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SURVEILLANCE REPORT

Legionellosis in Ontario: January 1, 2025 to October 22, 2025

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Introduction

This report summarizes the epidemiology of laboratory confirmed cases of legionellosis in Ontario with a focus on cases occurring in 2025 and comparisons to trends in recent years.

Legionella are bacteria found in natural water environments and can grow in human-made water systems, such as plumbing, cooling towers, hot tubs, showers and decorative fountains. Individuals can become infected with *Legionella* by breathing in small droplets or vapour of contaminated water. Legionellosis is a spectrum of illness caused by *Legionella* infection, ranging from mild flu-like illness (Pontiac fever) to severe lung infection/pneumonia (Legionnaires' disease) that can result in hospitalization and death.

Legionellosis is a disease of public health significance under Ontario Regulation 135/18 of the Health Protection and Promotion Act.[1] For additional information regarding legionellosis, including the provincial case definition, visit the Ontario Ministry of Health Appendix 1: Case Definitions and Disease Specific Information Disease: Legionellosis, the Public Health Ontario (PHO) webpage for Legionellosis, and the Ontario Ministry of Health *Legionella* Investigation Reference Document.[2-4]

Key Messages

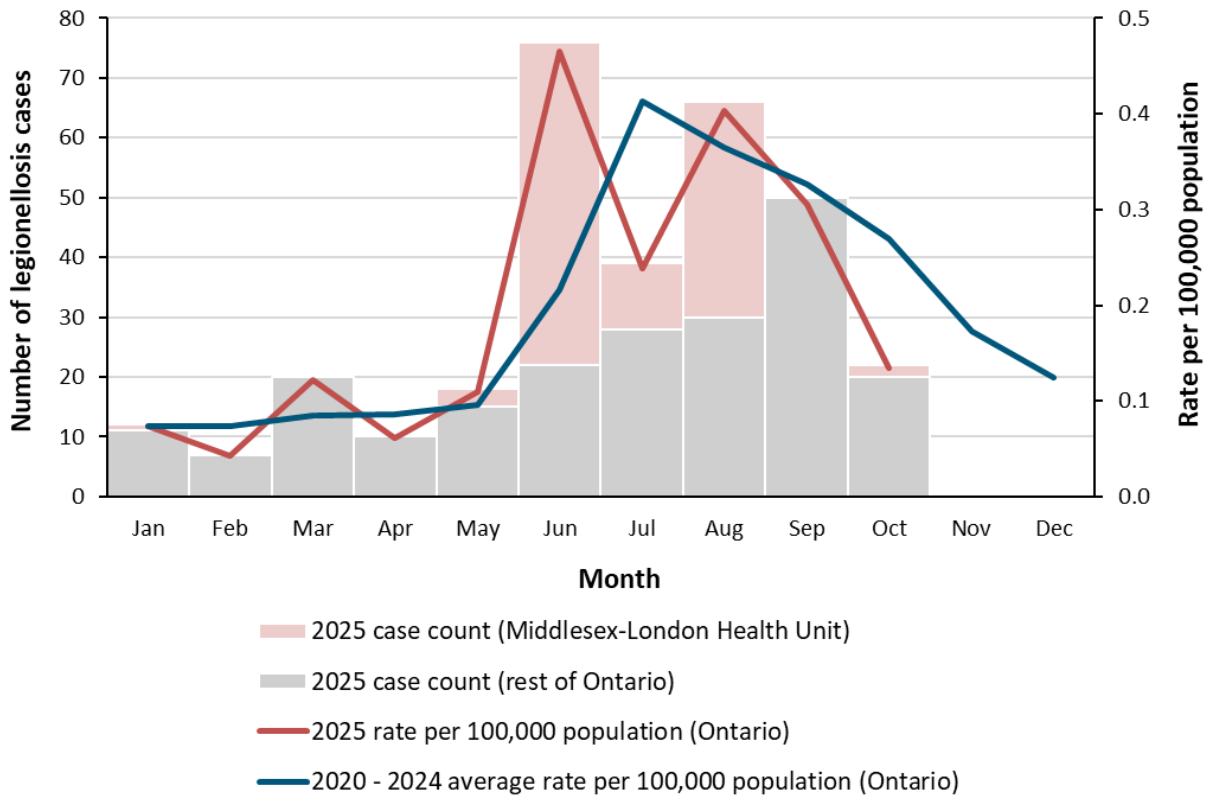
- *Legionella* bacteria are ubiquitous in the environment and most legionellosis cases reported in the province are sporadic and not linked to an identified outbreak.
- There have been 320 cases of legionellosis in Ontario with episode dates between January 1 and October 22, 2025.
    - In 2025, the monthly rate of legionellosis cases was highest between June and August, after which a decline was observed. The increase in cases was largely driven by an outbreak reported by Middlesex-London Health Unit (MLHU).
- There have been 107 cases of legionellosis in MLHU with episode dates between January 1 and October 22, 2025. These cases represent 33.4% (107/320) of all cases in Ontario with episode dates during this period.
    - Of the 107 legionellosis cases in MLHU, 106 (99.1%) were recorded as being related to the outbreak.
    - MLHU experienced a *Legionella* outbreak in 2024.[5]
    - This report contains some comparisons of trends in legionellosis cases for MLHU compared to the rest of Ontario. For the most up to date information on the outbreak, refer to MLHU's website.[6]

