

SURVEILLANCE REPORT

Mumps in Ontario: January 1 to December 31, 2024

Published: March 2025

Note: Effective January 1, 2025, the Ontario Ministry of Health approved the voluntary merger of nine local public health units into four entities. We have begun incorporating the new names of these health entities in our reports and resources. However, there will be a transitional period where the previous health unit name and/or the new health entity name may be referenced. Please note that updates will not be made retroactively.

Introduction

Mumps is a contagious viral illness that spreads primarily by respiratory droplets or saliva. Common symptoms include swelling of one or both parotid or other salivary glands, fever, and headache.¹ Mumps is an endemic disease in Canada and outbreaks continue to occur in Ontario and across Canada.

Mumps can be prevented by a vaccine. Mumps vaccine was first authorized in Canada in 1969.² Adults born before 1970 are generally considered to be immune to the disease through natural infection.² Ontario implemented a one-dose MMR (measles-mumps-rubella) vaccine program in 1975, followed by a routine two-dose program for children in 1996. Currently, children in Ontario receive two doses of mumps-containing vaccine before the age of 7 years.³ Due to historical changes in Ontario's vaccine program, individuals born between approximately 1970 and 1992 are considered more vulnerable to mumps infection as they may not have acquired natural immunity through infection and are less likely to have received two doses of mumps-containing vaccine. More information on Ontario's mumps vaccine coverage among children and vaccine safety data are presented in Public Health Ontario's [Immunization Data Tool](#).⁴

This report describes the epidemiology of mumps in Ontario in 2024. Trends over time for the years 2013 to 2024 are also included. Interpret data reported between 2020 and 2022 with caution due to the impact of COVID-19 pandemic response. This report includes the most current information available from Ontario's integrated Public Health Information System (iPHIS) as of January 7, 2025.

Highlights

Mumps Cases Reported in 2024

- There were 95 cases of mumps in Ontario in 2024. This represents an annual provincial incidence of 0.6 per 100,000 population, which was the third highest annual incidence since 2013, following 2017 and 2018 ([Figure 1](#)).
- This increase in cases observed in 2024 was predominantly driven by an outbreak (n=50) originating in Southwestern Public Health that spread to nearby public health units (PHUs). The outbreak occurred in a historically under-immunized community where all cases are linked to the same school. All cases reported under this outbreak are unimmunized without history of travel. The cases are reported by Southwestern Public Health, Grand Erie Health Unit, and Middlesex-London Health Unit.
- The monthly case counts in October, November, and December 2024 were above the 5-year-average plus 2-standard deviations ([Figure 2](#)).
- In 2024, 56.8% of the cases were males and the age of the cases ranged from 1 to 76 years (median 14 years).
- The highest proportion of cases were reported in the 10-17 and 5-9 age groups (33.7% and 20.0%, respectively), which also had the highest rates (2.41 and 2.44 per 100,000 population, respectively) ([Figure 3](#)).
- These two age groups are primarily impacted by the outbreak originating in Southwestern Public Health, in which all cases occurred in unimmunized individuals associated with a school. This is different from the 2017 outbreak where the increase in cases was associated with young adults (18-35 years) with waning immunity.
- Cases were reported from 16 different PHUs, with Southwestern Public Health reporting 42.1% of the total cases. Southwestern Public Health also had the highest rate of 16.7 per 100,000 population.
- Four cases reported hospitalization: three in adults 20 years and older and one in child under 10 years. No deaths were reported.
- Of the 95 cases reported in 2024, 72.6% had a known immunization status. Of these, 89.9% were unimmunized (n=62), 4.3% reported receiving one dose (n=3) and 5.8% reported receiving two doses of mumps-containing vaccine prior to disease onset (n=4). The median length of time between the second dose and disease onset ranged from one year to 31 years (median 14 years).
- Of the 79 confirmed cases, 30.4% (n=24) were confirmed by PCR. Of the 24 PCR-confirmed cases, 10 were genotype C and four were genotype G. The remaining ten cases had missing/unknown genotype information.
- 23.2% of cases (n=22) reported travel outside Ontario within one month of disease onset. All 22 cases were not associated with the outbreak originating in Southwestern Public Health.

