Public Health Ontario | Santé publique Ontario

TECHNICAL NOTES

Infectious Disease Trends in Ontario Tool

Published: March 2026

Introduction

The Infectious Disease Trends in Ontario Tool allows users to explore, compare and analyze both annual and monthly data for selected diseases of public health significance in Ontario. The tool includes confirmed case data for all diseases and probable case data for select diseases where applicable. The tool includes two sections:

- **Annual details** include finalized counts and rates from the previous calendar year, along with 10 years of historical data. Users can search, filter and customize interactive maps, graphs and tables, and export selected data for further analysis. The tool also supports sorting and exploration by public health unit and demographic characteristics.
- **Monthly preliminary data** displays a preliminary snapshot of selected diseases of public health significance at the provincial level for the current calendar year, which is updated monthly.

Reporting Diseases of Public Health Significance

In Ontario, over 70 diseases are specified as diseases of public health significance under Ontario Regulation 135/18 pursuant to the *Health Protection and Promotion Act* (HPPA), R.S.O. 1990.[1,2] Health care providers, laboratories, and other individuals with a duty to report under the HPPA must make such reports to the local public health unit (PHU), as outlined in Regulation 569.[3] PHUs manage reported cases in accordance with the HPPA, the Ontario Public Health Standards, and the Infectious Diseases Protocol, and report required case data to the province through the integrated Public Health Information System (iPHIS).[4,5] iPHIS is the primary data source for the Infectious Disease Trends in Ontario interactive tool.

Data Sources Overview

The following data sources are used to populate the Infectious Diseases Trends in Ontario tool.

- **Ontario case data:**
  - **Annual details:** The data for this tab were extracted from iPHIS on July 2, 2025, with the exception of cholera data which were extracted on September 26, 2025.
  - **Monthly preliminary data:** The data for this tab are based on information entered in iPHIS and are current as of the second Wednesday of each month at 7:00 a.m.
- **Ontario population data:**
  - **Population estimates:** Population estimates for 2015–2024 were sourced from Statistics Canada and retrieved from the Ministry of Health, IntelliHealth Ontario:
    - Statistics Canada. Table 17-10-0157-01: Population estimates, July 1, by health region and peer group, 2023 boundaries [Internet]. Ottawa, ON: Government of Canada; 2025 Feb 19 [extracted 2025 Feb 21]. Available from: https://doi.org/10.25318/1710015701-eng

- **Population projections:** Population projections for 2025–2026 are sourced from the Ontario Ministry of Finance and retrieved from the Ministry of Health, IntelliHealth Ontario:
    - Population Reporting. Population Projections Public Health Unit, 2024-2051 [data file]. Toronto ON: Ministry of Finance [producer]; Toronto, ON: Ontario. Ministry of Health, IntelliHealth Ontario [distributor]; [data extracted 2025 Sep 12].
- **Live births:** Live births were used as the denominator for calculating incidence rates for neonatal group B streptococcal disease, and ophthalmia neonatorum because neonatal population counts (infants up to 28 days old) could not be determined from available Vital Statistics data. Live birth data were retrieved from the Ministry of Health, IntelliHealth Ontario:
    - Vital Statistics Births, 2008–2023 [data file]. Toronto, ON: Ontario. Ministry of Health, IntelliHealth Ontario; [data extracted 2025 May 06].

- **National comparator data:**
    - These data were obtained directly from the Notifiable Disease Charts of the Public Health Agency of Canada website on August 19, 2025.6 Comparator incidence rates for Canada are provided in the tool whenever available.

Case Definitions

The Appendix in this document lists diseases of public health significance and associated case classifications that are reportable in Ontario. Cases are classified in iPHIS according to the provincial surveillance case definitions in use at the time the case was identified. PHUs are responsible for ensuring that cases reported to the province meet the relevant case definition. The most recent provincial case definitions are available in Appendix 1 of the Infectious Diseases Protocol.[7]

It is important to consider changes in provincial case definitions and associated case classifications (see Case Classifications section below) over time when interpreting disease trends presented in this tool. The changes have occurred over the years to reflect the changing epidemiology of infectious diseases and the use of more current laboratory diagnostic practices and technology.

Case Classifications

Unless otherwise stated, case counts presented in this tool include only the confirmed case classification. Reporting of probable cases is only required for some diseases, as specified in the provincial case definitions outlined in Appendix 1 of the Infectious Diseases Protocol.[7]

Probable cases are included in the total counts presented in the Infectious Disease Trends in Ontario tool for select diseases: amebiasis, anaplasmosis, babesiosis, Lyme disease, mumps, pertussis, Powassan virus, invasive meningococcal disease (IMD), invasive *Haemophilus influenzae* (Hi) disease all types, and West Nile virus (WNV) illness. Reporting of probable cases for these diseases, with the exception of WNV illness was instituted following case definition changes in 2009 because some cases that previously met the confirmed case definition were subsequently required to be reported as probable. As a result, both confirmed and probable cases are included in total counts for these diseases within this tool to ensure valid comparisons over time (see Table 1 for specific dates).

