THE CHIEF PUBLIC HEALTH OFFICER'S REPORT ON THE STATE OF PUBLIC HEALTH IN CANADA 2018

PREVENTING

PROBLEMATIC SUBSTANCE USE IN YOUTH

Canada

Également disponible en français sous le titre :
Rapport de l'administratrice en chef de la santé publique sur l'état de la santé publique au Canada, 2018 :
Prévenir la consommation problématique de substances chez les jeunes

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Publication date: October 2018

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Cat: HP2-10E-PDF
ISSN: 1924-7087
Pub: 180302

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A MESSAGE FROM CANADA'S CHIEF PUBLIC HEALTH OFFICER

I am pleased to present my annual report, which is a snapshot of the health of Canadians and a spotlight on the prevention of problematic substance use among youth.

This year I am introducing a new dashboard of health indicators to provide an overall picture of the health status of Canadians. In reviewing the dashboard, it is evident that Canada continues to be a healthy nation. We are generally living long lives and rank among the top or middle third for most indicators when compared to other high income countries.

I do remain concerned, however, about the influence of persistent health inequities and the impact of social and economic factors as barriers to living well and to the elimination of key infectious diseases.

Major chronic diseases, including cancer, cardiovascular diseases, neurological disorders, chronic respiratory diseases, and diabetes continue to be the leading causes of all deaths in Canada. It is important that as we age, we live in good health. Many chronic diseases can be prevented or delayed by approaches that get to the root causes of risks such as tobacco smoking, physical inactivity, unhealthy eating, and harmful use of alcohol. At the same time, mental health impacts every aspect of our lives, including relationships, education, work, and community involvement. Although the majority of Canadians report positive mental health, a third of us will be affected by a mental illness during our lifetime.

"This is a key moment in Canada to examine how we address problematic substance use across all areas of potential action: prevention, harm reduction, treatment and recovery. My aim with this report is to draw attention to the central role of prevention."

There are also worrying trends in relation to some infectious diseases. We are seeing a rise in sexually transmitted infections, while antimicrobial resistance (AMR) remains a global threat to our ability to cure infections. Lastly, as I highlighted in my previous report, tuberculosis is having a serious and ongoing impact on some First Nations and Inuit communities. Many cases of infectious diseases can be prevented or eliminated by reducing risks of exposure and ensuring access to screening and treatment – provided that partners also tackle underlying social factors by improving living conditions and confronting stigma.

To address key public health issues, I set out my vision and areas of focus for achieving optimal health for all Canadians earlier this year. I will champion the reduction of health disparities in key populations in collaboration with many partners and sectors. I will focus efforts in the areas of tuberculosis, AMR, built environments, sexually transmitted and blood-borne infections, children and youth, and the prevention of problematic substance use.

This brings me to this year's focus on preventing problematic substance use. The growing number of opioid-related overdoses and the over 8000 deaths since 2016 are tragic and unacceptable. The national life expectancy of Canadians may actually be decreasing for the first time in decades, because of the opioid overdose crisis. At the same time, because of its social acceptance, we have lost sight of the fact that continued high rates of problematic alcohol consumption are leading to a wide-range of harms. In fact, 25% of youth in grades 7 to 12 use alcohol excessively. I am also aware that the change in legal status of cannabis means we need to make sure that youth understand that legal does not mean safe.

We have to think about how to reverse these trends for future generations. That is why this report centres on youth and explores the reasons for harmful substance use, as well as effective approaches to prevent problematic use.

There is a complex interplay of factors that may lead youth to use substances. We know that the marketing, advertising, and availability of a substance can increase substance use in youth. We also know that youth are more likely to use substances as a coping mechanism when they have experienced abuse and other forms of trauma. But we also know that there are protective factors that can help build youth resilience, such as stable environments and positive family and caregiver relationships.

The interconnected nature of these factors means there is a critical need to collaborate across many sectors to develop comprehensive prevention solutions. The next generation of interventions can connect sectors such as housing, social services, education, public health and primary health care, at multiple levels to implement coordinated policies, public and professional education and programs. We can also work together with the media and private sector to promote new social norms around lower risk use of substances.

Our efforts need to value the experiences and voices of youth and those who use substances. The media, health care, and social service organizations can help to eliminate stigma and discrimination by adopting equitable and compassionate policies, practices and language.

There will never be just one answer to this ever-shifting issue of problematic substance use. This is a key moment in Canada to examine how we address problematic substance use across all areas of potential action: prevention, harm reduction, treatment and recovery. My aim with this report is to draw attention to the central role of prevention. As important initiatives like the Canadian Drugs and Substances Strategy advance, this report can help to inform these collective efforts to prevent substance use from becoming problematic.

I hope my report will stimulate discussion and lead to renewed action to achieve this goal.

Dr. Theresa Tam
Chief Public Health Officer of Canada

ABOUT THIS REPORT

This year's report from the Chief Public Health Officer of Canada first provides a snapshot on the health status of Canadians, then shines a light on problematic substance use among youth with a focus on primary prevention. This means tackling risk factors, strengthening protective factors, delaying initiation to the use of substances, and preventing their harmful use.

THE REPORT INCLUDES THE FOLLOWING SECTIONS:

Describing the Health of Canadians provides a snapshot of the overall health of Canadians by discussing select health indicators, such as life expectancy and positive mental health. This section concludes by examining substance use and harm patterns of alcohol, cannabis and opioid use in the general population.

Understanding Youth and Problematic Substance Use examines the issues around youth and substance use in Canada. It first describes the nature of youth substance use and the potential associated harms. It then explores why youth are drawn to using substances and describes the drivers that put youth at risk or that can protect them from harm.

Interventions for Preventing Problematic Substance Use in Youth speaks to the need for all relevant health, education and social sectors to coordinate a range of individual, community and society-wide interventions in order to prevent problematic substance use in youth. This chapter also examines population and individual level evidence-based practices and policies that can address the drivers of problematic substance use.

The Way Forward – The Path to Preventing Problematic Substance Use in Youth calls upon all relevant sectors to implement an integrated suite of interventions that enhances protective factors and reduces risk factors such as stigma and trauma.

1 DESCRIBING THE HEALTH OF CANADIANS

Introduction

The highlights below provide a snapshot of the overall health of Canadians, by drawing on several indicators from the new Chief Public Health Officer's Health Status Dashboard (see Appendix 2).

What is a health indicator?

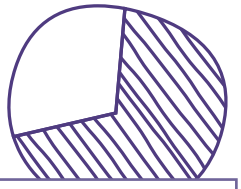
Health indicators are quantifiable measures that researchers and decision makers use as ways to understand the health of a population.[1]

In Brief

OVERALL, CANADIANS ENJOY GOOD HEALTH AND LIVE LONG LIVES.

Current inequalities prevent certain populations from achieving their full health potential, such as those Canadians living with low income and those with low education.

70 %

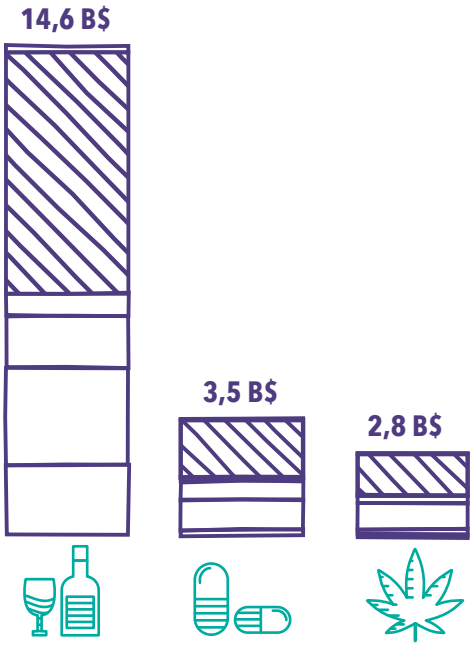


POSITIVE MENTAL HEALTH IS JUST AS IMPORTANT AS GOOD PHYSICAL HEALTH.

It has a protective effect that can help to prevent disease and reduce risks such as problematic substance use.

THE OPIOID OVERDOSE CRISIS IN CANADA IS ALARMING.

It may be shortening our national life expectancy, for the first time in decades.



PROBLEMATIC ALCOHOL USE ACCOUNTS FOR THE GREATEST HEALTH AND SOCIAL COSTS,

based on the accumulative harms of hospitalizations, death and lost productivity. **More people are hospitalized from alcohol use than from heart attacks.**

What are health inequalities?

While Canadians enjoy good health overall, there are barriers preventing some from reaching their full health potential. These barriers, often called inequalities, are influenced by a complex web of individual, socio-economic, environmental, and political factors that include our income, jobs and working conditions, education, housing, the neighbourhoods we live in and the experiences that shape our early childhood. These factors, collectively known as the social determinants of health, shape our lives and influence the odds of achieving and maintaining good health over our lifetime. First Nations, Inuit and Métis Peoples in Canada experience additional unique social determinants of health, including the historical impacts of colonization, the legacy of residential schools, land, language and culture.

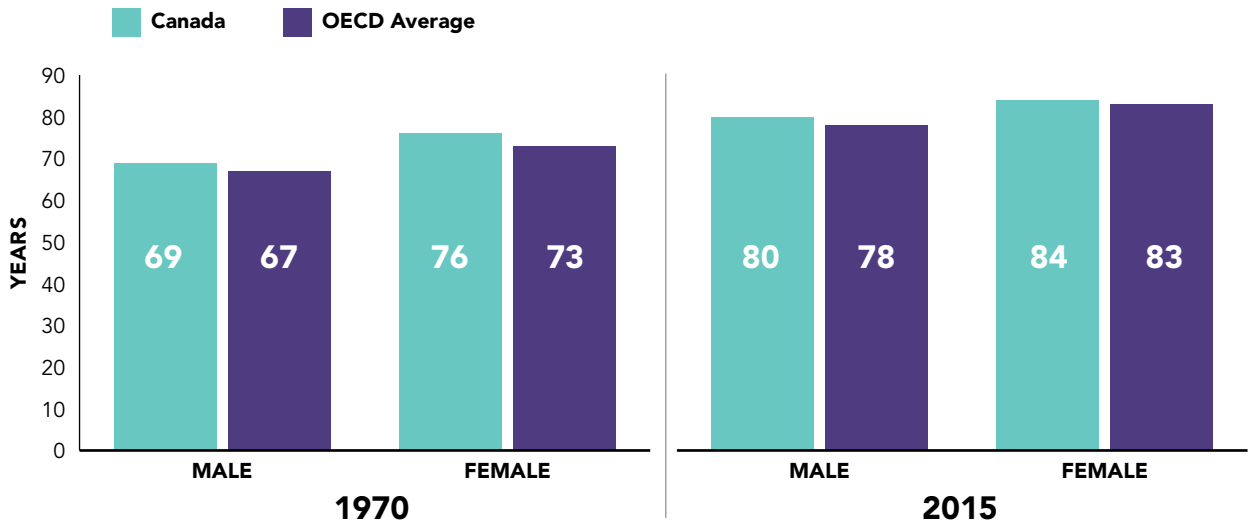
Life Expectancy

Defined as the number of years the average person can expect to live (usually from birth), life expectancy is considered one of the most general indicators for the overall health of a country.

On the whole, life expectancy has been steadily increasing in Canada over many years and it is comparable to other high income countries (see Figure 1).[22][23][24] Alarmingly, this is expected to change. For the first time in recent decades, life expectancy in British Columbia is decreasing, due to harms associated with opioid overdoses.[9] While data are not available at the national level, the Public Health Agency of Canada (PHAC) is analyzing the impact of the opioid overdose crisis on overall life expectancy.

Life expectancy is not equal among all segments of Canadian society. Certain populations such as First Nations, Métis, Inuit, Canadians living with low income and those with low education experience a shorter life expectancy than the national average.[25] As shown in Figure 2, there are gaps in life expectancy for First Nations, Inuit and Métis Peoples compared to overall life expectancy. Inuit have the largest gap, up to 16 years shorter than the overall Canadian life expectancy (64 years for males and 73 years for females).[22][26] The unique cultural and historical context of Indigenous Peoples contributes to this trend. The lasting legacy of colonization and intergenerational trauma have led to systemic health inequities between Indigenous peoples and non-Indigenous populations.

FIGURE 1 Canada's Life expectancy compared to the Organisation for Economic Cooperation and Development's* average, 1970 and 2015 (or nearest data year)[23]



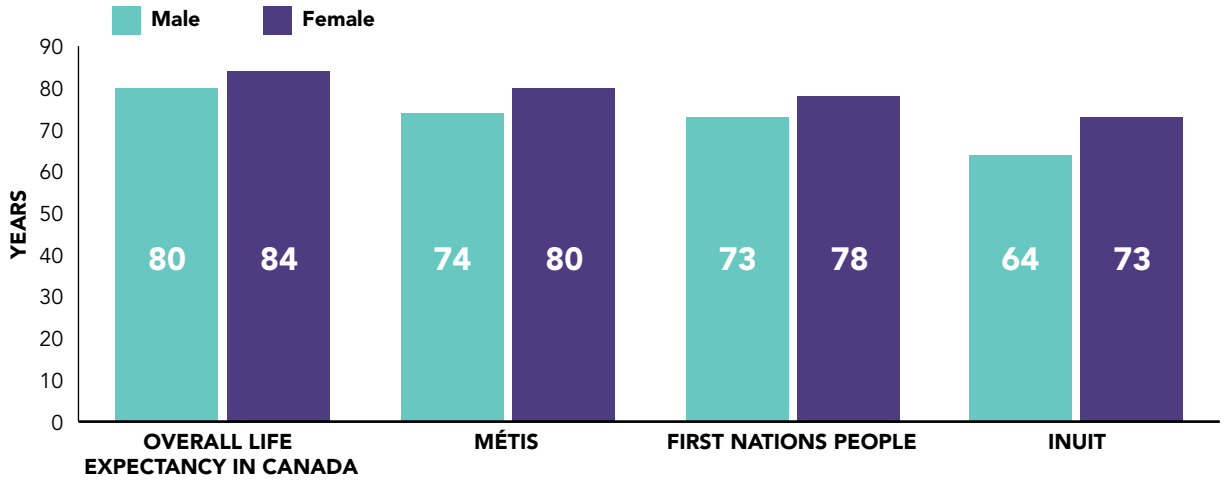
* The Organization for Economic Cooperation and Development (OECD) is a group of countries who develop and discuss economic and social policy.

Source: Health at a Glance 2017

Life expectancy is about 3 years lower for those in the poorest neighbourhoods, compared to the Canadian average.[25] Furthermore, it is almost 2 years higher for those in the most educated neighbourhoods, compared to the average life expectancy.[25]

The good news is that the inequality gap in Canada appears to be smaller than that of most other high income countries. For instance, Canada has a smaller gap in life expectancy between the highest and lowest educated groups when compared to most Organization for Economic Cooperation and Development (OECD) countries.[23] This smaller gap in no way justifies inaction. Through dedicated multi-sector actions, the public health community can support more Canadians to be healthier with improved social and economic conditions.

FIGURE 2 Overall and Indigenous Peoples life expectancy* in Canada, 2017[22][26]



* The life expectancies for Métis, First Nations people, and Inuit are projections for 2017. Overall life expectancy figures are based on data from 2013–2015.

Sources: Life expectancy and other elements of the life table, Indigenous statistics at a glance

An opportunity to reduce health inequities

Applying a social-determinants-of-health lens is particularly powerful for understanding the disproportionate health burden shared by Indigenous Peoples in Canada. Throughout history, First Nations, Métis and Inuit have had to overcome such catastrophic life events as colonialism, racism, the loss of traditional and political institutions, and attempts at cultural assimilation. Problematic substance use, suicide and family violence are examples of lasting intergenerational impacts of residential school placement and resulting trauma that have influenced the health of Indigenous Peoples across the country.

For progress to be made, all partners in health must collectively recognize, support, and foster the strength and resilience of First Nations, Métis and Inuit Peoples in Canada. Long-term commitment to implementing the recommendations of the Truth and Reconciliation Commission will contribute to improving health outcomes, and help individuals, families and communities to reach their full potential.

