

SURVEILLANCE REPORT

Mycoplasma pneumoniae Testing at Public Health Ontario

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Introduction

This report summarizes *Mycoplasma pneumoniae* testing performed by Public Health Ontario (PHO) from January 1, 2024 to November 15, 2024. All specimens have been tested by polymerase chain reaction (PCR), and a subset of PCR-positive specimens has been analyzed for markers of antimicrobial resistance.

Highlights

- In 2024 to date, 18.0% (733/4,069) of specimens have tested positive for *Mycoplasma pneumoniae* by PCR at PHO. The number of positives and percent positive greatly exceed previous years, including years prior to the COVID-19 pandemic.
- The percentage of specimens testing positive began to increase in May 2024. By August, this had reached nearly 30% and has remained high since.
- Positive specimens were identified primarily from children, with those aged 5-17 years having the highest number of positives and percent positive, followed by those aged 1-4 years.
- The public health units with the highest percent positive (based on testing performed by PHO only) were Ottawa Public Health (35.7%), Grey Bruce Health Unit (34.7%), Brant County Health Unit (33.3%), and Niagara Region Public Health (33.3%).
- Among the subset of PCR-positive specimens that underwent molecular testing for macrolide resistance markers, 16.3% (22/135) were found to harbour mutations that suggest resistance to macrolide antibiotics.

Background

Mycoplasma pneumoniae are bacteria that may cause respiratory infections. *M. pneumoniae* infections are usually mild with gradual symptom onset, however it can occasionally cause more severe disease including pneumonia.^{1,2} Pneumonia caused by *M. pneumoniae* is usually less severe than disease caused by other pathogens, which is why it is sometimes called 'walking pneumonia'.^{1,2}

M. pneumoniae activity tends to increase in late summer and early fall with larger cyclical increases in activity historically occurring every 3-7 years.¹ The disease usually spreads when someone breathes in or comes in direct contact with the respiratory droplets of an infected person. It is typically most common amongst school-aged children but can cause disease in any age group.^{1,3} Infections with persistent or severe symptoms are treated with antibiotics.^{1,2}

M. pneumoniae PCR testing is conducted by PHO as well as several clinical laboratories in the province. *M. pneumoniae* is not a designated Disease of Public Health Significance and is not subject to mandatory reporting, therefore there is no provincial or national surveillance system for the pathogen. Instead, laboratory testing data can serve as an important tool to monitor the situation. This report was prepared in response to a recent surge in *M. pneumoniae* activity in Ontario and describes the results of testing performed by PHO. For more information on testing at PHO, visit [Mycoplasma pneumoniae](#).

Results

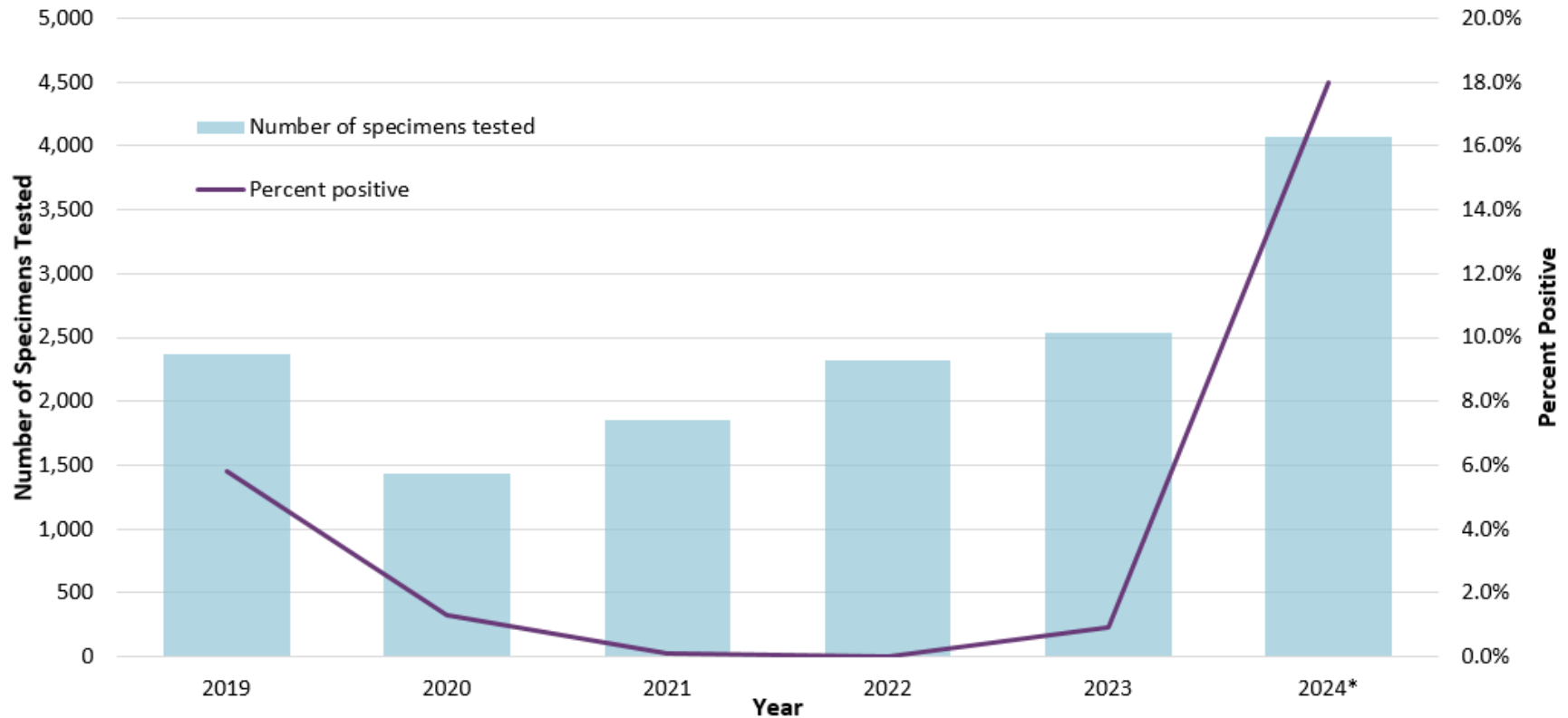
Table 1: Number of Specimens Positive, Tested, and Percent Positive for *Mycoplasma pneumoniae* PCR by Year, Public Health Ontario, January 1, 2019 to November 15, 2024

