

SURVEILLANCE REPORT

Gonorrhea in Ontario: Focus on 2023

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Purpose

The purpose of this annual report is to summarize data on trends over time, age and sex, geography, site of infection, testing, and antimicrobial susceptibility testing for confirmed cases of <u>gonorrhea</u> in Ontario, with a focus on cases reported in 2023.¹

This report includes the most current information available from Ontario's integrated Public Health Information System (iPHIS) as of **July 10, 2024**. Cases meeting the provincial confirmed gonorrhea case definition are included in this report.

Surveillance data for gonorrhea reported between 2020 and 2023 should be interpreted with caution due to changes in the availability of health care, health seeking behaviour, public health follow-up, and case entry during the COVID-19 pandemic and subsequent recovery periods.

Key Messages

- In Ontario, the incidence of gonorrhea, caused by *Neisseria gonorrhoeae*, has more than doubled between 2014 and 2023, largely driven by a steep increase in cases among males.
- Males consistently accounted for the vast majority of laboratory-confirmed gonorrhea cases reported in the province, with the highest incidence occurring among those 20-39 years of age. Among females, however, those aged 15-29 account for the majority of gonorrhea cases.
- In males, close to 60% of gonorrheal infections occurred at extragenital sites (i.e., pharyngeal and rectal), reinforcing the Public Health Agency of Canada's recommendations for gonorrhea screening at extragenital sites and the importance of understanding the sexual health practices of those seeking testing for sexually transmitted infections.²
- Despite a slight increase in the number of specimens tested for gonorrhea at Public Health Ontario (PHO) by culture in 2023 compared to 2022, the overall use of culture testing has decreased considerably since 2018. This impacts the ability to conduct surveillance for antimicrobial resistance as susceptibility testing can only be done on isolates obtained through culture.
 - Of note, in 2023, one case of gonorrhea with non-susceptibility to the antibiotic ceftriaxone the first line recommended treatment for gonorrhea (administered with azithromycin)³ - was identified in Ontario.
 - Prevention strategies (e.g., safer sex education and counselling), providing non-stigmatizing person-centred sexual health care⁴, and ensuring early detection through screening of at-risk

individuals at all appropriate sites should be part of a comprehensive approach to reduce the provincial incidence of gonorrhea.²

Overview

Trends over Time

- The provincial incidence (i.e., cases per 100,000 population) of laboratory-confirmed gonorrhea increased more than two-fold between 2014 (42.9) and 2023 (90.9). In 2023, 14,184 cases of laboratory-confirmed gonorrhea were reported in Ontario.
 - The observed decrease in the incidence of gonorrhea in 2020 likely reflects the impact of the COVID-19 pandemic and should be interpreted with caution.
- Between 2014 and 2023, males consistently accounted for almost two-thirds of all gonorrhea cases reported in Ontario (average: 70.1%; range: 65.2%-78.1%).
- For each year in the last 10 years, the annual incidence of gonorrhea among males ranged from 1.9 to 3.7 times higher compared to females. (Figure 1)

Age and Sex

- In 2023, males aged 30-34 years had the highest incidence of gonorrheal infections (406.7), followed by males aged 25-29 years (359.3), and males aged 35-39 years (310.2).
- Among females, the highest incidence of gonorrheal infections occurred in those aged 20-24 years (162.1). (Figure 2)

Geography

- In 2023, the public health units with the highest incidence of gonorrhea infections were: Toronto Public Health (241.6), Northwestern Health Unit (217.5), and Thunder Bay District Health Unit (126.0). (Figure 3)
- Between 2019 and 2021, Northwestern Health Unit consistently reported the highest annual incidence of gonorrhea; however, in both 2022 and 2023, Toronto Public Health had the highest annual incidence, followed closely by Northwestern Health Unit and Thunder Bay District Health Unit. (<u>Table A1</u>)