The Truth and Reconciliation Report *provides a way forward to addressing the longstanding racism and discrimination perpetrated against Indigenous Peoples of Canada. The report contains 94 calls to action, which include recommendations on health, language and culture, justice, youth programming, and professional training and development.*[13][17]

Disease Burden

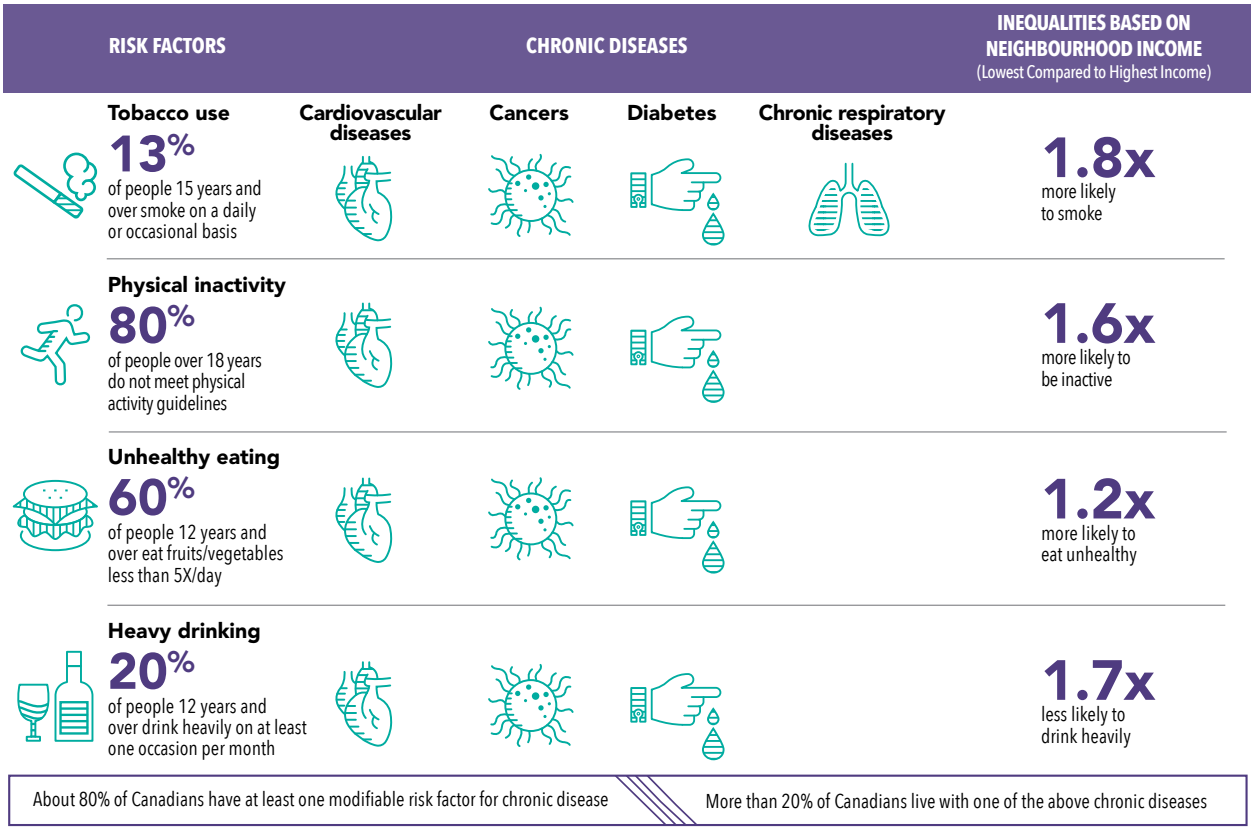
In 2016, there was a total of 273,000 deaths in Canada. Chronic diseases accounted for 89% of these deaths; 6% were attributed to injuries (specifically self-harm, falls and road injuries); and over 5% were due to infectious, maternal, neonatal and nutritional diseases.[27] As Canada's population continues to live longer, chronic diseases have become more common. The onset of chronic disease, and associated impacts, can be delayed by avoiding specific risk factors.

CHRONIC DISEASES

In 2016, about 244,000 (89%) out of the 273,000 deaths in Canada were due to chronic diseases.[27] Those accounting for the most deaths were cancers (31%), cardiovascular diseases (30%), neurological disorders (10%), chronic respiratory diseases (6%), and diabetes (3%).[27]

Although many Canadians are broadly considered to be healthy, many are living with a preventable chronic disease or risk factor. Indeed, more than 20% of Canadians over the age of 20 are experiencing a chronic disease such as cardiovascular disease, cancer, chronic respiratory disease, or diabetes.[24] The risk of developing many chronic diseases increases with age. About 80% of Canadian adults are living with at least one modifiable risk factor for chronic diseases, including tobacco use, physical inactivity, unhealthy eating, and heavy drinking (see Figure 3).[24]

FIGURE 3 Top 4 Chronic Diseases and Risk Factors[24] [25] [28] [29]



Delaying the onset of chronic disease and preventing risk factors are not only individual choices. These diseases are strongly influenced by factors in social, economic and physical environments. For example:

- Those living in walkable and safe neighbourhoods are more likely to be physically active. Almost 20% of Canadians report a crime rate that discourages them from walking at night in their neighbourhoods.[30][31]
- Access to healthy and affordable food is essential for healthy eating. This poses a particular challenge for people living in northern Canadian regions where food products are more expensive and, in some cases, traditional food is less available.[32][33][34][35] Over 2 million Canadians cannot access, or afford, enough safe and nutritious food throughout the year for a healthy life.[36]
- Almost 30% of adults from the lowest income neighbourhoods report smoking, compared to about 15% of those from the highest income neighbourhoods.[25] The annual lung cancer incidence rate is higher for those living in the lowest income neighbourhoods versus the highest income neighbourhoods (90 per 100,000 and 54 per 100,000, respectively).[25]

INFECTIOUS AND OTHER DISEASES

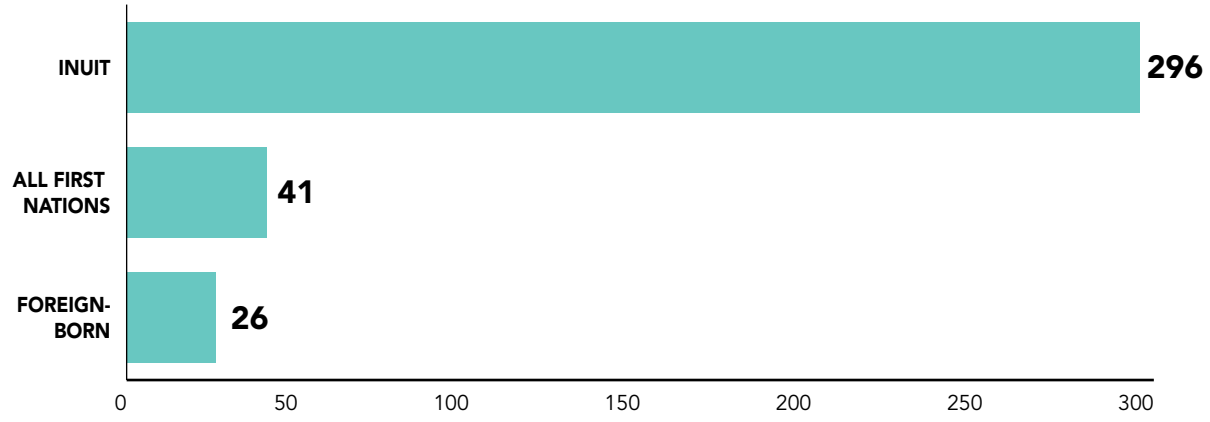
In 2016, some 13,000 (5%) out of the 273,000 deaths in Canada were due to infectious, maternal, neonatal, and nutritional diseases – a relatively small burden compared to that of chronic diseases.[27] Three percent of all deaths were caused by lower respiratory infections, such as pneumonia and influenza (between them, the leading cause of death for infectious diseases).[27] Pneumonia and influenza are major contributors to deaths and hospitalizations in senior populations, especially in those over the age of 80 years.[37][38] Influenza vaccinations in the elderly may lower the risk of this infection.[39][40][41]

About 0.2% of all deaths are the result of tuberculosis and HIV/AIDS.[27] In 2016, there were over 1,700 people diagnosed with active tuberculosis disease and over 2,300 people diagnosed with HIV.[2] While not a particularly large burden for the entire country, certain populations are affected disproportionately by infectious diseases. For example, the rate of active tuberculosis cases among Inuit is close to 300 times higher than the rate in the Canadian-born non-Indigenous population (see Figure 4).[42][43]

Historically, infectious diseases were far more common across all populations in Canada before large vaccination efforts, improvements in sanitation and built environments, and advancements in screening and in treatments such as antimicrobials.[44][45] Despite this progress over the past century, complacency is not an option.[46] The trends of antimicrobial resistant (AMR) infections, incomplete vaccination coverage, and emerging infectious diseases related to climate change, all underscore the need to remain vigilant.

Though rates of most AMR infections are stable or declining, the rates are increasing for some, such as *Neisseria gonorrhea*.[47] Common healthcare-associated infections like methicillin-resistant *Staphylococcus aureus (MRSA)* and *Clostridium difficile* can be reduced with the appropriate use of antimicrobials and sterilization practices.[47] The challenge with the majority of AMR infections is that they require more complex treatments.[47]

FIGURE 4 Rate ratio of active tuberculosis disease relative to the Canadian-born non-Indigenous population rate of 0.6 per 100,000, 2016[42][43]



Source: Tuberculosis in Canada, 2016

Overall, coverage rates for many common vaccinations in infants and children are below national goals; this may give rise in the future to outbreaks of vaccine preventable diseases, such as measles, invasive pneumococcal disease or pertussis.[48][49]

The number of people with Lyme disease has been steadily increasing over the past decades.[50] Many factors are at play, notably the influence of climate change in expanding the natural habitat of ticks that may carry the disease.[50]

Many cases of infectious diseases can be prevented by reducing risks of exposure and ensuring access to screening and treatment – provided that partners in health also tackle underlying social factors by improving living conditions, and confronting stigma.[43][51] For example, tuberculosis is often described as a social disease with a medical aspect.[43] Unlike chronic diseases, infectious diseases like HIV or TB can be eliminated through prevention and control. It was a combination of collaborative public health efforts, such as vaccination coverage, active surveillance strategies, public awareness and, to a varying level of effectiveness, quarantine interventions, that led to the eradication of polio in Canada two decades ago.[52]

The rise of sexually transmitted blood-borne infections (STBBIs)

Some STBBIs have been increasing in Canada over the past two decades, most notably chlamydia, gonorrhea, and syphilis.[2] Many actions can be taken in order to prevent infectious diseases, including greater sexual health education, promotion of safe sexual practices, increased uptake of vaccinations, and the regular use of sterile drug equipment.[12]

Mental Health and Substance Use

> In addition to good physical health, positive mental health is an essential component contributing to the overall health and well-being of Canadians.[53][54]

Positive mental health is "the capacity of each and all of us to feel, think and act in ways that enhance our ability to enjoy life and deal with the challenges we face".[55] The majority of Canadians report having positive mental health. About 70% describe their mental health as "very good" or "excellent".[29] Mental well-being has a protective effect that can help reduce risk factors and prevent diseases.[30] High levels of social support and low stress, for example, have been found to decrease the risk of premature death and poor health.[56][57][58]

Over 30% of Canadians will be affected by a mental illness during their lifetime.[59] Commonly reported mental illnesses include mood and anxiety disorders and substance use disorders.[59][60] About 20% of Canadians report a substance use disorder in their lifetime.[59] Alcohol is the cause of most frequently reported substance use disorders.[59]

Other definitions of positive mental health

The First Nations Mental Wellness Continuum Framework explains that mental wellness is supported by culture, language, Elders, families, and creation and is necessary for healthy individual, community, and family life.[3]

Inuit Tapiriit Kanatami defines mental wellness as the physical, emotional, mental and spiritual wellness, as well as strong cultural identity.[11]

The Métis Life Promotion Framework promotes a holistic approach for achieving a balance among various factors of wellness.[16]

SUBSTANCE USE AND POTENTIAL HARMS

Opioid-related deaths are reducing the life expectancy of British Columbians

Recent data from BC show that life expectancy dropped by 0.12 year from 2014 to 2016 due to deaths involving substances, with over 90% of these related to opioids.[9] This dip in life expectancy was more pronounced in men and in poorer neighbourhoods.[9]

Currently, substance use issues are capturing the attention of public health experts, decision-makers, communities and families across Canada. The current opioid overdose crisis and the new reality of cannabis legalization are underpinning a drive to re-examine the range of substance use behaviours and their implications for public health.[61] Given the acute extent of the opioid crisis, some stakeholders, including people with lived and living experiences, have asked that the decriminalizing of additional psychoactive substances in Canada be considered (decriminalization refers to the removal of criminal penalties for the possession of substances for personal use). In addition, Canadians are unfortunately not paying enough attention to the harms of alcohol.

Most Canadians use psychoactive substances in moderation without experiencing serious consequences. Problematic use occurs when these substances are consumed in a manner, situation, amount, or frequency that causes physical or mental harm to the person using them or to those around them. This definition can incorporate behaviours beyond a substance use disorder, such as taking substances while pregnant, interfering in major social or personal duties, and/or using substances while engaging in activities that increase the risk, such as driving.[62] This section summarizes the use, harms, and costs associated with alcohol, cannabis, and opioids.

ALCOHOL

Alcohol is a legal, socially acceptable, mind-altering substance that enjoys enormous popularity. However, its problematic use can lead to significant health and social harms.[63] In 2016, the use of alcohol was the leading cause of premature death and disability worldwide, among people aged 15–49 years. Twelve percent of deaths for men in this age group was attributed to alcohol use.[64] Although Canada's Low-Risk Alcohol Drinking Guidelines for short and long-term risks (see Appendix 3) were introduced in 2011, about 12% and 15% of Canadians exceed these guidelines for short and long-term risks, respectively.[28]

Use

Alcohol is the most commonly used psychoactive substance in Canada. Almost 80% of Canadians 15 years and older report drinking alcohol during the past year (see Table 1a).[28] One indicator of problematic alcohol use is heavy drinking (men having 5 or more drinks or women having 4 or more drinks on one occasion at least once a month in the past year), which has been reported by about 20% of Canadians 12 years and over.[29] Rates of heavy drinking have steadily increased from 14% in 1996 to 20% in 2013, and have remained stable since.[29][65]

Certain populations drink more heavily than others. For example, the proportion of males aged 12 years and over who are heavy drinkers is higher than that of females in the same age group (24% versus 15%, respectively).[29] Furthermore, about 30% of bisexual and almost 25% of lesbian women report heavy drinking compared to nearly 15% of heterosexual women.[25] Heavy drinking is reported by about 30% of First Nations living off-reserve, Métis, and Inuit adults, compared to about 20% for non-Indigenous adults.[25] According to the national First Nations Regional Health Survey, about 35% of First Nations adults (18 years and over) on-reserve report heavy drinking.[66]

What is stigma?

Stigma refers to the negative attitudes (prejudice), beliefs (stereotypes) or behaviours (discrimination) that devalue another person.[4][10] There are many levels of stigma and discrimination, ranging from the personal to the societal. Negative judgements based on one's sexual orientation, race/ethnicity, or disability status, can interplay to create multiple layers of stigma. This can lead to additional social and health challenges for some.

