

January 2017 to June 2023



# Suspected Opioid-Related Overdoses

Based on Emergency Medical Services

Surveillance of Opioid and  
Stimulant-Related Harms in Canada



Public Health  
Agency of Canada

Agence de la santé  
publique du Canada

Canada

# Technical Notes

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## Case definitions

There is currently no national case definition for Emergency Medical Services (EMS) responses to suspected opioid-related overdoses. Therefore, each region reports data based on their respective provincial or territorial case definition (refer to [Table A](#)). Due to differences in these case definitions, comparisons over time and between provinces and territories should be interpreted with caution.

## How suspected opioid-related overdoses are counted

Counts are provided by the provinces and territories that collect data from their respective Emergency Medical Services.

The data provided by the provinces and territories include EMS responses to suspected overdoses where:

- + Naloxone was administered by a member of the Emergency Medical Services or a bystander on site, or
- + Naloxone was not necessarily administered but an opioid-related overdose was suspected.

These data **do not** include suspected overdoses where:

- + Emergency Medical Services were not contacted or the client was gone on arrival

However, some provincial and territorial differences remain in the type of data reported and in the time periods for which data are available (refer to [Table B](#) and [Table C](#)).

# Limitations of the EMS data on suspected opioid-related overdoses

Data presented in this update should be interpreted with caution.

- + This update is based on data submitted to or extracted by the Public Health Agency of Canada on or before November 1, 2023. New or revised data reported after this date will be reflected in future updates.
- + Data released by provinces and territories may differ due to the availability of updated data, the use of alternate age groupings, differences in time periods presented and/or population estimates used for calculations, etc.
- + This update is based on data that do not specify how the opioids were obtained (e.g. illegally or through personal prescription); the level of toxicity may differ depending on the opioid (substance(s) involved, concentration, and dosage).
- + No drug or laboratory testing is undertaken by any province or territory to confirm whether ingestion of an opioid has occurred. As a result, the number of patients receiving naloxone might be an overestimation of the actual number of opioid-related overdoses as naloxone will not have an effect if opioids were not taken.

## Notes on provincial and territorial data

Due to differences in case definitions, comparisons over time and between provinces and territories should be interpreted with caution.

### General notes

1. Data reported by some provinces and territories may not include age group and sex information; refer to [Table B](#) for more details.
2. Data presented here are updated on a quarterly basis and are subject to change as new or updated information becomes available.
3. Data were not available for Quebec, Prince Edward Island and Nunavut.
4. Data from British Columbia include EMS responses to opioid overdose events. While data are updated quarterly, there may be a lag in reporting. As a result, discrepancies may be noted between the national quarterly reporting of opioid overdose events in BC and the quarterly reporting of opioid overdoses by BCEHS; please refer to section 1 of the [latest report](#).
5. Starting in 2018, Alberta provincial EMS data covers nearly 100% of ground ambulance services in Alberta. Data from air ambulance and interfacility transfers are not included. In 2017, EMS data were only available for the cities of Calgary and Edmonton.
6. Saskatchewan reports data from licensed ambulance services only. These data do not include events where naloxone was administered by bystanders or other first responders (e.g. police or firefighters).
7. The case definition changed for Saskatchewan in May 2022 to also include situations where there was a suspected overdose, but someone other than a paramedic (e.g. police, fire, or friend) administered naloxone. This change only affects prospective data collected in the province from 2021 onwards.

8. Manitoba reports data for two distinct regions: 1) Winnipeg, and 2) Northern and Rural Manitoba.
9. Northern and Rural Manitoba data include land and air transports, but exclude interfacility transports. Naloxone administration counts are based on information either collected from the on scene caller or provided by the dispatched EMS personnel to the MTCC during call back. Data from April to June 2023 were not available for Northern and Rural Manitoba.
10. The reporting format of data from the Winnipeg Fire Paramedic Service changed in November 2021, from the number of incidents requiring administration of naloxone to number of persons requiring administration of naloxone. This change affects both retrospective and prospective data collected in the city, and results in an increase in the number of EMS responses for all reporting years.
11. Ontario data relies on documentation by paramedics and extraction from Ministry of Health designated Base Hospitals. Data submitted for the province for April to June 2018 and for January to March 2019 were only available for the geographical area containing ~95.5% and ~99.6% of the Ontario population (based on 2016 Statistics Canada Census), respectively.
12. The number of patients receiving naloxone may overestimate the actual number of opioid-related overdoses as naloxone will not have an effect if opioids were not consumed. Therefore, New Brunswick reports the number of patients responding to naloxone. These data do not include overdoses where patients were dead on arrival or were not given naloxone by Ambulance New Brunswick.
13. Newfoundland and Labrador EMS data may underestimate the burden of suspected opioid-related overdose instances in the province. The number of suspected opioid-related EMS responses is subject to change due to a lag in reporting of retrospective naloxone administration.
14. Yukon EMS data were only available for the city of Whitehorse.
15. Northwest Territories EMS data were only available for the city of Yellowknife.

## Sex and age group

16. EMS data on suspected opioid-related overdoses where sex was categorized as "Unknown" were excluded from analyses by sex, but were included in overall analyses.
17. EMS data on suspected opioid-related overdoses where age group was categorized as "Unknown" were excluded from analyses by age group, but were included in overall analyses.
18. Due to rounding, percentages may not add to 100%.
19. Overall sex- and age-specific trends reflected in this document are based on data from the regions reporting data for the most recent year. Individual findings may fluctuate within individual provinces and territories.
20. British Columbia data by age group were not reported.
21. Saskatchewan data by sex and age group were only reported from 2018 to 2023.
22. Winnipeg, Manitoba data do not include individuals nine years or younger.
23. Newfoundland and Labrador data by sex and age group were not reported.
24. Yukon data by sex and age group were only reported from 2019 to 2023.

