

SURVEILLANCE REPORT

Pertussis in Ontario: 2025

Updated: July 2026

This report includes the most current information available from Ontario's Integrated Public Health Information System (iPHIS) as of **March 3, 2026**.

Introduction

This report describes the epidemiology of pertussis disease activity in Ontario in 2025, including case characteristics and case counts/incidence rates by age group and geography. Trends over time for the years 2007 to 2024 are also included.

Pertussis is an endemic disease in Ontario characterized by low level activity and occasional cyclical increases every 2-6 years.^{1,2} Pertussis is underdiagnosed and underreported in Ontario and is a common and often unrecognized cause of persistent cough in adolescents and adults.^{1,3} Pertussis is of most concern for infants as they are at the highest risk of severe disease.

Ontario has two routine immunization programs for pertussis.⁴ The primary childhood series includes four doses given between two and 18 months of age with booster doses given at four, 14 and 24 years of age. There is also a program for pregnant people with vaccine administration offered in every pregnancy, ideally between 27 to 32 weeks of gestation. Information on pertussis immunization coverage and vaccine safety can be found in Public Health Ontario's [Immunization Data Tool](#).⁵

Following a significant decline in pertussis activity during the COVID-19 pandemic, many global jurisdictions experienced a resurgence of pertussis, including Canada, the USA and many other countries within the Americas and Europe, Australia, and China.⁶⁻¹¹ This resurgence is thought to be due to a variety of factors, including increased in-person socialization, waning immunity, reduced immune stimulation due to fewer immune challenges during the pandemic, lower immunization coverage and in some areas, changes in circulating strains and reduced antibiotic susceptibility.¹⁰⁻¹²

Overview

- There were 187 cases (163 confirmed and 24 probable) of pertussis reported in Ontario in 2025, with an incidence rate of 1.1 cases per 100,000 population ([Figure 1](#)).
- Except for February, monthly counts were below the five year non-pandemic average for all months. ([Figure 2](#)).
- Most cases were among children ([Table 1](#)) and the highest age group-specific rates in 2025 were among the youngest age groups (<1 year and 1-4 year olds; 19.9 and 5.9 per 100,000 population, respectively). All age group-specific rates were below their respective five-year non-pandemic average rates ([Figure 3](#)).
- The 187 cases were identified from 26 of Ontario's 29 public health units ([Figure 4](#)).

Trends Over Time

- Annual trends in pertussis case counts and rates have fluctuated greatly over time ([Figure 1](#)) which is consistent with the cyclical nature of pertussis.
- The 2025 case count and rate was much lower than 2024 ([Figure 1](#)), which had the highest case count and rate observed during the surveillance period of 2007-2025; with 1,730 cases identified (10.7 cases per 100,000 population).
- Ontario had the lowest recorded case counts and rates during the height of the COVID-19 pandemic (2020-2021), with case counts and rates being particularly low for 2021 (n=16, 0.1 cases per 100,000 population).

Case Characteristics

- Females accounted for 57.2% (107/187) of all cases in 2025 ([Table 1](#)).
- Cases ranged in age from 1 day to 76 years with a median age of 11 years.
- Most cases (n=126; 67.4%) were under 18 years of age and 28 (15.0%) cases were less than one year of age ([Table 1](#)).
- The 10-14 year old age group had the highest number of cases with 39, representing 20.9% of all pertussis cases reported in 2025.
- All age group-specific rates were below their respective five-year non-pandemic average rates ([Figure 3](#)). The highest age group-specific rates in 2025 were among the youngest age groups (<1 year and 1-4 year olds).

Immunization Status

- Among the 187 cases in 2025, 63 (33.7%) were unimmunized, 101 cases (54.0%) were immunized, and 23 cases (12.3%) had an unknown immunization history ([Table 2](#)).
- The previously immunized cases received between one and six doses of pertussis-containing vaccines prior to disease onset ([Table 2](#)).
- The median time between receiving the most recent pertussis-containing vaccine dose and pertussis disease was 7 years (range 2 months to 49 years).