Highlights

- As in previous years, cases of legionellosis in Ontario in 2025 began increasing in June. There were 76 cases with an episode date in June, 39 cases in July, 66 cases in August and 50 cases in September. To date, there have been 22 cases with episode dates in October (Figure 1).
    - Of all cases between June and August, 55.8% (101/181) occurred in MLHU.
    - Case counts for MLHU were lower in July but higher in June and August 2025 compared to the same months in 2024. There are currently no cases with episode dates in September, compared to 3 cases the previous year. To date, the are two cases in October 2025, compared to one case in October 2024 (Figure 2).
- As with previous years, the highest rates of legionellosis in Ontario in 2025 have occurred among males and older adults (Table 1).
- Legionellosis rates varied by public health unit (PHU), with the highest rate to date in 2025 observed in MLHU with 17.9 cases per 100,000 population (Figure 3).
- In 2025, the proportion of positive tests among all *Legionella* tests conducted by PHO (percent positivity) increased at the end of June, peaking at approximately 10% at the start of July. After a decline in late July, percent positivity increased again in August up to 6%, before declining again and fluctuating at lower levels (Figure 4).
- Legionellosis case severity is presented in Table 2 and interpretation of the data should consider the possible impact of delays in reporting and that data for 2025 is only for a partial year. The proportion of legionellosis cases to-date in 2025:
    - With hospitalization reported is 71.6%, which is lower than the annual average for the period from 2020 to 2024 (75.6%).
    - Resulting in a fatal outcome is 7.5%, which is higher than the annual average for the period from 2020 to 2024 (6.4%) (Table 2).