Trends Over Time

Figure 1: Number of Mumps Cases and Incidence Rates per 100,000 Population: Ontario, 2013-2024

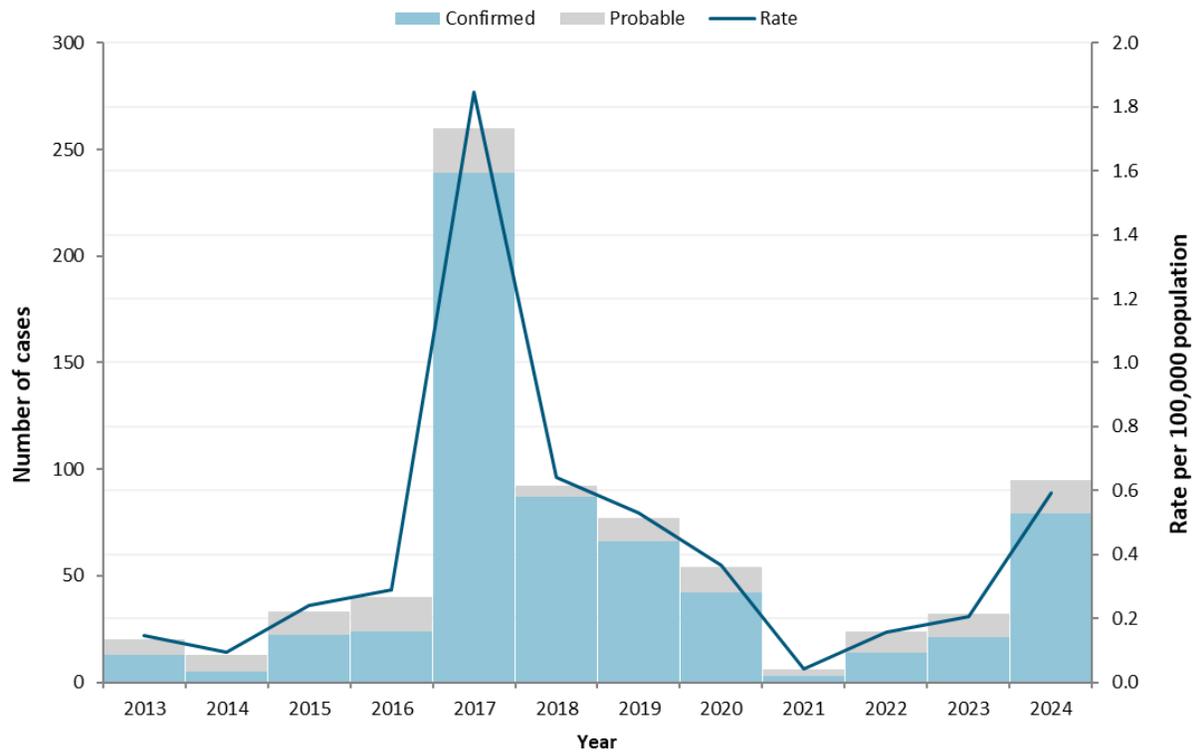
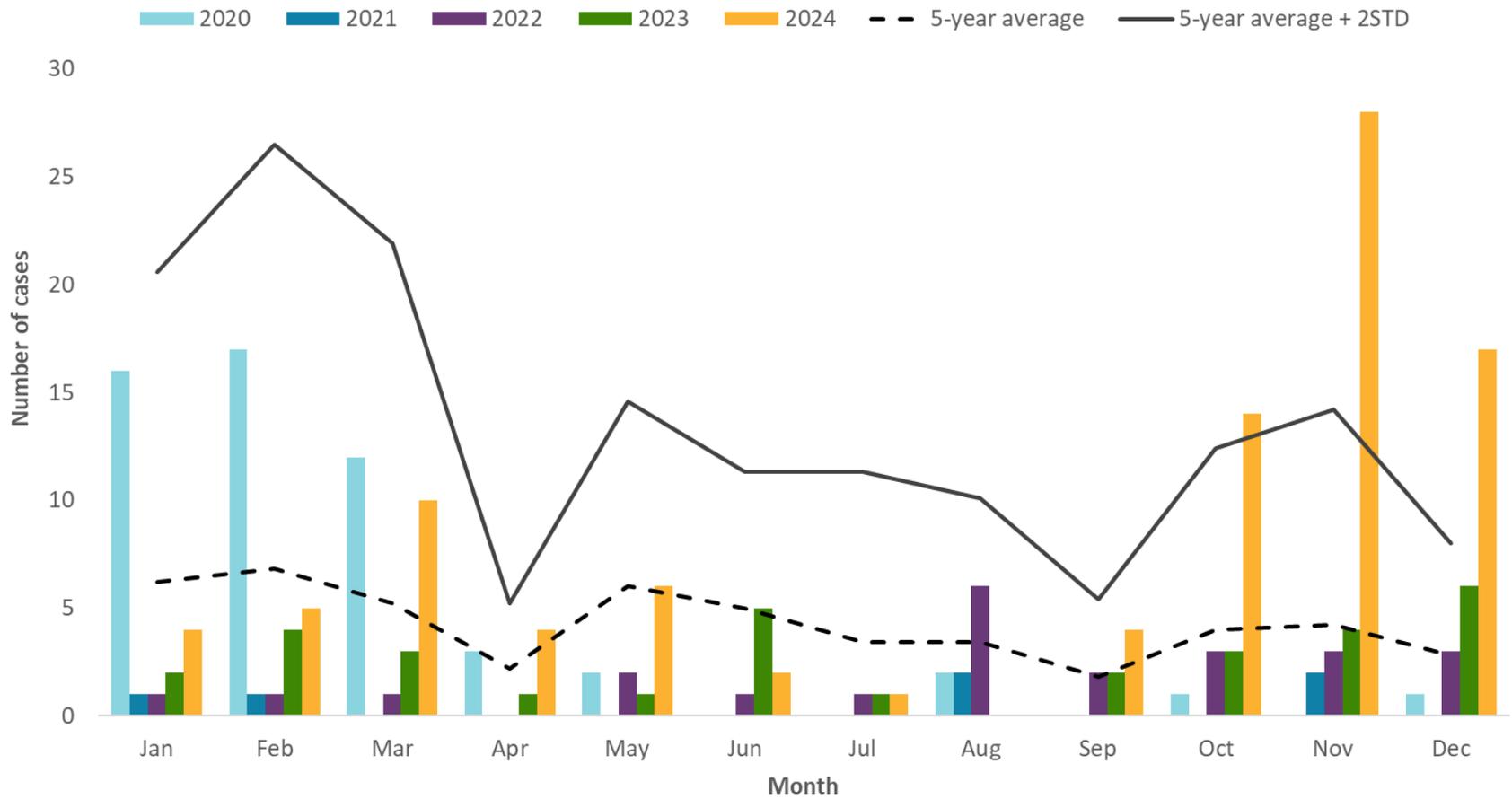
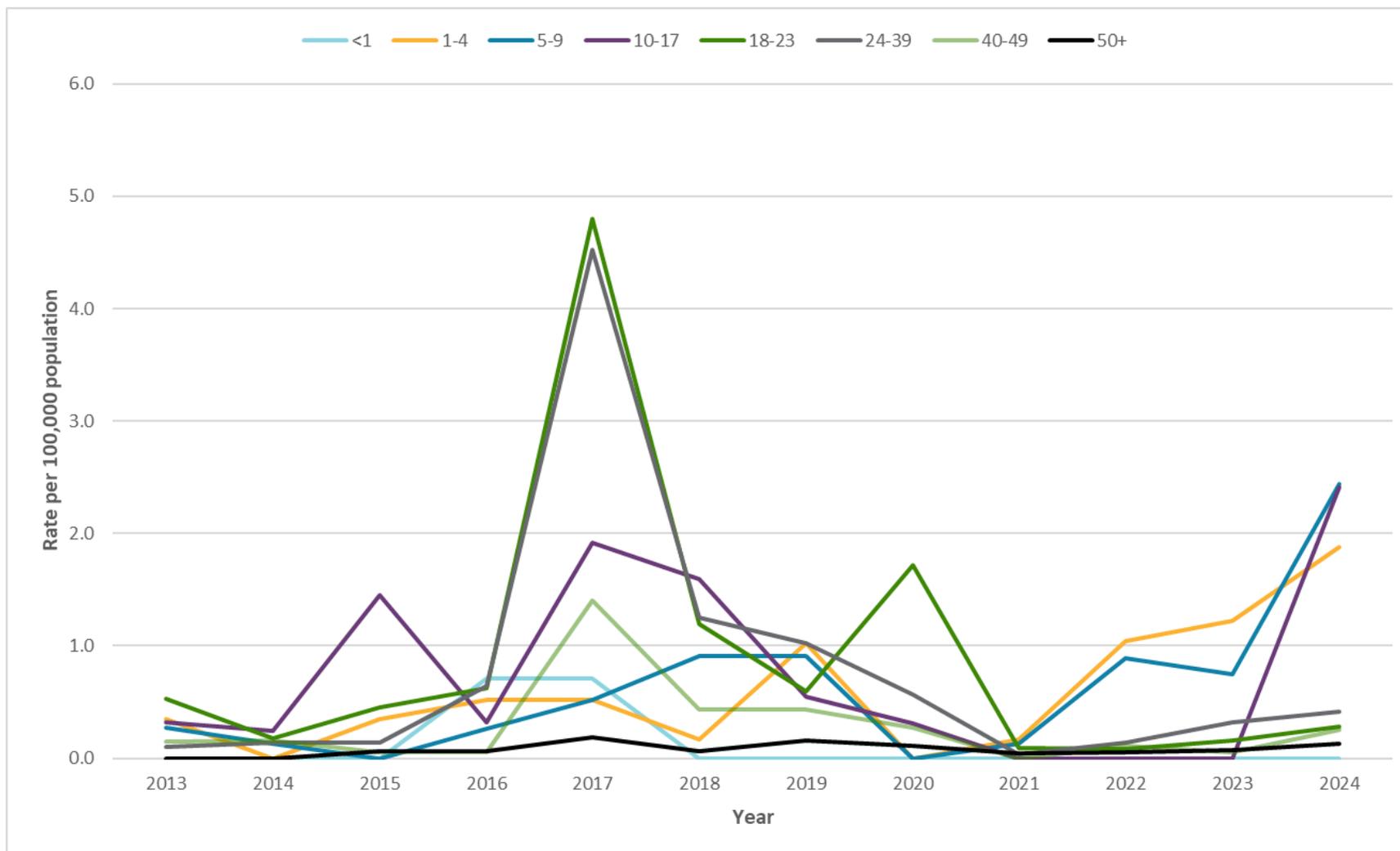


