Public Health Ontario | Santé publique Ontario

SURVEILLANCE REPORT

Varicella in Ontario: January 1 to December 31, 2025

Published: April 2026

Introduction

This annual report describes the epidemiology of varicella (chickenpox) in Ontario in 2025. Trends over time for years 2010 to 2024 are also included. The most current information available from Ontario's integrated Public Health Information System (iPHIS) as of January 20, 2026 is included. Unless specified, the analyses presented in the report pertains to cases of varicella reported at the individual-level.

Highlights

- In 2025, 779 confirmed cases of varicella were reported at the individual-level in Ontario (4.8 per 100,000 population). The rate of individual-level varicella has increased since the COVID-19 pandemic, with 2024 and 2025 having the highest rate since 2010.
- The highest incidence was reported in infants <1 year of age (28.4 per 100,000 population), which is the age group that had the highest incidence in all years between 2010 and 2025. The rate in this age group has been on an increasing trend since 2017.
- In 2025, 37 (4.7%) cases were reported as hospitalized and no deaths were reported. The age group with the highest proportion of cases was adults 50 years of age and older, where 20.5% of all cases reported in the age group were hospitalized. The proportion of cases that were reported as hospitalized in 2025 was lower than the previous two years and the combined five years prior to the COVID-19 pandemic (2015-2019).
- The proportion of cases reported as unimmunized has increased since 2010. In 2025, just over half of the reported cases were unimmunized.

Background

Varicella, commonly known as chickenpox, is a primary infection caused by the varicella-zoster virus (VZV). Univalent varicella vaccine was first authorized for use in Canada in December 1998 and was available for private purchase in Ontario.[1] In September 2004, a single dose of varicella vaccine became publicly funded for Ontario children at 15 months of age. In August 2011, Ontario's publicly funded immunization program expanded to add a second dose as measles-mumps-rubella-varicella (MMRV) vaccine for children at 4-6 years of age.[2] Children born on or after January 1, 2000 were also eligible to receive a second dose after 1 year of age. More information on Ontario's varicella vaccine coverage among children and vaccine safety data are presented in Public Health Ontario's Immunization Data Tool.[3]

Varicella is reported both at the individual-level and at aggregate-level in Ontario. Individually reported cases must meet the provincial surveillance definition, which typically involves laboratory-confirmation of virus.[4] Aggregate cases do not need to meet the surveillance definitions and do not contain individual-level case details. Local public health units are required to report aggregate counts of varicella stratified by pre-defined age groups monthly.

Results

Temporal Trends

- Cases of varicella reported in aggregate have been decreasing since the introduction of publicly funded varicella vaccines in 2004 (Figure 1). This trend suggests that the publicly funded immunization program has had a positive impact on decreasing the incidence of varicella in the province.
    - Although aggregate varicella data are helpful in seeing the overall trend in the epidemiology of disease in Ontario, there are significant data limitations associated with aggregate reporting that include: under-reporting, geographic variations in aggregate reporting practices, and the possibility of misclassified and/or duplicate cases due to lack of case-level information (e.g., laboratory results).
- In 2025, 779 confirmed cases of varicella were reported at the individual-level in Ontario (4.8 per 100,000 population). The rate of individual-level varicella has increased since the COVID-19 pandemic, with 2024 and 2025 having the highest incidence between 2010 and 2025 (Figure 2). Case counts for all months of 2024 and 2025 were above the pre-pandemic five-year monthly average plus two standard deviations (Figure 3).

Age Group

- In 2025, confirmed cases of varicella ranged in age from <1 to 87 years, with a median age of 25 years (Table 1).
- Although the highest proportion of cases in 2025 occurred in adults 20-49 years of age (57.9%), the highest incidence rate was reported in infants <1 year of age (28.4 per 100,000 population) followed by children 1-4 years of age (13.7 per 100,000 population). The lowest rate was reported for adults over 50 years of age and older (0.7 per 100,000 population).
- Between 2010 and 2025, infants <1 year of age consistently had the highest rate which has been steadily increasing since 2017 (Figure 4a). Children 1-4 years of age have also seen an increase in the rate since the COVID-19 pandemic. Rates for age groups 15-19 and 20-49 years have also increased slightly between 2010 and 2025, whereas adults 50 years of age and older have had the lowest rate among all age groups over the same time period (Figure 4b).

Severity

- In 2025, 37 (4.7%) cases reported hospitalization and no deaths were reported. Among the 37 hospitalized cases, 54.1% were in adults 20-49 years of age.
- The proportion of cases that were hospitalized in 2025 was lower than two previous years (6.8% and 7.8% in 2024 and 2023, respectively), as well as the pre-pandemic five-year combined proportion (9.9%) (Table 3).
- The age group with the highest proportion of hospitalized cases was adults 50 years of age and older, where 20.5% of all cases in the age group was reported as hospitalized in 2025.