For the vast majority of other diseases that were similarly impacted by the 2009 case definition changes, the impact on overall counts was negligible. As such, probable cases for these diseases are not routinely included in provincial counts.

Table 1: Diseases that Include Probable Cases in Total Counts

Disease	Case Classifications
Amebiasis	Probable cases of amebiasis have been included in total counts since January 1, 2009 owing to the change in interpretation of laboratory test results that previously reported the causative agent as *Entamoeba histolytica*/*E. dispar* with no distinction between the two. Cases with test results that do not differentiate between the non-pathogenic *E. dispar* and the pathogenic *E. histolytica* are now counted as probable, whereas they were previously counted as confirmed. The impact of this change was substantial. As a result, probable cases have been included in total counts since 2009 to ensure valid comparisons over time for amebiasis.
Anaplasmosis	Both confirmed and probable cases have been included in provincial counts since the disease became reportable on July 1, 2023.
Babesiosis	Both confirmed and probable cases have been included in provincial counts since the disease became reportable on July 1, 2023.
Haemophilus influenzae (Hi)	Probable cases have been included in total counts since April 28, 2009 to facilitate trending over time. As of May 1, 2018, all types of invasive Hi disease were designated as a disease of public health significance in Ontario. Previously, only type b was reportable. Thus, serotype information should be considered when comparing trends over time.
Invasive meningococcal disease (IMD)	Probable cases have been included in total counts since April 28, 2009 to facilitate interpretation of trends over time.
Lyme disease	The impact of the change in case definition was substantial given that probable cases reported since 2009 constituted a substantial proportion of total case counts. As a result, probable Lyme diseases cases have been included in total counts since January 1, 2009 in order to ensure valid comparisons over time.
Mumps	Probable cases have been included in total counts since April 28, 2009 to facilitate interpretation of trends over time.
Pertussis	Probable cases have been included in total counts since April 28, 2009 to facilitate interpretation of trends over time. Changes to laboratory testing may also impact temporal trends; testing by polymerase chain reaction (PCR), a more sensitive diagnostic tool, was first implemented in 1998, followed by real-time PCR in 2005. Effective 2009, the minimum threshold used to determine a positive PCR result was increased, leading to a reduction in the number of positive cases of pertussis identified via PCR.
Powassan virus	Both confirmed and probable cases have been included in provincial counts since the disease became reportable on July 1, 2023.
West Nile virus (WNV) illness	Both confirmed and probable cases have been included in provincial counts since the disease became reportable in 2003.

For **measles** and **rubella,** probable cases are excluded from the historical temporal trend despite being reportable at the provincial level. Rubella, along with congenital rubella syndrome (CRS), have been declared eliminated from Canada and strict criteria are required to confirm or rule out cases. Measles was eliminated from Canada in 1997 but following a prolonged multi-jurisdictional outbreak that began in 2024, Canada lost its elimination status in 2025. The outbreak was declared over in Ontario in October 2025 but ongoing measles activity continues due to outbreak cases in jurisdictions and the importation of cases from parts of the world where the disease remains endemic. Enhanced provincial surveillance activities to document the elimination of measles and rubella commenced in 2012 which may impact the interpretation of trends in the incidence of these diseases.

For **hepatitis B**, confirmed acute cases are captured under the Classification Description of confirmed in iPHIS, while confirmed chronic hepatitis B cases are captured under the Classification Description of carrier. When a case progresses from acute to chronic infection, PHUs create a chronic carrier case, in addition to the existing acute confirmed case. Therefore, counts of acute and chronic hepatitis B cases are not mutually exclusive and have not been summed, as this would result in double-counting of some cases.

Both **AIDS** and **HIV** cases are reported under the Disease field in iPHIS as HIV/AIDS. HIV cases that have not progressed to AIDS have both an Encounter Type and a Diagnosis Status of carrier. HIV cases that have progressed to AIDS have an updated Encounter Type of case and an updated Diagnosis Status of confirmed.

To determine accurate counts, cases of HIV/AIDS with either an Encounter Type of carrier and a Diagnosis Status of carrier or an Encounter Type of case and a Diagnosis Status of confirmed are counted as HIV cases using the Encounter Date (the date the HIV encounter was reported). HIV/AIDS encounters with an Encounter Type of case and a Diagnosis Status of confirmed are counted as AIDS cases based on the Diagnosis Status Date (the date the case was diagnosed with AIDS). Therefore, counts of AIDS and HIV cases are not mutually exclusive and have not been summed, as this would result in double-counting of some cases.