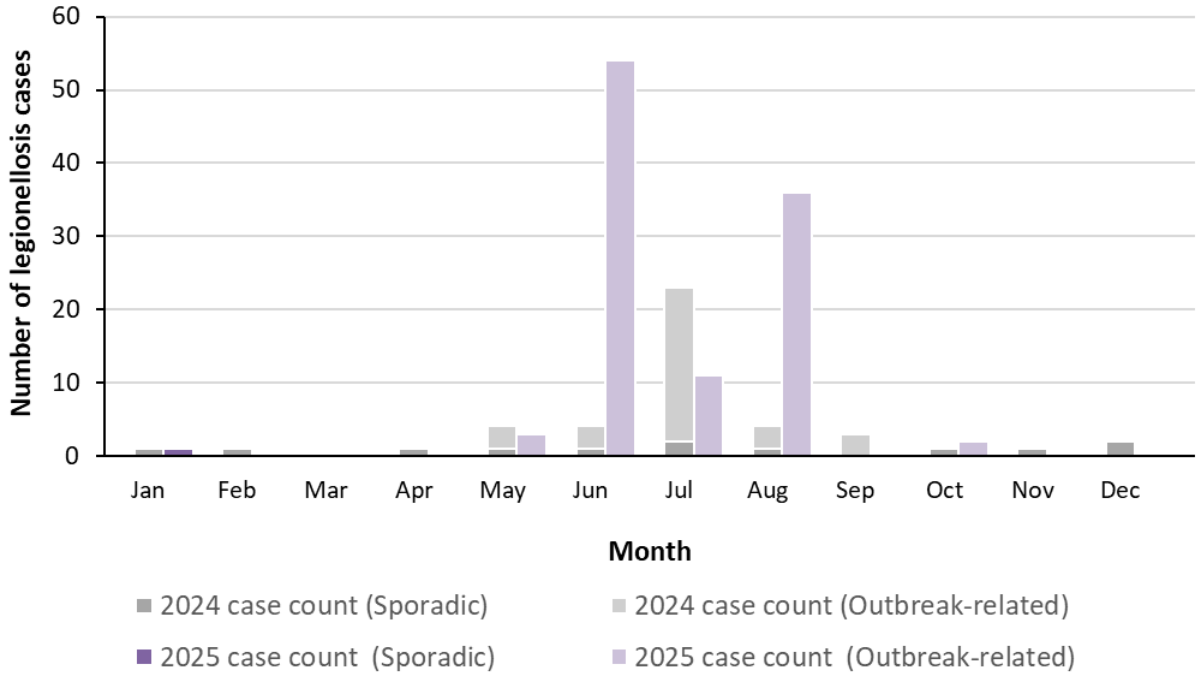
Trends

Figure 1: Confirmed Legionellosis Case Counts and Rates per 100,000 Population in Ontario: Year 2025* Compared to Average Rate for 2020 - 2024, by Month



Data Source: Cases: Public Health Information System (iPHIS) [database] [extracted 2025 Oct 22]. Population denominators: Statistics Canada and Ontario Ministry of Finance.
*2025 includes data from January 1 to October 22 only.

Figure 2: Confirmed Legionellosis Case Counts in Middlesex-London Health Unit: Year 2025* Compared to 2024, by Month