At the personal level, stigma can be internalized, which may reduce a person's confidence and hope for the future.[4][10] It can make people believe they are less worthy of respect, which can, in turn, impact their relationships, ability to get a job, find housing, and may make them less likely to seek help.[10] Communities can also stigmatize people by poorly treating those perceived as different.[18] From a societal perspective, institutional stigma can restrict a person's opportunities, such as access to training and employment, through restrictive policies, guidelines, or workplace culture.[19]

Those who live with mental health challenges or use substances often experience stigmatization.[18][20][21] Also, those who experience discrimination may go on to adopt harmful use of substances as a coping strategy.[18]

Harms

In 2015, over 3,000 Canadians died of conditions attributed to alcohol.[67] The alcohol-attributed death rate for women increased by 26% from 2001 to 2017, compared with a roughly 5% increase over the same period for men.[67] In 2016/2017, about 80,000 hospitalizations in Canada were due to conditions entirely caused by alcohol.[67] This is higher than the number of hospitalizations for acute myocardial infarctions (heart attacks).[67] Alcohol is the most common substance used by Canadians who visited publicly-funded substance use treatment centres.[68]

In 2017, there were over 65,000 incidents of alcohol-impaired driving.[69] While close to 40% of deaths from motor vehicle crashes are alcohol-related[70], the rate of alcohol-impaired driving incidents has declined by 26% over the last 10 years.[69]

In addition to the direct harms of poisoning, diseases and injuries, problematic use of alcohol is strongly associated with family conflict, intimate partner violence, child abuse and neglect, and violent crimes, including sexual assault.[71]

Lastly, drinking alcohol during pregnancy can also lead to serious harms. The number of women who drink during pregnancy and individuals who have been diagnosed with Fetal Alcohol Spectrum Disorder (FASD) are not routinely monitored in Canada. It is estimated that about 10% of women drink during pregnancy and about 0.5% of people in the general population are believed to have FASD. [72] Some populations may be at an increased risk, such as Indigenous Peoples with an estimated 33% of women consuming alcohol while pregnant, and 9% of individuals living with FASD.[72]

The alcohol harm paradox

Canadians with the lowest incomes report less heavy drinking but are more than twice as likely to be hospitalized for conditions attributed to alcohol, compared to Canadians with the highest incomes.[8] Possible reasons for this may be higher stress levels, limited social supports, fewer resources to cope, poorer diet, and higher levels of physical inactivity among low versus high income Canadians.[15]

CANNABIS

The Government of Canada introduced the *Cannabis Act* in October 2018 to legalize, strictly regulate, and restrict access to cannabis for non-medical purposes to better protect the health and safety of Canadians, in particular Canadian youth, and to remove profits from criminals and organized crime. This new policy for Canada takes a public health approach by aiming to reduce health risks from cannabis, and in particular, harms to vulnerable populations such as youth under the age of 18 years. The *Act* also has several additional public safety objectives which are beyond the scope of this report. Restrictions set out in the *Cannabis Act* for the legal production, distribution, retail sale and possession of cannabis aim to better protect youth by restricting their access to cannabis while making available a quality-controlled supply to adults. Also the legal framework provides public education and awareness of health risks to ensure Canadians have the information they need to make informed decisions about cannabis use. The Lower-Risk Cannabis Use Guidelines for Canada provide evidence-based recommendations to enable people to reduce associated health risks (see Appendix 3).

Use

Among Canadians, cannabis is the most commonly used substance after alcohol, with 12% of individuals 15 years and older reporting using it in the past year (see Table 1b).[28][73] This rate has more than doubled since 1985, when it was about 6%.[28][74] Use is more common among males (15%) compared to females (10%).[28] Three percent of Canadians report daily or almost daily cannabis use in the past 3 months (defined as problematic).[28]

Although national level data by socioeconomic status are limited, some studies indicate that cannabis use is higher among urban versus rural Canadians.[75] Use is also more common among certain Indigenous populations. According to the First Nations Regional Health Survey, 30% of First Nations on-reserve adults (18 years and over) used cannabis in the past year and 12% used it daily or almost daily.[66]

TABLE 1A Use of alcohol, 15 years and over, Canada, 2015[28]

	PERCENT	POPULATION SIZE
Alcohol		
Past year use	77%	22.7 M
Heavy drinking (12 years +)[29]	20%	6.0 M

TABLE 1B Use of cannabis, 15 years and over, Canada, 2015[28]

	PERCENT	POPULATION SIZE
Cannabis		
Past year use	12%	3.6 M
Daily or almost daily use (past 3 months)	3%	840,000

Harms

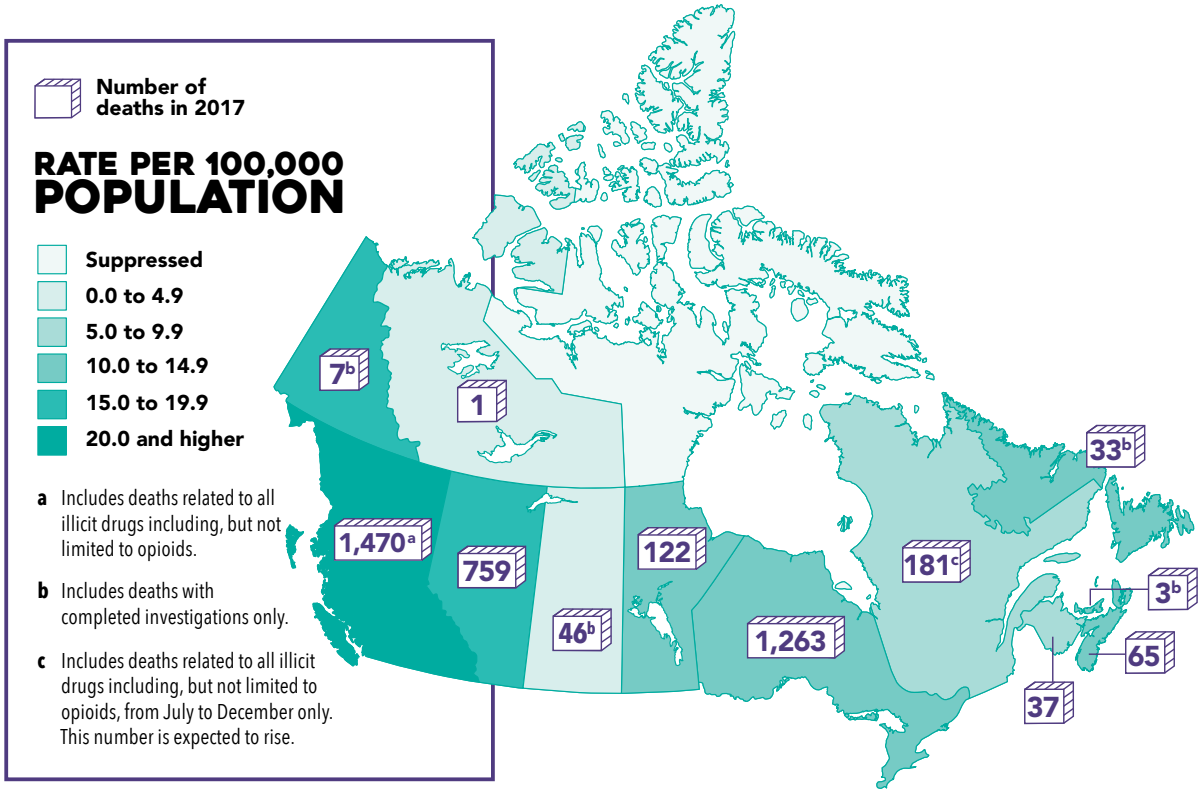
Although there is more to learn about long-term effects, the public health burden of cannabis use is currently less than that of alcohol and other substances like tobacco and opioids. The main contributors to cannabis-related health burden in Canada are motor vehicle crashes and substance use disorders.[76] Close to 10% of adults who have ever used cannabis will develop a substance use disorder. This statistic increases for those who started using cannabis at an early age, and those who use cannabis frequently.[77][78] There is an increased risk of developing some types of testicular cancers for cannabis users. This risk increases for those who use cannabis frequently and for those who use it for more than 10 years.[79] Although relatively uncommon, excessive and early initiation of cannabis use can increase the risk of developing schizophrenia and other types of psychoses, particularly if there is a family history involved.[77] Additionally, for those who use cannabis frequently, there is a higher risk of developing a mood and anxiety disorder, as well as attempting suicide.[80]

In Canada, there are presently no explicit measures of cannabis use and harms during pregnancy and breastfeeding, although surveys exploring this association are underway. According to a recent systematic review on prenatal exposure to cannabis, pregnant women who use cannabis are more likely to have anemia during pregnancy and infants are more likely to be placed in the neonatal intensive care unit.[81] Evidence also shows that inattention and impulsivity at 10 years of age are linked to prenatal exposure. Other poor outcomes include deficits in problem-solving skills, errors of omission and academic underachievement (particularly in reading and spelling), showing that prenatal cannabis exposure affects the ability to maintain attention.[82][83]

OPIOIDS

Canada is experiencing a growing epidemic of opioid-related deaths and harms. Nearly 4,000 Canadians lost their lives to opioid overdoses in 2017 alone.[84] This is equivalent to 11 Canadians dying each day. Nationally, the majority of these deaths to date have occurred among men, and individuals between the ages of 20 and 59; however, national data can sometimes mask local or regional trends.[84] The opioid crisis is rapidly evolving across Canada. While historically the greatest burden of opioid deaths has been observed in Western Canada, particularly in BC and Alberta (AB), other parts of the country are also experiencing recent increases (see Figure 5).[84][85]

FIGURE 5 Number and rate (per 100,000 population) of apparent opioids-related deaths by province or territory, Canada, 2017[84]



Source: Apparent opioid-related deaths in Canada (June 2018)

The causes of this crisis are complex and include the interplay of the excessive availability of prescription opioids and increased availability of non-prescription (illegal) opioids. First, increased prescribing of opioids is one of the drivers of opioid overdose deaths.[85] Between 1980 and 2015, opioid consumption increased by a factor of 40 in Canada, from 21 to 853 morphine equivalents per person in the population.[86] In 2016, over 20 million prescriptions for opioids were dispensed in Canada – the equivalent to nearly one prescription for every adult over the age of 18 years. This makes Canada the second-largest consumer of prescription opioids in the world, after the United States.[85] Trends also show an increase in the prescription of more potent opioids in recent years.

While the proportion of weaker opioid prescriptions (e.g., codeine) decreased between 2012 and 2016, the proportion of stronger opioid prescriptions, (e.g., oxycodone, hydromorphone, and morphine) increased from 52% to 57% over the same period.[87] Although relatively modest on the surface, this shift is concerning given the increased risk of harmful outcomes associated with strong opioids.[87]

Secondly, sharp rises in opioid-related deaths in the last few years, in parts of Canada, are believed to be mainly driven by the availability of illegal fentanyl, as rates in the legal medical dispensing of fentanyl have remained relatively stable across the country.[85][87][88] Fentanyl-related overdose deaths were first reported in BC and AB in 2011.[85] Since then, there has been a sharp increase in both the number and percent of fentanyl-related deaths detected in the West, with more recent rises in jurisdictions like Ontario.[84][88] In 2012, 4% and 11% of opioid overdose deaths in BC and AB were fentanyl-related; by 2017, this figure climbed to 84% and 79%, respectively.[84][88] Close to 70% of opioid-related deaths in Ontario (2017) involved fentanyl, compared to 24% in 2012.[84][88] Additionally, highly toxic synthetic opioids are becoming more pervasive. Carfentanil – 100 times more toxic than fentanyl – has now been detected in overdose deaths in several provinces.[85] More research is needed to understand the sources of illegal fentanyl products in different parts of Canada as these sources are not well understood.

Another factor likely influencing the current epidemic is the lack of awareness among Canadians of the risks associated with both illegal and prescription opioids. A 2017 survey on opioid awareness revealed that about 70% of Canadians were "very aware" that substances obtained illegally or on the street have the potential to contain fentanyl. However, almost 15% were "not at all aware" of that risk.[89] In addition, only 28% of Canadians said that they would recognize the signs of an overdose, while only about 10% said they would know how to both obtain and administer naloxone, a medication that blocks or reverses the effects of an opioid overdose.[89]

Use

Data on the impacts of opioids on affected populations are emerging. For example, there are limited data on non-medical use of opioids and limited data as to which populations are most affected, including information on socioeconomic and common risk factors. A national study on opioid- and drug-related overdose deaths, led by PHAC, is expected to contribute to our understanding of the drivers, causes, and determinants of the epidemic of opioid overdose deaths across Canada, and pinpoint where we need to focus additional research.[6]

In 2015, 0.3% of Canadians self-reported using prescribed opioid pain relievers for reasons other than for the prescribed therapeutic purposes.[28] A more recent online survey from Health Canada in 2017 found that nearly 33% of Canadians who reported using opioids in the past year did not always have a prescription.[85]

Harms

A common thread across the country is that combined use of multiple substances has been involved in a majority of opioid overdose deaths. National data show that more than 70% of these deaths also involved one or more types of non-opioid substances such as alcohol, benzodiazepines, cocaine or methamphetamines.[84] Confirmed deaths in AB (2017) indicated that 80% of fentanyl overdose deaths involved other substances as well.[84]

The opioid overdose crisis has touched all parts of the country and all sectors of society; nevertheless, available data highlight a disproportionate burden on certain populations. Emerging evidence from several provinces indicates that individuals living in poverty, First Nations people, and those who experience unstable housing are disproportionally affected by opioid overdose deaths.[9][90][91][92] Data from Ontario indicate that emergency room visits, hospitalizations, and deaths due to opioid

overdoses increase with decreasing neighbourhood income.[91] Data from BC show that First Nations people are 5 times more likely to experience an opioid overdose event and 3 times more likely to die from an overdose than non-First Nations people.[90] While overdoses and overdose-related deaths occur more frequently among men in the general population, First Nations men and women in BC experience similar rates of opioid overdose events.[90]

Individuals who experience unstable housing are also at increased risk of opioid-related harms. In BC, data collected in emergency room visits found that approximately 30% of those presenting for a known or suspected illegal substance overdose also reported unstable housing.[93]

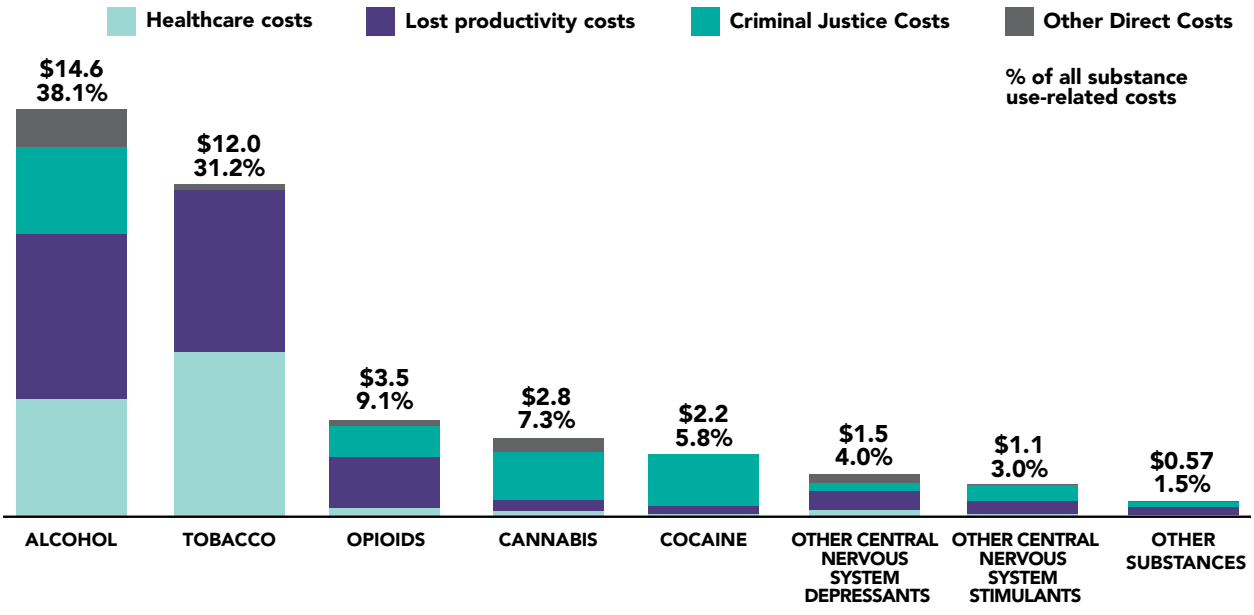
More research and surveillance is needed to better understand the populations most impacted by the opioid crisis and its drivers.