Site of Infection

- In 2023, the vast majority (87.7%; 2,463/2,809) of gonorrheal infections among females were detected in specimens collected from urogenital sites only.
- Among males, 40.3% (4,243/10,539) of gonorrheal infections reported in 2023 involved urogenital sites only and 51.7% (5,450/10,539) involved extragenital sites only, with pharyngeal being more common site (43.6%; 2,378/5,450) than rectal (33.0%; 1,799/5,450). (Table 2)

Testing

• Between 2014 and 2023, an average of 272,677 specimens (range: 211,785-356,899) were tested annually for gonorrhea by Public Health Ontario (PHO) using nucleic acid amplification tests

(NAATs). During this time period, the overall test positivity increased from 0.9% in 2014 to 2.7% in 2023. (Figure 4)

• Between 2014 and 2017, an average of 32,520 specimens (range: 27,768-39,442) were tested annually for gonorrhea by PHO using culture. In April 2018, PHO began accepting rectal and pharyngeal specimens for NAAT. As a result, the number of cultures submitted for testing decreased by 86.1% from 39,442 tests in 2017 to 5,491 in 2023. (Figure 5)

Antimicrobial Susceptibility

 Between 2019 and 2023 a total of 4,665 isolates had antimicrobial susceptibility testing completed by PHO. The vast majority of samples were susceptible to azithromycin (98.5%) (<u>Table 3</u>), cefixime (99.8%) (<u>Table 4</u>), and ceftriaxone (99.9%) (<u>Table 5</u>).

Trends over Time



Figure 1. Gonorrhea cases and rate (per 100,000 population) by year and sex*: Ontario, 2014-2023

Data sources: Cases: Integrated Public Health Information System (iPHIS) [database]. Population Estimates: Statistics Canada.⁵

*Excludes cases that did not identify as male or female.

Age and Sex

Table 1. Gonorrhea cases by age group and sex: Ontario, 2023 (n=14,184)

Demographic characteristic	2023
Mean age (years)	33.2
Median age and inter-quartile range (years)	31.36 (25.4-38.4)
Age group	n (%)
<20 years	816 (5.8%)
20 – 29 years	5,421 (38.2%)
30 – 39 years	4,924 (34.7%)
40 – 49 years	1,826 (12.9%)
50 – 59 years	857 (6.0%)
60 – 69 years	276 (1.9%)
70+ years	64 (0.5%)
Unknown	0 (0.0%)
Sex	n (%)
Male	11,072 (78.1%)
Female	3,033 (21.4%)
Transgender	68 (0.5%)
Other	3 (<0.1%)
Unknown	8 (0.1%)

Data source: iPHIS



Figure 2. Gonorrhea cases and rate (per 100,000 population) by age group and sex*: Ontario, 2023

Data sources: iPHIS; Statistics Canada.⁵

*Excludes cases that did not identify as male or female.

Geography





Data sources: iPHIS; Statistics Canada.⁵ **Note:** Data available in <u>Appendix A</u>: Table A1.

Site of Infection

Table 2. Gonorrhea cases by site of infec	tion and sex*: Ontario, 2023
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Site of infection	Male n (%)	Female n (%)	Total n (%)
Urogenital only**	4,243 (40.3%)	2,463 (87.7%)	6,706 (50.2%)
Extragenital only	5,450 (51.7%)	195 (6.9%)	5,645 (42.3%)
Rectal	1,799 (33.0%)	11 (5.6%)	1,810 (32.1%)
Pharyngeal	2,378 (43.6%)	169 (86.7%)	2,547 (45.1%)
Rectal and pharyngeal	1,273 (23.4%)	15 (7.7%)	1,288 (22.8%)
Urogenital and extragenital	846 (8.0%)	151 (5.4%)	997 (7.5%)
Total [†]	10,539 (100.0%)	2,809 (100.0%)	13,348 (100.0%)

Data source: iPHIS

*Excludes cases that did not identify as male or female.

**Includes urethral, urine, vaginal (females only), and cervical (females only). [†]Includes only cases with a urogenital and/or extragenital site of infection (e.g., rectal, pharyngeal) entered in iPHIS. Excludes 757 cases (among males and females) that had a site of infection that was not a urogenital and/or extragenital site (n=504) or had no site of infection entered in iPHIS (n=253).