## Data suppression

Counts of five or less were suppressed to address concerns around releasing small numbers. Suppression was also applied in instances where all data for a province or territory fell into a single category of sex or age group. Further, in situations where a single category of a mutually exclusive variable was suppressed, an additional category was suppressed in order to address privacy concerns.

**Table A.** Case definitions for suspected opioid-related overdose EMS responses for provinces and territories

Region	Data Source	Primary Case Definition
British Columbia	BC Emergency Health Services (BCEHS)	The current British Columbia Centre for Disease Control (BCCDC) Overdose Surveillance definition for paramedic attended overdose events is based on a cluster analysis algorithm, which codes ambulance-attended events as opioid overdose events when naloxone was administered by paramedics OR where the paramedic impression codes are related to recreational drug overdose and the Medical Priority Dispatch System (MPDS) code indicated either cardiac arrest, ingestion poisoning, or unconsciousness OR the paramedic impression codes indicate treated cardiac arrest and the MPDS code indicated ingestion poisoning.
Alberta	Alberta Health Services	Documentation of opioid medical control protocol or administration of naloxone.
Saskatchewan	Provincial Ambulance Information System	Emergency response calls with an assessment of "Overdose/poisoning with bystander medication administration" OR where Narcan (naloxone) is administered by ambulance crews and the patient has an assessment code for Possible Narcotic Overdose.
Winnipeg, Manitoba	Winnipeg Fire Paramedic Service	The number of suspected overdose cases receiving naloxone from Winnipeg Fire Paramedic Service (WFPS).
Northern and rural Manitoba	Medical Transportation Coordination Centre	The number of suspected overdose cases in Northern and Rural Manitoba receiving naloxone from EMS dispatched through the Medical Transportation Coordination Centre (MTCC) or a bystander on scene.
Ontario	Ontario Ambulance Call Reports	Suspected opioid overdose requiring administration of naloxone by paramedics (as indicated by Medication Code "Naloxone (610)").
New Brunswick	Ambulance New Brunswick	A patient who responded to naloxone that was administered by an Ambulance New Brunswick first responder for a suspected opioid overdose.
Nova Scotia	Emergency Health Services Nova Scotia	The number of emergency responses where naloxone was administered by an intensive care paramedic, an advanced care paramedic or a critical care paramedic when respiration or airway were compromised despite basic life support airway management AND an opioid intoxication was suspected.
Newfoundland and Labrador	Provincial Medical Oversight Office	Emergency response to an opioid-related overdose where naloxone is administered by paramedics.

Region	Data Source	Primary Case Definition
Whitehorse, Yukon	Yukon Emergency Medical Services	<p>Paper-based patient care reports:</p> <ol style="list-style-type: none"> <li>1. Suspected opioid overuse is identified during the 9-1-1 call taking process; and/or</li> <li>2. Opioid overuse or overdose are identified in the Patient Care Report's narrative, history of event, or chief complaint; and/or</li> <li>3. Naloxone administered by a designated emergency responder, allied health care provider, or layperson at the scene.</li> </ol> <p>Electronic-based patient care reports:</p> <ol style="list-style-type: none"> <li>1. Primary problem or final primary problem classified as "suspected opioid overdose"; and/or</li> <li>1. Procedure code: Naloxone administered by designated emergency responder, allied health care provider, or layperson at the scene.</li> </ol>
Yellowknife, Northwest Territories	Yellowknife Fire and Ambulance Services	Suspected overdose identified as chief complaint and an opioid identified as the overdose product OR suspected overdose identified as the chief complaint and naloxone administered by paramedics.

**Table B.** Reporting periods and available variables included in EMS data on suspected opioid-related overdoses used for this update by province or territory

		BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	YT	NT	NU
Reporting period (as of November 1, 2023)														
2017	January to December	✓	✓	n/a	✓ (INC)	n/a	n/a	✓	n/a	n/a	✓ (INC)	✓	✓	n/a
2018	January to December	✓	✓	✓ (INC)	✓	✓ (INC)	n/a	✓	✓ (INC)	n/a	✓ (INC)	✓	✓	n/a
2019	January to December	✓	✓	✓	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	n/a
2020	January to December	✓	✓	✓	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	n/a
2021	January to December	✓	✓	✓	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	n/a
2022	January to December	✓	✓	✓	✓	✓	n/a	✓	✓	n/a	n/a	✓	✓	n/a
2023	January to June	✓	✓	✓	✓ (INC)	✓	n/a	✓	✓	n/a	n/a	✓	✓	n/a
Data availability by variables collected														
Sex data		✓	✓	✓ (INC)	✓	✓	n/a	✓	✓	n/a	n/a	✓ (INC)	✓	n/a
Age group data		n/a	✓	✓ (INC)	✓	✓	n/a	✓	✓	n/a	n/a	✓ (INC)	✓	n/a

✓ These data have been reported by the province or territory and are reflected in this update, unless otherwise specified.

(INC) Data were not reported for the full time period. Please refer to [Table C](#) for more details.

n/a Data were not available at the time of this publication.



**Table C.** Specific reporting periods included in EMS data on suspected opioid-related overdoses used for this update, by region

Region	Reporting period
British Columbia	January 2017 to June 2023
Alberta	January 2017 to June 2023
Saskatchewan	April 2018 to June 2023
Winnipeg, Manitoba	January 2017 to June 2023
Northern and Rural Manitoba	May 2017 to March 2023
Ontario	April 2018 to June 2023
New Brunswick	January 2017 to June 2023
Nova Scotia	June 2018 to June 2023
Newfoundland and Labrador	April 2017 to March 2018
Whitehorse, Yukon	January 2017 to June 2023
Yellowknife, Northwest Territories	January 2017 to June 2023