Data Management

Reference Period

iPHIS allows the entry of multiple dates relevant to the case. In Ontario, cases of most diseases of public health significance are classified by time using the episode date, which is a field that estimates the symptom onset date of disease for a case. The episode date is determined using the following hierarchy of date fields in iPHIS:

1. Symptom Onset Date
2. Specimen Collection Date
3. Lab Test Date (date laboratory testing was performed)
4. Reported Date (date the case was reported to the PHU)

During data extraction, the earliest available date in the hierarchy is selected as the episode date for each case. For example, if an Onset Date is available for a case, it is selected as the episode date instead of the Specimen Collection Date and so on. In some situations, the episode dates captured can be much later than the actual date of symptom onset, which can result in larger margins of error when deriving the symptom onset date from the Reported Date or the Specimen Collection date.

Cases are attributed to a particular year based on their episode date. There are some exceptions to reporting of incident cases; for example, HIV, chronic hepatitis B, hepatitis C, TB, late latent syphilis and neurosyphilis are often undiagnosed for extended periods and their detection by public health is generally not indicative of the actual date the infection was acquired. Therefore in some instances, cases included in this tool for a particular year are individuals who acquired their infections in earlier years and the data represent rates of new diagnoses rather than rates of new infection.

HIV/AIDS and tuberculosis are not classified by time based on the Episode Date. For HIV, incident case counts are based on the Encounter Date (i.e., Reported Date), defined as the date a case became known to public health. AIDS and tuberculosis incident case counts are based on the Diagnosis Status Date and Diagnosis Date, which is the date of a case's diagnosis for AIDS and TB, respectively.

CDI outbreaks are allocated to onset year based on the onset date of the index case in the outbreak. Where onset date of the index case was missing, the date the outbreak was created in iPHIS was used.

CPE case counts are based on the earliest specimen collection date. Cases with missing specimen collection date were excluded. CPE outbreaks are counted based on report date.

Unless otherwise specified, the **Annual details** section of the tool covers the period from 2015 to 2024 for most diseases. Exceptions include:

- Data for Blastomycosis, CPE infection or colonization and Echinococcus multilocularis infection are presented from 2018 onwards. These diseases were designated as diseases of public health significance in Ontario on May 1, 2018.
- Data for mpox are presented from May 2022 onwards. This disease was designated as a disease of public health significance in Ontario on June 16, 2022 though cases were reported to the province before this date.
- Data for anaplasmosis, babesiosis and Powassan virus are presented from July 2023 onwards. These diseases were designated as diseases of public health significance in Ontario on July 1, 2023.

Data for *Candida auris* (*C. auris*) are presented in the **Monthly preliminary data** section from January 2025 and onwards and will be included under the **Annual details** once annual data extend beyond 2024. *C. auris* infection was added to the list of diseases of public health significance on January 1, 2025.

- Data for Candida auris are presented only in the 'Monthly preliminary data' tab as it was only designated as a disease of public health significance in Ontario on January 1, 2025.

Case Ascertainment Criteria

This tool includes all confirmed (and probable, as applicable) cases of diseases of public health significance reported through iPHIS for the relevant time periods, with the following exclusions:

1. Cases who were not residents of Ontario at the time of diagnosis.
2. Cases reported with a Disposition Status of entered in error, does not meet definition, duplicate – do not use, or any variation on these values.
3. Adverse events following immunization, which are summarized in an online tool available on PHO's vaccine safety webpage.[8]
4. Cases reported as encephalitis, meningitis, food poisoning or severe acute respiratory syndrome (SARS).
5. Institutional and public hospital outbreaks of gastroenteritis (where the Aetiologic Agent was not *Clostridioides difficile* in a hospital) and respiratory illness.
6. Cases with a missing outbreak number in iPHIS (i.e., sporadic cases should also have a sporadic outbreak number assigned in iPHIS where applicable).
7. Cases reported as influenza or COVID-19, which are summarized in PHO's Ontario Respiratory Virus Tool.[9]
8. Additionally, some diseases are omitted from the **Monthly preliminary data** section because they are extremely rare, have had zero incidence in recent years, are not updated frequently (e.g., Creutzfeldt-Jakob disease), are only reportable during outbreaks, or include mixed individual and aggregate reporting. These diseases are included in the **Annual details** section.

The Appendix in this document provides a list of diseases of public health significance in Ontario. Please refer to the user guide for more details on what diseases appear in the different sections of the tool.

Re-Infection and Co-Infections

For many of the diseases of public health significance, immunity is not conferred following infection or wanes over time, resulting in continued susceptibility and potential for re-infection. It is assumed that cases representing re-infection, as opposed to relapse, were assessed by PHUs before entry into iPHIS based on several factors, including the time period between the two episodes and the incubation period for the disease in question. As a result, data for most diseases in this tool are assumed to be new episodes of a disease or true re-infections. Thus, a single person with more than one episode of the same disease in a single year may contribute more than one case of a particular disease to the total provincial count for that year. For example, this may occur for individuals with chlamydia, gonorrhea or salmonellosis. For diseases caused by *Salmonella*, co-infections with two different serotypes (e.g., *Salmonella* Typhimurium and *Salmonella* Hadar) are reported as two separate episodes of salmonellosis. In addition, co-infections with more than one aetiologic agent at the same time (e.g., *Mycobacterium tuberculosis* complex and HIV) are reported as two different episodes, one for each disease caused by the co-infecting agents.