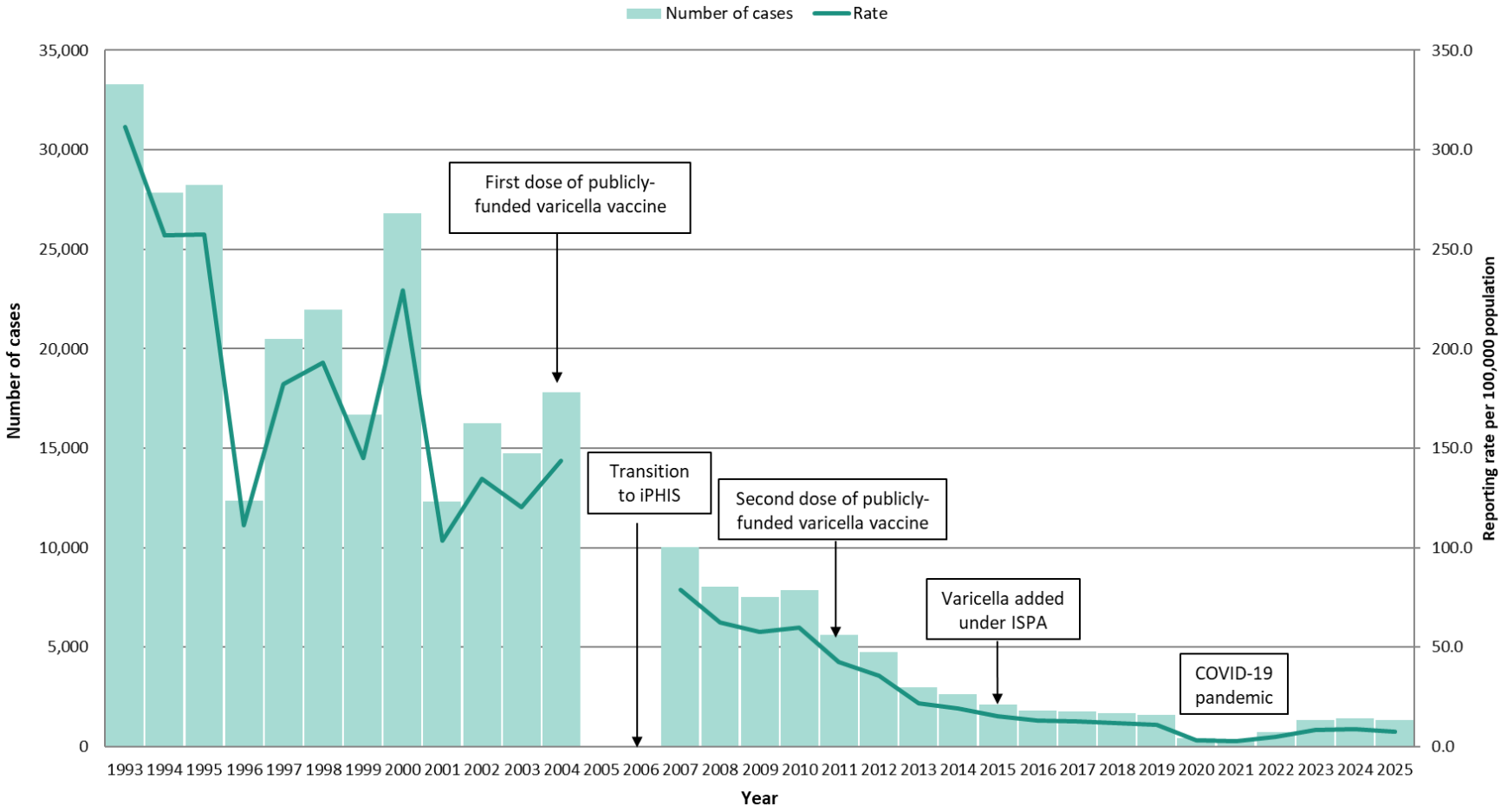
Immunization Status

- In 2025, 53.7% of the reported cases were unimmunized, 10.1% received one dose, and 6.9% received two or more doses of varicella-containing vaccines. The remaining 29.3% had unknown immunization status. Two doses are required to be considered up-to-date under Ontario's public immunization schedule (Table 4a).
- The proportion of cases reported as unimmunized has increased since 2010, as well as the proportion of cases receiving two or more doses of the vaccine (Figure 5).
- Cases born on or after 2000 had a higher proportion of cases who were immunized compared to those born before 2000 for the surveillance period (Tables 4b and 4c). This was expected given the timelines of implementation of Ontario's varicella immunization program.

Geographic Distribution

- In 2025, varicella was reported in 28 of 29 public health units. Among the 28 public health units, public health unit-specific rates ranged from 0.1 to 7.3 per 100,000 population (Table 5).

Figure 1: Number of Aggregate Varicella Cases and Incidence Rates by Year: Ontario, 1993-2025



Notes:

1. Cases from 2005-2006 were excluded due to data incompleteness arising from the transition in Ontario's reportable disease databases (i.e., transition to iPHIS).
2. A single dose of varicella vaccine was added to Ontario's publicly funded immunization schedule in September 2004.
3. A second dose of varicella vaccine as MMRV vaccine was added to Ontario's publicly funded immunization schedule in August 2011.
4. Varicella was added as a designated disease under the Immunization of School Pupils Act starting in the 2014-15 school year. Children born in 2010 or later were required to be immunized against varicella (two doses) or provide documentation of medical exemption or religious/conscientious objection for school attendance.