Severity

- Overall, nine cases (4.8%) had a documented hospitalization in iPHIS ([Table 1](#)). All nine hospitalizations were among children under five years of age including seven cases less than one year of age (range 1 day-10 weeks of age). This represents 25% of all cases in this age group (n=7/28).
 - One hospitalized case was admitted to the ICU. This case was in a child under one year of age.
 - No deaths were reported.
- There were also 21 cases (11.2%) with a documented emergency department visit (i.e., without an inpatient hospitalization). A total of 14 (66.7%) of these cases were among children (median age 8 years, range 19 weeks to 16 years).

Geography

- Cases were reported from 26 of 29 public health units ([Figure 4](#)).
- Although Toronto Public Health had the highest case count (n=44), it had a comparatively low rate of 1.4 cases per 100,000 population.
- Northeastern Public Health and Eastern Ontario Health Unit had the highest rates (10.2 and 4.6 per 100,000 population, respectively) and the fourth and fifth highest case counts.

Characteristics of Pertussis Cases: Ontario, 2025

Table 1A: Classification

Case Characteristics (n=187)	n	%
Confirmed	163	87.2
Probable	24	12.8

Table 1B: Gender

Case Characteristics (n=187)	n	%
Female	107	57.2
Male	80	42.8

Table 1C: Age

Case Characteristics (n=187)	n	%
<1 year	28	15.0
1-4 years	34	18.2
5-9 years	17	9.1
10-14 years	39	20.9
15-19 years	10	5.4
20-49 years	46	24.6
50-64 years	9	4.8
≥65 years	4	2.1

Table 1D: Hospitalizations and Deaths

Case Characteristics (n=187)	n	%
Hospitalized (all cases)	9	4.8
< 1 year old	7	25.0
1-4 years	2	5.9
5-9 years	0	-
10-14 years	0	-
15-19 years	0	-
20-49 years	0	-
50-64 years	0	-
≥65 years	0	-
Deaths	0	-

Table 2A: Number of Immunized* Pertussis Cases and Number of Doses Received, by Age Group: Ontario, 2025

Age Group	# Immunized Cases (n)	# Doses Received – Median	# Doses Received – Range
< 1 year	10	2	1-3
1-4 years	9	3	1-4
5-9 years	6	3	1-5
10-14 years	34	5	3-6
15-19 years	10	5	4-6
20-49 years	31	5	1-6
50-64 years	1	3	3-3
65 years	0	-	-

*Vaccine dose(s) considered valid when received at least two weeks prior to disease onset.

Table 2B: Immunization Status* among Pertussis Cases and Number of Doses Received in Previously Immunized Cases, by Age Group: Ontario, 2025

Age Group	Unknown Immunization History (n)	Unimmunized Cases (n)	# Immunized Cases (n)	# Doses Received – Median	# Doses Received – Range
< 1 year	1	17	10	2	1-3
1-4 years	3	22	9	3	1-4
5-9 years	2	9	6	3	1-5
10-14 years	1	4	34	5	3-6
15-19 years	0	0	10	5	4-6
20-49 years	10	5	31	5	1-6
50-64 years	5	3	1	3	3-3
65 years	1	3	0	-	-

*Vaccine dose(s) considered valid when received at least two weeks prior to disease onset.

Figure 1: Pertussis Case Counts and Incidence Rates per 100,000 Population: Ontario, 2007–2025