Descriptive Measures

Annual Details

The descriptive measures used throughout the **Annual details** section of the tool to characterize the epidemiology of diseases of public health significance in Ontario are listed below.

Case Counts

This measure refers to the number of confirmed (and probable, as applicable) cases of a disease reported during a specified time frame and within a sub-group (if applicable) that meet the case ascertainment criteria outlined above. The diseases outlined in Table 2 are exceptions that require additional ascertainment based on the listed criteria.

Table 2: Additional Ascertainment Criteria for AIDS, CDI Outbreaks in Hospitals, CPE, Syphilis, Tuberculosis and Varicella (chickenpox)

Disease	Additional Ascertainment Criteria
AIDS	AIDS case counts are based on the first AIDS diagnosis in a patient.
CDI outbreaks in hospitals	On September 1, 2008, Ontario amended regulations to make CDI outbreaks in public hospitals reportable to PHUs under the HPPA.[1,10] CDI outbreaks in long-term care homes that are reported as institutional outbreaks of gastroenteritis were excluded. For outbreak-level analyses, where discrepancies were observed between reported CDI aggregate case counts and line listed cases for the outbreak, counts of cases (and deaths) were determined based on the higher number. For case-level analyses, only individual confirmed case records associated with confirmed CDI outbreaks in hospitals were included for demographic and risk factor analyses. Cases with a non-reportable classification (e.g., probable cases) were excluded.
CPE	Case counts include infection, colonization and unspecified. Where multiple reports with the same carbapenemase are entered in iPHIS for a client, only the first report is included.
Syphilis	Includes only infectious cases (i.e., primary, secondary, early latent and infectious neurosyphilis).
Tuberculosis	Includes only active cases in counts of confirmed cases (i.e., latent tuberculosis infections are not included).
Varicella (chickenpox)	Varicella is reported provincially as both individual and aggregate cases. Only individually-reported cases are presented in this tool.

Rates

In the **Annual details** section of the tool, the term "Rate" refers to an annual rate (e.g., the number of cases observed for every 100,000 people living in Ontario per year), unless otherwise specified. Crude incidence rates were calculated by dividing the total case count in a year by the total number of people in the population in that year (see Figure 1 for more details). As specified in the Case Classifications section above, the total case count for some diseases may include confirmed and probable cases. The formulas for calculating overall and population-specific rates used in the **Annual details** section of the tool are noted below (using the example of rates presented in a specified time period per 100,000 population).

- Overall rate: Number of all new cases in a specified time period divided by the Ontario population for that time period, multiplied by 100,000.
- Group-specific rate: Number of new cases in a sub-group (e.g., age group, sex, PHU) in a specified time period divided by the population for that sub-group for that time period, multiplied by 100,000.
- Neonatal rate: Number of new congenital or neonatal cases of a disease (cases occurring in infants up to 28 days old) in a specified time period divided by the total number of live births for that time period, multiplied by 100,000. Live births with unknown geographic area are included in the Ontario live birth counts for that time period.

Monthly Incidence

The number of cases that occurred during each month is available as an option for the Trends graph in the 'Overall' tab. For CDI, the number of outbreaks each month is compared to the monthly average outbreak count for the previous five years.

Geographic Distribution

A PHU is a geographic area served by a Board of Health with the authority to deliver public health programs. Case counts and rates by PHU are available under the 'Overall', 'Age and sex', 'Public health unit' and 'Data tables' tabs for all years available for a disease, where applicable.

In iPHIS, allocation of case counts by geography is based on Diagnosing Health Unit (DHU). The DHU is the PHU where the case resided when first detected. It does not necessarily reflect the location of exposure or diagnosis. iPHIS Bulletin #13 provides additional detail on scenarios in which a PHU is considered the DHU.[11]

Allocation of CDI cases and outbreaks is based on the Primary Health Unit, which is the PHU where the hospital reporting the outbreak is located. While CPE case counts are allocated based on DHU, CPE outbreaks are allocated based on the Primary Health Unit.

Age Distribution

Age groups for most diseases are based on standard five- and 10-year age groupings. Refer to Table 3 below the aggregate age groups used in the tool and corresponding diseases. For vaccine-preventable diseases, age groups are constructed with consideration of the epidemiology of the disease, and in some cases, the age of recommended vaccination.[12] Cases with an unknown date of birth or a calculated age of less than zero or greater than 120, were classified as having an unknown age. Cases of unknown age are included when calculating total counts and rates, but are excluded in the calculation of age-specific rates.