Figure 2: Number of Individual-Level Varicella Cases and Incidence Rates by Year: Ontario, 2010-2025

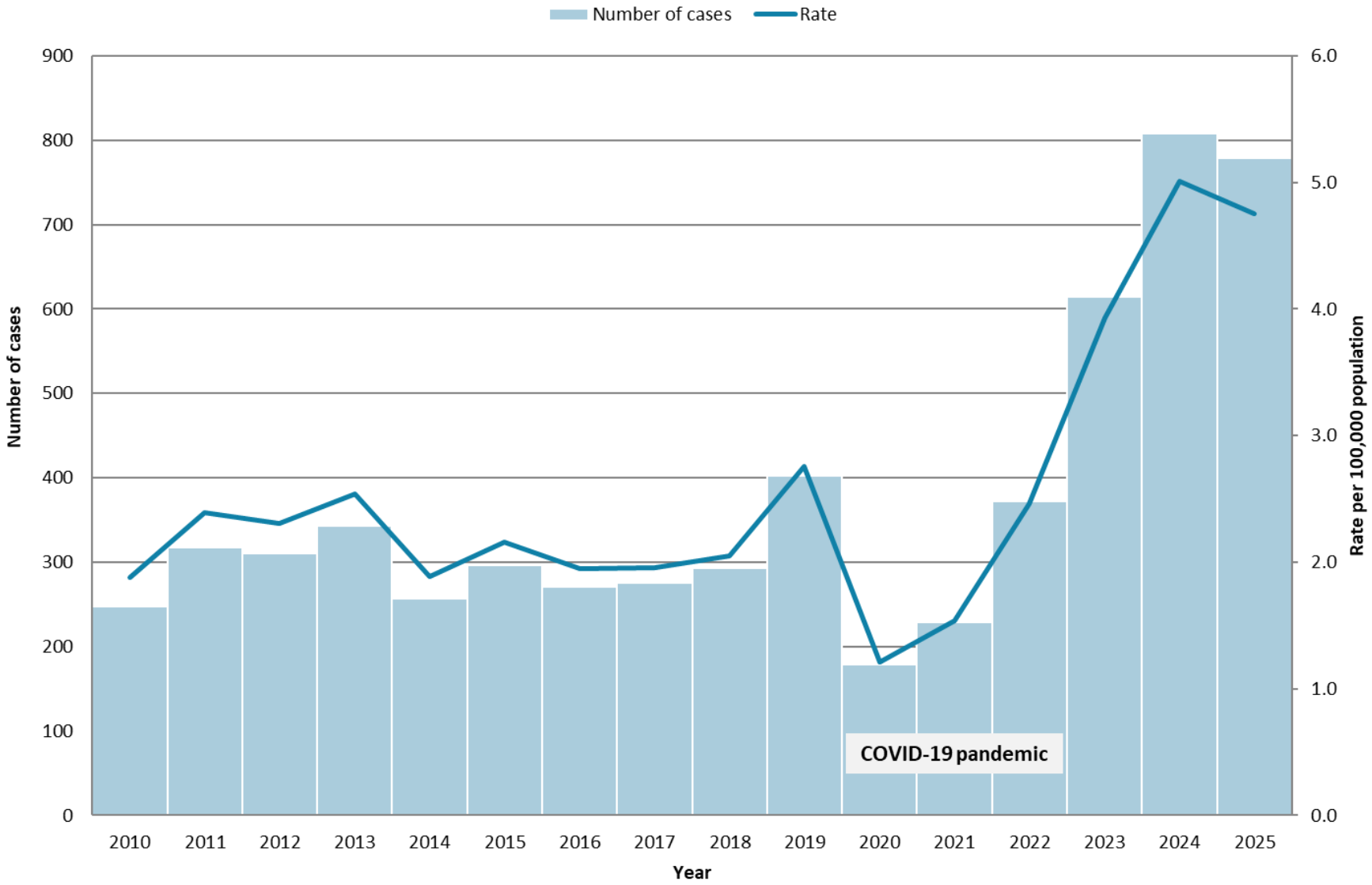
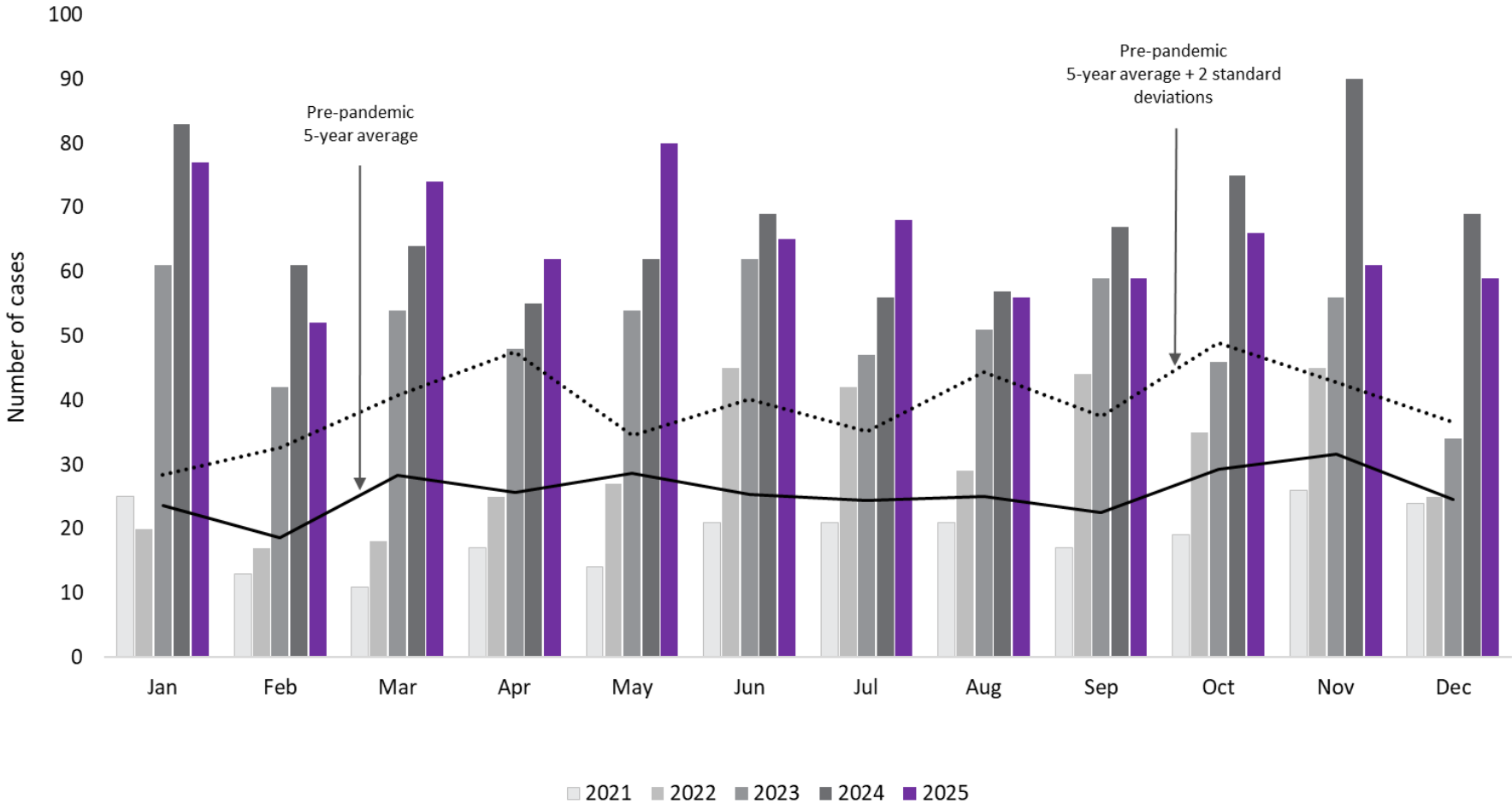