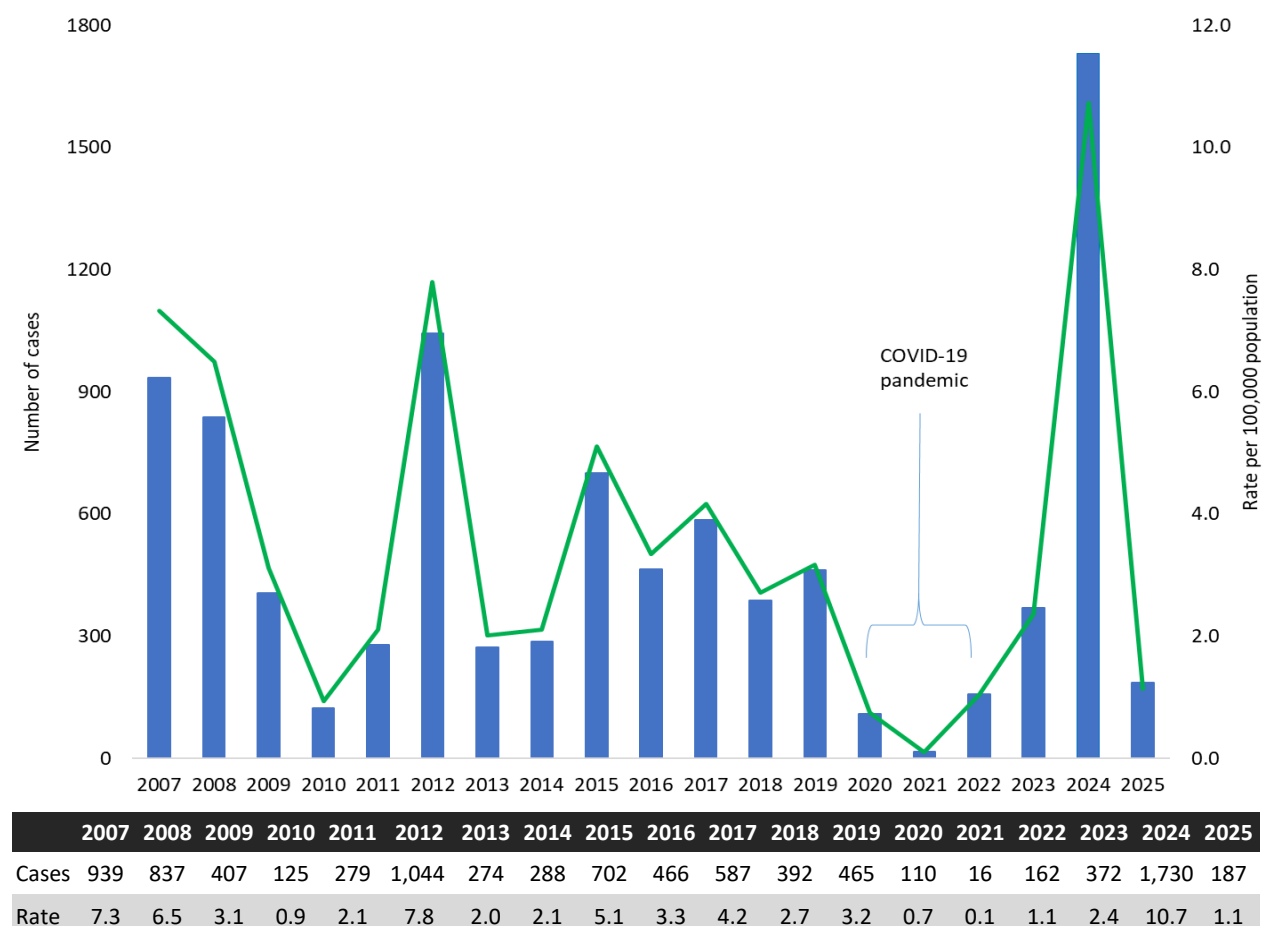
