging the significance of alcohol in our society while prioritizing public health and safety.

APPENDIX A

Canada's Low-Risk Alcohol Drinking Guidelines (LRADGs) were developed in 2011.[124] They recommend that some people avoid alcohol consumption altogether, specifically those who will be driving a vehicle or operating machinery, who are taking medicine that may interact with alcohol or who are pregnant (or planning to be) or breastfeeding. For people who do drink, the guidelines suggest:

- for adolescents, never more than one or two standard drinks (a standard drink is defined as 13.6 grams of alcohol) at a time, and never more than one or two times per week
- for women, no more than 10 drinks per week, and no more than two drinks most days (or three on "special occasions")
- for men, no more than 15 drinks per week, and no more than two drinks most days (or four on "special occasions").

More recently, researchers have pointed out that the LRADGs are not particularly low-risk,[125] and some cancer-related organizations in Canada have adopted a different set of guidelines with lower consumption limits.[126]

APPENDIX B

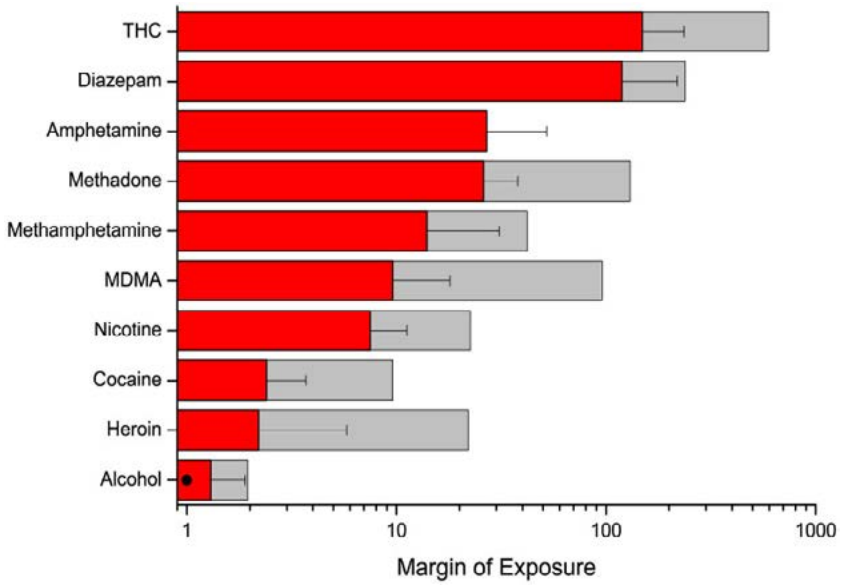
Estimated intrinsic or inherent risks of six different drugs, rated along different dimensions of harm on a scale of 0 to 100 (with 100 representing the highest risk)

	ALCOHOL	TOBACCO	CANNABIS	AMPHETAMINES	HEROIN	COCAINE/CRACK
Lethality*	50	0	0	20	100	22.5
Damage to physical health	80	100	20	30	20	40
Impairment of mental functioning	65	0	30	60	30	80

* Expressed as ratio of lethal dose and standard dose.
Table reproduced from: Centre for Addiction and Mental Health. (2014). *Cannabis Policy Framework.* Toronto: CAMH. Source of original data: Nutt, D. J., King, L. A., & Phillips, L. D. (2010). Drug harms in the UK: A multicriteria decision analysis. The Lancet, 376(9752), 1558–1565.

Margin of exposure for daily drug use, estimated using probabilistic analysis*

Left red bar: average; error bar: standard deviation; right gray bar: tolerant user; circle symbol (for alcohol): value based on human data



Source: Lachenmeier, D. W., & Rehm, J. (2015). Comparative risk assessment of alcohol, to bacco, cannabis and other illicit drugs using the margin of exposure approach. *Scientific Reports, 5*.

* Margin of exposure (MoE), a toxicology-based measure, is the ratio between the dose of a drug known to cause adverse effects and the estimated average dose a person would ingest. The lower the MoE, the riskier the drug.

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