

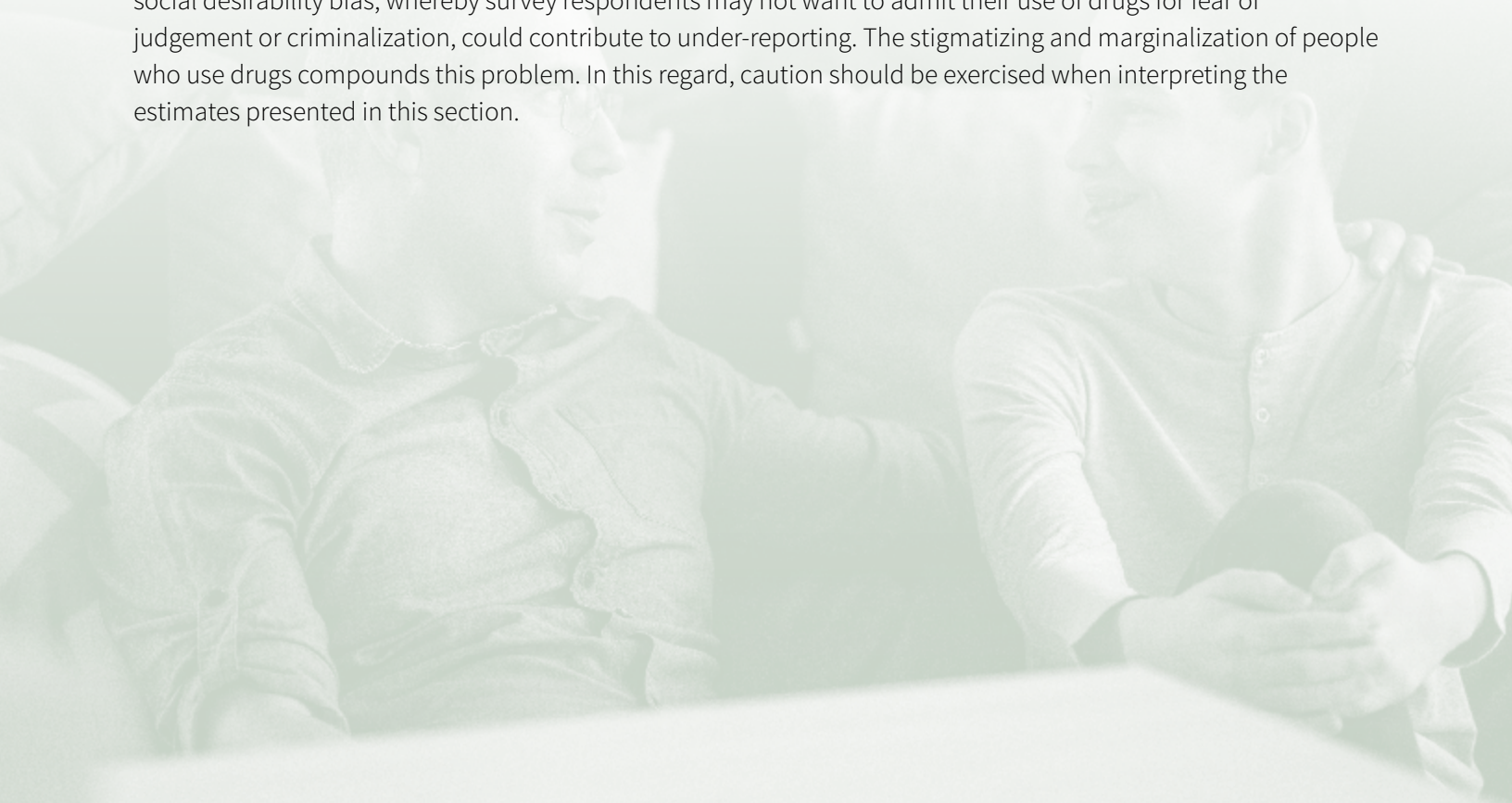
Introduction

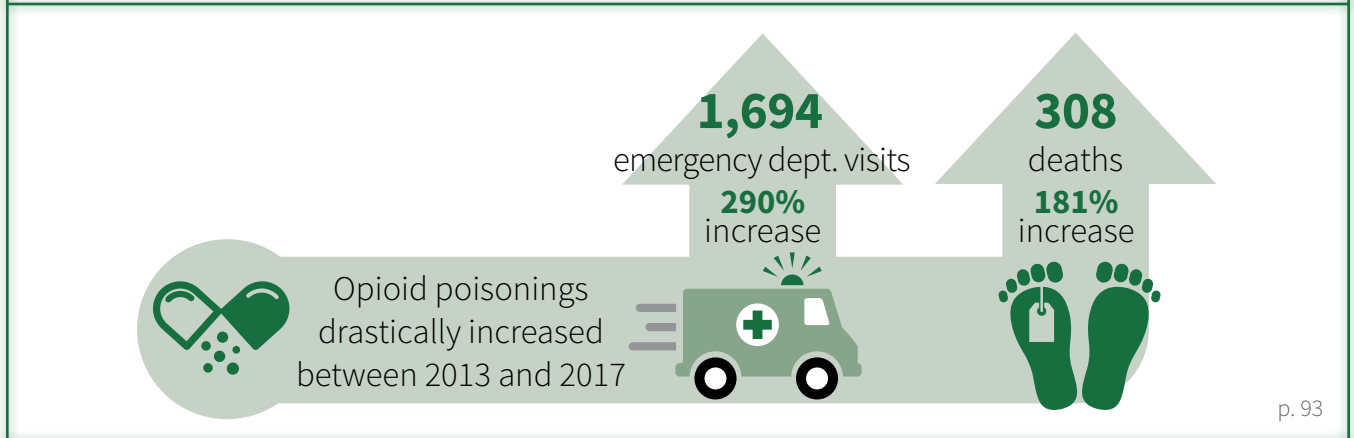
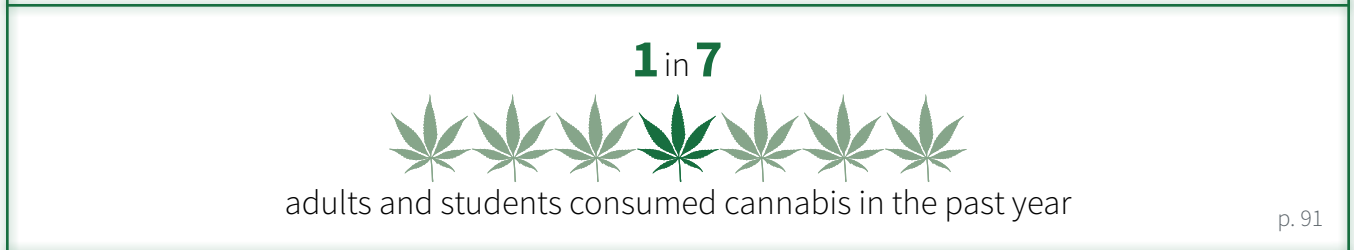
The substances covered in this chapter include psychoactive drugs, which are chemical substances that alter brain function and result in temporary changes in perception, mood and behaviour. Psychoactive substances are used for both medical and non-medical reasons [1]. They can be legal, and are widely available, such as alcohol. Some are available by prescription for pharmaceutical use, such as some opioids and stimulants [2]. Other drugs are obtained in the illicit market, such as cocaine and heroin [3].

When used in moderation and in a safe environment, substance use can have a positive impact on life satisfaction [4]. However, substance use can also have negative physical, social, and psychological impacts. It can lead to a higher risk of injury and chronic disease [5], can have a negative impact on mental health and relationships, and can interfere with employment and housing security [6]. Behaviours such as driving under the influence of psychoactive substances, sharing intravenous needles and other equipment, and using drugs alone or in unsafe environments can increase the risk of harms [4]. In addition, the unregulated nature of the illicit drug market can result in unintentional drug poisoning via product contamination and/or unknown potency.

Beyond mental and physical health impacts, the stigma, marginalization, and discrimination also impact the health of people who use drugs. The criminalization of some types of drug use contributes significantly to these harms. Addressing the related social determinants of health, such as housing, social inclusion, and income, is an important component of preventing harmful substance use [4].

Like other behaviours, substance use is challenging to reliably measure in the population. Many of the data sources used to estimate substance use in this chapter likely underestimate the magnitude of use and harms in Toronto. Surveys, in particular, under-represent many of the vulnerable populations that use drugs. In addition, social desirability bias, whereby survey respondents may not want to admit their use of drugs for fear of judgement or criminalization, could contribute to under-reporting. The stigmatizing and marginalization of people who use drugs compounds this problem. In this regard, caution should be exercised when interpreting the estimates presented in this section.