Table 3: Aggregate Age Groups Used in the Tool and Corresponding Diseases

Aggregated Age Groupings	Diseases
0-4, 5-9, 10-14	Acute flaccid paralysis
0–4, 5–9, 10–19, 20–29, 30–39, 40–49, 50–59, 60–69, 70+	Amebiasis, anaplasmosis, babesiosis, blastomycosis, botulism, brucellosis, *Campylobacter* enteritis, cryptosporidiosis, cyclosporiasis, giardiasis, invasive group A streptococcal disease, hepatitis A, legionellosis, leprosy, listeriosis, Lyme disease, paratyphoid fever, Powassan virus, Q fever, salmonellosis, shigellosis, tuberculosis, typhoid fever, Verotoxin-producing *E. coli*, West Nile virus illness, yersiniosis
0–14, 15–19, 20–24, 25–29, 30–39, 40–49, 50–59, 60–69, 70+	AIDS, chlamydia, gonorrhea, hepatitis B (acute and chronic), hepatitis C, HIV, infectious syphilis
0–9, 10–19, 20–34, 35–49, 50–64, 65+	Mumps
0–4, 5–9, 10–14, 15–19, 20–49, 50–64, 65+	Measles, pertussis, invasive Pneumococcal disease
0–4, 5–9, 10–14, 15–19, 20–49, 50+	Invasive *Haemophilus influenzae* disease, all types, invasive Meningococcal disease, varicella (chickenpox)
1–19, 20–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84, 85+	Cases of CDI outbreaks in hospitals
0–17, 18–64, 65+	CPE
0–19, 20–29, 30–39, 40–49, 50–59, 60–69, 70+	Mpox

Sex

This tool uses the terminology “sex” to reference the reported values for the gender field in iPHIS. The exception is mpox, which uses the terminology “gender”. Three values for sex (gender in the case of mpox) are derived from the data entered in iPHIS: Male, Female, and Did Not Specify Male or Female. Information from all three values are combined when presenting total counts or rates. For sex- or gender-specific rates, only male and female data are presented.

Hospitalizations

Hospitalizations refer to the number of cases that were reported as hospitalized due to their disease, at the time of data extraction. In this tool, a case is considered hospitalized if at least one hospital admission date was recorded and the hospital admission date occurred 60 days or less before the episode date or 90 days or less after the episode date. The intention of applying an interval is to exclude hospital admission dates that are outside the reasonable range from the episode date to be attributed to the disease. The interval was selected to serve as boundaries that could be applied in a uniform fashion across all diseases while including the majority of hospital records that fall within a reasonable range of the episode date.

Hospital admissions were identified by a reported hospital admission date or reported "Yes" for hospitalization/ICU. If hospital admission date is missing, then ICU admission date is used (if applicable). When there is no ICU admission date to serve as a proxy, then reported date is used. Hospital admission date refers to the first admission date recorded on the case record. Hospital service transfers (e.g., alternate level of care) are not reflected in the hospital admission date.

Emergency room visits are not included in the number of reported hospitalizations. It should be noted that under-reporting of hospitalizations may occur in iPHIS, particularly if hospitalization occurred after completion of follow-up by the PHU.

Hospitalization status is not reported for all diseases in this tool and, where available, is generally presented for the years 2015 to 2024, with the exception of mpox (2022 onward), anaplasmosis and babesiosis (2023 onward).

Deaths

This measure refers to the number of cases that were reported as having died due to their disease, at the time of data extraction. For most diseases included in this tool, a case is counted as having died if at least one fatal outcome was recorded at the case level and the type/cause of death is a value other than "reportable disease was unrelated to cause of death". Cases that have multiple types/causes of death, are counted as fatal if there is at least one value in this field other than "reportable disease was unrelated to cause of death." It should be noted that variations in follow-up may exist among PHUs in determining outcomes for all reportable diseases, as well as how the deaths are entered in the type/cause of death fields in iPHIS.

For tuberculosis, any case with a Date of Death entered in iPHIS is counted as fatal, except when the only cause of death entered in the iPHIS case record is "reportable disease was unrelated to cause of death". The criteria for tuberculosis are different from those of most other diseases because the tuberculosis module is set up differently in iPHIS and the general criteria could not be applied.

For CDI outbreak associated cases, any confirmed cases reported with an outcome of fatal are counted as a fatal case. All reported deaths are classified as "all-cause" and may or may not be directly attributable to CDI.

Under-reporting of deaths may occur in iPHIS, particularly if deaths occurred after completion of follow-up by the PHU. Cases occurring in 2024 for whom treatment is ongoing or if the disease is chronic may become fatal at a point in time after the extraction of data; these deaths would not be reflected in this tool. Case fatality data in 2024 for hepatitis B, hepatitis C, HIV/AIDS and tuberculosis are likely to be impacted by this issue.

Deaths are not reported for all diseases in this tool and, where available, are generally presented for the years 2015 to 2024, with the exception of blastomycosis (2018 onward), mpox (2022 onward), anaplasmosis and babesiosis (2023 onward).