Figure 2: Number of Mumps Cases by Month: Ontario, 2021-2024 and Pre-Pandemic Five-Year Average



Note: 5-year average includes years 2014, 2015, 2016, 2018 and 2019. COVID-19 pandemic years and outbreak year (2017) are excluded from calculating the 5-year average. STD represents standard deviation.

Figure 3: Incidence Rates of Mumps per 100,000 Population by Age Group: Ontario, 2013-2024



Characteristics of Mumps Cases in 2024

Table 1: Case Classification of Mumps Cases: Ontario, 2024

Case Classification	n	%
Confirmed	79	83.2
Probable	16	16.8
Total	95	100.0

Table 2: Gender of Mumps Cases: Ontario, 2024

Gender	n	%
Female	40	42.1
Male	54	56.8
Unknown	1	1.1
Total	95	100.0

Table 3: Age Groups of Mumps Cases: Ontario, 2024

Age Group (Years)	n	%	Rate per 100,000 Population
<1	0	0.0	0.0
1 – 4	11	11.6	1.9
5 – 9	19	20.0	2.4
10 – 17	32	33.7	2.4
18 – 23	4	4.2	0.3
24 – 39	16	16.8	0.4
40 – 49	5	5.3	0.3
50 +	8	8.4	0.1
Total	95	100.0	0.6

Table 4: Hospitalization and Deaths of Mumps Cases: Ontario, 2024

Severity	n	%
Hospitalization	4	4.2
Deaths	0	0.0

Table 5: Immunization Status of Mumps Cases: Ontario, 2024

Immunization Status	n	%
Unknown	26	27.4
Unimmunized	62	65.3
One dose of mumps-containing vaccine	3	3.2
Two or more doses of mumps-containing vaccine	4	4.2
Total	95	100.0

Table 6: Number of Mumps Cases and Incidence Rates per 100,000 Population by Public Health Unit (PHU): Ontario, 2024

Public Health Unit	n	%	Rate per 100,000 population
Algoma Public Health	0	0.0	0.0
Chatham-Kent Public Health	0	0.0	0.0
City of Hamilton Public Health Services	3	3.2	0.5
Durham Region Health Department	2	2.1	0.3
Eastern Ontario Health Unit	0	0.0	0.0
Grand Erie Health Unit*	13	13.7	4.3
Grey Bruce Health Unit	1	1.1	0.5
Haliburton Kawartha Northumberland and Peterborough Health Unit**	0	0.0	0.0
Halton Region Public Health	1	1.1	0.2
Huron Perth Public Health	0	0.0	0.0
Lambton Public Health	0	0.0	0.0
Middlesex-London Health Unit	2	2.1	0.3
Niagara Region Public Health	2	2.1	0.4
North Bay Parry Sound District Health Unit	0	0.0	0.0
Northeastern Health Unit [†]	0	0.0	0.0
Northwestern Health Unit	0	0.0	0.0
Ottawa Public Health	3	3.2	0.3
Peel Public Health	9	9.5	0.5