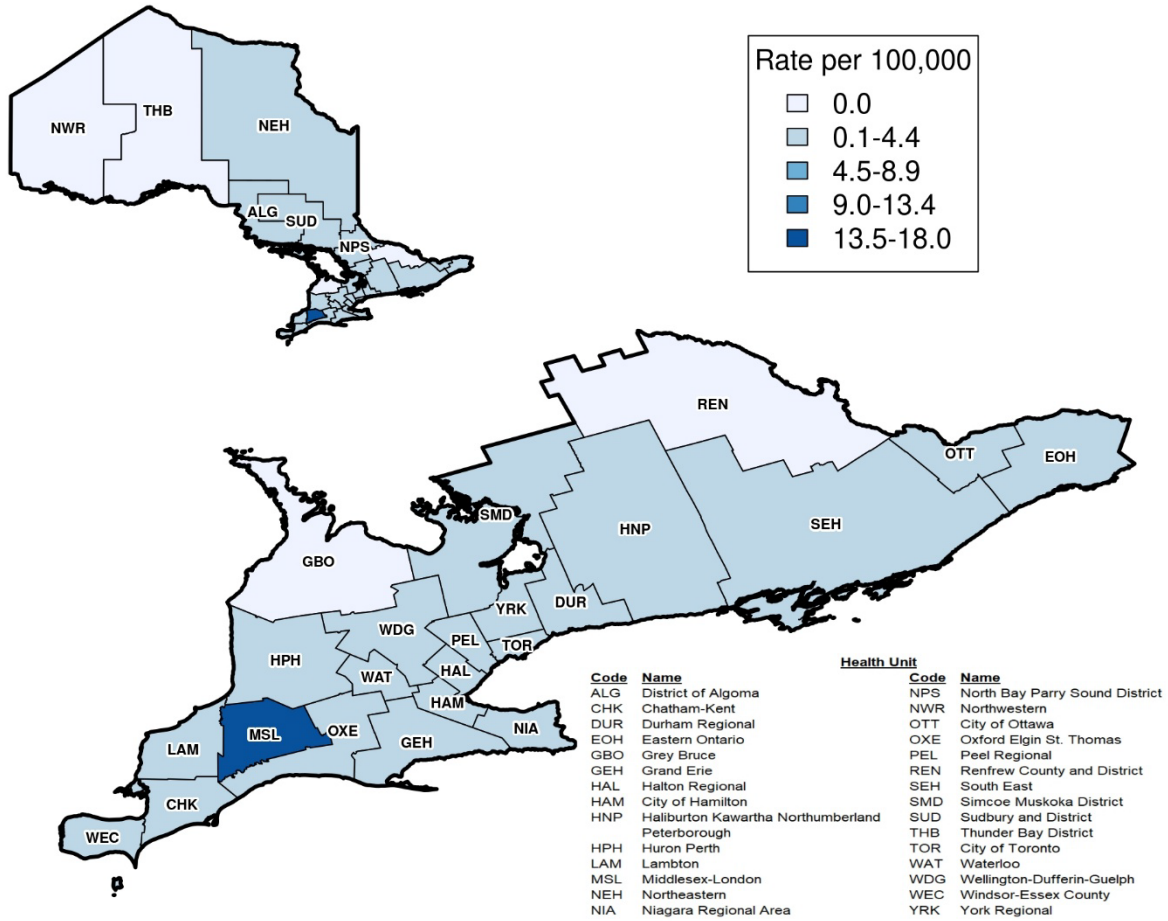
Data Source: Integrated Public Health Information System (iPHIS) [database] [extracted 2025 Oct 22].
*2025 includes data from January 1 to October 22 only.

Table 1: Confirmed Legionellosis Case Counts and Rates per 100,000 Population in Ontario, by Sex* and Age: Year 2025 Compared to the Average of the Previous Five Years (2020 - 2024)**

Sex and Age Group (years)	Total Number of Cases Between January 1 to October 22, 2025	Rate per 100,000 Population Between January 1 to October 22, 2025	Average Number of Cases Annually Between January 1, 2020 to December 31, 2024	Average Annual Rate per 100,000 Population Between January 1, 2020 to December 31, 2024
Female	109	1.3	113.8	1.5
Male	210	2.6	237.8	3.1
Did not specify	1	N/A	0.0	N/A
0 – 19	0	N/A	1.0	0.0
20 – 39	22	0.4	16.4	0.4
40 – 59	85	2.2	105.0	2.7
60 – 79	167	5.0	184.4	6.0
≥80	46	6.0	44.6	6.4
Unknown	0	N/A	0.2	N/A
Total	**320**	**2.0**	**351.6**	**2.3**

Data Source: Cases: Integrated Public Health Information System (iPHIS) [database] [extracted 2025 Oct 22]. Population denominators: Statistics Canada and Ontario Ministry of Finance.
*This report uses the terminology sex to reference the reported values for the gender field in iPHIS. Three values for sex are derived from the data entered in iPHIS: Male, Female, and Did Not Specify Male or Female; information from all three is combined when presenting total counts or rates.
**2025 includes data from January 1 to October 22 only.