Figure 3: Number of Individual-Level Varicella Cases by Month: Ontario, 2021-2025



Note: Pre-pandemic five-year average includes years 2015 to 2019.

Figure 4a: Incidence Rates of Individual-Level Varicella Cases by Age Group and Year with a Focus on Children Under 10 Years: Ontario, 2010-2025

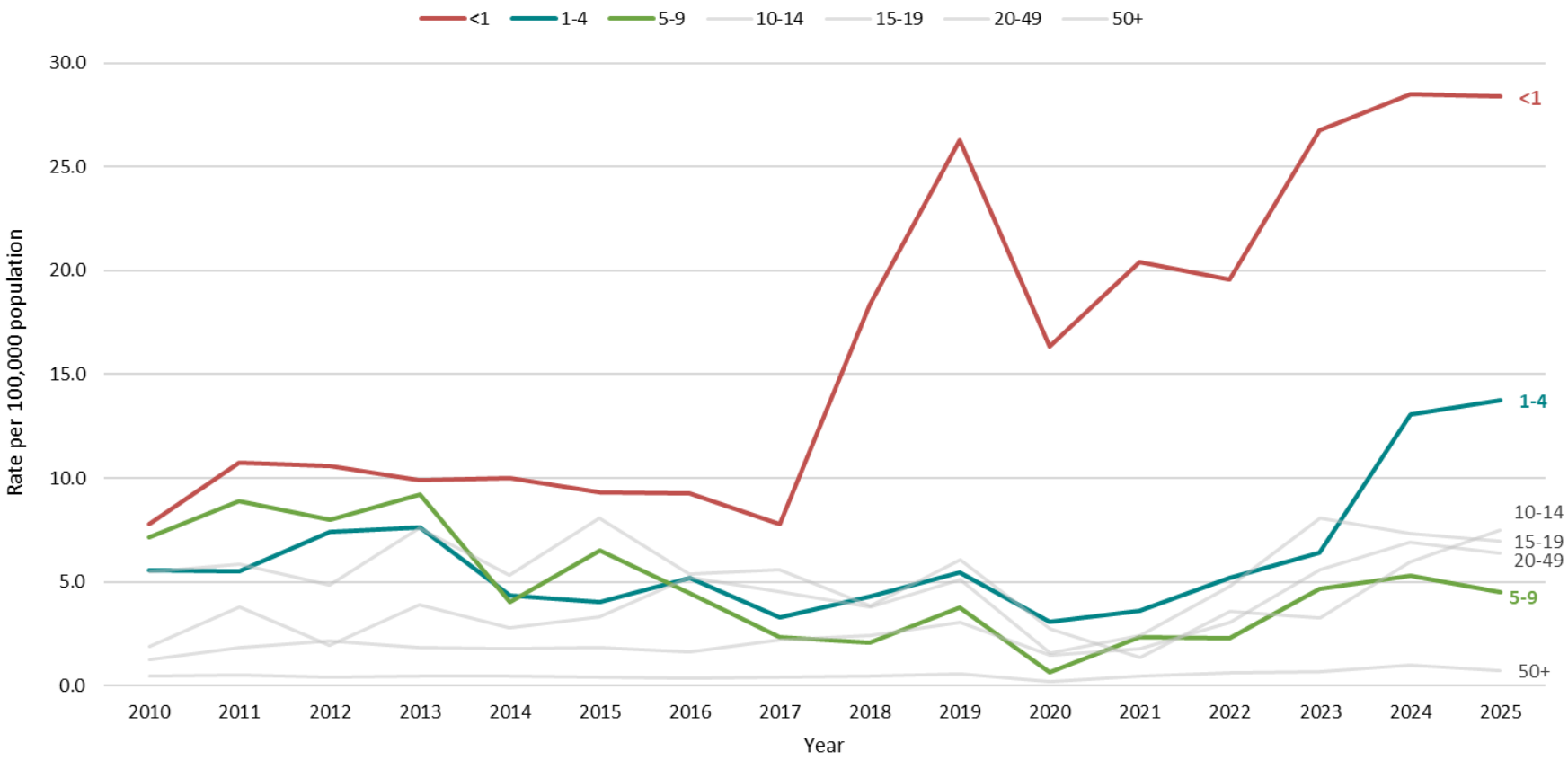


Figure 4b: Incidence Rates of Individual-Level Varicella Cases by Age Group and Year with a Focus on Individuals 10 Years of Age or Older: Ontario, 2010-2025