Alcohol

Alcohol is one of the most commonly consumed psychoactive drugs among Canadians [7]. It leads to increased risk for variety of chronic diseases such as cancer, liver disease, and cardiovascular diseases [8, 9]. Excessive alcohol use also increases the risk for injury, violence, and mental health issues, and can lead to physiological dependence [10]. In 2014, alcohol use was responsible for the highest overall costs of any psychoactive substance in Canada, including for healthcare, lost productivity, and criminal justice impacts [11]. Some evidence at the provincial and national level suggests that the average number of drinks consumed per week is increasing, particularly among women [12] [11].

Overall Alcohol Consumption

Among Toronto adults (19 years of age and over), in 2015/16:

- 76% consumed alcohol in the past 12 months.
- Those aged 19 to 39 years were significantly more likely to consume alcohol compared to older age groups.

Among Toronto students in grades 7 to 12, in 2014:

- 29% drank alcohol in the past 12 months, ranging from 6 percent of grade 7/8 students to 49% of grade 11/12 students.

Exceeding Low-Risk Alcohol Consumption

The risk of both acute and chronic harms from alcohol consumption increases with the amount consumed. Frequent episodes of heavy drinking, defined here as having a minimum of four drinks for females or five drinks for males on a single occasion, puts individuals at higher risk for various chronic diseases [13] and personal injury, as well as violent [14] [15] and suicidal behaviours [16]. Canada's Low-Risk Alcohol Drinking Guidelines (LRADG) inform Canadians about how to reduce risks from alcohol consumption [17]. In addition to advising against

heavy drinking episodes, the guidelines also propose a maximum number of drinks per week (for men and women), and advise that alcohol not be consumed every day.

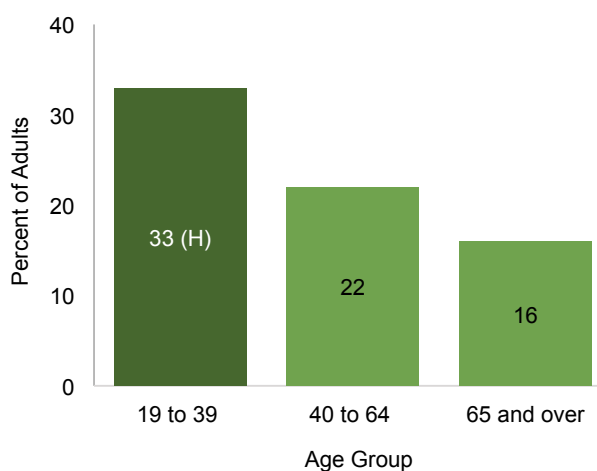
Among Toronto adults (19 years of age and over), in 2015/16:

- 17% reported heavy drinking episodes at least once per month in the past 12 months.
- 25% exceeded the LRADG in the past year.
- Males were twice as likely to have frequent heavy drinking episodes and exceed the LRADG compared to females.
- Those aged 19 to 39 years were significantly more likely to exceed LRADG in the past 12 months compared to older age groups (Figure 7.1). A similar trend is seen for frequent heavy drinking episodes.

Among Toronto students in grades 7 to 12, in 2014:

- 15% reported heavy drinking¹ on at least one occasion in the past 12 months, a behaviour which increased with age, to 29% among grade 11/12 students.

Figure 7.1: Percent of Adults (19 Years of Age and Over) Who Exceeded the Low-Risk Alcohol Drinking Guidelines by Age Group, Toronto, 2015/16



H: Significantly higher than the 40 to 64 and 65 and over age groups.
Data Source: Canadian Community Health Survey, 2015/16.

¹ In TPH's Student Health Survey, heavy drinking was defined as 5 drinks or more regardless of gender.



In 2015/16, Toronto adults (19 years of age and over) identifying as homosexual, bisexual or other sexual orientation² were more than twice as likely to have frequent heavy drinking episodes and to exceed the Low-Risk Alcohol Drinking Guidelines compared to those who reported being heterosexual. This inequity should be interpreted in the context of homophobia, discrimination, and other trauma, which can drive people to substance use as a coping mechanism [18].