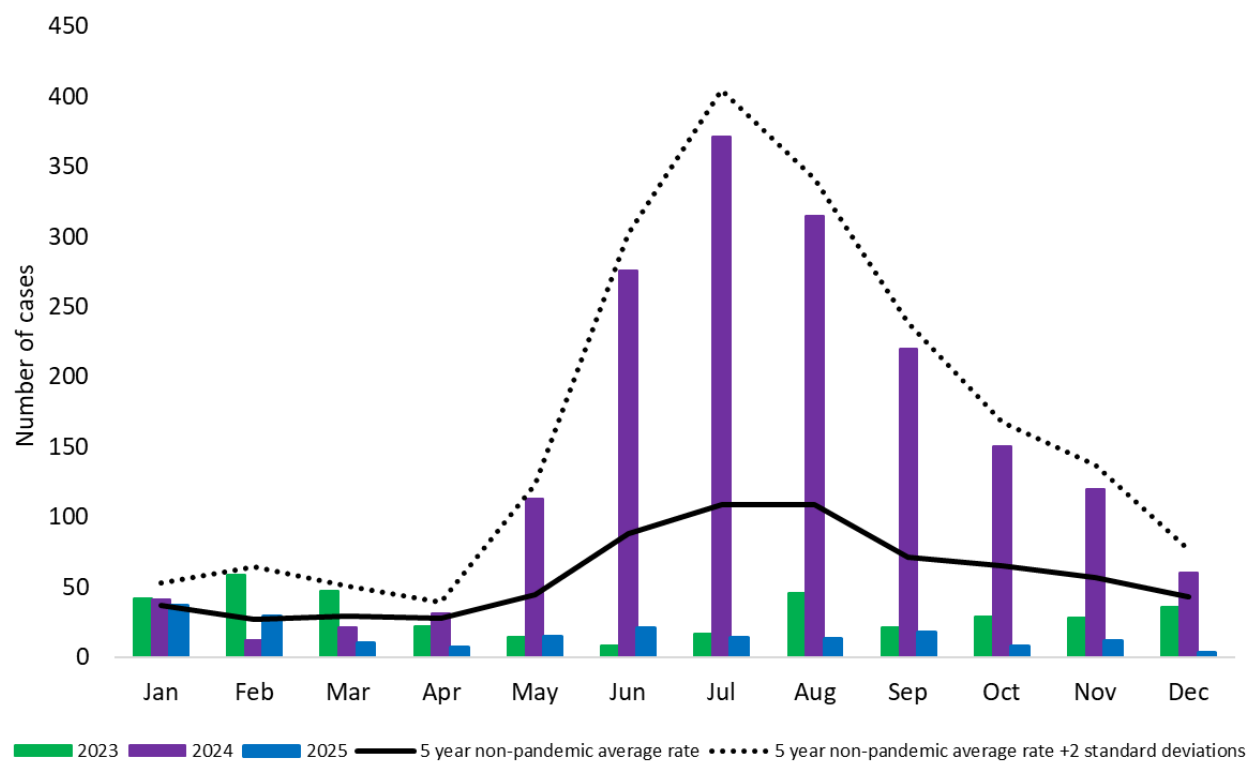


