

Background

- Over the last 5 years, there have been rapidly increasing rates of emergency department (ED) visits for opioid toxicity and opioid-related mortality across Canada, largely driven by the increased prevalence of fentanyl and other synthetic opioids in the unregulated drug supply.
- In addition to the risks of overdose, opioid use among people who inject drugs can lead to other serious complications, including infective endocarditis (IE) and other invasive infections.
- As the drivers of opioid overdoses have changed considerably in recent years, there is an important gap in the literature describing trends of opioid-related IE and other infections.

What did we investigate?

Trends in rates of hospitalizations for IE and other serious infections among people with an opioid use disorder (OUD) and the sequelae of those hospitalizations in Ontario, Canada.

Key points

- The rates of serious infections have increased considerably among people with OUD, with serious infections of skin or soft tissue being the most prevalent type of infection.
- Approximately 1 in 5 people hospitalized with a serious infection were readmitted to hospital within 30 days of discharge.
- More than one-quarter of those hospitalized for IE died in-hospital or within 30 days of discharge.

How was the study conducted?

- *Design:* Population-based repeated cross-sectional analysis
- *Population:* All inpatient hospitalizations for serious infections (infective endocarditis (IE), spinal infections, non-vertebral bone infections, and skin or soft tissue infections) among people with OUD in Ontario.
- *Study period:* Between January 1, 2013 and December 31, 2019.
- *Outcome:* Annual population-adjusted rate of hospitalizations for serious infections, stratified by type of infection and prevalence of prior opioid agonist therapy and hydromorphone prescribing. Characteristics of hospitalizations and 30-day mortality were also reported.
- *Analysis:* Cochrane Armitage Trend Test to test for trends in each of the outcomes across each year of the study.

For more information

Gomes, T., Kitchen, S., Taylor, L., Men, S., Murray, R., Bayoumi, A., Campbell, T., Young, S., & Kolla, G. (2021). Trends in hospitalizations for serious infections among people with opioid use disorder in Ontario, Canada. *Journal of Addiction Medicine*.



What did we find?

- Over the 7-year study period, we identified 1,427 incident IE hospitalizations, 899 hospitalizations for spinal infections, 1,596 for non-vertebral bone infections, and 5,039 for skin or soft tissue infections.
- The rate of all infections rose significantly ($p < 0.01$) over the study period as follows:
 - IE: 167% increase from 7.7 to 20.6 per million residents,
 - Spinal infections: 394% increase from 3.4 to 16.8 per million residents,
 - Non-vertebral bone infections: 191% increase from 8.9 to 25.9 per million residents, and
 - Skin or soft tissue infections: 147% increase from 32.1 to 79.4 per million residents.
- In the most recent two years of the study, 57% of people with OUD hospitalized for serious infections were male, with a median age of 40 and approximately half resided in neighbourhoods in the lowest income quintile. One-quarter of these individuals had a prior Hepatitis C diagnosis, and nearly 5% had an HIV diagnosis at time of hospitalization.
- Among all incident serious infections, 5.6% were previously hospitalized for IE, 4.2% had been hospitalized for a spinal infection, 7.7% for non-vertebral bone infections, and 20.1% for an infection of the skin or soft tissue in the prior 2 years.
- Nearly half (42.9%) of individuals hospitalized with serious infections visited an ED within 30 days of hospital discharge, and readmission rates were high across all infection types (ranging from 18.1% [skin and soft tissue infections] to 34.4% [IE]).
- Death in-hospital and within 30 days of discharge was highest among those with IE (11.5% and 15.9%, respectively), and lower among those with other infections (<5%).

Recommendations

Policy makers

Action is needed to reduce barriers to harm reduction programs (including needle and syringe exchange programs) and treatment, and to increase access to preventative healthcare in order to address the burden of infections among people with OUD.

Healthcare professionals

Integration of treatment for OUD into primary care is needed to promote early intervention among people experiencing infective complications from injection drug use.