In 2016, 47% of Indigenous adults (15 years of age and over) reported that they abstained or rarely engaged (less than once per month) in heavy drinking in the past year. In comparison, 83% in the general population reported fewer than monthly heavy drinking episodes in the past 12 months. This inequity should be interpreted in the context of colonization, anti-Indigenous racism, and inter-generational trauma. These root causes and additional social determinants are reasons why people use substances as a coping mechanism [19].

Healthcare Utilization for Problems Related to Alcohol

In Canada in 2015/16, there were more hospitalizations for conditions entirely caused by alcohol than there were for heart attacks [20]. This includes mental health admissions, such as chronic alcohol use disorder and alcohol withdrawal, as well as physical conditions such as cirrhosis of the liver, pancreatitis, hepatitis, and alcohol poisoning.

In Toronto:

- Males were almost three times more likely to be hospitalized (278 per 100,000) compared to females (94 per 100,000) for conditions entirely caused by alcohol (among those 10 years of age and over, fiscal year 2016).
- Alcohol was the most common drug for which people attended provincially-funded substance use treatment programs. In fiscal 2017, 68% of Toronto residents attending treatment services noted alcohol as a ‘problem substance’ at admission.³



Toronto residents are hospitalized as a result of alcohol use less often than people in the rest of Ontario. In the 2016 fiscal year, the age-standardized hospitalization rate for conditions entirely caused by alcohol in the province of Ontario was 201 per 100,000 population, significantly higher than Toronto’s rate (182 per 100,000 population).



The use of alcohol and other psychoactive substances during pregnancy is an area of particular public health concern due to known and unknown impacts effects on the developing fetus. **More information** about substance use during pregnancy is included in Chapter 4.

Cannabis

Prior to its legalization in 2018, non-medical cannabis was the most commonly used illicit drug in Canada [21]. Some studies suggest there was a significant increase in self-reported cannabis use between 1996 and 2017 in Toronto and Ontario overall [12]. It is too early to know if cannabis legalization will increase rates of cannabis consumption; however, it is

² These terms were used by the survey tool that collected these data, and do not reflect the terminology used by Toronto Public Health.

³ People could name up to five substances at intake.

expected people who have not used cannabis before may be more likely to try legally purchased cannabis.

There are significant health, social, and economic harms from laws that criminalize people who consume certain drugs. These include stigma and access to employment and housing [22]. A disproportionate number of the arrests for cannabis possession prior to legalization was among members of racialized and vulnerable communities [23] [24].

Although legalization addresses issues related to some of these harms as well as quality control and safety of cannabis products, there is a need for more research on the acute and long-term health effects of cannabis use. More evidence is also needed on the health impacts of occasional and moderate use of cannabis since this comprises the majority of use.

Currently, research suggests that long-term cannabis use may be associated with poorer health, with frequent and chronic users being at higher risk [25] [26] [27]. For instance, regular cannabis use has been associated with mental illnesses such as depression and anxiety. In addition, among those with a family history, there is an increased risk of developing psychosis and schizophrenia with cannabis use [26, 28]. Long-term cannabis smoking has also been associated with respiratory illness such as chronic bronchitis [26] [29]. Those who start using the drug during adolescence may be at particular risk of harms, as smoking during youth increases the likelihood of dependence [25] [26]. However, cannabis also has therapeutic properties and health care providers may provide medical authorization for patients to access cannabis for medical purposes.

Cannabis Consumption

Among Toronto adults (18 years of age and over), in 2015/16:

- 14% reported using cannabis in the past 12 months, and 7% used it once per month or more.
- A significantly lower proportion of women (10%) reported using cannabis compared to men (18%).

Among Toronto students in grades 7 to 12, in 2014:

- 13% reported using cannabis in the past 12 months. Cannabis was the most commonly consumed drug after alcohol. 24% of grade 11/12 students reported using cannabis in the past 12 months, and 6% used it 4 to 6 times per week or more.



Among Toronto adults (18 years of age and over) in 2015/16, individuals with a high-school diploma as their highest level of education were twice as likely as those with post-secondary education to report using cannabis in the past 12 months (22% compared to 11%).

In 2016, 63% of Indigenous adults (15 years of age and over) reported that they used cannabis in the past year, compared to 14% in the general population. This inequity should be interpreted in the context of colonization, anti-Indigenous racism, and inter-generational trauma. These root causes and additional social determinants can drive people to substance use as a coping mechanism [19].