Testing



Figure 4. Number of nucleic acid amplification tests (NAATs) performed by Public Health Ontario (PHO) and test positivity for *N. gonorrhoeae* by year and sex*: Ontario, 2014-2023

Data source: PHO Laboratory Information Management System (LIMS).

*Excludes cases that did not identify as male or female. Includes all NAATs performed on cervical, urethral, vaginal, urine, rectal, pharyngeal specimens and a small number of other sites; rectal and pharyngeal specimens accepted for NAAT since April 2018.





Data source: PHO LIMS

*Excludes cases that did not identify as male or female. Rectal and pharyngeal specimens accepted for NAAT since April 2018; as a result, the number of cultures submitted for testing decreased.

Antimicrobial Susceptibility

Antimicrobial susceptibility testing for *N. gonorrhoeae* at PHO is done by determining the minimum inhibitory concentration (MIC) of antibiotics (i.e., the lowest concentration [mg/L] that prevents growth of an isolate of *N. gonorrhoeae*). A breakpoint is then used to determine if the isolate is susceptible (i.e., MIC below breakpoint) or non-susceptible (i.e., MIC above breakpoint) to an antibiotic. Refer to the <u>Data</u> <u>Caveats</u> for further details.

Table 3. Number and percentage of *N. gonorrhoeae* isolates tested at PHO that were susceptible and non-susceptible to azithromycin: Ontario, 2019-2023

MIC interpretation*	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Susceptible	1,428 (98.5%)	716 (97.9%)	662 (98.7%)	776 (99.2%)	1,013 (98.3%)
Non-susceptible	22 (1.5%)	15 (2.1%)	9 (1.3%)	6 (0.8%)	18 (1.8%)
Total	1,450	731	671	782	1,031

Data source: PHO LIMS

*MIC breakpoint = \leq 1.0 mg/L. See <u>Appendix B</u> for the number and percentage of *N. gonorrhoeae* isolates tested at PHO by year and azithromycin MIC.

Table 4. Number and percentage of *N. gonorrhoeae* isolates tested at PHO that were susceptible and non-susceptible to cefixime: Ontario, 2019-2023

MIC interpretation*	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Susceptible	1,444 (99.6%)	731 (100%)	671 (100%)	782 (100%)	1,030 (99.9%)
Non-susceptible	6 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Total	1,450	731	671	782	1,031

Data source: PHO LIMS

*MIC breakpoint = ≤ 0.25 mg/L. See <u>Appendix B</u> for the number and percentage of *N. gonorrhoeae* isolates tested at PHO by year and cefixime MIC.

Table 5. Number and percentage of *N. gonorrhoeae* isolates tested at PHO that were susceptible and non-susceptible to ceftriaxone: Ontario, 2019-2023

MIC interpretation*	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
Susceptible	1,450 (100%)	731 (100%)	671 (100%)	782 (100%)	1,030 (99.9%)
Non-susceptible	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Total	1,450	731	671	782	1,031

Data source: PHO LIMS

*MIC breakpoint = ≤ 0.25 mg/L. See <u>Appendix B</u> for the number and percentage of *N. gonorrhoeae* isolates tested at PHO by year and ceftriaxone MIC.

Technical Notes

Data Sources

CASE DATA

- 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 **July 10, 2024**.
- 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.

LABORATORY DATA

- Data on the results of nucleic acid amplification tests (NAAT) and culture testing were extracted from the PHO Laboratory Information System (LIMS) on **April 29, 2024**.
- Antimicrobial susceptibility data were extracted from LIMS on March 20, 2024.