THE COSTS OF SUBSTANCE USE IN CANADA

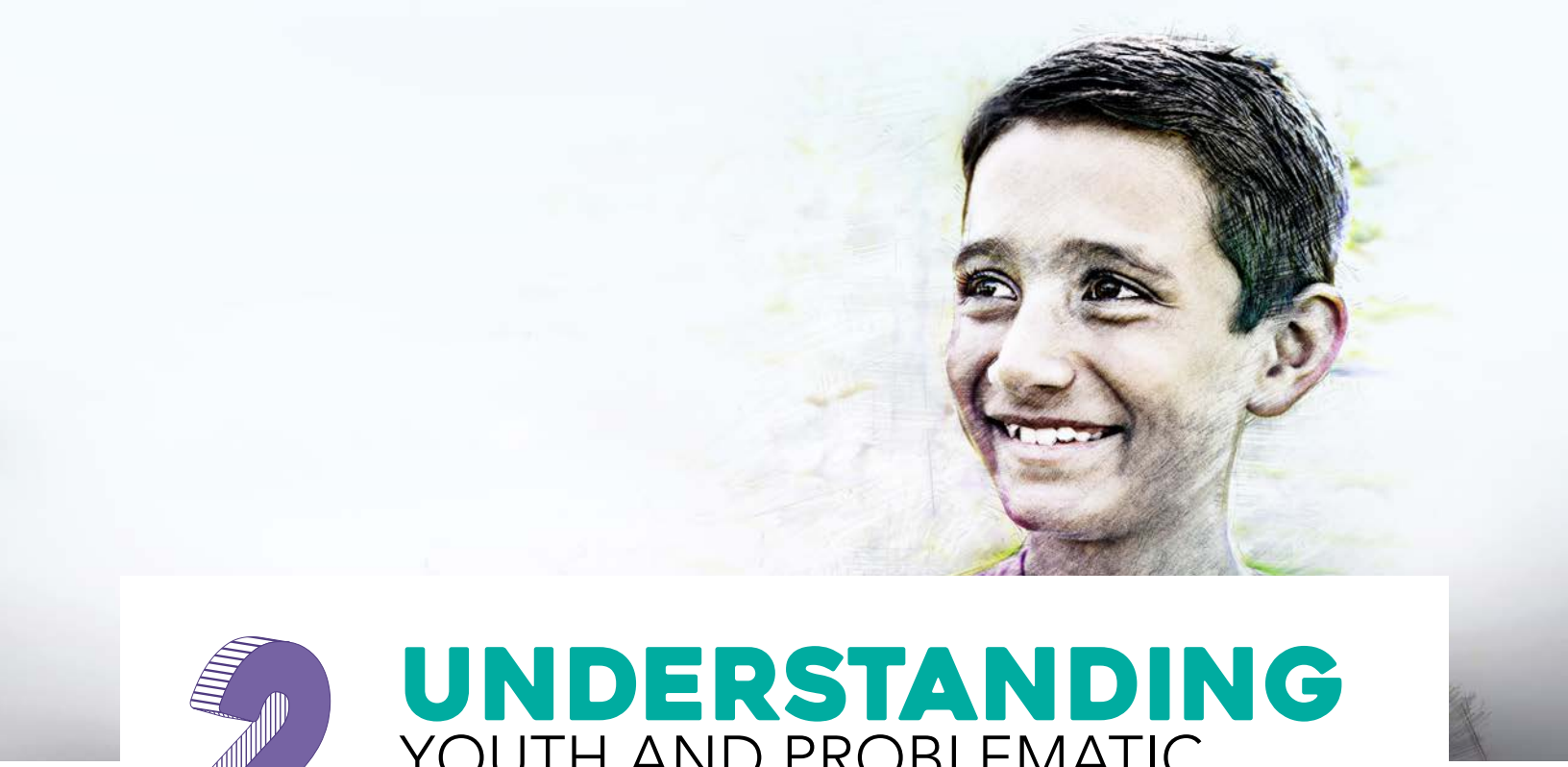
Compared to other substances, alcohol use was responsible for the highest overall costs in Canada in 2014, at $14.6 billion for healthcare, lost productivity, criminal justice costs and other factors (see Figure 6). This was followed by costs related to tobacco use, estimated to be $12.0 billion a year.[94] Opioid use incurred the third highest costs at $3.5 billion dollars.[94] As harms associated with opioid use have increased dramatically since 2015, the associated costs are also expected to rise substantially. Finally, cannabis use incurred the fourth highest costs at $2.8 billion, with over half associated with the criminal justice system. The cost segment related to criminal justice is expected to decrease following the full implementation of cannabis legalization policy.[94]

Given the burden of tobacco use on society, it is evident that tobacco control efforts should be continued.[94][95] While the rest of this report does not include an in-depth focus on tobacco, it refers to tobacco use and intervention efforts as examples of ways to successfully address a complex public health issue.

FIGURE 6 Overall costs (in billions) by substance and cost type, 2014[94]



Source: Costs of Substance Use in Canada



2 UNDERSTANDING YOUTH AND PROBLEMATIC SUBSTANCE USE

Introduction

Adolescence and young adulthood are key life stages when lifelong behaviours often become established. Ongoing physical and social changes occur as the young brain grows, puberty ensues and future adult roles are developed. At the same time, young people are coping with new social relationships and an emerging independence that may present opportunities for risk taking.[96] This evolution takes place within family, community and broader peer, social, and cultural contexts that can support or challenge positive youth development. During this time, many youth experiment with substance use, but some go on to do so in ways that are harmful to themselves and others. Understanding the circumstances that can lead youth to use substances in a problematic way is a crucial step in selecting supportive and effective prevention interventions.

Youth are not a single homogenous group and can vary according to gender, race, sexual identity, ability, cultural background, economic reality and personal identity. Current health and social services may not always meet the needs of those across the spectrum of diverse backgrounds.[5]

In Brief

CLOSE TO 25% OF YOUTH

in grades 7 to 12 engage in

HIGH RISK DRINKING BEHAVIOUR.

7.1 PER 100,000
2010-2011

12.4 PER 100,000
2015-2016

OPIOID RELATED HOSPITALIZATIONS

have been rapidly

INCREASING

in the past 5 years among **young adults** aged 15–24 years.

THE MAJORITY OF YOUTH WHO USE SUBSTANCES INDICATE THAT THEY DO SO TO FEEL GOOD AND TO BE SOCIABLE.

A MUCH SMALLER GROUP SAY THAT SUBSTANCES CAN RELIEVE STRESS AND HELP THEM COPE WITH NEGATIVE SITUATIONS.

This group is more likely to experience negative health and social consequences.

THERE IS NO SINGLE CAUSE

of problematic substance use among youth. It involves a complex interplay of factors such as the marketing of psychoactive substances, their availability, family and peer relationships, experiences of abuse and trauma, and social factors such as stable housing and family income that can lead one towards – or protect one from – the problematic use of substances.

Youth Substance Use and Potential Harms

The earlier in life that one starts using substances and the more heavy or frequent their use, the higher the risk for problematic substance use and harms later in life.[97] Focusing efforts early on can therefore help to reduce potential risky behaviours and long-term negative health effects.[98]

ALCOHOL

Use

Underage drinking is common in Canada. More than 40% of students in grades 7 to 12 reported consuming an alcoholic beverage in the past 12 months (see Table 2).[99] On average, students tried drinking alcohol for the first time at 13 years of age.[99] Almost 25% of students exhibited high risk drinking behaviour (5 or more drinks on a single occasion).[99] Data available on heavy drinking among adolescents show that national rates increase with income. At the same time, certain sub-populations report varying rates of heavy drinking – for example, Indigenous youth living off-reserve report more frequent heavy drinking than non-Indigenous youth.[25] Thirty-three percent of Métis youth (12–19 years) report heavy drinking in the past month in BC[100], while 10% of First Nations youth (12–17 years) living on-reserve report heavy drinking.[66]

Harms

Excessive and risky drinking can impact youth in many ways. Some direct harms associated with alcohol over-consumption include injury, memory loss, sexual coercion and assaults, suicide and other forms of self-harm, alcohol toxicity and motor vehicle crashes. Long-term harms include substance use disorders, learning and memory issues, problems with school performance, increased risk of school dropout, and increased risk for certain chronic diseases.[71][101][102][103] Among youth 10–19 years, girls experience much higher rates of alcohol-related hospitalization than boys, although the reasons for this are not well understood.[8] Given social norms in Canadian society, there appears to be a general lack of perception, among youth, of harms due to alcohol.

TABLE 2 Use of alcohol, students in grades 7 to 12, Canada, 2016/2017[99]

	PERCENT OR YEARS	POPULATION SIZE
Alcohol		
Past year use	44%	859,000
High risk drinking behaviour (i.e., 5 or more drinks on a single occasion) in the past year	24%	487,000
Average age of initiation	13 years	N/A

CANNABIS

Use

Almost 20% of students in grades 7 to 12 reported using cannabis in the past year (2016/2017) (see Table 3).[99] On average, students first used cannabis at 14 years of age.[99] The large majority of the students (80%) who used cannabis reported smoking it[99], which can cause respiratory harms.[77] Other methods for consuming cannabis include edibles, vaping, and dabbing – vaporizing concentrated cannabis by placing it on an extremely hot metal object and inhaling the vapours produced.[99] Some youth are more likely to use cannabis than others. For example, according to the First Nations Regional Health Survey, almost 30% of First Nations on-reserve youth (12–17 years) used cannabis in the past year and some 66% of Inuit youth (15–19 years) from a study in Nunavik reported using cannabis in the past year. [66][104] Furthermore, about 40% of Métis youth (12–19 years) report having tried cannabis in the past year.[100]

Canadian youth are more likely to use cannabis than adults. While rates of past year cannabis use among adolescents (about 20% of 15–19 years) and young adults (about 30% of 20–24 years) have remained unchanged between 2013 and 2015, they are still higher than the 10% rate in adults over the age of 25 years.[28] Sustained weekly or more frequent cannabis use in teenagers can increase the risk for substance use disorder or mental health problems later in life.[105] In 2015, in the past 3 months, about 5.1 % of youth 15–24 years reported using cannabis daily or almost daily in the past 3 months, 4.6% used it weekly and 3.5% used it monthly.[106]

Harms and Risk Perception

The younger a person starts using cannabis, the greater the likelihood of them developing health problems.[77][97] Initiating cannabis use at a young age – primarily before the age of 16 – and frequent use of cannabis can increase the risk for substance use disorder and psychosis.[77][97] While more research is needed in this area, daily cannabis use over many years that begins in adolescence has been associated with impairments of memory, attention, and learning.[107][108]

In the context of legalization, the perception of risks associated with cannabis is important to monitor over time, especially among youth. When students in grades 7 to 12 were asked if they thought smoking cannabis once in a while could be harmful, about 20% responded that this could put people at "great risk" of harming themselves, and about the same percentage said that it posed "no risk".[99] When the same group was asked if they thought that smoking cannabis regularly could be harmful, only just over 50% responded that this could put people at "great risk", while close to 10% said it posed "no risk" of harms.[99]

OPIOIDS

Use

Three percent of students in grades 7 to 12 report using prescribed opioids (this includes opioids prescribed to the survey respondent or taken from a family member or friend) for non-medical reasons (e.g., to get high) in the past year (2016/2017), including 1% and 0.5% who reported using oxycodone and fentanyl to get high, respectively (see Table 4).[99] Some youth are particularly vulnerable to problematic opioid use. In one recent study of young adults (16–25 years) who had used opioids in the last 3 months, LGBT youth were nearly twice as likely to use opioids intensively (i.e., longest duration and most consistent harmful use of opioids).[109]

TABLE 3 Use and Risk Perception of cannabis, students in grades 7 to 12, Canada, 2016/2017[99]

	PERCENT OR YEARS	POPULATION SIZE
Cannabis		
Past year use	17%	340,000
Average age of initiation	14 years	N/A
Smoke cannabis (among students who had reported ever using cannabis)	80%	340,000
Perceive that smoking cannabis on a regular basis puts people at "great risk" of harm	54%	1.1M

Harms

Between 2010–2015 in Ontario, the most substantial increase in opioid-related deaths occurred among those aged 15–24 years.[110] About 10% of all deaths among young adults aged 15–24 years in Ontario were opioid-related, a rate that has nearly doubled in the last 5 years.[110] While these mortality trends may be unique to Ontario, pan-Canadian hospitalization data mirror these findings, showing that the age group of 15–24 years experienced the fastest-growing rates of hospitalizations related to opioid overdoses between 2007–2008 and 2015–2016.[111] During the same period, over 50% of opioid overdoses among youth that led to hospitalization were intentional, or overdoses that occurred as a result of self-inflicted harm.[112] The reasons for this are not well understood – in order to inform prevention efforts, public health officials need better evidence on the reasons why youth use opioids, as well as on the source of the opioids they obtain.

TABLE 4 Use of opioids, students in grades 7 to 12, Canada, 2016/2017[99]

	PERCENT	POPULATION SIZE
Prescription Opioids		
Use of pain relievers to get high in the past year	3%	61,000
Use of oxycodone to get high in the past year	1%	24,000
Use of fentanyl to get high in the past year	0.5%	10,000

Reasons Why Youth Use Substances

> Youth report a range of reasons to explain why they use substances. The most common reasons in relation to cannabis and alcohol are "having fun" and "being social".[113][114] A smaller group report using substances to deal with stress or emotional pain. This group is at greater risk of problematic substance use.[115]

Because it is fun and social

Youth most often report that "having fun" and celebrating are the main reasons for drinking alcohol.[113][114] Students said that they drank alcohol mainly because they enjoy the taste and it is a part of being sociable with their friends.[116] These reasons are similar for why youth report using cannabis, which is "to experiment" and "to be social". For cannabis specifically, youth also report using it "to be more creative and original".[117]

To deal with stress or emotional pain

A smaller number of young people use alcohol and cannabis to cope with stress. Students who reported poor mental health were more likely to also report using substances as a coping strategy or because they felt down or sad.[115] Youth report using cannabis to cope because they feel depressed, want to reduce stress and anxiety, or want to escape reality or a negative situation.[117][118] Another study showed that youth who used alcohol as a coping strategy were more likely to report difficulties from their alcohol use, such as fights, arguments with their friends or family members, or having problems with school.[114] Similarly, youth who use cannabis as a coping strategy are also more likely to report problems such memory loss, lower productivity and difficulty sleeping.[119] Lastly, some youth also use cannabis for relief of physical pain.[115][118]

Finally, although reasons for opioid use among youth are not yet fully understood, some have reported using these "to get high" or to self-medicate.[99] Public health officials need more comprehensive surveillance data on the reasons why youth use opioids in order to better inform prevention efforts.

Youth Risk and Protective Factors

A range of interacting risk and protective factors in a young person's life either place them at greater risk of problematic substance use, or protect them from this risk.[5][120] These factors are neither independent of each other nor are they simply a reflection of an individual's personal characteristics. Instead, they are dynamic and span across the social contexts in which youth grow up.[5][120]

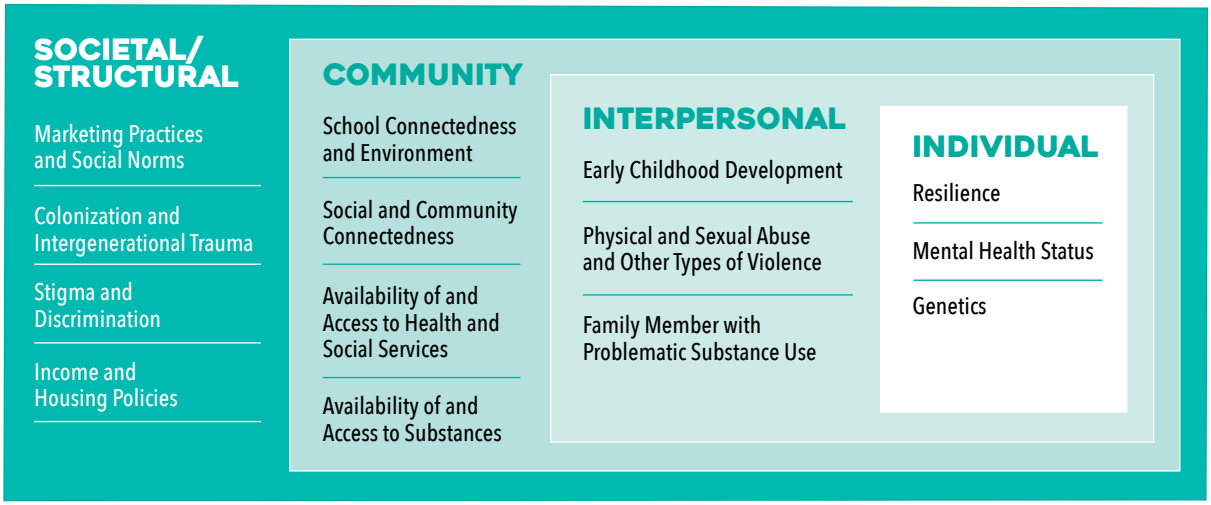
Figure 7 shows examples of risk and protective factors for problematic substance use in youth. The individual is nested within the influences of society at large as well as within their own family and community context. These factors are shaped through the life course, from the prenatal environment to adulthood. Some risk factors may be more powerful than others at certain stages of development, such as peer pressure during the teenage years. Equally, some protective factors, such as a strong parent-child bond, can have a greater impact on reducing risks during the early years and build resilience. This, in turn, can influence many health and socioeconomic outcomes in childhood and later life.[120] An important goal of prevention is to shift the balance in favour of protective factors over risk factors (see Table 5).