In 2015/16, cannabis use in the past year was more common among adults in Toronto (14%) than it was in the rest of the Greater Toronto Area (9%).

Emergency Department Visits Due to Cannabis Consumption

The acute negative consequences of intentional and unintentional cannabis use are of particular concern once edible cannabis products are legalized in October 2019. Data from Emergency Departments (EDs) on visits caused by cannabis use capture some of the most severe cases of adverse reactions to

cannabis, including symptoms of poisoning and psychosis. As of 2017, cannabis had not been associated with direct cause of death. [29]

In Toronto in 2017:

- There were 1,071 visits to the ED caused directly by cannabis consumption, which is a rate of 35 visits per 100,000 people. The rate for males (48 per 100,000) was more than twice as high as the rate for females (22 per 100,000).
- Individuals aged 15 to 24 accounted for 460 visits to the ED caused directly by cannabis consumption, a rate of 121 per 100,000 people.
- The number of visits to the ED caused directly by cannabis consumption has significantly increased since 2007, when the rate was 8 per 100,000 visits. More research is needed to understand if this increase reflects a true increase in adverse reactions to cannabis, or if it is due to changes in diagnostic coding.



Cannabis may be consumed by smoking, vaping, dabbing (inhaling heated cannabis extracts), ingesting cannabis-infused food and drink, and by applying cannabis products to skin and hair. Local data on methods of cannabis consumption and the circumstances surrounding acute cannabis intoxication are lacking. Although rates of ED utilization are available, there is no reliable way to determine if the cannabis consumption was intentional or unintentional.

Opioids

Opioid poisonings are a major public health crisis in Toronto and across Canada [22]. Death from opioid poisoning has increased significantly over the past 10 years. In Canada, the unregulated illicit drug supply has become increasingly contaminated with potent opioids such as fentanyl and its analogues (many of which are illicitly produced), which can increase the risk of opioid poisoning [30]. Pharmaceutical opioids play an important role in the management of severe and chronic pain, however, opioid use can lead to physical dependency.

Pharmaceutical Opioids

Among Toronto adults (18 years and over) in 2017:

- 19% reported any use of pharmaceutical pain relievers⁴, such as Percocet, Demerol, Endocet, Tylenol #3 in the past year, and 3%⁵ reported use without a prescription or doctor's instruction.

Among Toronto students in grades 7 to 12, in 2014:

- 11% reported using pain relief pills, such as Percocet, Demerol, OxyContin, or Tylenol #3 without a prescription⁶, ranging from 7% of grade 7/8 students to 13% for grade 11/12 students



Data on consumption of heroin and other illicit opioids is unavailable for Toronto residents, as survey sample sizes are not large enough to reliably estimate behaviours that are not common. However, heroin and other illicit opioids may be more frequently used in some marginalized segments of the population, and there is considerable risk of harms from using unregulated illicit drugs such as these.

⁴ Survey module did not specify 'opioids' in the question, but only included examples containing opioids

⁵ High degree of variability. Interpret with caution.

⁶ Survey question included only opioid examples and excluded 'regular Tylenol or aspirin that anyone can buy in a drug store'.

Opioid Poisoning

The consumption of opioids in high doses or in conjunction with other drugs/contaminants can result in poisoning, and even death. These opioid poisonings, or overdoses, can only reliably be counted when there is contact with the health care system, such as paramedic services, hospital services, or coroner investigation. Many people do not seek medical help for non-fatal overdoses, which means the available numbers are an under-representation of the number of overdoses occurring [31].

In 2018, Toronto Paramedic Services attended:

- 3,265 suspected opioid overdose calls, with a mean patient age of 41. The majority of calls for suspected opioid overdoses were for male patients (68%) compared to female patients (32%).