ONTARIO POPULATION DATA

 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].⁵

Data Caveats

IPHIS

- Data reported between 2020 and 2023 should be interpreted with caution. Both testing and iPHIS data entry practices were impacted by the COVID-19 pandemic and subsequent recovery periods.
- These data only represent laboratory-confirmed cases of gonorrhea 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, which may
 depend on severity of illness, clinical practices, and changes in laboratory testing and reporting
 behaviours.
- Only gonorrhea cases meeting the confirmed case classification as listed in the Ontario MOH surveillance <u>case definitions</u> are included in the reported case counts.¹ Provincial surveillance case definitions are available online under the Infectious Diseases Protocol 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 Reporting Diseases in Ontario: Case Definition Changes and Associated Trends 1991-2016" and its associated appendix provide more detailed information on this topic.^{6,7}

- Cases of gonorrhea 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.
- 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.
 - 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.
- 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.
- The following values for sex are derived from the data entered in the Gender field of iPHIS: MALE, FEMALE, TRANSGENDER, OTHER, UNKNOWN. Counts or rates presented as 'Total' include all of these values; however, for sex-specific rates or proportions, only Male and Female counts are included as denominators are not available for the other values.
 - Note: Cases reported as transgender include both transgender males and transgender females as it is not possible to determine the case's preferred gender identity in iPHIS.
- The potential for duplicate case records exists because duplicate sets were not identified and excluded unless they were already resolved at either the local or provincial level prior to data extraction from iPHIS.
- Extragenital infections of gonorrhea are reported based on the body site of the positive laboratory specimen. Note, however, that not all cases of gonorrhea have a body site entered in iPHIS.

Laboratory Information Management System

- The laboratory data only represent tests performed at PHO. These data do not include testing performed at community laboratories throughout the province that conduct a large proportion of testing for gonorrhea in Ontario.
 - Data do not represent unique individuals and instead represent all isolates, meaning that an individual who is tested for *N. gonorrhoeae* from more than one site (e.g. pharyngeal and rectal) and/or on more than one occasion in a calendar year will have all tests captured in these data. This is true for all negative and positive tests.
- Test positivity is calculated as the number of specimens positive for *N. gonorrhoeae* divided by the total number of specimens tested for *N. gonorrhoeae*.
- Rectal and pharyngeal specimens have been accepted for NAAT since April 2018. This may have contributed to the increase in NAATs completed in 2019.
- Antimicrobial susceptibility testing (AST) requires isolation of *N. gonorrhoeae* from culture. As culture is not the primary diagnostic method for *N. gonorrhoeae* infection, these data only represents a small subset of all *N. gonorrhoeae* infections in Ontario. PHO may not receive all *N. gonorrhoeae* isolates cultured in other laboratories for AST.

- On December 1, 2021, PHO implemented the Roche assay for NAAT, which made it no longer possible to request only *C. trachomatis* or *N. gonorrhoeae* testing. Therefore, any impacts to NAAT testing after this date would have an impact on the testing of both *C. trachomatis* and *N. gonorrhoeae*. For this reason, the test volumes in 2021 and onward may not necessarily reflect screening practices for *N. gonorrhoeae*.
- Login date was used to assign year of test.
- Demographic information is obtained from paper requisitions accompanying the patient specimen and is thus subject to transcription errors.
- The MIC of one antibiotic cannot be compared to the MIC of another antibiotic. PHO uses the breakpoints outlined in the Performance Standards for Antimicrobial Susceptibility Testing from the Clinical and Laboratory Standards Institute (CLSI), using the edition available in the year of testing.
 - The breakpoint for azithromycin was not established by CLSI until 2019; prior to this, susceptibility was inferred using an epidemiological cut-off value.
- Since the introduction of NAAT for *N. gonorrhoeae* testing in Ontario, the percentage of cases with culture testing has greatly decreased. Since AST relies on culture, the AST results presented in this report represent a small proportion (<20%) of cases in Ontario and may not be generalizable to all gonorrhea infections.