Figure 2: Number of Pertussis Cases by Month: Ontario, 2023-2025 and 5 Year Non-Pandemic Average*



*For pertussis, the 5 year non-pandemic average is based on the years 2017, 2018, 2019, 2023 & 2024

Figure 3: Pertussis Incidence Rates by Age Group: Ontario, 2025

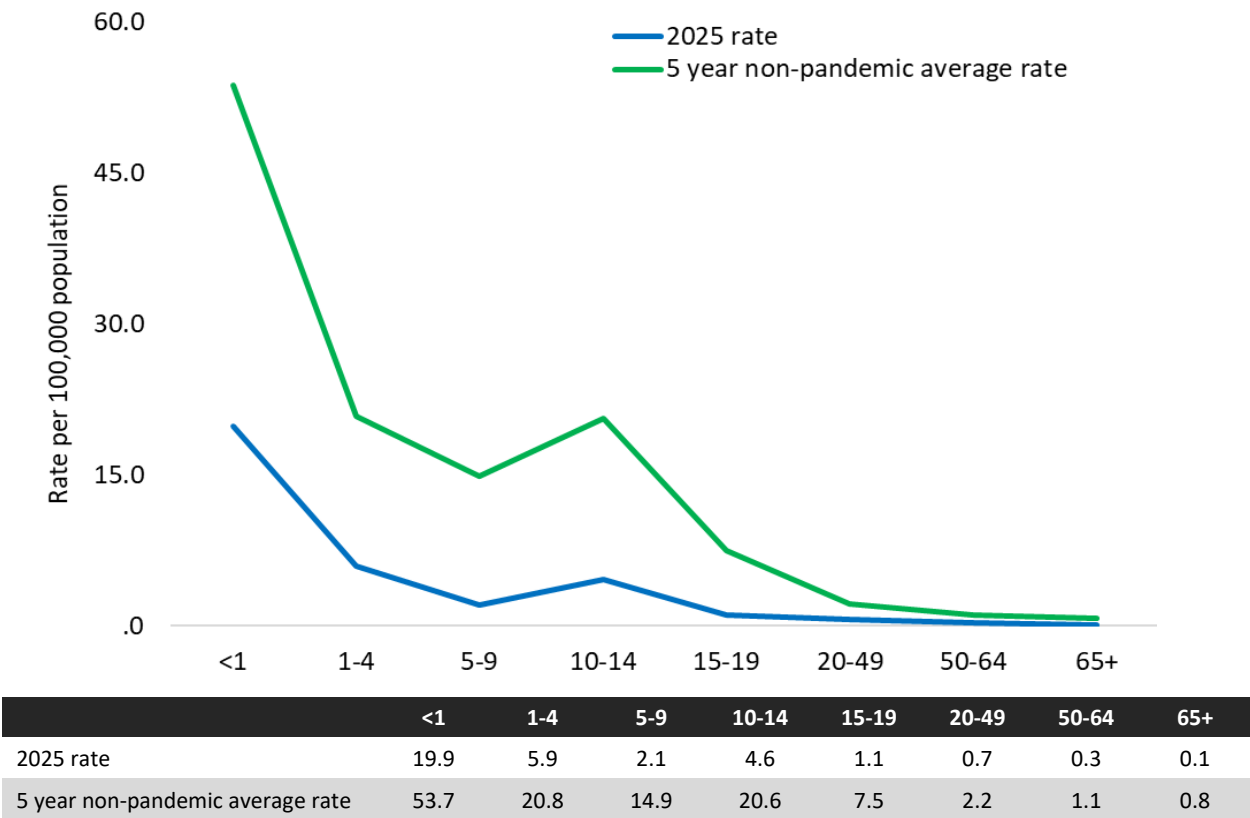
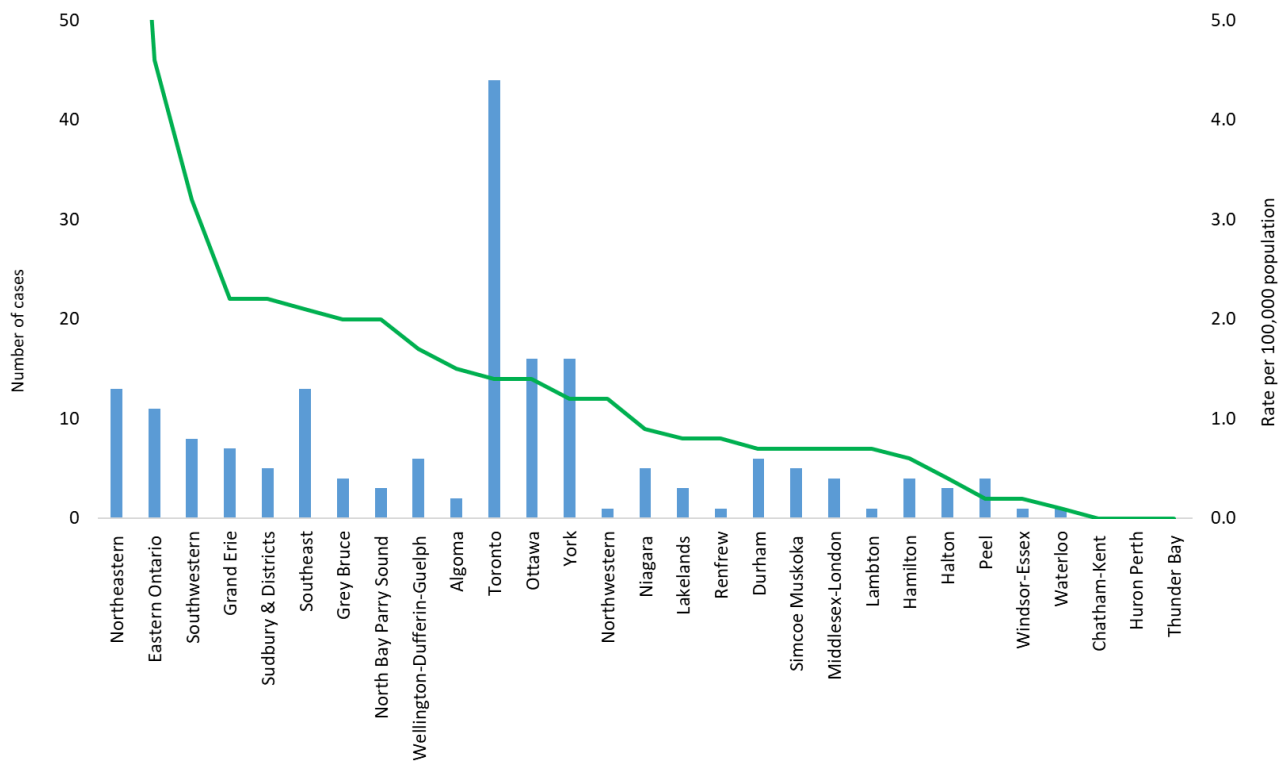


