

# Hospital Stays for Harm Caused by Substance Use among Youth in Canada

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## Abstract

The rise in harms associated with misuse of substances such as cannabis, alcohol and opioids is a public health issue gaining increasing importance in Canada. Taking a closer look at who is being hospitalized, and for which substances, helps inform efforts to improve access to services for youth.

Between 2017 and 2018, hospitalizations for harm caused by substance use accounted for about one in 20 of all hospital stays among youths aged 10–24 years in Canada. Cannabis use was documented in nearly 40% of these hospitalizations, while alcohol was associated with 26%. Approximately one in every six youths (17%), who were hospitalized for harm caused by substance use, was hospitalized more than once for substance use within the same year.

## Approach

The current analysis, focused on youth aged 10–24 years, is based on the “Hospital Stays for Harm Caused by Substance Use” indicator produced by the Canadian Institute for Health Information (CIHI n.d.). Substances included in the indicator are alcohol, opioids, cannabis, other central nervous system (CNS) depressants (e.g., benzodiazepines), cocaine, other CNS stimulants (e.g., methamphetamine), other substances (e.g., hallucinogens and solvents) and other unknown/mixed substances.

This indicator captures in-patient hospital stays and day surgeries. Types of harm caused by substance use can include overdosing, severe withdrawal symptoms, injuries caused by intoxication and substance-induced psychosis requiring treatment in a mental health unit. Harm from the use of more than one substance can be recorded per hospitalization, and these harms can be documented as the most responsible diagnosis or as a comorbidity, as in the case of injuries.<sup>1</sup>

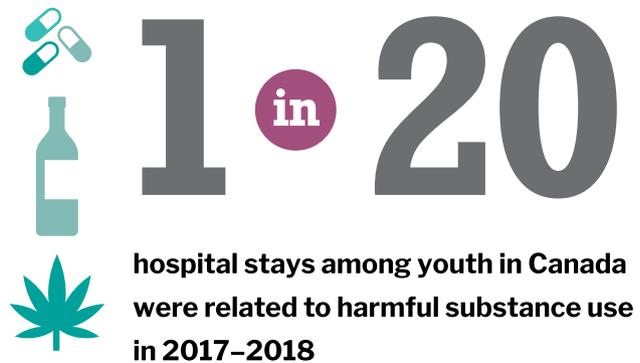
## Key Findings

### Hospital rates

Between 2017 and 2018, there were 23,580 hospital stays for harm caused by substance use among youth aged 10–24

years. This is the equivalent of 65 youths hospitalized every day in Canada. The national rate of hospital stays for harm caused by substance use among the youth was 364 per 100,000 in 2017–2018. As shown in Figure 1, these hospital stays accounted for about one in 20 of all hospital stays in Canada for youths aged 10–24 years.

**FIGURE 1.** Proportion of hospital stays related to harmful substance use



Sources: Hospital Morbidity Database, Ontario Mental Health Reporting System and National Ambulatory Care Reporting System (day surgery records) 2017–2018, CIHI

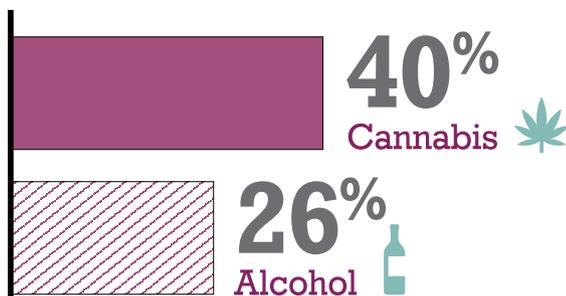
Of the youth who were hospitalized for harm caused by substance use, 17% were hospitalized more than once for substance use within the same fiscal year. In 2017–2018, a total of 59 youths who were hospitalized for harm caused by substance use died in hospital from any cause.

Hospitalizations are only the tip of the iceberg when it comes to estimating harm caused by substance use. This hospitalization indicator does not capture treatments or deaths that occur outside of in-patient hospital stays (e.g., visits to addiction centres, primary care clinics or emergency departments or deaths caused by fatal overdoses in the community). For every one hospital stay reported in this analysis, there were approximately five visits to emergency departments as a result of substance use.