At the broader societal level in Canada, inequalities related to the determinants of health – in particular, poverty and access to safe and affordable housing – are linked to increased risk of problematic substance use among youth.

At the same time, certain youth populations face their own unique determinants. The historical and ongoing effects of colonization for First Nations, Inuit and Métis communities reflect intergenerational trauma in the lives of many Indigenous youth and the consequences these legacies have on the eradication of culture, traditional values, and the loss of traditional family stability.[13] These risk factors for Indigenous communities are countered by such protective factors as *cultural continuity*, which has been associated with reduced suicide rates among First Nations youth in BC.[121][122] Research shows that connection to land, cultural ceremonies, and healing traditions can reduce the risk of problematic substance use among Indigenous youth by linking them to the knowledge and skills that help them attain meaningful connections around family, spirituality, and identity.[123]

Risk and protective factors for harmful use of substances are not distributed equally among all youth. Other specific groups who are at higher risk than their peers include homeless or street-involved

FIGURE 7 Examples of risk and protective factors associated with problematic substance use in youth



youth; youth in custody; youth living with co-occurring mental health problems; youth with a history of trauma; as well as gay, lesbian, bisexual, transgender and questioning youth.[5] Common risk factors among these populations include a history of trauma; exposure to sexual and physical abuse or other types of violence; experiences of stigma and discrimination (including racism, heterosexism, and transphobia); and resulting mental health issues.[5]

Some risk factors speak to individual and interpersonal differences – for example, youth who have a family history of substance use and/or a mental illness are also at greater risk of using substances in a harmful manner.

There is growing evidence that protective factors in the lives of even the most vulnerable young person can buffer risk and boost resilience. Connectedness to school, positive relationships with caring adults inside and outside the family, supportive peers, as well as school and community safety, can all enhance an individual's ability to cope with everyday responsibilities and reduce the likelihood of difficulties that lead to problematic substance use.[120]

TABLE 5A Examples of Societal/Structural Risk and Protective Factors

RISK AND PROTECTIVE FACTORS	ASSOCIATION WITH PROBLEMATIC SUBSTANCE USE
MARKETING PRACTICES AND SOCIAL NORMS	Research shows that exposure to alcohol and tobacco marketing increases the probability of using these substances.[124] [125] Marketing can shape social norms by portraying substances in a positive light and targeting concepts such as social approval, autonomy, self-image and adventure seeking.[124] Popular media also perpetuate the use of both legal and illegal substances.[126] [127] A 2010 scientific review identified that increased non-advertisement media exposure (i.e., television, music and film) was significantly associated with smoking initiation, use of illegal substances and alcohol consumption among children and adolescents.[128]
COLONIZATION AND INTERGENERATIONAL TRAUMA	The historical and ongoing effects of colonization and the residential school system in Canada continue to impact First Nations, Inuit and Métis communities, across several generations. The latest First Nations Regional Health Survey found higher rates of problematic substance use (i.e., heavy drinking) among First Nations youth who had at least one parent who attended a residential school, when compared to non-First Nations youth.[90]
STIGMA AND DISCRIMINATION	Experiencing stigma or discrimination based on race/ethnicity, Indigenous identity, mental health status, disability, and/or LGBTQ2 status can heighten the risk of harmful use of substances for certain groups of youth.[5] [129] The resulting intersecting layers of stigma and discrimination can, in turn, perpetuate a cycle of problematic substance use.[129] In addition to public stigma that perpetuates negative language and stereotypes that may lead to social exclusion, restricted opportunities, and diminished self-efficacy among people who use substances, institutional stigma can lead to significant barriers in accessing health care, housing, and employment.[4] [19] As people who use substances internalize public and institutional stigma, they may experience loss of confidence, as well as feelings of embarrassment and shame, discouraging them from seeking help for their disorder.[18]

Continued on next page

RISK AND PROTECTIVE FACTORS	ASSOCIATION WITH PROBLEMATIC SUBSTANCE USE
INCOME AND HOUSING POLICIES	Poverty among families with children is associated with substance use later in life, although the pathway may not always be direct. For example, children from low-income families are more likely to go to school hungry. This, in turn, affects their ability to learn and to perform in school – which is associated with increased harmful use of substances.[130] [131] Children from low-income families are also less likely to experience such long-term protective factors as daily reading, parental time, involvement in school based activities, and time and/or money for recreational activities.[130] [131] [132] [133] [134] Living in low-income and disadvantaged neighbourhoods is also linked to higher levels of exposure to illegal substances, substance use and poisonings.[135] [136] Access to safe, stable housing is another important predictor, as those lacking it will often turn to substances as a coping strategy.[137] Youth facing housing insecurity are at a greater risk of engaging in harmful use of substances.[131] Indeed, homeless or street-involved youth experience elevated health and social challenges, and homelessness is a strong determinant of substance use initiation among youth (even after adjustment for various socio-demographic factors).[138] Certain populations also experience higher rates of housing need than others. First Nations people living off-reserve, Métis, and Inuit experience housing below standards – homes considered unsuitable, inadequate or unaffordable – at a greater rate than the non-Indigenous population. In Canada, in 2011, about 50% of First Nations people living off-reserve and Inuit, and 40% of Métis lived in housing below standards.[25]

TABLE 5B Examples of Community Risk and Protective Factors

RISK AND PROTECTIVE FACTORS	ASSOCIATION WITH PROBLEMATIC SUBSTANCE USE
SCHOOL CONNECTEDNESS AND ENVIRONMENT	School connectedness refers to the extent to which students perceive that they are accepted, respected, included, and supported by others in the educational environment.[139] [140] [141] These connections protect youth from many health risks, including early initiation of smoking and alcohol use.[139] [140] This is closely related to the concept of positive school environment, which has a demonstrated protective effect against problematic substance use and is associated with lower rates of alcohol and cannabis use among adolescents.[142] Over 60% of Canadian students in grades 6 to 10 reported feeling a sense of belonging at school.[143]
SOCIAL AND COMMUNITY CONNECTEDNESS	The caring and respect engendered by positive social relationships, and the resulting sense of satisfaction and well-being, serve as a buffer against many health issues. The more that youth engage with their communities, the less likely they are to participate in risky behaviours with their peers. Instead, they have greater opportunities to develop independence, confidence and good decision-making, while broadening their social networks to include more peers who model and encourage positive behaviours.[144] Structured community activities can also expose youth to positive mentors and serve as a source of emotional support.[144] Community involvement also increases youths' sense of competence as they succeed in non-academic pursuits, which may positively influence subsequent attitudes, goals, and other means of contributing to society.[144] Neighbourhood disorganization is associated with problematic substance use.[145] Risk factors associated with disorganized neighbourhoods (e.g., increased crime, limited access to safe outdoor areas, vandalism, and publicly visible substance use) may create an environment that limits protective factors (e.g., access to safe recreational and social spaces, and school- or community-based organizations that offer the opportunity to build caring relationships with adults outside the home).[146] In 2013/2014, about 60% of grades 6 to 10 students reported that they can trust people where they live.[143] Ninety percent of 15–17 year olds reported that their neighbourhood is a place where neighbours help each other.[143] Moreover, about 6% of 15–17 year olds reported that social disorder in their neighbourhood is "a very big problem" or "a fairly big problem".[143]

Continued on next page

RISK AND PROTECTIVE FACTORS	ASSOCIATION WITH PROBLEMATIC SUBSTANCE USE
AVAILABILITY OF AND ACCESS TO HEALTH AND SOCIAL SERVICES	Youth living with poor mental health are more likely to engage in harmful use of substances than those who are not – early intervention following the first episode of a serious mental illness can lead to positive health outcomes later in life.[146] Fewer than 25% of Canadian children with a mental health disorder receive specialized treatment services.[147] Mental health and other health care practitioners can play a key role in identifying youth who may need support and those who already experience substance use issues by screening, providing brief interventions and, if needed, referring them to substance use treatment programs and ongoing monitoring and follow-up.[146] Several screening tools are available to practitioners.[148]
AVAILABILITY OF AND ACCESS TO SUBSTANCES	Substance use increases among youth who have high availability and easy access to them. Substances can become more available through the community (e.g., density of retail locations and low cost), family (e.g., readily found in the home and/or a low level of parental monitoring), peers, and the health care system (e.g., physician prescribing practices). Close to 70% of Canadian students in grades 7 to 12 report that it is fairly easy or very easy to access alcohol, followed by cannabis (39%) and prescription pain relievers (25%).[99]

TABLE 5C Examples of Interpersonal Risk and Protective Factors

RISK AND PROTECTIVE FACTORS	ASSOCIATION WITH PROBLEMATIC SUBSTANCE USE
EARLY CHILDHOOD DEVELOPMENT	Negative experiences in a child's life can lead to future poor health (e.g., obesity, cardiovascular disease, and diabetes), poorer educational attainment, economic dependency, and greater risk of problematic substance use and depression.[149] [150] The Early Development Instrument measures school readiness – a demonstrated predictor for substance use later on in life. In Canada, more than 25% of children[151] are vulnerable in at least 1 of the 5 areas of development prior to entering grade 1: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge.
PHYSICAL AND SEXUAL ABUSE AND OTHER TYPES OF VIOLENCE	The connection between physical abuse, sexual abuse, and other types of violence with substance use later on in life has been well-established.[152] [153] Abuse can disrupt early development by impeding a child's ability to cope and by contributing to cognitive impairment. Over time, harmful use of substances may result as a coping mechanism.[153] A nationally representative Canadian survey from 2012 found that those who self-reported physical abuse, sexual abuse, or exposure to intimate partner violence before the age of 16 years were about 3.5 times more likely to report problematic substance use compared to those who did not (even after adjustment for various socio-demographic variables, such as age, sex, education, and income).[152] The severity of child abuse also plays a role in substance use risk. Canadians who have been exposed to all 3 forms of violence (referenced above) are almost 11 times more likely to report a substance use disorder than those not exposed to any abuse.[152] A third of Canadians over the age of 15 (33%) report experiencing at least 1 of these 3 types of child abuse before the age of 15 years.[154]
FAMILY MEMBER WITH PROBLEMATIC SUBSTANCE USE	Substance use in the family increases the likelihood that youth have direct exposure and access to substances. Harmful use disrupts routines and social support, contributing to stressful family environments. [155] [156] Negative parental or sibling modeling of behaviours and attitudes regarding substance use is a risk factor for youth.[156] For instance, maternal smoking, alcohol use, and illegal substance use have been linked to cannabis and other substance use disorders in young adults.[157] Moreover, children who experience both maltreatment and dysfunction in a family setting have the highest risk for mental health issues in adulthood.[153] In 2012, nearly 30% of Canadian students (15–17 years) reported having a family member who had problems with their emotions, mental health or use of substances and over 25% said that they were affected "a lot" or "some" by this situation.[143]

TABLE 5D Examples of Individual Risk and Protective Factors

RISK AND PROTECTIVE FACTORS	ASSOCIATION WITH PROBLEMATIC SUBSTANCE USE
RESILIENCE	Resilience is commonly recognized as a protective factor against problematic substance use among youth. While lacking a universal definition, it is often described as the ability to transform stressful events and/or adversity into opportunities for learning. [158] [159] Resilience includes a dynamic interplay of individual resources (e.g., problem solving skills, confidence, coping skills), relational resources (e.g., relationships with primary caregivers, parents, mentors, teachers) and contextual resources (e.g., community and culture) that help young people cope with challenging situations. [159] [160] There are various ways to measure resilience and no single national indicator is currently used. However, national level data from 2012 (based on proxy measures) show that only 45% of 12–17 year olds reported a high level of perceived control over life changes, while over 40% reported having the skills necessary to cope with everyday responsibilities.[143]
MENTAL HEALTH STATUS	Elements of positive mental health, such as living in a stable and nurturing home, attachment to family and school, and living in a safe, supportive neighbourhood have long been shown to protect against problematic substance use among youth.[161] On the other hand, poor mental health and mental illness are well-established risk factors for influencing the harmful use of substances.[77] Youth living with mental illness may use substances as a way to manage or cope.[5] [162] Moreover, youth who use substances frequently and/or at an early age are at greater risk of developing substance use disorders. The co-occurrence of problematic substance use and mental illness and disorders (particularly anxiety and depression) can generate a cycle of poor outcomes, including a high relapse rate if the disorders are not treated at the same time as the mental illness.[161]
GENETICS	Interactions between genes and the environment may in part explain protective factors (e.g., parental attachment) or risk factors (e.g., childhood trauma, unstable housing, or poverty) that influence substance use early in life.[163] [164] [165] [166] No single gene predisposes one to substance use. Rather a multitude of genes interact with each other and their environments, making individuals more or less susceptible to substance use disorders.[163] [164] Evidence indicates that such disorders can run in families.[157] [167] Their potential to be inherited varies among substances. More addictive ones (such as opiates) are more likely to be passed down through families.[163]

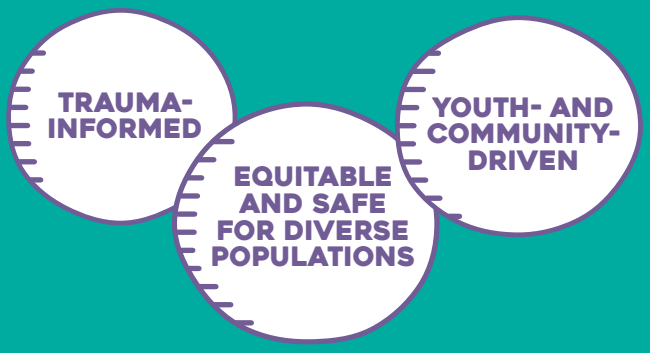
3 INTERVENTIONS FOR PREVENTING PROBLEMATIC SUBSTANCE USE IN YOUTH

Introduction

Preventing or reducing problematic substance use among youth in Canada can only be achieved through a range of coordinated actions that serve to promote wellness, reduce risks and harms, strengthen protective factors, and improve access to quality mental health and support services. Any measures implemented must be culturally safe for all youth and not stigmatize those who use substances. This section outlines the principles and components of a comprehensive and equitable approach to prevention. Intervening early to counteract the risk factors of problematic use offers the best chance of having a positive influence on a young person's development and reducing long-term harms to them and to society as a whole.[5]

In Brief

ACTIONS GUIDED BY CORE PRINCIPLES –



will ensure that policies and programs recognize the diverse needs of youth.

A RANGE OF ACTIONS TO PROMOTE WELLNESS,

reduce risks and harms, and improve access to quality mental health and support services are required.

A COMPREHENSIVE APPROACH INCLUDES POLICIES AND PROGRAMS THAT:

- ✓ CREATE EQUITABLE SOCIAL AND ECONOMIC CONDITIONS
- ✓ BUILD THE SKILLS AND RESILIENCE OF YOUTH AND THEIR FAMILIES
- ✓ PROMOTE POSITIVE SOCIAL NORMS, COMMUNICATE RISKS AND REDUCE ACCESS TO AND AVAILABILITY OF SUBSTANCES
- ✓ PROMOTE EARLY INTERVENTION FOR YOUTH WHO NEED SUPPORT.

Principles to Inform Prevention Interventions

Actions guided by core principles – trauma-informed, equitable and safe for diverse populations, and youth- and community-driven – will ensure that public health policies, systems, programs, and services meet the needs of diverse groups of youth and that existing inequities are not perpetuated or intensified.