Monthly Preliminary Data

The descriptive measures used in the **Monthly preliminary data** section of the tool to characterize the epidemiology of diseases of public health significance in Ontario for the current year are listed below.

Case Counts

This measure refers to the number of confirmed (and probable, as applicable) cases of a disease reported during a specified time frame and within a sub-group (if applicable) that meet the case ascertainment criteria outlined above. The case counts are presented by month, as well as year-to-date in this section of the tool.

YTD Rate

In general, incidence rate is defined as the number of new cases of disease (or newly reported/diagnosed cases for some diseases) occurring in a specified time period. In the **Monthly preliminary data** section of the tool, the year-to-date (YTD) rate refers to the cumulative number of cases observed to date in the calendar year per 100,000 people, calculated using the projected population for Ontario for that year, unless otherwise specified.

Data Limitations

Accuracy of Data

PHO coordinates an annual data cleaning exercise with PHUs to review cases/events of public health significance that occurred in their jurisdiction for the purpose of improving iPHIS data quality. The 2020 annual data cleaning process was interrupted due to the COVID-19 pandemic. The annual initiative resumed for 2021 data. However, there may have been variations in the ability of public health units to participate in the process. As a result, there may be limitations related to the completeness of 2020 through to 2023 data and trends should be interpreted with caution.

Any data extracted from iPHIS, including the data used in this tool represent a snapshot at the time of extraction and may differ from previous or subsequent reports. Discrepancies in disease counts and rates provided in this tool and other published data may exist due to:

- Enhanced data cleaning for select analyses, such as the linkage of iPHIS and laboratory data and subsequent reconciliation in iPHIS
- Late reporting
- Local and/or provincial-led data cleaning initiatives
- Differences in data extraction dates
- Where such variability exists, data provided in the most recent release of this tool, other PHO surveillance tools and reports or published research may be a more appropriate source depending on how the methodology, data caveats and/or extraction dates align with the intended use of the data.

Small Counts

For some diseases, the observed variability in population-specific incidence rates should be interpreted with caution owing to small counts, which may be exacerbated by small denominators (population). For this reason, users of this tool should be aware that these rates may be unstable.

Under-Reporting

Passive surveillance systems, such as iPHIS, rely primarily on mandatory health care provider and laboratory reports of illness and are therefore subject to under-reporting of the true burden of illness. For diseases captured in iPHIS, case counts only represent known cases reported to PHUs and recorded in the system. The resulting degree of under-reporting may vary from disease to disease due to a variety of factors. Interpret surveillance results for diseases of public health significance in 2020 through 2023 with caution due to changes in the availability of health care, health seeking behaviours, public health follow-up, and case entry during the COVID-19 pandemic and subsequent recovery period.

Asymptomatic individuals who are colonized with CPE are only identified and reported if they are screened at a health care facility. As a result, colonized cases captured by provincial surveillance are more likely to have chronic underlying medical conditions that predispose their access to health care while asymptomatic cases in the community are likely underrepresented. Currently, health care facilities are in the process of implementing CPE screening programs and robustness may vary. Given the heterogeneity in CPE screening practices among health care facilities in Ontario, colonizations are likely underreported. In addition, there is a potential for misclassification of colonizations and infections due to variability in the interpretation of symptomatic presentation.

Duplicates

The potential for duplicates exists, as duplicate sets were not identified and excluded unless they were resolved prior to data extraction either at the local or provincial level. Inclusion of duplicates would result in over-reporting.

Missing Data (Data Not Reported by PHUs)

Data quality (completeness) for some fields is lower than others. Hospitalization and death are underreported in iPHIS, with the degree of underreporting influenced by the severity of illness and associated outcomes (e.g., less underreporting if illness or outcomes are more severe) and the timing of the event (i.e., there is likely less underreporting if hospitalization or death occurs shortly after symptom onset or before investigation of the case by the PHU is completed). In general, the degree of underreporting is influenced by a combination of factors, including incomplete follow-up of cases (e.g., case is not reachable), incomplete or late entry of data in iPHIS, and the occurrence of outcomes after follow-up has been completed. A high proportion of missing or incomplete data may result in conclusions or interpretations that are not representative of the underlying epidemiology of the disease.