Figure 4: Public Health Unit-Specific* Pertussis Incidence Rates and Cases: Ontario, 2025



*Refer to the technical notes section for a complete listing of PHU names

Technical Notes

Data Sources

Case Data

- The data for this report were based on information entered in the Ontario Ministry of Health (MOH) integrated Public Health Information System (iPHIS) database as of March 3, 2026.
- iPHIS is a dynamic disease reporting system that allows ongoing updates to previously entered data. As a result, data extracted from iPHIS represent a snapshot at the time of extraction and may differ from previous or subsequent reports.

Immunization Data

- In addition to the immunization data from iPHIS, pertussis immunization records were also extracted from Ontario's Digital Health Immunization Repository using the Panorama Enhanced Analytical Reporting (PEAR) tool. Data are current as of February 2, 2026.
- The PEAR data extract was linked to the iPHIS data to create a more robust immunization dataset. This linked dataset was used to assess immunization status and to count the number of valid doses a case had received prior to disease onset. For the 2007-2025 surveillance period, this resulted in an additional 1,255 cases with valid immunization records (including an additional 21 cases in 2025). Ontario Population Data

Ontario Population Data

Ontario population data were sourced from:

- Population estimates 2007-2024: Population Reporting. Population estimates county/municipality, 2001-2024 [data file]. Ottawa ON: Statistics Canada, Government of Canada [producer]; Toronto, ON: Ontario. Ministry of Health, IntelliHealth Ontario [distributor]; [data extracted 2025 Feb 21].
- Population projections 2025: 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].

Data Caveats

- As of 1 January 2025, Ontario moved from 34 to 29 public health units. The reduction is due to several mergers between public health units: Porcupine Health Unit and Timiskaming Health Unit merged to become Northeastern Public Health (NEH); Brant County Health Unit and Haldimand-Norfolk Health Unit merged to become Grand Erie Public Health (GEH); Haliburton, Kawartha, Pine Ridge District Health Unit and Peterborough Public Health merged to become Haliburton Kawartha Northumberland Peterborough Health Unit (HKNP); and Hastings Prince Edward Public Health, Leeds, Grenville & Lanark District Health Unit and Kingston, Frontenac and Lennox & Addington Public Health joined to become South East Health Unit (SEH). **List of Ontario Public Health Units:**
 - Algoma=Algoma Public Health (ALG)
 - Chatham-Kent=Chatham-Kent Public Health (CHK)
 - Durham=Durham Region Health Department (DUR)
 - Eastern Ontario=Eastern Ontario Health Unit (EOH)