Public Health Unit	n	%	Rate per 100,000 population
Public Health Sudbury & Districts	0	0.0	0.0
Region of Waterloo Public Health and Emergency Services	4	4.2	0.6
Renfrew County and District Health Unit	1	1.1	0.9
Simcoe Muskoka District Health Unit	1	1.1	0.2
South East Health Unit ^{††}	0	0.0	0.0
Southwestern Public Health	40	42.1	16.7
Thunder Bay District Health Unit	1	1.1	0.6
Toronto Public Health	11	11.6	0.3
Wellington-Dufferin-Guelph Public Health	1	1.1	0.3
Windsor-Essex County Health Unit	0	0.0	0.0
York Region Public Health	0	0.0	0.0
Total	95	100.0	0.6

*Formerly Brant County Health Unit and Haldimand-Norfolk Health Unit.

**Formerly Haliburton, Kawartha and Pine Ridge District Health Unit and Peterborough County-City Health Unit.

†Formerly Porcupine Health Unit and Timiskaming Health Unit.

††Formerly Hastings and Prince Edward Counties Health Unit and Kingston, Frontenac and Lennox and Addington Health Unit and Leeds, Grenville & Lanark District Health Unit.

Technical Notes

Data Sources

- The case data for this report were based on information entered in the Ontario Ministry of Health's (MOH) integrated Public Health Information System (iPHIS) as of **January 7, 2025**.
- 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.
- The population data for this report were sourced from:
 - Population estimates 2012-2023: 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; 2024 Jun 19 [extracted 2024 Jun 28]. Available from: <https://doi.org/10.25318/1710015701-eng>
 - Population projections (2024): Population Reporting. Population Projections Public Health Unit, 2023-2046 [data file]. Toronto ON: Ministry of Finance [producer]; Toronto, ON: Ontario. Ministry of Health, IntelliHealth Ontario [distributor]; [data extracted 2024 Jun 10].

Data Caveats

- Data reported for 2020-2022 should be interpreted with caution. Both testing and iPHIS data entry practices may have been impacted by the COVID-19 pandemic response.
- Only mumps cases meeting the confirmed and probable case classification as listed in the [Ontario MOH surveillance case definitions](#) are included in the reported case counts.⁵
 - Cases are classified in iPHIS based on the [Ontario MOH surveillance case definitions](#) in use at the time the case was identified. Changes to provincial surveillance case definitions and disease classifications have occurred over the years and may impact the analysis of trends over time. Refer to PHO's technical report "[Factors Affecting Reporting Diseases in Ontario: Case Definition Changes and Associated Trends 1991-2016](#)" for more detailed information.⁶
- 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 the analysis.
- Cases are attributed to a particular year based on their Episode Date, which is an estimate of the symptom onset date for a case. To determine the Episode Date, the following hierarchy exists in iPHIS: Onset Date > Specimen Collection Date > Lab Test Date > Reported Date.
 - For example: If an Onset Date exists for a case, 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.
- The five-year pre-pandemic average is based on cases reported between in years 2014, 2015, 2016, 2018 and 2019. The outbreak year (2017) and COVID-19 pandemic years were excluded from calculating the 5-year average.
- Incidence rates were calculated by dividing the total case count in a year by the year's population, presented per 100,000 population.

- Case counts by geography are based on the case’s diagnosing health unit (DHU), which refers to the PHU where the case was residing when first detected as a confirmed/probable disease case. 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 the analysis.
- 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 rates.
- Sex refers to the reported values for the Gender field in iPHIS. For sex-specific rates, only male and female data are presented.
- To determine the immunization status of cases, only documented doses of a mumps-containing vaccine administered at least 14 days prior to disease onset were included.
 - Unimmunized: Case classified as ‘Unimmunized’ in the risk factor section of iPHIS and no immunization records are reported.
 - Immunized: Case has at least one documented immunization record for a mumps-containing vaccine.
 - Unknown: Case has no response reported for the risk factor ‘Unimmunized’ and no immunization records reported.
- Hospitalized cases include those cases with at least one reported hospital admission date that is no more than 60 days prior to disease onset or 90 days post disease onset.
- Fatal cases include those cases reporting an Outcome of ‘Fatal’ and Type of Death not reported as “Reportable disease was unrelated to cause of death”.

References

1. Public Health Agency of Canada. Guidelines for the prevention and control of mumps outbreaks in Canada. Can Commun Dis Rep. 2010;36(S1):1-46. Available from: <https://www.canada.ca/en/public-health/services/reports-publications/canada-communicable-disease-report-ccdr/monthly-issue/2010-36/guidelines-prevention-control-mumps-outbreaks-canada.html>
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Citation

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