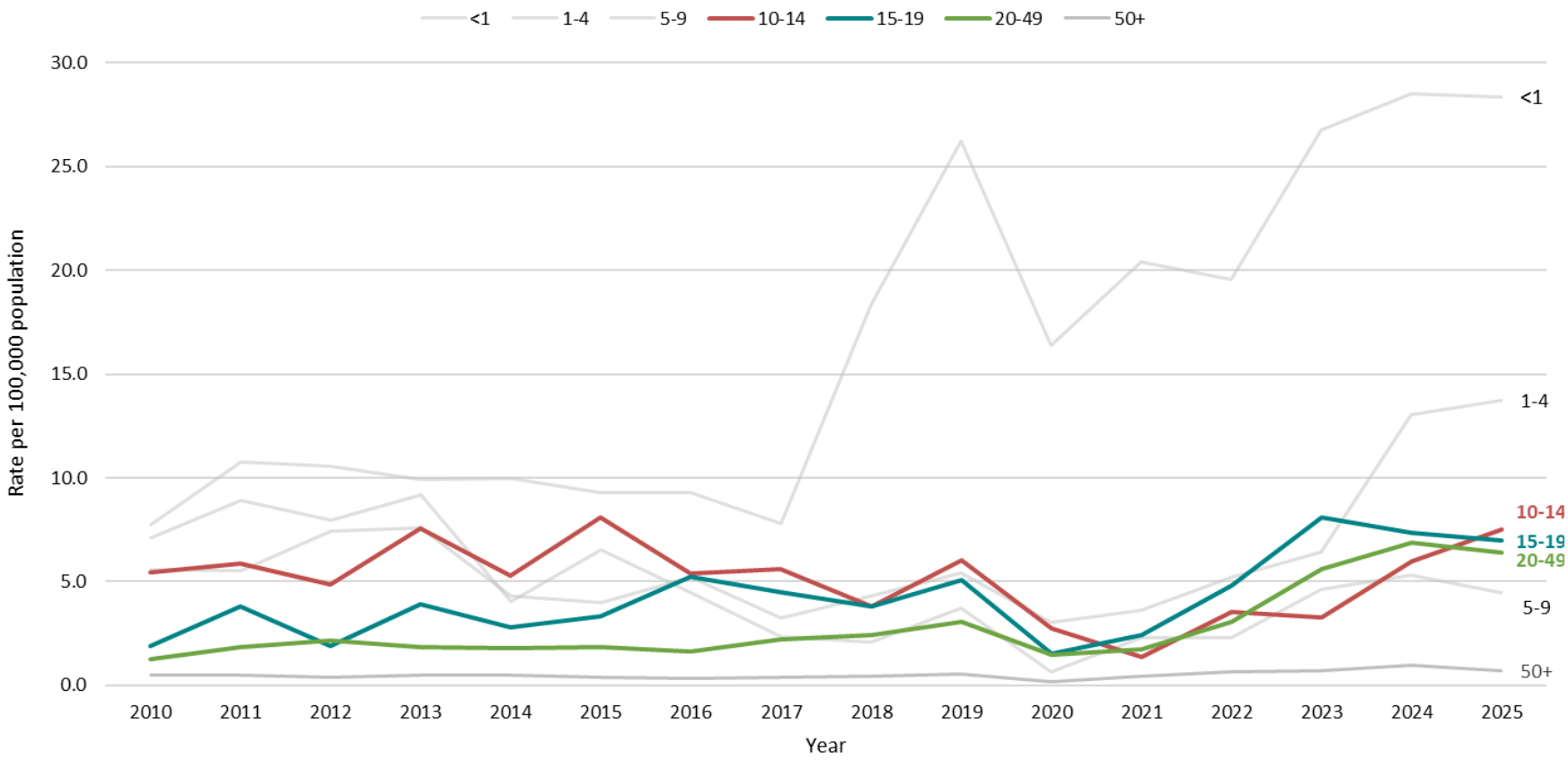


Table 1: Individual-Level Varicella Cases by Age Group and Year: Ontario, 2023-2025

Age Group (years)	2025 (n, %)	2024 (n, %)	2023 (n, %)	2015-2019 combined (n, %)
<1	40 (5.1)	40 (5.0)	36 (5.9)	100 (6.5)
1-4	79 (10.1)	75 (9.3)	37 (6.0)	129 (8.4)
5-9	36 (4.6)	43 (5.3)	37 (6.0)	146 (9.5)
10-14	63 (8.1)	50 (6.2)	27 (4.4)	223 (14.5)
15-19	66 (8.5)	67 (8.3)	72 (11.7)	185 (12.0)
20-49	451 (57.9)	474 (58.7)	365 (59.4)	641 (41.7)
50+	44 (5.6)	59 (7.3)	40 (6.5)	114 (7.4)
Total	**779 (100.0)**	**808 (100.0)**	**614 (100.0)**	**1,538 (100.0)**

Table 2: Individual-Level Varicella Cases by Sex and Year: Ontario, 2023-2025

Sex	2025 (n, %)	2024 (n, %)	2023 (n, %)	2015-2019 combined (n, %)
Female	364 (46.7)	379 (46.9)	259 (42.2)	688 (44.7)
Male	410 (52.6)	429 (53.1)	354 (57.7)	845 (54.9)
Other/unknown	5 (0.6)	0 (0.0)	1 (0.2)	5 (0.3)
Total	**779 (100.0)**	**808 (100.0)**	**614 (100.0)**	**1,538 (100.0)**

Table 3: Hospitalized Cases of Individual-Level Varicella by Age Group and Year: Ontario, 2023-2025

Age Group (years)	2025 (n, % of total age group cases)	2024 (n, % of total age group cases)	2023 (n, % of total age group cases)	2015-2019 combined (n, % of total age group cases)
<1	2 (5.0)	3 (7.5)	4 (11.1)	21 (21.0)
1-4	1 (1.3)	1 (1.3)	3 (8.1)	6 (4.7)
5-9	2 (5.6)	2 (4.7)	3 (8.1)	14 (9.6)
10-14	2 (3.2)	3 (6.0)	2 (7.4)	4 (1.8)
15-19	1 (1.5)	5 (7.5)	2 (2.8)	8 (4.3)
20-49	20 (4.4)	27 (5.7)	27 (7.4)	49 (7.6)
50+	9 (20.5)	14 (23.7)	7 (17.5)	50 (43.9)
Total Hospitalized Cases (% of total cases)	**37 (4.7)**	**55 (6.8)**	**48 (7.8)**	**152 (9.9)**

Figure 5: Immunization Status of Individual-Level Varicella Cases by Year: Ontario: Ontario, 2010-2025