- Grey Bruce=Grey Bruce Public Health (GBO)
- Grand Erie=Grand Erie Public Health (GEH)
- Halton=Halton Region Public Health (HAL)
- Hamilton=City of Hamilton Public Health Services (HAM)
- Lakelands=Lakelands Public Health (HNP)
- Huron Perth=Huron Perth Public Health (HPH)
- Lambton=Lambton Public Health (LAM)
- Middlesex-London=Middlesex-London Health Unit (MSL)
- Northeastern=Northeastern Public Health (NEH)
- Niagara=Niagara Region Public Health (NIA)
- North Bay Parry Sound=North Bay Parry Sound District Health Unit (NPS)
- Northwestern=Northwestern Health Unit (NWR)
- Ottawa=Ottawa Public Health (OTT)
- Southwestern=Southwestern Public Health (OXE)
- Peel=Peel Public Health (PEL)
- Renfrew=Renfrew County and District Health Unit (REN)
- Southeast=Southeast Public Health (SEH)
- Simcoe Muskoka=Simcoe Muskoka District Health Unit (SMD)
- Sudbury & Districts=Public Health Sudbury & Districts (SUD)
- Thunder Bay=Thunder Bay District Health Unit (THB)
- Toronto=Toronto Public Health (TOR)
- Waterloo=Region of Waterloo Public Health and Paramedic Services (WAT)
- Wellington-Dufferin-Guelph=Wellington-Dufferin-Guelph Public Health (WDG)
- Windsor-Essex=Windsor-Essex County Health Unit (WEC)
- York=York Region Public Health (YRK)
- **Data reported for 2020-2022 should be interpreted with caution. Both testing and iPHIS data entry practices were likely impacted by the COVID-19 pandemic response.**
- Only pertussis cases meeting the confirmed and probable case classification as defined in the Ontario Ministry of Health surveillance case definitions are included in the reported case counts.²
- Changes to provincial surveillance case definitions and disease classifications have occurred over the years and thus may impact the analysis of trends over time. Cases are classified in iPHIS based on the Ontario Ministry of Health surveillance case definitions in use at the time the case was identified.
- PHO's technical report "Factors Affecting Reportable Diseases in Ontario: Case Definition Changes and Associated Trends 1991-2016" and its associated appendix provide more detailed information on this topic.¹³
- Cases of pertussis are reported based on the Episode Date, which is an estimate of the onset date of disease for a case. To determine this date, the following hierarchy exists in iPHIS: Onset Date > Specimen Collection Date > Lab Test Date > Reported Date.
 - For example: If an Onset Date exists, it will be used as the Episode Date. If Onset Date is not available, then the next available date in the hierarchy (i.e., Specimen Collection Date) will be used, and so on.

- Case counts by geography are based on the diagnosing health unit (DHU). DHU refers to the case's public health unit of residence at the time of illness onset or report to public health and not necessarily the location of exposure.
- Cases for which the DHU was reported as MOHLTC (to signify a case that is not a resident of Ontario) were excluded from this analysis.
- 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, were excluded from this analysis.
- Incidence rates were calculated per 100,000 population.
- The five year non-pandemic average and five year non-pandemic average plus two standard deviations were used to provide a historical context to pertussis cases in Ontario. They were based on the years 2017, 2018, 2019, 2023 and 2024. Case counts and rates were greatly reduced between 2020-2022 and returned to pre-pandemic levels by 2023.
- To determine immunization status of cases, only documented doses of a pertussis-containing vaccine product administered at least 14 days prior to disease onset were included. A case marked as unimmunized in iPHIS and without any valid documented dose (in either iPHIS or PEAR) was considered unimmunized. A case without any immunization information entered in iPHIS and no valid immunization history found in PEAR was considered as having an unknown pertussis immunization history.
- To be considered as a valid hospitalization, a case must have a hospital admission date that is no more than 60 days prior to disease onset or 90 days post disease onset.
- To be considered as a fatal case outcome, a case must have a death recorded that is not classified as "reportable disease was unrelated to cause of death".