Figure 3: Rate of Confirmed Legionellosis Cases from January 1 to October 22, 2025 in Ontario, by Public Health Unit

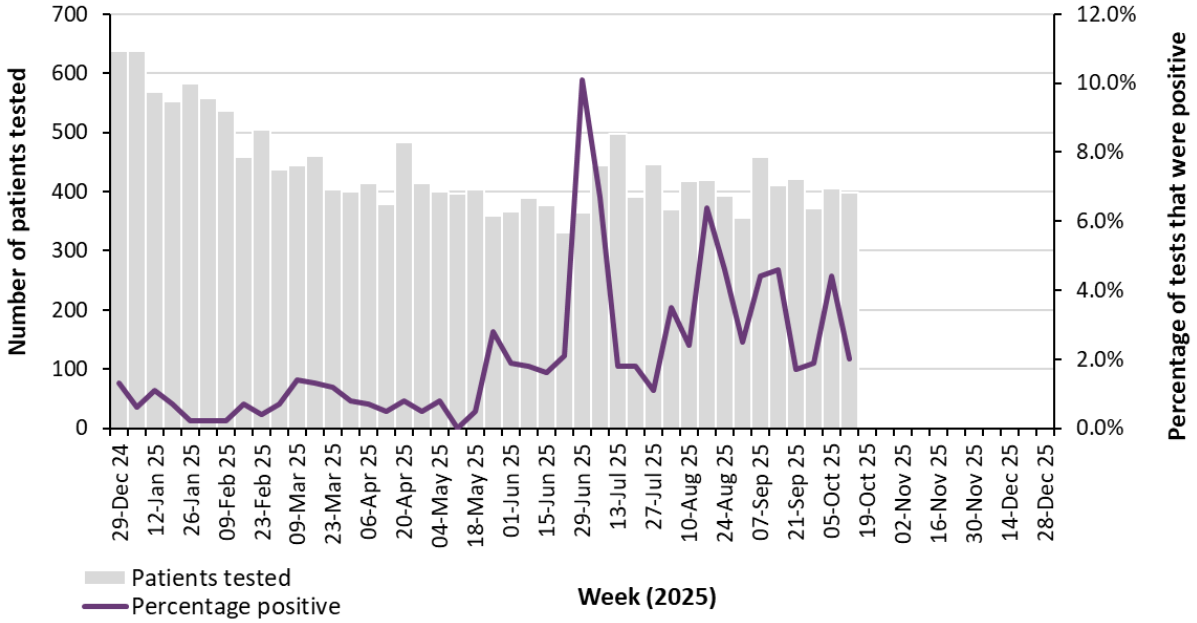


Health Unit			
Code	**Name**	**Code**	**Name**
ALG	District of Algoma	NPS	North Bay Parry Sound District
CHK	Chatham-Kent	NWR	Northwestern
DUR	Durham Regional	OTT	City of Ottawa
EOH	Eastern Ontario	OXE	Oxford Elgin St. Thomas
GBO	Grey Bruce	PEL	Peel Regional
GEH	Grand Erie	REN	Renfrew County and District
HAL	Halton Regional	SEH	South East
HAM	City of Hamilton	SMD	Simcoe Muskoka District
HNP	Haliburton Kawartha Northumberland Peterborough	SUD	Sudbury and District
		THB	Thunder Bay District
HPH	Huron Perth	TOR	City of Toronto
LAM	Lambton	WAT	Waterloo
MSL	Middlesex-London	WDG	Wellington-Dufferin-Guelph
NEH	Northeastern	WEC	Windsor-Essex County
NIA	Niagara Regional Area	YRK	York Regional

Data Source: Cases: Integrated Public Health Information System (iPHIS) [database] [extracted 2025 Oct 22]. Population denominators: Statistics Canada and Ontario Ministry of Finance.

Testing

Figure 4: Number of Individuals Tested for *Legionella* and Percent Positivity in Ontario, by Week, 2025*



Data Source: PHO Laboratory Information Management System
Note: Testing for the most recent week is not complete due to pending results. Includes all *Legionella* testing methods conducted by Public Health Ontario's laboratory. An individual is considered positive if a specimen was positive by any validated test method. Week was assigned based on the data the specimen was received at Public Health Ontario's laboratory; start dates of each week are presented on the x-axis.
*The first week contains data from December 29-31, 2024.

