

Epidemiologic Summary

Legionellosis in Ontario, January 1, 2018 to December 31, 2018

Purpose

- This report provides an epidemiologic summary of legionellosis activity in Ontario from January 1, 2018 to December 31, 2018. It highlights the increased activity in 2018 compared to the previous five years (2013-2017).

Key Messages

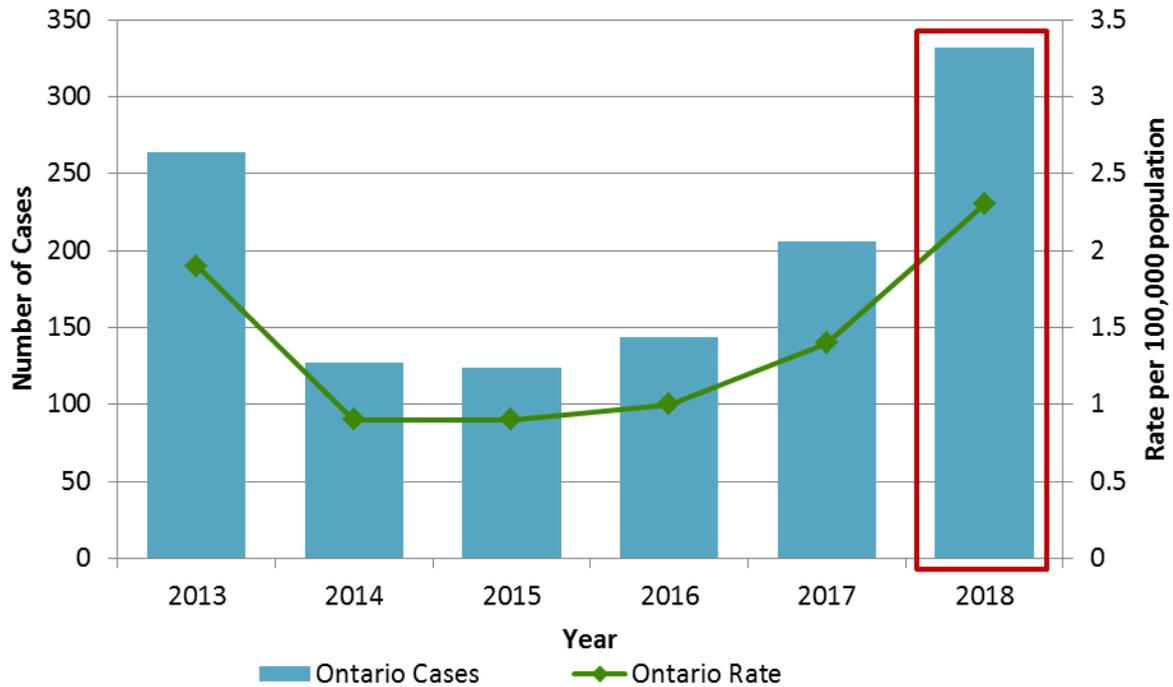
There were 332 confirmed cases of legionellosis in Ontario in 2018. This is the highest number of cases in the past six years, including the last peak activity year in 2013 ([Figure 1](#)). Further investigation of cases and their exposure locations suggest the increase in cases in 2018 was comprised of sporadic cases. Examination of laboratory testing volumes suggest the increase in cases may be partially due to increased testing, although percent positivity was higher than in most previous years.

- The highest number of cases in 2018 was reported in August (78 cases). This is within the expected time for peak legionella reporting compared to the preceding five years (July – October).
- The age and gender demographics of legionellosis cases in 2018 were similar to cases from the previous five years, mostly affecting older males.
 - The median age in 2018 was 63.0 years (range: 23-94 years) versus the median age from 2013 to 2017, which was 62.0 years (range: 0-95 years). The percentage male in 2018 was 70.8% versus 69.0% for 2013 to 2017.
- The majority of cases in Ontario in 2018 (34.6%) were observed in Toronto and Peel Region, with 64 and 51 cases reported, respectively. This is similar to 2013 to 2017, where 35.4% of cases were reported from these two areas. The highest reported incidence rates of legionellosis in 2018 were from Waterloo Region and the City of Hamilton, with 5.5 and 4.2 cases per 100,000 population, respectively ([Figure 2](#)).
- Testing volumes for *legionella* specimens in 2018 were greater than in 2013, (which was the previous year with the most tests), with 11,525 tests conducted in 2018 compared to 8,530 tests in 2013.

- The percent positivity for both 2013 and 2018 was 3.1%. However, the percent positivity in 2018 was highest in September (8.3%); whereas the highest percent positivity in 2013 was seen in July (7.4%; [Figure 3](#)).