References

1. *Designation of Diseases*, O Reg 135/18. Available from: https://www.ontario.ca/laws/regulation/180135
2. *Health Protection and Promotion Act*, RSO 1990, c H.7. Available from: http://www.ontario.ca/laws/statute/90h07
3. *RRO 1990, Reg 569*. Available from: http://www.ontario.ca/laws/regulation/900569
4. Ontario. Ministry of Health. Ontario public health standards: requirements for programs, services, and accountability. Effective: June 2021 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2021 [modified 2021 Jun; cited 2023 Dec 12]. Available from: https://files.ontario.ca/moh-ontario-public-health-standards-en-2021.pdf
5. Ontario. Ministry of Health. Infectious diseases protocol, 2023. Toronto, ON: King's Printer for Ontario; 2023. Available from: https://files.ontario.ca/moh-infectious-disease-protocol-en-2023.pdf
6. Public Health Agency of Canada. Notifiable disease charts [Internet]. Ottawa, ON: Government of Canada; 2024 [modified 2024 Aug 28; cited 2024 Oct 28]. Available from: https://diseases.canada.ca/notifiable/charts-list
7. Ontario. Ministry of Health. Ontario public health standards: requirements for programs, services, and accountability. Infectious disease protocol. Appendix 1, provincial case definitions and disease specific information [Internet]. Toronto, ON: King's Printer for Ontario; 2023 [updated 2023 Dec 30; cited 2023 Dec 30]. Available from: https://www.ontario.ca/page/ontario-public-health-standards-requirements-programs-services-and-accountability#section-2
8. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Vaccine safety [Internet]. Toronto, ON: Queen's Printer for Ontario; 2024 [updated 2024 Mar 01; cited 2024 Oct 15]. Available from: https://www.publichealthontario.ca/en/health-topics/immunization/vaccine-safety
9. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Ontario respiratory virus tool [Internet]. Toronto, ON: King's Printer for Ontario: c2024 [modified 2026 Jan 23; cited 2026 Jan 29]. Available from: https://www.publichealthontario.ca/en/Data-and-Analysis/Infectious-Disease/Respiratory-Virus-Tool
10. *Specification of Communicable Diseases*, O Reg 558/91. Available from: https://www.ontario.ca/laws/regulation/910558
11. Ontario Agency for Health Protection and Promotion (Public Health Ontario). iPHIS bulletin #13: transferring client responsibility [Internet]. Toronto, ON: Queen's Printer for Ontario; 2006 [revised 2020 Mar; cited 2021 Dec 08]. Available from: https://www.publichealthontario.ca/-/media/documents/i/2020/iphis-bulletin-client-responsibility.pdf
12. Ontario. Ministry of Health. Publicly funded immunization schedules for Ontario [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [cited 2026 Feb 24]. Available from: https://www.ontario.ca/files/2024-01/moh-publicly-funded-immunization-schedule-en-2024-01-23.pdf

Appendix: Diseases of Public Health Significance and Reportable Classifications in Ontario

Table A1 summarizes the diseases of public health significance, as specified under Ontario Regulation 135/18[1] and amendments under the Health Protection and Promotion Act[2] and the associated reportable case classifications, as outlined in Appendix 1 of the Infectious Diseases Protocol.

Table A1: Diseases of Public Health Significance and Reportable Case Classifications in Ontario, 2025

Disease of Public Health Significance	Reportable Case Classifications
Acquired immunodeficiency syndrome (HIV/AIDS)	Confirmed
Acute Flaccid Paralysis (AFP)[†]	Confirmed
Adverse events following immunization (AEFIs)[§§]	Confirmed
Amebiasis[‡]	Confirmed, probable
Anaplasmosis[‡,§]	Confirmed, probable
Anthrax	Confirmed, probable, suspect
Babesiosis[‡,§]	Confirmed, probable
Blastomycosis[¶]	Confirmed, probable
Botulism	Confirmed, probable, suspect
Brucellosis	Confirmed, probable
Campylobacter enteritis	Confirmed, probable
Candida auris[*]	Confirmed
Carbapenemase-producing *Enterobacteriaceae* (CPE) infection or colonization[¶]	Confirmed
Chancroid	Confirmed, probable
Chickenpox (Varicella)	Confirmed
Chlamydia trachomatis infections	Confirmed, probable
Cholera	Confirmed, probable
Clostridium difficile infection (CDI) Outbreaks in Public Hospitals[#]	Confirmed
Coronavirus disease 2019 (COVID-19) [§§]	Confirmed, probable, laboratory-based case of reinfection, time-based case of reinfection

Disease of Public Health Significance	Reportable Case Classifications
Creutzfeldt-Jakob disease, all types	Confirmed, probable, suspect
Cryptosporidiosis	Confirmed, probable
Cyclosporiasis	Confirmed, probable
Diphtheria	Confirmed, probable
Diseases caused by a novel coronavirus[§§], including Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)	Confirmed, presumptive confirmed, probable
Echinococcus multilocularis infection[¶]	Confirmed, probable
Encephalitis[*] • Primary, viral • Post-infectious • Vaccine-related • Subacute sclerosing panencephalitis • Unspecified	Confirmed, probable
Food poisoning, all causes[*]	Confirmed, probable, suspect
Gastroenteritis, institutional outbreaks[§§]	Not applicable
Giardiasis, except asymptomatic cases	Confirmed, probable
Gonorrhea	Confirmed, probable
Group A Streptococcal disease, invasive	Confirmed
Group B Streptococcal disease, neonatal	Confirmed, probable
Haemophilus influenzae disease, all types, invasive[‡,¶]	Confirmed, probable
Hantavirus pulmonary syndrome	Confirmed
Hemorrhagic fevers, including: • Ebola virus disease • Marburg virus disease • Lassa Fever • Other viral causes including bunyaviruses, arenaviruses and flaviviruses	Confirmed, probable
Hepatitis A	Confirmed, probable
Hepatitis B[**]	Confirmed, Chronic, probable
Hepatitis C	Confirmed