Severity

Table 2: Hospitalizations and Deaths among Confirmed Legionellosis Cases in Ontario, by Sex* and Age: Year 2025 Compared to the Average of the Previous Five Years (2020 - 2024)**

Sex and Age Group (years)	Number (%) of Cases Hospitalized Between January 1 to October 22, 2025	Average Number (%) of Cases Hospitalized per Year Between January 1, 2020 to December 31, 2024	Number (%) of Cases with a Fatal Outcome Between January 1 to October 22, 2025	Average Number (%) of Cases with a Fatal Outcome per Year Between January 1, 2020 to December 31, 2024
Female	75/109 (68.8)	85.4/113.8 (75.0)	9/109 (8.3)	6.8/113.8 (6.0)
Male	153/210 (72.9)	180.4/237.8 (75.9)	15/210 (7.1)	15.8/237.8 (6.6)
Did not specify	1/1 (100.0)	0/0 (0.0)	0/1 (0.0)	0/0 (0.0)
0 – 19	0/0 (0.0)	0.8/1 (80.0)	0/0 (0.0)	0/1 (0.0)
20 – 39	15/22 (68.2)	11.6/16.4 (70.7)	0/22 (0.0)	0.6/16.4 (3.7)
40 – 59	65/85 (76.5)	77.8/105 (74.1)	3/85 (3.5)	2.4/105 (2.3)
60 – 79	115/167 (68.9)	140.8/184.4 (76.4)	11/167 (6.6)	14.6/184.4 (7.9)
≥80	34/46 (73.9)	34.8/44.6 (78.0)	10/46 (21.7)	5/44.6 (11.2)
Unknown	0/0 (0.0)	0/0.2 (0.0)	0/0 (0.0)	0/0.2 (0.0)
Total	**229/320 (71.6)**	**265.8/351.6 (75.6)**	**24/320 (7.5)**	**22.6/351.6 (6.4)**

Data Source: Ontario. Ministry of Health. Integrated Public Health Information System (iPHIS) [database] [extracted 2025 Oct 22].

*This report uses the terminology sex to reference the reported values for the gender field in iPHIS. Three values for sex are derived from the data entered in iPHIS: Male, Female, and Did Not Specify Male or Female; information from all three is combined when presenting total counts or rates.

**2025 includes data from January 1 to October 22 only.

Technical Notes

Data Sources

- 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 9 a.m., October 22, 2025.**
- Testing and percent positivity data was obtained from PHO's Laboratory Information Management System **as of October 22, 2025.**
- Population estimates used to calculate rates for cases were calculated using the Ontario 2020 to 2022 population estimates[7], sourced from Statistics Canada, and the Ontario 2023 to 2025 population projections[8], sourced from the Ontario Ministry of Finance.

Data Caveats for iPHIS

- 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.
- These data only represent laboratory-confirmed cases of legionellosis 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 legionellosis cases meeting the confirmed case classification as listed in the Ontario Ministry of Health (MOH) surveillance case definitions are included in the reported case counts.
  - Provincial surveillance case definitions available online under the Infectious Diseases Protocol[2] are the most current.
  - 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 MOH surveillance case definitions in use at the time the case was identified.
  - PHO's technical report "Factors Affecting Case Definition Changes in Ontario 1991-2016"[9] provides more detailed information on this topic.
- Cases are reported based on the Episode Date, which is an estimate of the onset date of disease for a case. In order 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.
- Duplicate case records may be included if they were not identified and resolved at either the local or provincial level prior to data extraction from iPHIS.
- Public Health Ontario conducts the majority of Legionella testing in the province.
- Interpretation of severity data for 2025 should consider the possible impacts of lags in reporting:
  - Hospitalized legionellosis cases were determined based on a reported intervention type description of "Hospitalization" or "ICU" and a reported intervention start date on or after the case's episode date.
  - Fatal legionellosis cases were determined based on a case outcome description of "Fatal" and the type of death not being reported as "Reportable disease was unrelated to cause of death."
- Cases for which the Diagnosing Heath Unit (DHU) was reported as MOHLTC (to signify a case that is not a resident of Ontario) were excluded from this analysis.

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Citation

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