Trauma-informed

Many youth who go on to engage in harmful use of substances have previously experienced trauma. A trauma-informed lens incorporates an understanding of experiences of trauma into all aspects of an intervention.[168] This is particularly important for programs and services working directly with youth, to ensure that those accessing the services feel safe and are able to benefit from the intervention. Trauma-informed services and systems avoid re-traumatizing individuals and support choice and control on the part of participating youth.[168] Programs are designed to be inclusive, transparent, collaborative, and empowering.[169][170]

Equitable and safe for diverse populations

Prevention interventions should be equity-driven and culturally safe. This means designing interventions to meet the needs of diverse groups of youth, including those from socially and economically marginalized communities. It also means facilitating access to services and programs by eliminating stigmatizing practices and institutional barriers, such as racism and discrimination, which prevent marginalized youth from seeking help.[18] Being equity-driven also means acknowledging that sex and gender shapes the experience of problematic substance use and that interventions should be designed and evaluated accordingly. [171][172][173] This also offers opportunities to engage in gender-transformative programming, which aims to change negative gender stereotypes and norms and redress imbalances of power.[174]

Cultural safety is a fundamental principle for all public health practices, particularly in relation to those that support First Nations, Inuit and Métis populations. It means ensuring that all interactions with, and initiatives for, Indigenous Peoples are based on humility, respect, cultural understanding, and equity[175] To implement this principle, institutions and organizations can institute policies and training on cultural safety for health professionals, schools, and social service organizations.

Youth and community driven

Community engagement – where community members serve as both a driver and an active participant in a process – is an essential component of equitable and responsive policies and initiatives. Communities may be defined geographically or socio-culturally (e.g., municipalities, Indigenous populations). A community may also be made up of people who share common experiences and vulnerabilities, such as LGBTQ2 youth or youth who use substances.

Community engagement can provide direction on how to design interventions that are appropriate for different populations and stimulate local action to address social inclusion and build community supports. Young people, and specifically those who use substances, can be engaged as collaborators on issues affecting their communities – effectively making them local peer leaders with an opportunity to influence program development and prevention campaigns.[176][177] This would help ensure that initiatives are non-judgemental and that youth feel comfortable accessing them. Supporting First Nations, Inuit and Métis communities to shape prevention efforts can strengthen cultural relevancy and facilitate community ownership.

A Public Health Approach to Prevention

A comprehensive public health approach to prevention considers two fundamental questions:

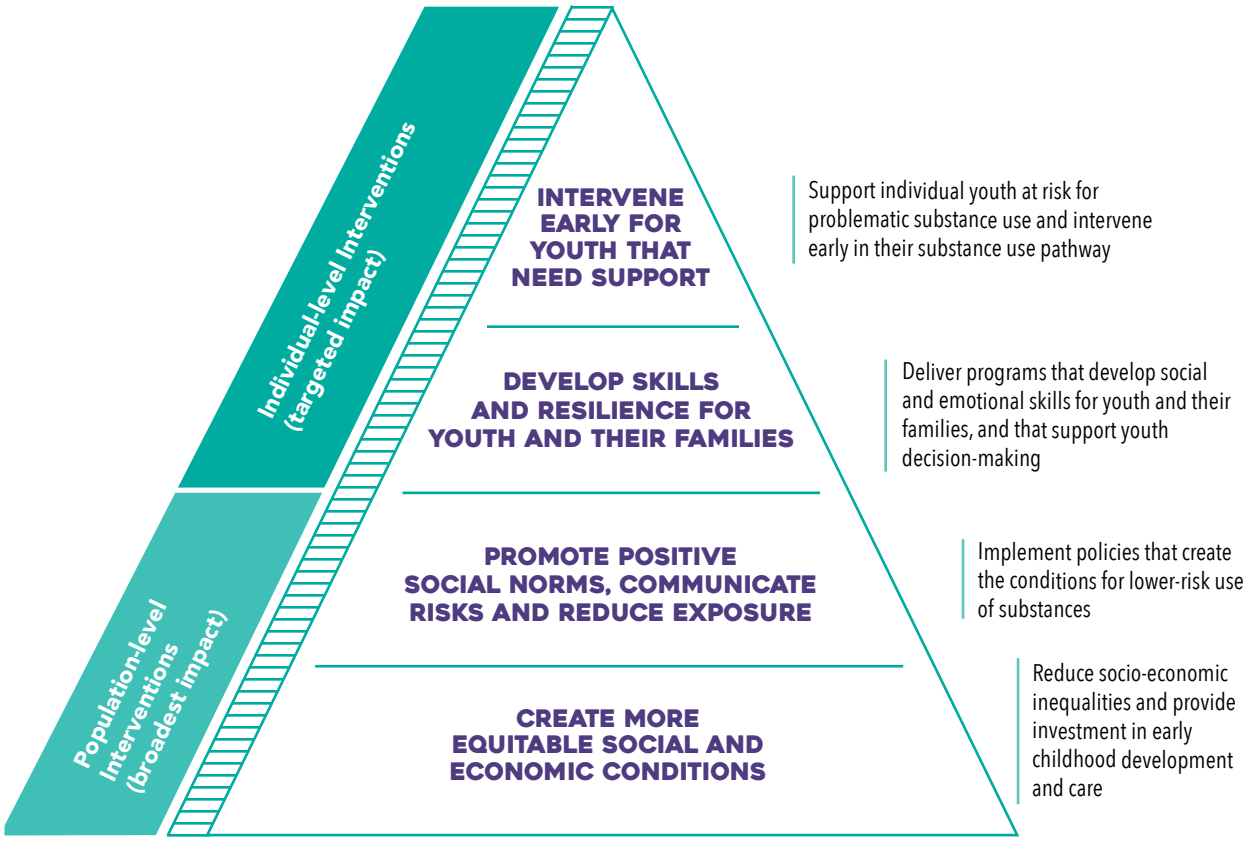
1. Which broad interventions can have the most benefit to the greatest number of people?

2. What kinds of interventions are needed to reduce health inequities?

The **public health pyramid** provides direction on where to implement different types of interventions (see Figure 8).[178] Population-level efforts in the bottom half of the pyramid can potentially benefit more youth because they are aimed at reducing overall substance use, either at the societal level, community-level, or in smaller populations, such as schools. At the same time, because they are designed for broad populations, these initiatives can avoid stigmatizing individual groups of youth. More individual-focussed interventions found in the top half of the pyramid are important for meeting the needs of socially marginalized youth with diverse needs.

The public health community has learned from previous efforts that a comprehensive approach needs to address the population-level in order to achieve sufficiently broad results, while also prioritizing specific, more focussed individual-level interventions. For example, population-level policies have markedly decreased the overall number of youth who smoke. At the same time, rates of smoking have remained higher among certain populations, such as those of lower socioeconomic status and LGBTQ2 youth.[179][180] To help reduce these disparities, the current renewal of the Federal Tobacco Control Strategy specifically targets higher rates of tobacco use in vulnerable populations.[95]

FIGURE 8 Public health interventions for the prevention of problematic substance use in youth



CREATE MORE EQUITABLE SOCIAL AND ECONOMIC CONDITIONS

Broad interventions that improve socio-economic conditions and early childhood development will improve overall community and individual health and resilience in a manner that reduces the risk of problematic substance use in the future. These types of interventions target the "causes of the causes" of societal health problems.[181] While measuring outcomes directly related to problematic substance use can be challenging, interventions at this level promise to deliver the widest-reaching effects by easing every day economic and social stressors on families and youth. Fundamentally, this requires action to reduce childhood poverty and meet the core housing needs of families. Early childhood represents the greatest opportunity to positively influence health and well-being in the future.[182][183] Quality early learning and child care from 0–6 years should be available to all children to ensure they benefit from the best possible start in life.

National initiatives are currently underway that aim to strengthen support to families and enhance early childhood development. Four of these initiatives and their potential impact on the prevention of problematic substance use are highlighted in Table 6, below. Moving forward, health and social sectors could consider measuring the health impact of these initiatives.

TABLE 6 Examples of current major policy reform in Canada and potential impact

POLICY INITIATIVE	POTENTIAL IMPACT ON PROBLEMATIC SUBSTANCE USE
Canada's Poverty Reduction Strategy [184]	This strategy aims to reduce poverty by 50% by 2030, while aligning with existing provincial and municipal poverty reduction strategies. It includes a plan to measure and publicly report on progress. Programs like the Canada Child Benefit and the Canada Workers Benefit help to ease poverty and support families living on low income by potentially: • Reducing family stress • Increasing time to develop family attachments • Providing greater opportunities for participation in community sports and other activities.
Housing First[217]	Housing First is an evidence-based approach to reducing homelessness that prioritizes people experiencing it. It is built on harm reduction principles where individuals are not expected to undergo treatment for substance use to access permanent housing. Analysis shows that the program has a positive impact on housing stability and maintenance. It has also been linked to lower alcohol consumption and reduced costs associated with chronic alcohol use in health and social justice settings.[218][219]
National Housing Strategy[185]	This strategy is a 10-year plan that includes targets to reduce homelessness and increase access to affordable and sustainable housing. These efforts could potentially reduce family stressors and parental substance use. When coupled with investment in connected, inclusive, community infrastructure, the result could be reduced exposure to substances for youth.
Indigenous Early Learning and Child Care Framework[186]	This framework is being developed to set out an action plan for facilitating access to culturally appropriate, high-quality, fully inclusive, flexible and affordable early learning and child care for First Nations, Inuit and Métis families. Successful implementation would contribute to life-long developmental benefits to children.

PROMOTE POSITIVE SOCIAL NORMS, COMMUNICATE RISKS AND REDUCE EXPOSURE

Alcohol, cannabis, and some opioids are regulated psychoactive substances that can be legally accessed. Marketing and advertising practices influence social norms (e.g., what is considered to be socially acceptable), and patterns of problematic substance use by increasing exposure to these substances and promoting their use. For prescription opioids, aggressive marketing can influence health professionals and contribute to over-prescription.[187]

A range of policy actions can be applied to reduce the availability of these substances, shift social norms, and increase awareness of risks related to substances. For example, regulatory policies

can restrict access to substances and limit marketing practices that may promote problematic substance use. Public education campaigns can communicate the health consequences of using substances and deliver harm reduction messaging. Lower-risk guidelines can be introduced to promote new social norms.

Policy in action: changing the culture of alcohol at the local level

Municipalities across Canada are working to change the culture of alcohol in their communities. Provinces have developed guides that provide a range of policy options and international examples for municipalities to consider.[7] These include evidence-based actions relating to regulating availability, restricting marketing and advertising, modifying the drinking context, developing education strategies, and ensuring enforcement. Comprehensive municipal alcohol policies have proven effective in reducing underage access to alcohol, injuries and hospital visits, and impaired driving.[14]

The history of tobacco control demonstrates that social norms and perceptions of psychoactive substances can change in response to the application of multiple policy measures such as public education, health warnings, and other regulatory policies.[98]

Policy measures targeting the prevention of problematic substance use are tailored to specific substances and can be implemented by local, provincial or federal governments. These types of population-level policy interventions are evaluated based on their reach and impact; that is, the number of people who are exposed to, and potentially influenced by, the policy.[98] As such, even though policies may not benefit everyone, they can have a large population effect if many people are exposed to the intervention. To maximize their effectiveness, policy interventions can be coordinated across government levels and correspond with related community- and school-based efforts.

Table 7, below, describes a series of available policy tools for the prevention of problematic substance use in youth, including potential actions for future consideration. In particular, two alcohol-related policy measures appear to show the greatest potential for reducing the harmful use of alcohol:[98]

1. **Policies that ensure higher pricing and taxation:** Youth and lower income individuals are 'price sensitive' and generally reduce consumption of alcohol in response to higher prices. Price thresholds are also an important consideration for cannabis and other controlled substances. Higher prices can help to lower use, but prices that are too high could shift consumers to seek lower-cost product in the illegal market.

2. **Policies that reduce availability:** Applying restrictions on the retail availability of alcohol can have a significant effect on the substance use behaviour of young people.

TABLE 7 Policy actions that could prevent problematic substance use in youth (adapted from[98])

POLICY AIM	POLICY MEASURE	CURRENT POLICY APPROACH IN CANADA	CONSIDERATIONS FOR FUTURE ACTION IN CANADA
Promote positive social norms and communicate risks	**Restrictions on promotion, including advertising**	Partial restrictions and voluntary standards for alcohol industry *Cannabis Act* includes comprehensive restrictions Intention to restrict marketing and advertising for opioids to health care practitioners	Examine comprehensive restrictions on alcohol marketing and advertising Monitor compliance of restrictions on cannabis and assess the need for new or additional measures
	Public education campaigns	Public education and awareness campaigns in mass media and social media to raise awareness of risks and encourage harm reduction measures (alcohol, cannabis, and opioids). Education and awareness activities targeting parents, youth, youth influencers, and other priority populations (e.g., Indigenous Peoples) to communicate the health and safety risks of cannabis use	Ensure awareness campaigns are conducted in coordination with other initiatives (e.g., school- or community-based initiatives) Monitor and adapt cannabis public education and awareness activities based on emerging evidence (e.g., prevalence of use, knowledge, attitudes and beliefs)

Continued on next page

POLICY AIM	POLICY MEASURE	CURRENT POLICY APPROACH IN CANADA	CONSIDERATIONS FOR FUTURE ACTION IN CANADA
Promote positive social norms and communicate risks	**Guidelines instructing lower-risk use**	Low-risk use alcohol guidelines Lower-risk use cannabis guidelines Guidelines that promote best practices in opioid prescribing	Promote existing guidelines through health associations and social sectors
	School health policies	Combination of positive youth development and education, depending on province or territory	Enhance health and education sector opportunities for strengthening youth resilience
	Health warnings	Mandatory health warning messages, standardized cannabis symbol and labelling of THC and CBD amounts on cannabis products Opioid warning sticker and patient information handout for all prescription opioids	Monitor and assess compliance with federal labelling regulations for cannabis and assess the need for new or additional measures
Reduce access and availability of psychoactive substances	**Substance content control**	Federal legislative and regulatory measures for cannabis to limit and control access, inform consumers, protect against accidental consumption, and reduce the appeal of cannabis to youth Intention to restrict the alcohol concentration of highly-sweetened alcoholic beverages	Evidence- and risk-based regulations to control the legal sale of additional cannabis products (e.g., edibles and concentrates) by October 2019
	Legal age of use	Enforcing legal age for cannabis possession, sale and distribution within each jurisdiction Legal age enforcement for alcohol consumption	Monitor adequacy of cannabis enforcement measures and share best practices across jurisdictions
	Private versus public sales	Minimum federal legislative conditions for cannabis retailers regardless of P/T retail model, including federal legislative restrictions at points-of-sale Spectrum of approaches in Canada for selling of alcohol, including government monopoly and private sales	Evaluate retail approaches for cannabis in relation to youth use
	Control of supply	Federal oversight of the cannabis supply chain, including: licensing of cannabis producers, product safety and quality control requirements, and mandatory reporting of the movement of cannabis through the supply chain Prescription monitoring systems for opioids to promote appropriate prescribing	Ongoing calibration of compliance and enforcement measures for cannabis based on assessment of risk
	Minimum pricing and taxation	Federal excise taxes for cannabis products, and recovery of regulatory costs from licensed producers Higher alcohol beverage prices and taxes	Assess the impact of Canada's cannabis taxation and cost recovery framework

Given the current environment of cannabis legalization, coupled with the opioid overdose crisis, further research is needed as to which specific policies will be effective for the prevention of problematic use of cannabis and opioids in youth. That being said, evidence from the tobacco field suggests that policies placing mandatory, comprehensive restrictions on marketing and advertising would help to reduce the problematic use of cannabis and alcohol in young people.[98] Voluntary restrictions do not appear to be as effective. Forthcoming Canadian regulations will soon restrict the marketing and advertising of opioids to health care practitioners, which may help to reduce over-prescribing.[188] Furthermore, recently-released guidelines focus on the problematic use of prescriptions by providing clear direction on appropriate prescribing practices for opioids (including when not to prescribe).[189]

Lastly, decriminalization policies are generally considered harm reduction strategies rather than primary prevention. They prioritize a public health approach with harm reduction as a key component instead of law enforcement strategies. In countries that have seen positive results from decriminalizing the simple possession of psychoactive substances, the policy is always a part of a suite of measures that include primary prevention, social support, treatment and harm reduction measures tailored to the country's context. In the end, a major societal shift such as decriminalization requires societal engagement and discourse, founded on the available evidence and an understanding of the necessity to eliminate stigma and discrimination of the people who use substances.

