

TECHNICAL NOTES

COVID-19 Data Tool

Background

Public Health Ontario (PHO) developed the COVID-19 Data Tool which contains data on laboratory confirmed cases of COVID-19 in Ontario. This tool will allow users to view summarized COVID-19 data through a series of visuals that shows trends for the province as a whole or for specific sub-populations. The report also contains a section that highlights COVID-19 activity in Ontario for five key indicators (i.e., number of cases, deaths and hospitalizations, outbreaks in long-term care homes, and COVID-19 test positivity) and shows daily changes in trends for select indicators. All data are updated daily and changes may occur as new case reports and additional case details are uploaded.

Descriptive Measures

NUMBER OF COVID-19 CASES

- This measure refers to the number of confirmed cases of COVID-19 meeting the [confirmed case definition](#).

CUMULATIVE NUMBER OF COVID-19 HOSPITALIZATIONS

- This measure refers to the cumulative number of COVID-19 cases that reported being hospitalized. It includes cases that are currently hospitalized as well as cases that have been discharged from hospital.
- Includes cases that were hospitalized due to COVID-19, and cases that were in hospital prior to acquiring the disease.
- Emergency room visits are not included in the number of reported hospitalizations.

NUMBER OF COVID-19 ICU CASES

- This measure refers to the number of COVID-19 cases that reported treatment in an intensive care unit (ICU). It includes cases that are currently being treated in an ICU as well as cases that have been discharged from ICU.
- Cases treated in ICUs are a sub-set of the total number of hospitalizations reported.

COVID-19 DEATHS

- This measure refers to the number of COVID-19 cases who died.
- Deaths are included whether or not COVID-19 was determined to be a contributing or underlying cause of death.

COVID-19 RATES

- COVID-19 rates are crude incidence rates that show the number of COVID-19 cases, deaths or hospitalizations for every 100,000 Ontarians. Rates are calculated for the province as a whole or for sub-groups such as age groups or sex (if selected in the tool). They are calculated by dividing the COVID-19 measure (Cases, Hospitalizations or Deaths) by the total number of people in the applicable population

$$\frac{\text{Number of Cases}}{\text{Total number of people in that population}} \times 100,000$$

NUMBER OF COVID-19 OUTBREAKS IN LONG-TERM CARE HOMES (LTCH)

- A single laboratory confirmed case of COVID-19 in a resident or staff of a LTCH is considered a confirmed COVID-19 outbreak.

NUMBER OF COVID-19 OUTBREAKS IN HOSPITALS

- A confirmed COVID-19 outbreak in a public hospital as defined in the Health Protection and Promotion Act

NUMBER OF COVID-19 TESTS COMPLETED

- This measure refers to the number of COVID-19 laboratory tests completed.

PERCENT POSITIVITY

- This measure refers to the percentage of conducted COVID-19 tests that were positive for COVID-19.

PUBLIC HEALTH UNIT DISTRIBUTION

- This measure refers to the number of COVID-19 cases reported by all 34 public health units.
- Orientation of case counts by geography is based on the diagnosing health unit (DHU). DHU refers to the case's public health unit of residence at the time of illness onset and not necessarily the case's location of exposure.

SEX

- Indicates the sex of a case as either male, female, or did not specify male or female.

HEALTH CARE WORKER

- Health Care Worker is defined as a person whose profession involves caring for patients.

DATES

- Reported Date is the date the case was reported to public health.

- Episode Date is an estimate of symptom onset date in a case. It is calculated hierarchically based on either the date of symptom onset, specimen collection/test date, or the date reported to public health.
- The date of death is the date the case was reported to have died.

Tool Overview

HIGHLIGHTS

- This section of the tool presents high level summary information about COVID-19 cases in Ontario. Data will change as public health units update information in iPHIS or local data systems. There are five highlights boxes:
 - Cumulative laboratory-confirmed COVID-19 cases and the change from the previous day.
 - Cumulative counts and percentages of COVID-19 demographic characteristics are presented.
 - Cumulative measures of severity including the number of deaths, hospitalizations and ICU admissions.
 - The cumulative number of confirmed COVID-19 outbreaks in long-term care homes (LTCH) and hospitals.
 - The number of tests performed daily for COVID-19 and the percent positivity, as well as changes in these indicators from the previous day.