Historical Trends

Figure 1: Confirmed cases and rates of legionellosis by year in Ontario, 2013-2018.

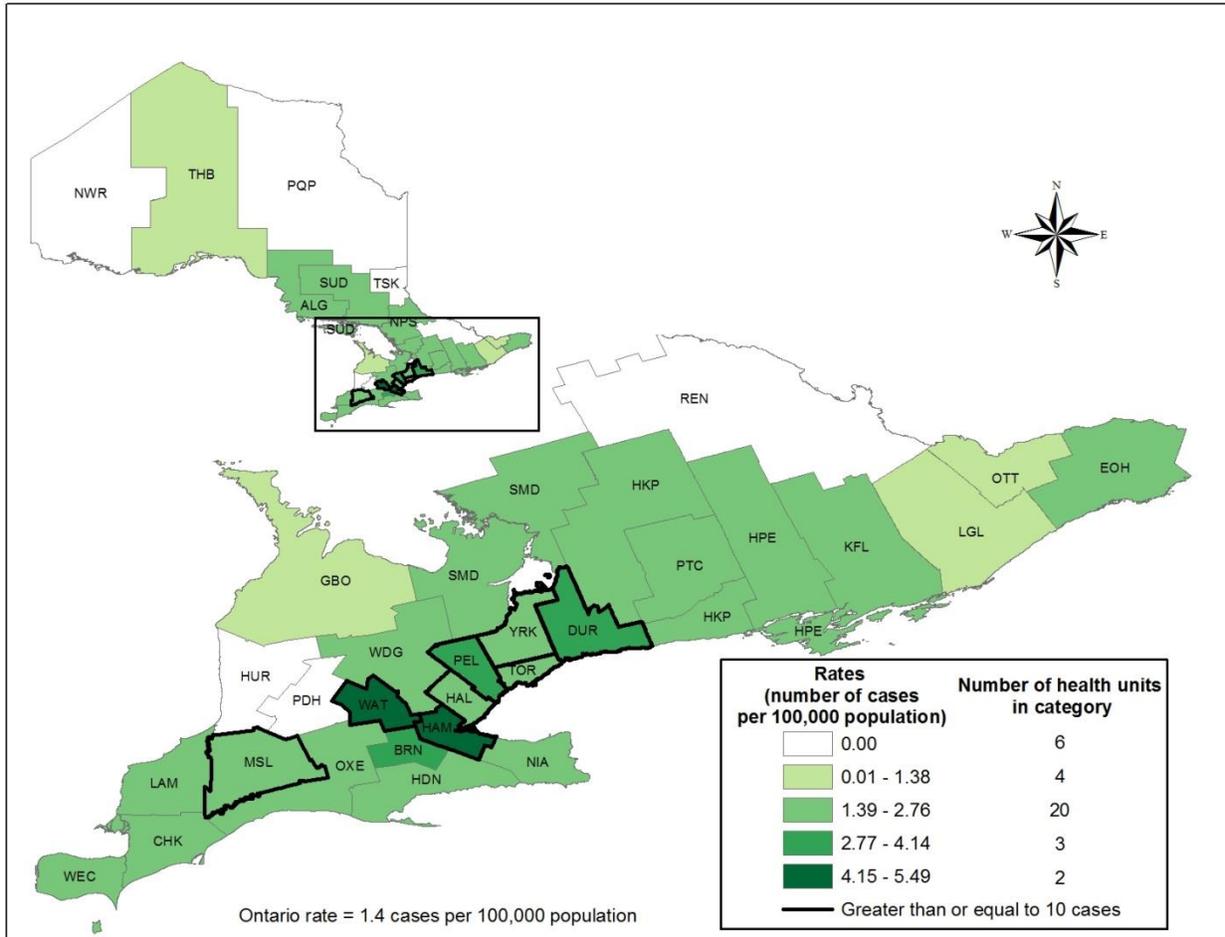


Data Sources:

- Case information: integrated Public Health Information System (iPHIS) database
- Ontario population data: IntelliHEALTH Ontario

Geographic Distribution

Figure 2: Rates of confirmed cases of legionellosis by public health unit in Ontario, 2018 (n=332).