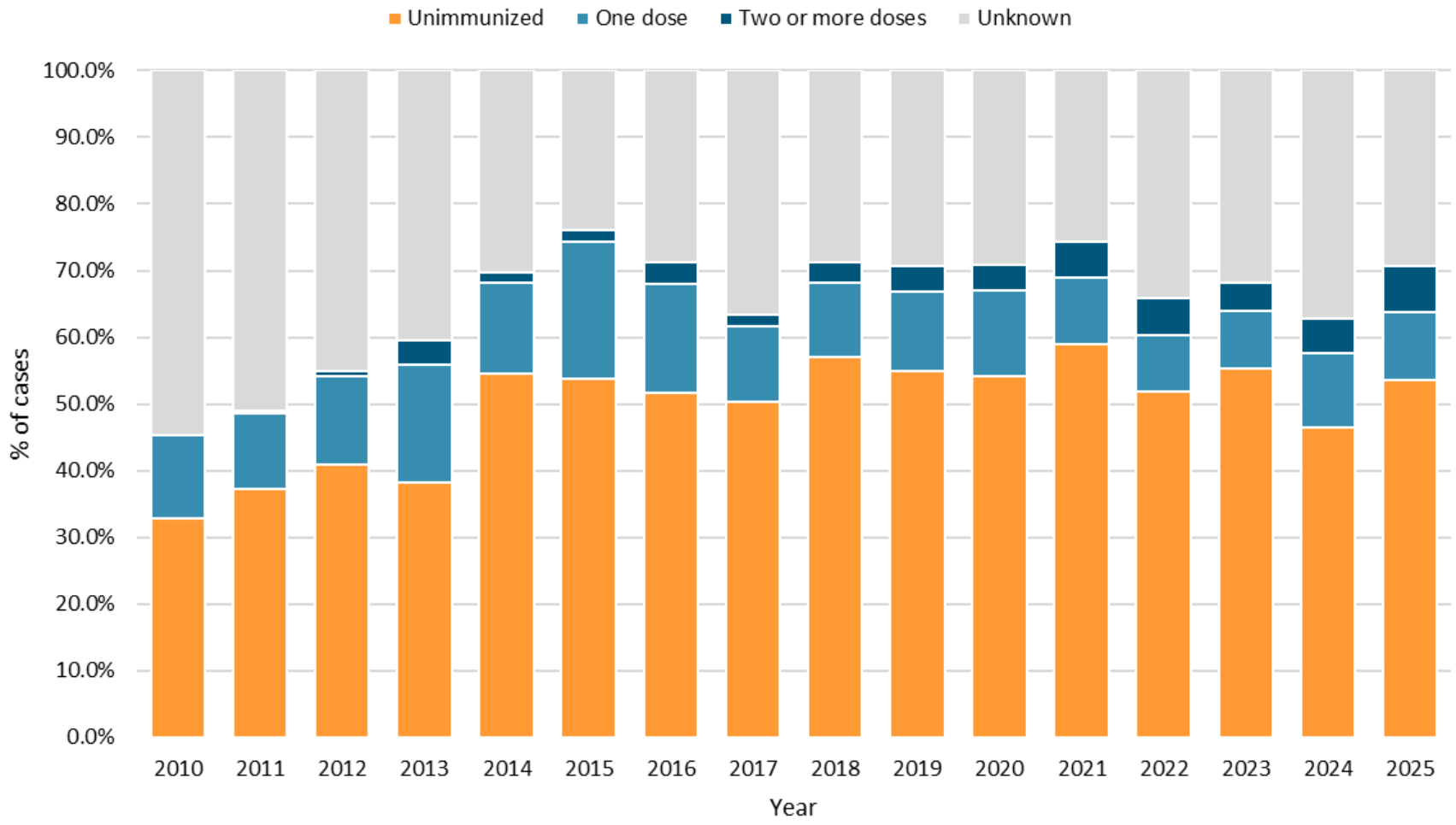


Table 4a: Immunization Status of Individual-Level Varicella Cases by Year: Ontario, 2023-2025

Immunization Status (n, %)	2025	2024	2023	2015-2019 combined	2010-2014 combined
One dose	79 (10.1)	89 (11.0)	53 (8.6)	217 (14.1)	204 (13.8)
Two or more doses	54 (6.9)	43 (5.3)	26 (4.2)	43 (2.8)	19 (1.3)
Unimmunized	418 (53.7)	376 (46.5)	340 (55.4)	826 (53.7)	597 (40.5)
Unknown	228 (29.3)	300 (37.1)	195 (31.8)	452 (29.4)	654 (44.4)
Total	**779 (100.0)**	**808 (100.0)**	**614 (100.0)**	**1,538 (100.0)**	**1,474 (100.0)**

Table 4b: Immunization Status of Individual-Level Varicella Cases Born on or After 2000 by Year: Ontario, 2023-2025

Immunization Status (n, %)	2025	2024	2023	2015-2019 combined	2010-2014 combined
One dose	73 (18.5)	81 (20.6)	43 (15.0)	207 (29.7)	178 (27.6)
Two or more doses	51 (12.9)	41 (10.4)	24 (8.4)	41 (5.9)	18 (2.8)
Unimmunized	187 (47.5)	174 (44.2)	167 (58.2)	343 (49.3)	282 (43.7)
Unknown	83 (21.1)	98 (24.9)	53 (18.5)	105 (15.1)	168 (26.0)
Total	**394 (100.0)**	**394 (100.0)**	**287 (100.0)**	**696 (100.0)**	**646 (100.0)**

Table 4c: Immunization Status of Individual-Level Varicella Cases Born Before 2000 by Year: Ontario, 2023-2025

Immunization Status (n, %)	2025	2024	2023	2015-2019 combined	2010-2014 combined
One dose	6 (1.6)	8 (1.9)	10 (3.1)	10 (1.2)	26 (3.1)
Two or more doses	3 (0.8)	2 (0.5)	2 (0.6)	2 (0.2)	1 (0.1)
Unimmunized	231 (60.0)	202 (48.8)	173 (52.9)	483 (57.4)	315 (38.1)
Unknown	145 (37.7)	202 (48.8)	142 (43.4)	347 (41.2)	484 (58.6)
Total	**385 (100.0)**	**414 (100.0)**	**327 (100.0)**	**842 (100.0)**	**826 (100.0)**