DEVELOP SKILLS AND RESILIENCE FOR YOUTH AND THEIR FAMILIES

Programs that aim to develop social and emotional skills within youth and their families, improve parent-child relationships, and address social norms around substance use can help to reduce the harmful use of substances among youth. Although interventions at this level are designed to support individuals or sub-groups, they can have a population-level influence if universally and effectively applied.[178] Yet, many programs lack the rigorous evaluation of effectiveness required for them to be widely adopted or expanded. The importance of these programs lie in the opportunities they present to directly engage with youth in their community context and intervene early with those who need additional support. To provide a supportive environment for these programs, communities can ensure a range of initiatives and activities are available for youth and families to connect and engage with each other.[190]

This section summarizes key components and approaches that have shown to be effective or promising within prevention programs for schools, social and health services, or activities such as sports programs. Programs that combine a range of components, are strengths-based, and are interactive show the most promise of consistent protective effects for reducing problematic substance use.

Family-focussed

Prevention interventions that help develop the skills and resources of caregivers can lead to improvements in childhood development in the earliest years.[183] Parent-involved programs – when combined with other skills-building programs for youth – effectively strengthen family relationships and communication, build family resilience, and reduce alcohol and substance use in pre-teens and early adolescence.[191] Programs that offer additional social supports for parents early on can potentially improve parent-child relationships (e.g., attachment), reduce child abuse, and reduce any subsequent harmful use of substances by youth.[192] Programs have also been developed to help diverse families support their LGBTQ2 children to achieve well-being and lessen the risk of harmful behaviours, although the evidence is still emerging concerning their effectiveness for reducing problematic substance use.[193]

Building skills and enhancing resilience

Programs that teach resistance skills and correct misinformation about psychoactive substances show more promise when combined with elements that aim to build resilience and cognitive skills, such as self-management, decision-making, and social skills.[194][195][196] In general, purely knowledge-based programs do not lead to significant changes in youth behaviour.[194] Providing youth with tools and information to reduce harms from substance use (particularly alcohol) and to make informed choices, may also be effective.[197][198] For Indigenous Peoples, resilience-based program components would be grounded in cultural values, such as culturally distinctive concepts of the person, and the importance of collective history and Indigenous languages and traditions.[199]

Interactive and youth-led

Interactions between teachers and students (and among students as peers) that stress communication and balanced discussions about substance use can improve prevention programming.[200][201] Engaging with youth on program design can help to ensure that education programs are responsive to their needs.[202] In general, fear- and abstinence-based programs delivered by police officers in schools are mostly ineffective and do not resonate with youth.[203]

Developmentally appropriate

Research indicates that prevention interventions are most effective when delivered prior to initial substance use or at the very early stages.[204] As such, prevention programming can be implemented at all grade levels, particularly at ages that represent key transition points when youth generally begin to use substances.[205] School-based programs may be most effective if implemented during the middle-school years, when experimentation with substance use is most likely to occur.[200]

INTERVENE EARLY FOR YOUTH THAT NEED SUPPORT

Interventions based on one-to-one interactions with youth can be implemented in a variety of settings such as clinical environments, schools, child services settings, and community settings. These initiatives can be supported by a strong network of youth-focussed and non-stigmatizing mental health and support services. They are generally designed to help individual youth, although they can also be delivered universally.[206]

Screening, Brief Intervention and Referral (SBIR) for adolescents and young adults is the most evaluated individual-level program. The aim of SBIR is to encourage and motivate behaviour change over a short time period (1 to 5 sessions). The brevity and low cost may allow this intervention to be applied on a relatively large scale.[206] SBIR has shown some effect on reducing problematic substance use in youth, particularly for alcohol, and may also be effective in preventing other substance use.[206][207] The intervention generally consists of initiating a conversation with young people in order to identify early substance use and then take the necessary steps to prevent problems from developing. The screening component assesses substance use behaviours; this information is then used to identify the most appropriate type of intervention, either a brief conversation that attempts to motivate behaviour change, or referral to a more intensive treatment program. The most effective SBIR interventions promote behaviour change by building trust and using empathic and motivational interviewing styles.[208]

TAKING A COMPREHENSIVE APPROACH

Comprehensive multi-level and multi-sector initiatives could have greater and longer lasting effects than stand-alone interventions.[209] The following two case studies reflect a broad approach to the prevention of substance use, going beyond individual-level interventions aimed at youth to tackle a range of interconnected community and social determinants of health.

The Iceland Youth Initiative (IYI)

> *"We learned through the studies that we need to create circumstances in which kids can lead healthy lives, and they do not need to use substances, because life is fun, and they have plenty to do–and they are supported by parents who will spend time with them."*
> *– Professor Inga Dóra Sigfúsdóttir*[210]

The IYI has been heralded as a public health success for reducing harmful use of substances among youth. The initiative tackles wide-scale use of substances by youth through interventions that are implemented at community and societal levels.[211] The program's impact has been dramatic, particularly on early initiation of alcohol use. The percentage of adolescents (grade 10) who had never used alcohol rose from 20.8% in 1995 to 65.5% in 2015. Similarly, there was a decline over the same period in the proportion of adolescents who had consumed alcohol 40 times or more, from 13.7% to 2.8%.[212]

The intervention focuses on reducing known risk factors for substance use, while strengthening a broad range of parental, school and community protective factors. The developers reasoned that if they provided easily accessible, inexpensive alternatives, they could reduce substance use. At the societal level, funding was increased for organized sports, music, art, dance and other clubs, with youth from low-income families receiving financial support to take part in these activities. National policies were implemented for minimum age restrictions on buying tobacco (18 years) and alcohol (20 years), and tobacco and alcohol advertising were banned. A policy was also implemented that prohibited adolescents (13–16 years) from being outside after 10 p.m. in winter and midnight in summer.[212]

The initiative's interpersonal and community streams emphasized the importance of family and parental relationships. Community buy-in was fostered through the building of alliances between schools, parent groups, local authorities and recreational workers, leading to an organized network of mutual support for youth.[212]

These interventions are informed by the Youth in Iceland Survey, a population-based survey for 9th and 10th graders to measure their substance use. The information collected helps to inform action at the community level. Survey results are made available to community workers and decision-makers within two months, which allows for quick local reaction.[212]

The First Nations Mental Wellness Continuum Framework

The First Nations Mental Wellness Continuum Framework (the Framework) was launched in 2015 to address mental health and substance use in First Nations communities of Canada using a comprehensive and culturally grounded approach.[213] It is the result of extensive collaboration between First Nations communities, Indigenous leaders, and federal departments to identify a way forward in addressing mental wellness that considers the unique needs, values, beliefs and customs of First Nations communities. At the heart of this endeavour are community-led actions and a shared vision amongst First Nations community partners who have a responsibility to address mental wellness that focuses on families and communities.

The Framework is a complex model rooted in culture that emphasizes strengths, resilience, and the Indigenous social determinants of health. It is made up of layers of elements that are critical to supporting First Nations mental wellness across the life course, including youth. A key component is the recognition that First Nation culture, knowledge and wisdom must be the foundation to health and wellness. The Framework is based on a systems approach that provides a frame through which all services, supports, and partners can work together to respond to the full range of risks and harms associated with mental wellness in an evidence-based, culturally competent manner.[213]

Since its launch, the partners have developed an implementation plan to put the Framework into practice and identify priorities for the short, medium and long term. To move forward, the partners work collaboratively to implement these priorities and continue to engage provincial and territorial governments to advance the work of the Framework. An evaluation plan is being developed to support ongoing improvement of the implementation process. Although still in the early stages, the Framework promises to serve as a 'best practice' for a systems-oriented public health approach that addresses key social determinants of health across the life course and societal levels. If successful, it could have a substantial long-term impact on reducing problematic substance use and creating the conditions for optimal mental wellness in First Nations youth.[213]

Canadian Drugs and Substances Strategy (CDSS)

The two case studies described above and our knowledge of what is required for a comprehensive approach can inform future action.

In 2016, the Government of Canada introduced the CDSS as the new public approach to strengthening action on illegal and legal problematic substance use.[214] It is a framework to address harmful use of substances through key pillars of prevention, harm reduction, treatment and enforcement. A consultation process was launched in the fall of 2018 to seek stakeholder input into what is needed for a comprehensive and collaborative approach that reflects the latest evidence and best practices.[215]

> *"We know that community solutions are the key to our success and we know that First Nations cultures must be central and foundational to addressing substance use issues and promoting wellness for individuals, families, and communities… [Achieving] the envisioned continuum of mental wellness will require sustained leadership, commitment and collaboration by all parties." Assembly of First Nations Ontario Regional Chief Stan Beardy*[213]

4 THE WAY FORWARD—
THE PATH TO PREVENTING PROBLEMATIC SUBSTANCE USE IN YOUTH

> Problematic substance use among youth is driven by a dynamic interplay of factors such as the marketing of psychoactive substances and their availability to youth, family and peer relationships, experiences of abuse and trauma, stable housing, and family income.

Because of this complex reality, our collective response needs to be equally as broad and comprehensive. This report explores a range of prevention interventions which can inform cross-sector and youth-led discussions about how to move forward with innovative and integrated solutions.

I am calling upon all levels of government as well as nongovernmental, private, and philanthropic organizations across sectors – including public health, primary health care, social services, justice, and education – to undertake a coordinated approach to preventing problematic substance use among youth.

Key Action Areas

IMPLEMENT AN INTEGRATED SUITE OF SOLUTIONS

As a complex issue, the prevention of problematic substance use among youth requires a suite of interventions made up of effective policies, programs, and public and professional education.

Our previous public health approaches to tobacco can provide us with direction for addressing other psychoactive substances. Our experience tells us that – in combination with other interventions such as public education – comprehensive restrictions on the marketing, access, and availability of a substance can markedly reduce use and harms at a societal level. The current public health approach to cannabis under the new *Cannabis Act* aims to restrict youth access, regulate adult access, enhance public awareness of the health risks and reduce the burden on the criminal justice system. We have an opportunity to evaluate this public health approach to cannabis.

At the same time, this report highlights the high levels of problematic alcohol consumption in Canada and the extent of its harms and costs. Now is the time for a comprehensive re-examination on how best to address problematic alcohol use and the necessary suite of evidence-informed public health measures needed to improve health outcomes.

We can also apply fresh approaches to designing multi-sectoral initiatives. For example, public health education campaigns could be developed in collaboration with social scientists and youth (including those who use or have used substances) to ensure that public messages speak to youth in their context and reflect current attitudes, behaviours, and beliefs.

COLLABORATE TO DRIVE NOVEL APPROACHES

No single entity is capable of implementing a complete suite of solutions. We will need to collaborate across sectors and with youth and people who use substances to pool our knowledge, identify critical gaps in prevention, and collectively develop new ideas.

To move forward with this integrated approach, we must accelerate established and budding collaborations between public health and social and economic sectors such as education, housing, and income support. For example, public health and education leaders could enhance collaborative efforts to bolster healthy school communities and expand or adapt promising school-based approaches for the prevention of problematic substance use. These types of partnerships could support the ongoing building of safe and supportive schools and communities that strengthen youth resilience.

STRENGTHEN MULTI-DISCIPLINARY EVIDENCE FOR DECISION-MAKING

Data and research form the evidence foundation for an effective suite of solutions. Many sectors have pieces of key information required for a more complete picture. We can do things differently by applying a systems perspective to coordinate networks across disciplines and sectors and gather data that can help us better understand the interplay of biological and social drivers. This will require social and health sciences to collaboratively develop research questions and ways of determining the effectiveness of interventions. Together with robust and linked surveillance systems that capture behaviours and harms, a systems approach can allow us to address the inherent complexity of problematic substance use and effectively respond as new patterns emerge.

We also need to understand the effectiveness of the actions we take to prevent problematic substance use, through rigorous evaluation of existing policies, public education campaigns, and tailored programs. This includes measuring the impact of initiatives on reducing health inequities and whether they meet the needs of different populations of youth. Lastly, we can better apply interventions and practices that we already know to be effective. These interventions could be shared amongst stakeholders and across networks so they can be adapted to new contexts and/or expanded to reach more youth.

ADDRESS TRAUMA AND ELIMINATE STIGMA

Everyone has a story to tell. It is critical to recognize that, when not addressed, trauma can lead young people to turn to substances to cope with painful realities. Stigmatizing youth who use substances by thinking of them as addicts or failures is not productive and can further traumatize. We can help reduce the negative effects of stigma by changing the way we talk about substance use. Sectors such as health, justice, social services and the media can use neutral language that puts "people first" (e.g., people who use substances) and is respectful of them. Working closely with young people who have lived and living experience of using substances can help make sure that how we communicate and offer support is appropriate and compassionate.

Young people need community, healthcare, and school environments that are safe and empowering places for them to address past trauma and explore their strengths in culture and identity. To achieve this, we need to apply a trauma-informed lens to policies, practice, and program delivery. This involves institutions incorporating an understanding of the effects of trauma in all organizational aspects, and placing priority on the emotional safety and autonomy of young people. By taking on principles of cultural safety and addressing institutional barriers, we can make sure that programs and services are free of discrimination for the range of young people who access them. For example, reducing institutional barriers – such as not requiring youth to be substance free in order to access housing services – could encourage more of them to access much needed support.

MAKING PREVENTION A PRIORITY

The pervasive harms of problematic substance use require us to do things differently. We must advance action across the entire continuum of prevention, harm reduction, treatment and recovery. Within the context of prevention, we will only succeed by acknowledging and acting on risks, while at the same time strengthening protective factors so that youth are engaged, resilient, and empowered.

I trust that this report provides enough knowledge to help amplify prevention efforts aimed at addressing problematic substance use before it begins. We must act now, together, to give use the best chance at ensuring the future well-being of our young people.

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APPENDIX 1: GLOSSARY

TERM	DEFINITION
Cannabis	A generic term used to denote the several psychoactive preparations of the plant from the *genus Cannabis*. It contains hundreds of chemical substances and more than 100 cannabinoids, many of which are biologically active. Among these, two cannabinoids have received the most scientific interest: delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). THC has therapeutic effects and is the compound mainly responsible for the characteristic psychomimetic effects of cannabis, while CBD has therapeutic but no obvious psychomimetic effects, though it is psychoactive.
Early Development Instrument	A widely used measure of children's readiness to learn. It is a kindergarten teacher-completed checklist that was developed to assess a child's school readiness in five developmental areas: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge. EDI scores are calculated as the percentage of children who fall below the 10% cut-off of the comparison population (e.g., province or Canada) on at least 1 of the 5 areas of development.
Fetal Alcohol Spectrum Disorder	An umbrella diagnostic term describing the range of effects that can occur in an individual who was prenatally exposed to alcohol. These effects may include physical, cognitive, memory, behavioural and learning difficulties with lifelong implications.
Harm reduction	Policies, programs, and practices that aim to reduce the adverse health, social and economic consequences of the use of legal and illegal psychoactive substances, without necessarily requiring people who use these substances from abstaining or stopping. A harm reduction approach respects the rights of individuals to use substances, increases awareness of lower-risk use, and addresses risk and protective factors relating to harms.
Health inequalities	Differences in health status or in the distribution of health determinants between different population groups. These differences can be due to unmodifiable health determinants such as biological factors and/or chance, or modifiable health determinants such as income, education, employment and/or social supports.
Health inequities	A subset of health inequalities that arise from the persistence of modifiable health determinants in certain population groups.
Heavy drinking	Classified as an excessive amount of standard drinks of alcohol (i.e., 12 ounces of beer or cider, 5 ounces of wine, or 1.5 ounce of distilled alcohol), at least 5 for males and 4 for females, in 1 occasion at least once a month in the past year.
Indigenous Peoples	A collective name for the original peoples of North America and their descendants. There are three distinct populations of Indigenous Peoples in Canada: First Nations, Inuit and Métis.
LGBTQ2	An evolving acronym for Lesbian, Gay, Bisexual, Transgender, Queer, Two-Spirit and additional identities.
Opioids	A family of powerful drugs (such as codeine, oxycodone, morphine, hydromorphone and fentanyl) that are usually prescribed to relieve pain; they can create a feeling of euphoria which makes them prone to abuse. If taken in large quantities or with other depressants (such as alcohol), opioids can lead to respiratory depression and death. In addition to be prescribed medications, they can also be produced or obtained illegally.