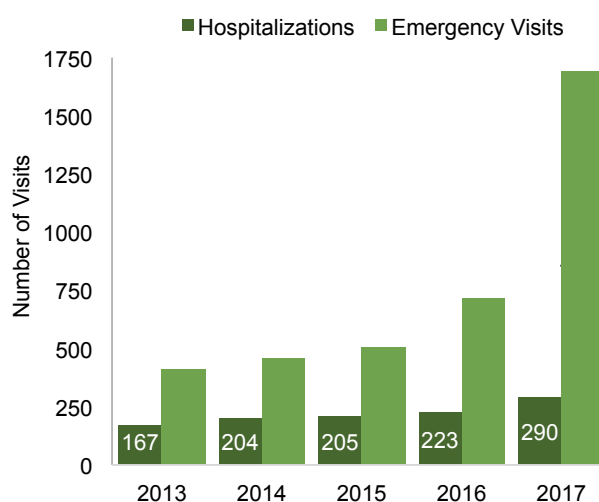
Among Toronto residents in 2017, opioid poisonings resulted in:

- 1,694 Emergency Department (ED) visits^{7,8}, a rate of 57.4 per 100,000 persons. This is an increase of 131% in the rate of visits compared to 2016, and a 290% increase compared to 2013 (Figure 7.2).
- 290 hospitalizations⁹, a rate of 9.8 per 100,000 persons. This is a 26% increase in the rate of hospitalizations compared to 2016 and a 63% increase compared to 2013 (Figure 7.2).
- 308 deaths¹⁰, a rate of 10.4 per 100,000 [32]. This is a 60% increase in the rate of death compared to 2016 and a 181% increase in rate compared to 2013 (Figure 7.3).

Between October 1, 2017 and September 30, 2018:

- Fentanyl and its analogues were the most commonly reported opioid group contributing to deaths due to opioid poisonings, contributing to 78% of deaths. Heroin was second, contributing to less than 19% of deaths.

Figure 7.2: Emergency Department Visits⁸ and Hospitalizations Due to Opioid Poisoning, Toronto, 2013 to 2017



Data Source: Source: Public Health Ontario. Interactive Opioid Tool. 2013 to 2017. Accessed on February 28, 2019.

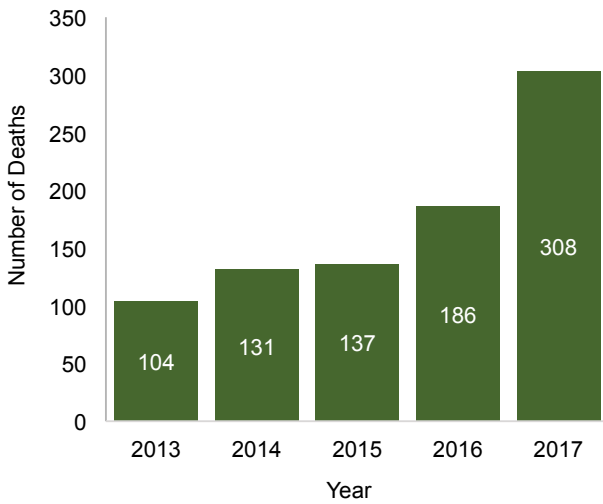
⁷ These numbers exclude opioid poisonings that occur in Toronto to individuals who reside outside of Toronto and to those who do not have a fixed address (NFA). As a result, the burden of this issue is under-represented.

⁸ Note that changes to hospital reporting for opioid overdoses at the start of May 2017 may account for some of the large increase seen in 2017.

⁹ These numbers exclude opioid poisonings that occur in Toronto to individuals who reside outside of Toronto and to those who do not have a fixed address (NFA). As a result, the burden of this issue is under-represented.

¹⁰ This number may include opioid poisoning deaths that occurred among individuals who reside outside of Toronto, if location of residence was unknown.

Figure 7.3: Deaths Due to Opioid Poisoning, Toronto, 2013 to 2017



Data Source: Source: Public Health Ontario. Interactive Opioid Tool. 2013 to 2017. Accessed on October 23, 2018.

COMPARING TO

Toronto has 20% of Ontario’s population, but in 2017, 24% of overdose deaths in Ontario occurred in Toronto [33]. The rate of opioid-related deaths in Toronto (10.4 per 100,000), was higher than in Ottawa (6.4 per 100,000), and lower than in Hamilton (15.4 per 100,000) in 2017.



Drug toxicity is the leading cause of death for people experiencing homelessness. **More information** on people experiencing homelessness in Toronto is included in Chapter 2.

Stimulants

Stimulants are drugs that cause an increased heart rate, body temperature, and blood pressure and result in increased energy, attention, and wakefulness. There are many different classes of stimulants, including legal and widely available drugs such as caffeine and nicotine, prescription medications, and illicit substances such as cocaine and methamphetamine. When used in excess, stimulants can lead to dependency and increase the risk of heart attack and stroke [34].