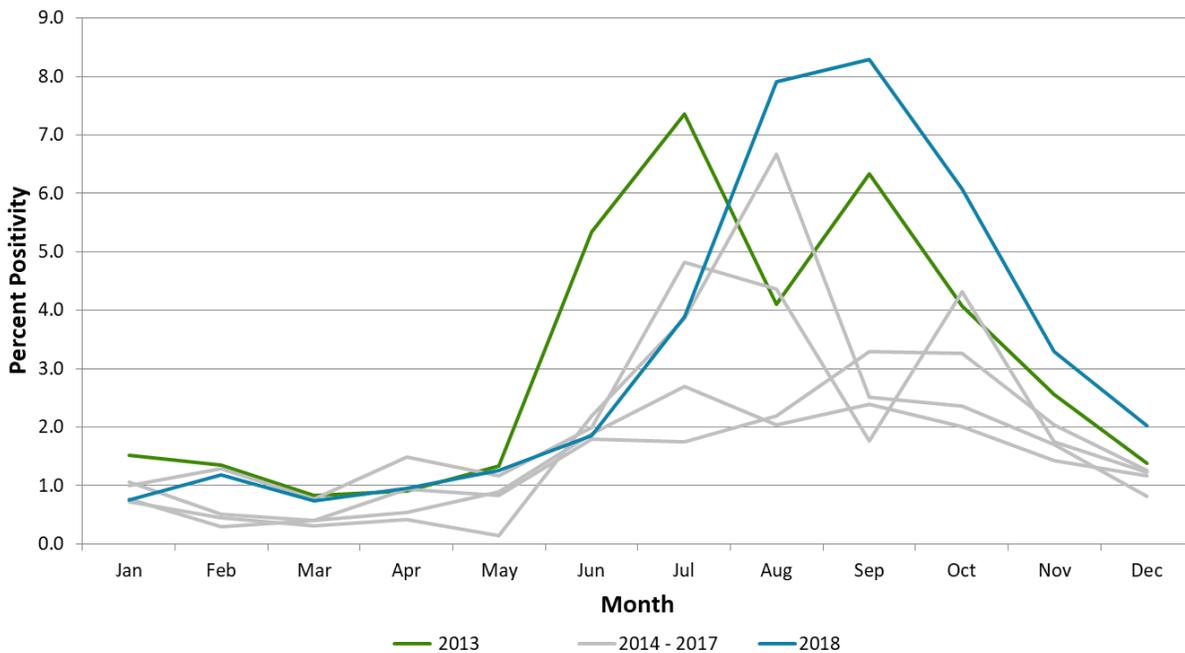


Data Sources:

- Case information: integrated Public Health Information System (iPHIS) database
- Ontario population data: IntelliHEALTH Ontario

Laboratory Information

Figure 3: Percent positivity of *Legionella* specimens tested at the Public Health Ontario Laboratories in Ontario by month, 2013-2018.



Data Sources:

- Laboratory information: Public Health Ontario Laboratories (PHOL), Laboratory Information Management System (LIMS), extracted 02/14/2019

Notes:

- Counts are unique individuals.
- Months are calculated based on the day when specimens were received at the lab.
- All tests that were performed and considered for this analysis: Binax, Polymerase Chain Reaction, Culture, Indirect Fluorescent Antibody.
- A positive result overrides negative results in individuals with conflicting results.
- 'Date reported' was used for the data extraction. The data analysis was done based on the date when the specimen was received at the lab.

Technical Notes

Data Sources

- Case data:
 - The data for this report were based on information entered in the Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database as of February 25, 2019.
 - iPHIS is a dynamic disease reporting system, which allows ongoing updates to data previously entered. As a result, data extracted from iPHIS represent a snapshot at the time of extraction and may differ from previous or subsequent reports.
- Ontario Population data:
 - Population Projections 2017–18, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario. Data was extracted on **Oct 24, 2017**.
- Laboratory data:
 - Public Health Ontario Laboratory provides specimen level information from the 11 Public Health Ontario (PHO) laboratory sites located in Ontario; data for this report was extracted from the Laboratory Information Management System by PHO on February 14, 2019.

iPHIS data caveats:

- The data only represent cases reported to public health and recorded in iPHIS. As a result, all counts will be subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours (which may depend on severity of illness), clinical practice, and reporting behaviours. Change in laboratory testing methods may also affect case counts over time.
- Only cases meeting the confirmed provincial case classification, as listed in the Ontario Ministry of Health and Long-Term Care (MOHLTC) [legionellosis](#) surveillance case definition, are included in the report counts. Cases are excluded if they do not meet the provincial confirmed case classification in place at the time that the case was reported.
- Cases in this dataset are reported based on the Accurate Episode Date. This is a calculated field used when extracting data from iPHIS. The field uses a number of dates entered in iPHIS to provide an approximation of onset date.
- Orientation of case counts by geography is based on the diagnosing health unit (DHU). DHU refers to the case's public health unit of residence at the time of illness onset 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) or Muskoka Parry Sound (a public health unit that no longer exists) have been excluded from the analyses.

- 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 have been excluded.
- For years in which population estimates were not available at the time of data extraction, the population projection was used to calculate disease rates.

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Legionellosis in Ontario, January 1, 2018 to December 31, 2018. Toronto, ON: Queen's Printer for Ontario; 2019.

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