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TERM	DEFINITION
Positive youth development	A strengths-based approach that focuses on resilience and building protective factors in a young person's environment. It promotes positive outcomes for young people by providing opportunities, fostering positive relationships, and facilitating the support needed for them to overcome adversity.
Problematic substance use	The use of a psychoactive substance in a manner, situation, amount, or frequency that can cause harm to the person using the substance or those around them.
Protective factors	Factors that decrease the likelihood of an individual developing problematic substance use or health problems associated with substance use.
Psychoactive substances	These are substances, that when taken into one's system, affect mental processes. For the purposes of this report, the term "substances" refers to psychoactive substances. Substances discussed in this report include alcohol, cannabis, and opioids.
Resilience	The capacity to bounce back from adversity. Resilient individuals, families and communities are more able to cope with difficulties and adversities than those with less resilience.
Risk factors	Factors that increase the likelihood of individuals beginning to use substances problematically and/or developing health problems associated with use.
Social determinants of health	The conditions in which people are born, grow, work, live, and age. These relate to an individual's place in society, such as income, education or employment. Experiences of discrimination and/or historical trauma are also important social determinants of health for certain groups such as Indigenous Peoples.
Social norms	Customary rules of behaviour that are considered acceptable in groups and societies.
Substance use	This occurs across a continuum, ranging from experimentation to high-intensity chronic use.
Substance use disorder	Occurs when the recurrent use of a substance causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home. According to the Diagnostic and Statistical Manual of Mental Health Disorders-Fifth Edition (DSM-V), a diagnosis of substance use disorder is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria.
Trauma	Describes the effects of experiences that overwhelm a person's capacity to cope. These experiences may be early life events of abuse, neglect, and witnessing violence, or later life events such as sexual assault, partner violence, natural disaster, war, accidents, sudden unexpected loss, and forced disconnection from home or culture.
Trauma-informed approach	Trauma-informed approaches (TIAs) involve integrating an understanding of past and current experiences of trauma into various aspects of organizational systems, policies, programs, and practices to respond effectively and compassionately to those who have experienced trauma. TIAs operate at multiple levels, including the practitioner level, organizational level, as well as through wider collaboration across systems and sectors. The goal of TIAs is to minimize harm and avoid re-traumatizing individuals while supporting safety, choice, and control.
Youth (adolescents and young adults)	Aligned with the World Health Organization definition, adolescence in this report is characterized as the period from 10–19 years, and young adulthood, the period from 20–24 years. "Youth" is used to refer to either of these terms throughout the report.

APPENDIX 2:
CPHO HEALTH STATUS DASHBOARD

TABLE A General Health Status

TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Life expectancy at birth	**82 years** Overall life expectancy	2013–2015	Vital Statistics	**Better**	**Same**[i]
	84 years Female life expectancy	2013–2015	Vital Statistics	**Better**	**Same**[i]
	80 years Male life expectancy	2013–2015	Vital Statistics	**Better**	**Same**[i]
Health Adjusted Life Expectancy (HALE) at birth	**71 years** Female HALE	2010–2012	Vital Statistics, Birth and Death Databases and population estimates; Canadian Community Health Survey; National Population Health Survey, Health institutions component; Residential Care Facilities Survey; Canadian Health Measures Survey; Census of population	**Better**	**Better***[ii]
	69 years Male HALE	2010–2012		**Better**	
Perceived health	**61%** of population aged 12 years and older who report "very good" or "excellent" health	2017	Canadian Community Health Survey (CCHS)	**Same**	**Better****[i]
Perceived mental health	**70%** of population aged 12 years and older who report "very good" or "excellent" mental health	2017	Canadian Community Health Survey (CCHS)	**Worse**	N/A

* The WHO classification "Region of the Americas" was used as the comparator.

** For this survey question, Canada had a different set of positive responses, creating a positive bias for this estimate.

TABLE B Factors influencing health

CATEGORY	TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Social Factors	Community belonging	**69%** of population aged 12 years and older who report a "somewhat strong" or "very strong" sense of belonging to local community	2017	Canadian Community Health Survey (CCHS)	**Better**	N/A
	Poverty (Canada's Official Poverty Line)	**11%** of population below Canada's official poverty line, based on the Market Basket Measure (MBM) – is a measure of low income based on the cost of a specified basket of goods and services representing a modest, basic standard of living	2016	Canadian Income Survey (CIS)	**Better**	N/A
	Childhood poverty (Canada's Official Poverty Line)	**11%** of children living below Canada's official poverty line, based on the MBM	2016	Canadian Income Survey (CIS)	**Better**	N/A
	Education	**14%** of population without certificate, diploma or degree, >25 years	2017	Labour Force Survey	**Better**	**Better**[iii]
	Core housing need	**13%** of households in core housing need (considered inadequate, unaffordable and unsuitable)	2016	Census	**Same**	N/A
	Food insecurity	**8%** of households are food insecure	2011–2012	Canadian Community Health Survey (CCHS)	**Same**	N/A
Problematic substance use	Smoking	**13%** of population aged 15 and over who report being a current daily or occasional smoker (cigarettes only)	2015	Canadian Tobacco, Alcohol and Drugs Survey (CTADS)	**Better**	**Better**[i]
	Cannabis	**3%** of population aged 15 years and over who report daily or almost daily cannabis use, in past 12 months	2015	Canadian Tobacco, Alcohol and Drugs Survey (CTADS)	N/A	**Worse***[iv]

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* Refers to international survey examining the number of 15 year olds reporting to ever use cannabis.

CATEGORY	TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Problematic substance use	Alcohol	**20%** of population aged 12 years and over who report heavy drinking (men having 5 or more drinks, women having 4 or more drinks) at least once a month, in past 12 months	2017	Canadian Community Health Survey (CCHS)	**Worse****	**Same**[i]
	Opioids	**11 per 100,000** rate of apparent opioid-related deaths	2017	Opioid surveillance	**Worse*****	N/A
		16 per 100,000 rate of hospitalizations due to opioid poisonings	2017	Hospital Morbidity Database (HMDB)	**Worse**	N/A
Childhood risk and behavioural factors	Bullying	**22%** of youth from Grade 7 to 10 who report being victimized (at least once or twice in last 2 months)	2014	Health Behaviour in School-aged Children	**Same**	**Same**[v]
	Physical activity	**7%** of children and youth (aged 6 to 17 years) that accumulate at least 60 minutes of Moderate-to-Vigorous physical activity per day	2015	Canadian Health Measures Survey (CHMS)	**Same**	N/A
	Sedentary behaviour	**29%** of children and youth who report meeting sedentary behaviour recommendations by spending 2 hours or less per day watching television or using a computer during leisure time	2014–2015	Canadian Health Measures Survey (CHMS)	N/A	N/A

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** In 2013, the definition of heavy drinking was modified. Interpret with caution.

*** Trend data only available for past year (relative to 2016).

CATEGORY	TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Childhood risk and behavioural factors	Overweight and obesity	**17%** of population aged 6 to 18 years classified as overweight by WHO definition	2015	Canadian Health Measures Survey (CHMS)	**Same**	**Same****[i]**
		14% of population aged 6 to 18 years classified as obese by WHO definition	2015		**Same**	
	Child abuse	**33%** of population who experienced any of 3 types of child abuse before age 15 (physical abuse, sexual abuse and/or witnessing violence by a parent or guardian against another adult)	2014	General Social Survey	N/A	N/A
Early childhood protective factors	Early development index	**26%** of children vulnerable in 1 of 5 areas of development prior to entering Grade 1 (Physical Health and Well-Being; Social Competence; Emotional Maturity; Language and Cognitive Development; Communication Skills and General Knowledge)	Various data years pooled	Offord Centre for Child Studies, McMaster University	N/A	N/A
	Immunization	**89%** of 2 year-old population that have received measles vaccine	2015	Childhood National Immunization Coverage Survey	**Same**	**Worse[vi]**
		77% of 2 year-old population that have received the recommended 4 doses for diptheria, pertussis and tetanus vaccine	2015		**Same**	**Worse[vi]**
		91% of 2 year-old population that have received the polio vaccine	2015		**Same**	N/A
		75% of 2 year-old population that have received the varicella (chickenpox) vaccine	2015		**Same**	N/A

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**** International comparisons combined children who are overweight and obese.

CATEGORY	TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Maternal and Infant Health Factors	Low birthweight	**6%** of live births with a birth weight less than 2,500 grams	2016	Vital Statistics	**Worse**	**Same**[i]
	Breastfeeding	**32%** of female population aged 15 to 55 years who had a baby and report exclusively breastfeeding for at least 6 months, without additional liquid/ water or solid food	2017	Canadian Community Health Survey (CCHS)	**Better**	**Worse**[vi]

TABLE C Health Outcomes

CATEGORY	TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Chronic diseases and injuries	Cancer	**564 per 100,000** rate of newly diagnosed cancers (all ages)	2015	Canadian Chronic Disease Indicators (CCDI)	N/A	**Same**[i]
		66 per 100,000 rate of newly diagnosed colorectal cancers (all ages) (excluding Quebec)	2017	Canadian Cancer Registry (CCR)	N/A	N/A
	Cardiovascular Disease	**592 per 100,000** rate of newly diagnosed cases of ischemic heart disease, aged 20 and over	2015	Canadian Chronic Disease Indicators (CCDI)	**Better**	**Better***[i]
	Diabetes	**595 per 100,000** rate of newly diagnosed cases of diabetes, aged 1 and over	2015	Canadian Chronic Disease Indicators (CCDI)	**Better**	**Same****[i]
	Mood disorders	**9%** population aged 12 and over who report that they have been diagnosed by a health professional as having a mood disorder, such as depression, bipolar disorder, mania or dysthymia	2017	Canadian Community Health Survey (CCHS)	**Worse**	N/A
	Dementia (including Alzheimer's disease)	**1373 per 100,000** rate of newly diagnosed dementia cases, including Alzheimer's disease, aged 65+	2015	Canadian Chronic Disease Indicators (CCDI)	**Better**	**Same****[i]

Continued on next page

* Compares internationally the mortality rate of ischemic heart disease, per 100,000. The indicator reports the rate of newly diagnosed cases.

** International comparison based on all cases (new and existing).

CATEGORY	TOPIC	INDICATOR	MOST CURRENT DATA YEAR	DATA SOURCE	TREND OVER TIME (UP TO 15 YEARS)	INTERNATIONAL BENCHMARK
Chronic diseases and injuries	Suicide	**11 per 100,000** rate of suicide mortality	2016	Vital Statistics	**Same**	**Same**[i]
	Unintentional injuries	**601 per 100,000** rate of hospitalizations due to injuries	2016	Discharge Abstract Database (DAD) Hospital Morbidity Database (HMDB)	**Better**	N/A
Communicable diseases	Tuberculosis	**5 per 100,000** rate of new active tuberculosis cases	2016	Notifiable Disease on-line tool	**Same**	**Better**[vii]
	Hepatitis C	**31 per 100,000** rate of new hepatitis C cases	2016		**Better**	**Better**[viii]
	HIV	**6 per 100,000** rate of new HIV cases	2016		**Same**	N/A

INTERNATIONAL COMPARISONS

i Organization for Economic Development Canada. (2017). Health at a Glance 2017. Available from: http://www.oecd.org/health/health-systems/health-at-a-glance-19991312.htm

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v Organization for Economic Development. (2017). PISA 2015 key findings for Canada. Available from: http://www.oecd.org/canada/pisa-2015-canada.htm

vi Organization for Economic Development Canada. (2017). OECD Family Database. Available from: http://www.oecd.org/els/family/database.htm

vii World Health Organization. (2017). Global Tuberculosis Report. Available from: http://www.who.int/tb/publications/global_report/gtbr2017_annex4.pdf?ua=1

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APPENDIX 3:
GUIDELINES FOR LOW-RISK ALCOHOL DRINKING AND LOWER-RISK CANNABIS USE

LOW-RISK ALCOHOL DRINKING GUIDELINES

The Low-Risk Alcohol Drinking Guidelines (LRADGs) recommend to:[216]

REDUCE LONG-TERM HEALTH RISKS

(e.g., liver disease and some cancers)

WOMEN SHOULD HAVE NO MORE THAN 10 DRINKS A WEEK, WITH NO MORE THAN 2 DRINKS A DAY MOST DAYS

MEN SHOULD HAVE NO MORE THAN 15 DRINKS A WEEK, WITH NO MORE THAN 3 DRINKS A DAY MOST DAYS

REDUCE SHORT-TERM RISKS OF INJURY OR ACUTE ILLNESS

- ✕ **WOMEN SHOULD NOT HAVE MORE THAN 3 DRINKS ON ANY SINGLE OCCASION**
- ✕ **MEN SHOULD NOT HAVE MORE THAN 4 DRINKS ON ANY SINGLE OCCASION**

ABSTAIN FROM USING IN SITUATIONS THAT ARE CONSIDERED HAZARDOUS

- When driving a vehicle or using machinery and tools
- When taking medicine or other drugs that interact with alcohol
- When doing any kind of dangerous physical activity or making important decisions
- When living with mental or physical health problems, or alcohol dependence
- When pregnant or planning to be pregnant, or before breastfeeding
- When responsible for the safety of others

LOWER-RISK CANNABIS USE GUIDELINES

The Lower-risk Cannabis Use Guidelines (LRCUGs) recommend to:[97]

ABSTAIN FROM USE, AS IT IS THE MOST EFFECTIVE WAY TO AVOID HEALTH RISKS

DELAY STARTING CANNABIS USE UNTIL LATER IN LIFE

IDENTIFY AND CHOOSE LOWER-RISK CANNABIS PRODUCTS

AVOID SMOKING BURNT CANNABIS

DO NOT USE SYNTHETIC CANNABINOIDS

AVOID FREQUENT OR INTENSIVE CANNABIS USE

(e.g., daily or near-daily)

ABSTAIN FROM USING IN SITUATIONS THAT ARE CONSIDERED HAZARDOUS:

- ✕ WHEN DRIVING A VEHICLE OR USING MACHINERY
- ✕ IF YOU ARE AT RISK FOR MENTAL HEALTH PROBLEMS
- ✕ IF YOU ARE PREGNANT

AVOID HARMFUL INHALING PRACTICES

such as breath-holding and deep-inhalation

AVOID COMBINING THESE RISKS

ACKNOWLEDGEMENTS

Many individuals and organizations have contributed to the development of The Chief Public Health Officer's Report on the State of Public Health in Canada, 2018: Preventing Problematic Substance Use in Youth.

I would like to express my appreciation to the consultants who provided invaluable expert advice:

- Dr. Cory Neudorf, Chief Medical Health Officer, Saskatoon Health Region, University of Saskatchewan
- Dr. David Mowat, Canadian Partnership Against Cancer
- Dr. Elizabeth Saewyc, University of British Columbia
- Dr. Jeff Reading, University of Victoria
- Dr. John Frank, University of Edinburgh
- Dr. Margo Greenwood, University of Northern British Columbia, National Collaborating Centre for Aboriginal Health
- Dr. Michael Routledge, Medical Officer of Health, Manitoba
- Dr. Perry Kendall, University of British Columbia

I would like to extend a special thank you to problematic substance use experts for sharing their expertise in reviewing many drafts:

- Dr. Benedickt Fischer, Centre for Addiction and Mental Health
- Dr. David Hammond, University of Waterloo
- Dr. Jean-Sébastien Fallu, Université de Montréal
- Dr. Rebecca Saah, University of Calgary

In addition, I would also like to recognize contributions made by partners and stakeholders who were consulted on the report, including Marlene Laroque and Nelson Alisappi from the Assembly of First Nations, Eduardo Vides from the Métis National Council, and staff from Inuit Tapiriit Kanatami, as well as the National Youth Council from the Boys and Girls Club of Canada.

I would also like to sincerely thank the many staff within Health Canada, the Public Health Agency of Canada, Canadian Mortgage and Housing Corporation, and Employment and Social Development Canada for review of and input into the report.

I appreciate the excellence and dedication of my support staff and CPHO Reports Unit in researching, consulting on and developing this report: Bonnie Hostrawser, Anne-Marie Robert, Debjani Mitra, Kimberly Gray, Larry Shaver, Fatimah Elbarrani, Aimée Campeau, and Rhonda Fraser.