Year	Number of Specimens Positive	Number of Specimens Tested	Percent Positive
2019	137	2,368	5.8%
2020	19	1,434	1.3%
2021	2	1,851	0.1%
2022	0	2,316	0.0%
2023	23	2,542	0.9%
2024*	733	4,069	18.0%
Total	914	14,580	6.3%

Note: *Data for 2024 include specimens up to November 15. Data represent unique specimens as opposed to individuals or cases. As a result, the same individual may have been counted multiple times. Year was assigned using specimen collection date if available, and specimen login date otherwise.

Data source: Public Health Ontario Laboratory Information Management System

Figure 1: Number of Specimens Tested and Percent Positive for *Mycoplasma pneumoniae* PCR by Year, Public Health Ontario, January 1, 2019 to November 15, 2024



Note: *Data for 2024 include specimens up to November 15. Data represent unique specimens as opposed to individuals or cases. As a result, the same individual may have been counted multiple times. Year was assigned using specimen collection date if available, and specimen login date otherwise.

Data source: Public Health Ontario Laboratory Information Management System

Table 2: Number of Specimens Positive, Tested, and Percent Positive for *Mycoplasma pneumoniae* PCR by Month, Public Health Ontario, January 1, 2024 to November 15, 2024

Month	Number of Specimens Positive	Number of Specimens Tested	Percent Positive
January 2024	4	282	1.4%
February 2024	4	258	1.6%
March 2024	4	238	1.7%
April 2024	4	238	1.7%
May 2024	8	247	3.2%
June 2024	17	236	7.2%
July 2024	44	297	14.8%
August 2024	123	417	29.5%
September 2024	125	488	25.6%
October 2024	242	795	30.4%
November 2024*	158	573	27.6%
Total	733	4,069	18.0%

Note: *Data for November 2024 include specimens up to November 15. Data represent unique specimens as opposed to individuals or cases. As a result, the same individual may have been counted multiple times. Year and month were assigned using specimen collection date if available, and specimen login date otherwise.

Data source: Public Health Ontario Laboratory Information Management System

Table 3: Number of Specimens Positive, Tested, and Percent Positive for *Mycoplasma pneumoniae* PCR by Age Group, Public Health Ontario, January 1, 2024 to November 15, 2024

Age Group	Number of Specimens Positive	Number of Specimens Tested	Percent Positive
Ages: 0 - 4	124	486	25.5%
Ages: 5 - 11	322	705	45.7%
Ages: 12 - 17	174	395	44.1%
Ages: 18 and Over	113	2,482	4.6%
Total	733	4,068	18.0%

Note: Data represent unique specimens as opposed to individuals or cases. As a result, the same individual may have been counted multiple times. Excludes one specimen with unknown age.