Table 5: Number of Individual-Level Varicella Cases and Incidence Rates by Public Health Units: Ontario, 2025

Public Health Unit	n	Rate per 100,000 population
Algoma Public Health	3	2.3
Chatham-Kent Public Health	2	1.7
City of Hamilton Public Health Services	37	5.7
Durham Region Health Department	35	4.3
Eastern Ontario Health Unit	10	4.2
Grand Erie Public Health	6	1.9
Grey Bruce Public Health	8	4.1
Halton Region Public Health	34	5.1
Huron Perth Public Health	0	0.0
Lakelands Public Health	5	1.3
Lambton Public Health	2	1.4
Middlesex-London Health Unit	32	5.3
Niagara Region Public Health	19	3.4
North Bay Parry Sound District Health Unit	1	0.7
Northeastern Public Health	4	3.1
Northwestern Health Unit	3	3.6
Ottawa Public Health	45	3.8
Peel Public Health	122	7.3
Public Health Sudbury & Districts	6	2.6
Region of Waterloo Public Health and Paramedic Services	36	4.8
Renfrew County and District Health Unit	1	0.8
Simcoe Muskoka District Health Unit	1	0.1
Southeast Public Health	12	1.9
Southwestern Public Health	4	1.6
Thunder Bay District Health Unit	4	2.4
Toronto Public Health	236	7.2
Wellington-Dufferin-Guelph Public Health	25	7.2
Windsor-Essex County Health Unit	12	2.4
York Region Public Health	74	5.7
Total	**779**	**4.7**

Technical Notes

Data Sources

- Individual-level varicella case data were based on information entered in the Ontario Ministry of Health (MOH) integrated Public Health Information System (iPHIS) database as of **January 20, 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.
- Aggregate varicella reported between 1993-2004 were extracted from the Ontario Public Health Portal on May 24, 2012. Cases from 2005-2006 were excluded due to data incompleteness arising from the transition in Ontario's reportable disease databases. Aggregate varicella data for 2007-2025 were extracted from iPHIS on January 20, 2026.
- In addition to the immunization data from iPHIS, immunization records were also extracted from Ontario's Digital Health Immunization Repository using the Panorama Enhanced Analytical Reporting tool (PEAR) on January 29, 2026. The PEAR data extract was used to supplement immunization data reported in iPHIS and increase the completeness of immunization status assessment in this report.
- Rates were calculated using population estimates (1991-2024) sourced from Statistics Canada, and 2025 population projections sourced from Ontario Ministry of Finance.[5,6]

Data Notes

- Data reported between 2020 and 2022 should be interpreted with caution. Both testing and iPHIS data entry practices were likely impacted by the COVID-19 pandemic response.
    - Five years preceding the COVID-19 pandemic (2015-2019) were chosen as a baseline for assessing recent trends.
- These data only represent confirmed cases of individual-level varicella reported to public health and recorded in iPHIS. As a result, all case counts are subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours, that may depend on severity of illness, clinical practices, and changes in laboratory testing and reporting behaviours.
- Only cases meeting the confirmed case classification as listed in the Ontario Ministry of Health (MOH) surveillance case definitions in use at the time the case was identified are included.[4]
    - PHO's technical report "Factors Affection Case Definition Changes in Ontario 1991-2016" provides more detailed information on changes to provincial surveillance case definitions and disease classifications, which may impact the analysis of trends over time.[7]
- 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.
- Cases are reported based on the Episode Date, which is an estimate of the symptom 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.

- Age groups are constructed with consideration of the epidemiology of the diseases and the age of recommended vaccination. Cases with an unknown date of birth or a calculated age of greater than 120 are classified as having an unknown age. Cases of unknown age are included in total counts and rate but excluded from age-specific counts/rates.
- 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. It does not necessarily reflect the location of exposure or diagnosis. 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.
- Hospitalized cases include those with an Intervention Type Description of 'Hospitalization' and an Intervention Start Date that that is no more than 60 days prior to disease onset or 90 days post disease onset.
- Fatal cases include those with an Outcome of 'Fatal' and Type of Death is not captured as 'Reportable Disease was Unrelated to Cause of Death'.
- To determine the immunization status of cases, documented doses of a varicella-containing vaccine administered at least 14 days prior to disease onset and on or after the case's first birthday were considered as valid doses.
    - Unimmunized: Case classified as 'Unimmunized' in the risk factor section of iPHIS with no immunization records reported or the case did not receive any valid doses.
    - Immunized: Case has at least one documented valid dose in iPHIS or Panorama.
    - Unknown: Case has no response reported for the risk factor 'Unimmunized' and no immunization records were reported in iPHIS or Panorama.

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Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Varicella in Ontario: January 1 to December 31, 2025. Toronto, ON: King's Printer for Ontario; 2026.

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