References

1. Public Health Agency of Canada, National Advisory Committee on Immunization. Pertussis (whooping cough) vaccines: Canadian immunization guide [Internet]. Evergreen ed. Ottawa, ON: Government of Canada; 2018 [modified 2018 Mar; cited 2026 Mar 9]. Part 4, Immunizing agents. Available from: <https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-4-active-vaccines/page-15-pertussis-vaccine.html>
2. Ontario. Ministry of Health. Ontario public health standards: requirements for programs, services, and accountability. Infectious disease protocol. Appendix 1: case definitions and disease specific information. Disease: Pertussis (whooping cough). Effective: May 2022 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [cited 2026 Mar 9]. Available from: <https://files.ontario.ca/moh-ophs-pertussis-whooping-cough-en-2022.pdf>
3. Ebell MH, Marchello C, Callahan M. Clinical diagnosis of Bordetella pertussis infection: a systematic review. J Am Board Fam Med. 2017;30(3):308-19. Available from: <https://doi.org/10.3122/jabfm.2017.03.160330>
4. Ontario. Ministry of Health. Publicly funded immunization schedules for Ontario. Effective: June 2022 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2022 [cited 2026 Mar 9]. Available from: <https://www.ontario.ca/files/2024-01/moh-publicly-funded-immunization-schedule-en-2024-01-23.pdf>
5. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Immunization data tool [Internet]. Toronto, ON: King's Printer for Ontario; 2025 [cited 2026 Mar 9]. Available from: <https://www.publichealthontario.ca/en/Data-and-Analysis/Infectious-Disease/Immunization-Tool>
6. Centers for Disease Control and Prevention (CDC). Pertussis surveillance and trends [Internet]. Atlanta, GA: CDC; 2025 [cited 2026 Mar 9]. Available from: <https://www.cdc.gov/pertussis/php/surveillance/index.html>
7. Pan American Health Organization/World Health Organization (PAHO/WHO). Epidemiological alert: increase in pertussis (whooping cough) in the Americas region. 31 May 2025. Washington, DC: PAHO/WHO; 2025. Available from: <https://www.paho.org/sites/default/files/2025-05/2025-05-31-epi-alert-pertussis-whooping-cough-final.pdf>
8. European Centre for Disease Prevention and Control (ECDC). Increase of pertussis cases in the EU/EEA, 8 May 2024. Stockholm: ECDC; 2024. Available from: <https://www.ecdc.europa.eu/en/publications-data/increase-pertussis-cases-eueea>
9. Australian Centre for Disease Control. Whooping cough (pertussis) [Internet]. Canberra: Commonwealth of Australia; 2025 [cited 2026 Mar 9]. Available from: <https://www.cdc.gov.au/topics/whooping-cough-pertussis>
10. Cai J, Liu Q, Chen B, Jiang Y, Zeng X, Huang J, et al. Waning immunity, prevailing non-vaccine type ptxP3 and macrolide-resistant strains in the 2024 pertussis outbreak in China: a multicentre cross-sectional descriptive study. Lancet Reg Health. 2025;60:101628. Available from: <https://doi.org/10.1016/j.lanwpc.2025.101628>
11. BlueDot Inc. Outbreak insider: whooping cough makes a sweeping global resurgence [Internet]. Toronto, ON: BlueDot Inc.; 2025 [cited 2026 Mar 9]. Available from: <https://bluedot.global/whooping-cough-makes-a-sweeping-global-resurgence/>

12. Zhang H, Kang Z, Zhang Y, Yuanbin Y, Huiwen L, Naik W, et al. Evolutionary dynamics and global spread of macrolide-resistant *Bordetella pertussis* during the post-pandemic pertussis resurgence. *Journal of Infection*, 2026;92:106718. Available from:
[https://www.journalofinfection.com/article/S0163-4453\(26\)00043-5/fulltext?rss=yes](https://www.journalofinfection.com/article/S0163-4453(26)00043-5/fulltext?rss=yes)
13. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Factors affecting reportable diseases in Ontario: case definition changes and associated trends, 1991-2016 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2018 [cited 2026 Mar 9]. Available from:
https://www.publichealthontario.ca/-/media/Documents/F/2018/factors-reportable-diseases-ontario-1991-2016.pdf?rev=ff1672e0c3fb410dbf025ec2b4c88f79&sc_lang=en

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Pertussis in Ontario: 2025. Toronto, ON: King's Printer for Ontario; 2026.

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