Data source: Public Health Ontario Laboratory Information Management System

Table 4: Number of Specimens Positive, Tested, and Percent Positive for *Mycoplasma pneumoniae* PCR by Public Health Unit, Public Health Ontario, January 1, 2024 to November 15, 2024

Public Health Unit	Number of Specimens Positive	Number of Specimens Tested	Percent Positive
Algoma Public Health	0	10	0.0%
Brant County Health Unit	12	36	33.3%
Chatham-Kent Public Health	2	25	8.0%
City of Hamilton Public Health Services	3	42	7.1%
Durham Region Health Department	28	117	23.9%
Eastern Ontario Health Unit	18	74	24.3%
Grey Bruce Health Unit	17	49	34.7%
Haldimand-Norfolk Health Unit	6	37	16.2%
Haliburton, Kawartha, Pine Ridge District Health Unit	3	70	4.3%
Halton Region Public Health	26	250	10.4%
Hastings Prince Edward Public Health	10	99	10.1%
Huron Perth Public Health	6	52	11.5%
Kingston, Frontenac and Lennox & Addington Public Health	44	253	17.4%
Lambton Public Health	1	23	4.3%
Leeds, Grenville & Lanark District Health Unit	15	94	16.0%
Middlesex-London Health Unit	14	221	6.3%
Niagara Region Public Health	14	42	33.3%
North Bay Parry Sound District Health Unit	3	10	30.0%
Northwestern Health Unit	0	7	0.0%
Ottawa Public Health	201	563	35.7%
Peel Public Health	36	506	7.1%
Peterborough Public Health	1	87	1.1%

Public Health Unit	Number of Specimens Positive	Number of Specimens Tested	Percent Positive
Porcupine Health Unit	0	13	0.0%
Public Health Sudbury & Districts	0	16	0.0%
Region of Waterloo Public Health and Emergency Services	24	136	17.6%
Renfrew County and District Health Unit	4	35	11.4%
Simcoe Muskoka District Health Unit	16	71	22.5%
Southwestern Public Health	8	82	9.8%
Thunder Bay District Health Unit	0	7	0.0%
Timiskaming Health Unit	0	4	0.0%
Toronto Public Health	156	664	23.5%
Wellington-Dufferin-Guelph Public Health	6	42	14.3%
Windsor-Essex County Health Unit	5	101	5.0%
York Region Public Health	54	231	23.4%
Total	733	4,069	18.0%

Note: Data represent unique specimens as opposed to individuals or cases. As a result, the same individual may have been counted multiple times. Public health unit was assigned using an individual's residential postal code if provided and submitter postal code otherwise.

Data source: Public Health Ontario Laboratory Information Management System

Table 5: Number and Percentage of *Mycoplasma pneumoniae* Specimens Tested for Macrolide Resistance by Sequencing Result, Public Health Ontario, January 1, 2024 to August 31, 2024

Sequencing Result	Number of Specimens	Percentage
Positive for Macrolide Resistance Mutation(s)	22	16.3%
No Mutations Identified	113	83.7%
Total	135	100%

Note: As not all PCR-positive specimens could be tested for macrolide resistance, results should be interpreted with caution. Specimens were tested by 23S rRNA gene sequence analysis.

Data source: Public Health Ontario Laboratory Information Management System

Technical Notes

Data Sources

- *Mycoplasma pneumoniae* PCR data were extracted from the PHO Laboratory Information Management System (PHO LIMS) on November 20, 2024 at 10:30 a.m.
- Data for the subset of specimens tested by 23S rRNA gene sequence analysis for macrolide resistance were stored separately from PHO LIMS and linked to PCR data using PHO's internal specimen identifier. Results were available for specimens tested as of August 31, 2024.

Data Caveats

- As PHO does not perform all testing for *M. pneumoniae* in Ontario, data may not be representative of Ontario overall. In addition, not all PCR-positive specimens underwent 23S rRNA gene sequence analysis to test for macrolide resistance.
- Data exclude testing of specimens from individuals residing outside of Ontario.
- As data represent specimens, a single individual may have had multiple specimens tested.
- Year and month were assigned using specimen collection date if available, and specimen login date otherwise.
- Public health unit was assigned using an individual's residential postal code if available, and submitter postal code otherwise.

References

1. Paquette M, Magyar M, Renaud C. *Mycoplasma pneumoniae*. CMAJ. 2024;196(32):E1120. Available from: <https://doi.org/10.1503/cmaj.240085>
2. Centres for Disease Control and Prevention (CDC). About *Mycoplasma pneumoniae* infection [Internet]. Atlanta, GA: CDC; 2024 [cited 2024 Nov 20]. Available from: <https://www.cdc.gov/mycoplasma/about/index.html>
3. Centres for Disease Control and Prevention (CDC). *Mycoplasma pneumoniae* infection: causes and how it spreads [Internet]. Atlanta, GA: CDC; 2024 [cited 2024 Nov 20]. Available from: <https://www.cdc.gov/mycoplasma/causes/index.html>

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). *Mycoplasma pneumoniae* Testing at Public Health Ontario. Toronto, ON: King's Printer for Ontario; 2024.

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