More information on tobacco, which contains the stimulant nicotine, is included in Chapter 10.

Among Toronto students in grades 7 to 12, in 2014:

- 1%¹¹ reported using stimulants without a prescription in the past year.

Crack and Powder Cocaine

Crack and powder cocaine are stimulants and although stemming from the same source substance, crack cocaine is prepared differently than powder cocaine and may be ingested differently, with more rapid, intense effects [35]. Both can lead to dependency and negative health outcomes, including severe cardiovascular and gastrointestinal complications. The number of drug toxicity deaths where cocaine was a contributing cause has been increasing in Ontario, from 142 deaths in 2012, to 587 in 2017 [36].

¹¹ High sampling variability. Interpret with caution.

Among Toronto students in grades 7 to 12, in 2014:

- Less than 1%¹² used cocaine in the past year.

Among Toronto adults (18 years of age and over) in 2015/16:

- 9% used cocaine in their lifetime, while 2%¹³ used cocaine in the past 12 months.

Among Toronto residents in fiscal 2017:

- Crack cocaine was noted as ‘problem substance’ among 27% of people attending provincially-funded substance use treatment programs, and powder cocaine was noted in 23%.¹⁴

Amphetamines/Methamphetamines

Methamphetamine and amphetamine are chemically related but slightly different stimulants. Some amphetamines are prescribed, while methamphetamines, such as crystal meth, are illegal. Both classes of drugs can lead to dependency and negative health outcomes, such as psychosis, changes in brain structure and function, mood disturbances, weight loss, and dental problems [37] [38]. The number of drug toxicity deaths where methamphetamine was a contributing cause has been increasing in Ontario, from 14 deaths in 2012, to 217 in 2017. [36]

Among Toronto adults (18 years of age and over) in 2015/16:

- 4% reported using amphetamines or methamphetamines, such as speed or crystal meth in their lifetime.¹⁵

At provincially-funded inpatient and outpatient drug treatment programs in Toronto in fiscal 2017:

- Methamphetamines were named as ‘problem substances’ in 12% of admissions.¹⁶
- The proportion of newly admitted patients selecting methamphetamines as a problem substance has steadily increased over the past five years, from 4% in 2012.

Substance Use and Driving

Impaired driving is the leading criminal cause of death and injury nationally [39]. In 2015, there were 122 cases of impaired driving causing death and 596 cases of impaired driving causing bodily harm in Canada [40]. Historically, alcohol consumption and driving has been the major focus in terms of public awareness of the risks, prevention campaigns, and criminal prosecution. However, other psychoactive substances, in particular, newly legalized non-medical cannabis, have come into the forefront more recently. The proportion of police-reported impaired driving incidents due to drugs other than alcohol increased in Canada from 2% in 2009 to 4% in 2015 [40]. The proportion of Ontario residents reporting driving within an hour of consuming cannabis also increased from 1.5% in 2010 to 2.6% in 2015 [12].

¹² High sampling variability. Interpret with caution.

¹³ High sampling variability. Interpret with caution.

¹⁴ People could name up to five substances at intake.

¹⁵ Question was asked in the context of illicit drug use, and is not intended to capture prescription use.

¹⁶ People could name up to five substances at intake.

In Toronto, in 2017:

- 5%¹⁹ of licensed drivers 18 years and over reported driving within one hour of consuming two or more alcoholic drinks. A significant declining trend has been observed since 1996, when it was 14%.
- There were 43 violations per 100,000 population related to impaired driving.

Among Toronto students in grades 9 to 12, in 2014:

- 10% reported riding in a car or other vehicle in the past 30 days driven by someone who had been drinking alcohol.
- 6% reported riding in a car in the past 30 days driven by someone who had been using other drugs.
- 3% reported that they had driven a car while under the influence of alcohol or other drugs in the past 30 days.



Toronto data on cannabis and other drug use while driving are currently not available, as survey sample sizes are not large enough

to reliably estimate behaviours that are not common. Other data sources to track this information, such as police infraction records, currently do not consistently and accurately specify the type of substance consumed. In addition, these data only reflect individuals who are apprehended by the police.

¹⁹ High sampling variability. Interpret with caution.

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