TRENDS

- This tab displays trends in COVID-19 cases and deaths over time. Data can be viewed for Ontario or by local public health unit.
- Data for all graphs can be shown for the entire province or can be filtered by individual public health units.
- Grey bars are used to indicate days for which data are more likely to change as a result of lags in case identification, reporting and/or data entry.

AGE AND SEX

- This tab displays COVID-19 cases, hospitalizations and deaths by 10-year age groupings, sex and geography (Ontario, or any of the 34 local public health units).
- Data can be presented as counts, rates per 100,000 population or both.

MAP

- The cumulative number of COVID-19 cases, hospitalizations, and deaths and corresponding rates per 100,000 population by public health unit are presented.

Data Limitations

The following limitations apply to the data presented in the COVID-19 Data Tool.

DATA SOURCES

- Case data for this report were based on information extracted from the Ontario Ministry of Health (MOH) integrated Public Health Information System (iPHIS) database and data successfully uploaded to the MOH from local public health unit data reporting systems. Data are extracted from iPHIS at 4pm and from local health unit data reporting systems at 2pm the day prior to posting in the COVID-19 Data Tool.
- Ontario population projection data for 2020 for calculating rates were sourced from Ontario Ministry of Health, IntelliHEALTH Ontario. Data were extracted on November 26, 2019.
- Laboratory testing data for this tool were based on information from The Provincial COVID-19 Diagnostics Network, reported by member microbiology laboratories.

DATA CAVEATS

- The reporting systems from which data are extracted for this report are dynamic disease reporting systems that allows for ongoing updates to data previously entered. As a result, data extracted from these databases represent a snapshot at the time of extraction and may differ from previous or subsequent reports.
- All presented data represent only cases reported to public health. As a result, all counts will be subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours, which may depend on severity of illness, clinical practice, changes in laboratory testing, and reporting behaviours.
- Data on hospital admissions, ICU admissions and deaths are likely under-reported as these events may occur after the completion of public health follow up of cases. Cases that were admitted to hospital or died after follow-up was completed may not be captured in iPHIS or local health unit reporting tools.
- This tool uses the terminology “sex” to reference the reported values for the “gender” field in iPHIS and local health unit data reporting systems.
- Lags in data entry due to reduced holiday and weekend staffing may result in lower case counts than would otherwise be recorded on those days.
- Due to differences in reporting timeframes, counts presented here may not align with counts presented on public health units’ websites. For discrepancies in counts, data presented on the public health unit website should be used.
- Only cases meeting the confirmed case classification as listed in the MOH [COVID-19 case definition](#) are included in the counts.
- Cases that are not residents of Ontario have been excluded from the analyses.

- Health care worker includes any case with a response of ‘Yes’ to any of the following:
 - Health care worker: Occupation involving caring for patients
 - Doctor: Occupation involving someone licensed to practice medicine and treating individuals who are ill, primarily in a hospital setting or physician’s office/clinic.
 - Nurse: Occupation involving caring for the sick, as well as promoting and maintaining health.
- iPHIS cases for which the Disposition Status was reported as ENTERED IN ERROR, DOES NOT MEET DEFINITION, DUPLICATE-DO NOT USE, or any variation on these values have been excluded.
- To provide a measure of the impact of COVID-19 on long-term care homes and hospitals, the number of outbreaks is reported. Only confirmed outbreaks meeting the provincial outbreaks definitions for outbreaks in long term care homes and hospitals are included.
- The number of tests performed does not reflect the number of specimens or persons tested. More than one test may be performed per specimen or per person. As such, the percentage of tests that were positive does not necessarily translate to the number of specimens or persons testing positive.
- Changes in the testing algorithm used in Ontario for COVID-19 will impact the interpretation of the graphs over time.

Disclaimer

This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication.

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