### Substances associated with hospitalizations

In 2017–2018, cannabis-related hospital stays were more common than hospitalizations for any other substance use. This was true for both sexes and across all age groups. Cannabis was also the first or second most common substance associated with hospital stays in Canada across all provinces and territories. As shown in Figure 2, cannabis was documented in nearly 40% of the hospitalizations for harm caused by substance use among youth aged 10–24 years. Alcohol was the second most commonly documented known substance in this age group, associated with 26% of the hospital stays. In comparison, among people 25 years and older, cannabis was associated with only 11% of the hospital stays for harm caused by substance use and alcohol was associated with 58%.

**FIGURE 2.**  
Most common substances associated with hospital stays among youth



Sources: Hospital Morbidity Database, Ontario Mental Health Reporting System and National Ambulatory Care Reporting System (day surgery records) 2017–2018, CIHI

A high proportion (27%) of hospital stays were related to unknown/mixed substances (the term used for unidentified and possibly mixed substances). This may suggest a need for improved physician documentation or local discharge abstract coding practices. CIHI works with the jurisdictions and others on an ongoing basis to understand and improve documentation and coding practices. It is important to note that substance use and other concurrent mental health conditions may have been underreported in hospital records because of stigma or underdiagnosis (Hawke et al. 2019).

### Concurrent mental health conditions

Mental health conditions and harmful substance use have a complex interrelationship (Watson et al. 2014). Unmanaged mental health problems may lead to self-medication with substances; conversely, substance use may cause or exacerbate mental health conditions (Skinner et al. 2010; Watson et al. 2014). Among a sample of over 2,300 Canadian youths aged 12–24 years who were in contact with services (e.g., mental health and addictions, education, housing and outreach), 38% screened positive for both substance use and mental health disorders (Henderson et al. 2017).

Overall, 69% of the hospital stays for harm caused by substance use among youth aged 10–24 years involved care for a concurrent mental health condition, with notable differences by sex. The proportion of hospitalizations for harm caused by substance use with concurrent mental health conditions was higher among females. By condition, females had a higher proportion of mood, behavioural and trauma- and stressor-related disorders; males had a higher proportion of schizophrenia and other psychotic disorders.

The proportion of hospitalizations with concurrent mental health conditions decreased with age, ranging from 77% for youths aged 10–14 to 67% for those aged 18–24 years. The overall proportion of hospitalizations among youths aged 10–24 years was nearly double what was observed in adults aged 25 years and older who were hospitalized for harm caused by substance use (38% received treatment for concurrent mental health conditions).

The proportion of hospital stays involving care for a concurrent mental health condition also varied by substance among youths aged 10–24 years, ranging from 49% for opioid-related stays to 81% for hospitalizations associated with cannabis. The association between cannabis use and the occurrence of schizophrenia and psychosis has been widely reported in the literature (Marconi et al. 2016; Myles et al. 2012).

### Additional Findings

Detailed findings for hospital stays for harm caused by substance use among the youth, including findings by province and territory and by neighbourhood income level, as well as information on data sources, terminology and methods, are available at <https://www.cihi.ca/en/health-professionals-express-concerns-over-rates-of-youth-hospitalizations-due-to-substance-use>.

### Way Forward

This analysis contributes to a better understanding of harm caused by substance use among Canadian youth. Providing better services to prevent and treat harmful substance use in this priority population is critical for reducing harms associated with substance use in Canada. Moving forward, this analysis can inform the federal, provincial and territorial governments as they work together to improve access to mental health and addiction services.

This paper was prepared by the Canadian Population Health Initiative (CPHI) at CIHI. CPHI carries out research and analysis, evidence synthesis and performance measurement with the aim of supporting policy makers and health system managers in their efforts to improve population health and reduce health inequalities in Canada. **HQ**

## Note

1. The single diagnosis or condition that can be described as the most responsible factor for the patient's stay in the hospital. If there is more than one such condition, then the one held most responsible for the greatest portion of the length of stay or greatest use of resources (e.g., operating room time and investigative technology) is selected.

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