Disease of Public Health Significance	Reportable Case Classifications
Influenza[§§]	Confirmed
Legionellosis	Confirmed, probable
Leprosy	Confirmed, probable
Listeriosis	Confirmed, probable
Lyme disease[‡]	Confirmed, probable
Measles	Confirmed, probable
Meningitis, acute[*] • Bacterial • Viral • Other	Confirmed, probable
Meningococcal disease, invasive[‡]	Confirmed, probable
Mumps[‡]	Confirmed, probable
Ophthalmia neonatorum	Confirmed, probable
Paralytic Shellfish Poisoning (PSP)[†]	Confirmed, probable
Paratyphoid fever	Confirmed, probable
Pertussis (whooping cough)[‡]	Confirmed, probable
Plague	Confirmed, probable
Pneumococcal disease, invasive	Confirmed
Poliomyelitis, acute	Confirmed
Powassan virus[‡,§]	Confirmed, probable
Psittacosis/Ornithosis	Confirmed, probable
Q-fever	Confirmed, probable
Rabies	Confirmed, probable
Respiratory infection outbreaks in institutions and public hospitals[§§]	Not applicable
Rubella	Confirmed, probable
Rubella, congenital syndrome	Confirmed, probable
Salmonellosis	Confirmed, probable
SARS COV-2 disease (COVID-19)[§§]	Confirmed, probable

Disease of Public Health Significance	Reportable Case Classifications
Shigellosis	Confirmed, probable
Smallpox and other Orthopoxviruses including mpox‡‡ (monkeypox)	Confirmed, probable, suspect, person under investigation
Syphilis, infectious	Confirmed
Tetanus	Confirmed
Trichinosis	Confirmed, probable
Tuberculosis	Confirmed, suspect
Tularemia	Confirmed, probable
Typhoid fever	Confirmed, probable
Verotoxin-producing *E. coli* infection indicator conditions, including Haemolytic Uremic Syndrome	Confirmed, probable
West Nile Virus illness‡	Confirmed, probable
Yersiniosis	Confirmed, probable

Source: Ontario. Ministry of Health. Ontario public health standards: requirements for programs, services, and accountability. Infectious disease protocol. Appendix 1, provincial case definitions and disease specific information [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [updated 2026 Jan 8; cited 2026 Mar 4]. Available from: https://www.ontario.ca/page/ontario-public-health-standards-requirements-programs-services-and-accountability#section-2

*Disease only included in the Monthly preliminary data section of this tool.

†These diseases became reportable on December 4, 2013.

‡Both confirmed and probable cases of these diseases are included in this tool, whereas only confirmed cases are included for other diseases.

§This disease became reportable on July 1, 2023.

¶Disease became designated as a disease of public health significance on May 1, 2018. For invasive *Haemophilus influenzae* disease, all types of Hi were designated as a disease of public health significance, as of May 1, 2018, prior to which only type b was reportable.

#*Clostridium difficile* infection is now more commonly referred to as *Clostridioides difficile* infection.

**Chronic case (carrier) classification added in 2012.

††This disease became reportable on January 22, 2020.

‡‡This disease became reportable on June 16, 2022.

§§Disease not included in this tool.

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Technical notes: infectious disease trends in Ontario tool. Toronto, ON: King's Printer for Ontario; 2026.

How to Cite this Tool

Generic Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious disease trends in Ontario tool [Internet]. Toronto, ON: King's Printer for Ontario; cYYYY [modified YYYY Mon DD; cited YYYY Mon DD]. Available from: https://www.publichealthontario.ca/en/data-and-analysis/infectious-disease/reportable-disease-trends-annually

Example Citation for Graphs

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious disease trends in Ontario tool: gonorrhea cases by age, for all sexes, in Ontario [Internet]. Toronto, ON: King's Printer for Ontario; c2026 [cited 2026 Apr 16]. Available from: https://www.publichealthontario.ca/en/data-and-analysis/infectious-disease/reportable-disease-trends-annually

Example Citation for Maps

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious disease trends in Ontario tool: tuberculosis rates for all ages, by males, 2013 [Internet]. Toronto, ON: King's Printer for Ontario; c2026 [cited 2026 Apr 16]. Available from: https://www.publichealthontario.ca/en/data-and-analysis/infectious-disease/reportable-disease-trends-annually

Disclaimer

Public Health Ontario

Public Health Ontario is an agency of the Government of Ontario dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. Public Health Ontario links public health practitioners, front-line health workers and researchers to the best scientific intelligence and knowledge from around the world.

For more information about PHO, visit publichealthontario.ca.

Ontario