References

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Appendix A

Table A1. Gonorrhea case counts and rate (per 100,000 population) by public health unit:Ontario, 2019-2023

Public Health Unit	2019	2020	2021	2022	2023
Algoma Public Health	23 (19.6)	18 (15.3)	120 (102.0)	88 (73.3)	56 (45.2)
Brant County Health Unit	115 (75.3)	106 (68.2)	103 (64.9)	112 (68.5)	85 (50.1)
Chatham-Kent Public Health	88 (82.8)	97 (90.4)	79 (73.0)	122 (111.4)	72 (64.8)
City of Hamilton Public Health Services	503 (86.9)	477 (81.1)	535 (90.1)	419 (69.5)	479 (77.9)
Durham Region Health Department	500 (71.6)	404 (56.6)	368 (50.6)	403 (54.1)	520 (67.8)
Eastern Ontario Health Unit	23 (10.7)	37 (17.0)	29 (13.1)	78 (34.7)	43 (18.7)
Grey Bruce Health Unit	39 (22.4)	30 (16.9)	76 (42.0)	49 (26.4)	38 (20.0)
Haldimand-Norfolk Health Unit	24 (20.3)	29 (24.3)	34 (28.0)	26 (20.9)	23 (18.1)
Haliburton, Kawartha, Pine Ridge District Health Unit	44 (23.1)	53 (27.5)	71 (36.2)	53 (26.5)	72 (35.3)
Halton Region Health Department	217 (36.1)	171 (27.9)	206 (33.2)	223 (35.4)	254 (39.5)
Hastings Prince Edward Public Health	35 (20.3)	80 (45.6)	86 (48.4)	70 (38.5)	70 (37.7)
Huron Perth Health Unit	72 (49.7)	48 (32.7)	47 (31.6)	34 (22.5)	41 (26.6)
Kingston, Frontenac, Lennox & Addington Public Health	80 (38.0)	257 (120.6)	181 (84.1)	196 (89.0)	165 (73.5)
Lambton Public Health	62 (46.4)	51 (38.0)	88 (65.3)	53 (38.4)	41 (29.1)
Leeds, Grenville and Lanark District Health Unit	30 (16.6)	31 (16.9)	47 (25.2)	58 (30.5)	51 (26.3)
Middlesex-London Health Unit	288 (56.6)	343 (66.3)	420 (80.0)	335 (61.7)	259 (46.0)
Niagara Region Public Health	389 (80.3)	338 (68.9)	426 (85.7)	423 (83.1)	291 (55.4)

Public Health Unit	2019	2020	2021	2022	2023
North Bay Parry Sound District Health Unit	43 (32.8)	28 (21.2)	32 (23.9)	23 (16.7)	22 (15.5)
Northwestern Health Unit	191 (233.1)	180 (218.5)	114 (137.1)	144 (173.3)	181 (217.5)
Ottawa Public Health	731 (70.9)	488 (46.4)	595 (56.0)	819 (75.6)	961 (86.2)
Peel Public Health	925 (61.3)	774 (50.8)	717 (47.3)	880 (57.6)	1,056 (66.6)
Peterborough Public Health	66 (43.9)	46 (30.3)	39 (25.4)	68 (43.3)	100 (61.4)
Porcupine Health Unit	46 (53.6)	26 (30.3)	20 (23.3)	25 (28.8)	15 (16.9)
Public Health Sudbury & Districts	143 (69.0)	77 (36.9)	104 (49.4)	80 (37.5)	64 (29.2)
Region of Waterloo Public Health and Emergency Services	349 (58.7)	302 (49.8)	257 (41.8)	267 (41.8)	310 (45.9)
Renfrew County and District Health Unit	15 (13.7)	14 (12.7)	15 (13.4)	17 (15.0)	21 (18.3)
Simcoe Muskoka District Health Unit	201 (33.6)	118 (19.3)	263 (42.1)	279 (43.3)	231 (34.9)
Southwestern Public Health	49 (22.6)	51 (23.1)	78 (34.6)	107 (46.5)	47 (20.0)
Thunder Bay District Health Unit	192 (120.6)	221 (138.5)	212 (133.5)	162 (101.3)	204 (126.0)
Timiskaming Health Unit	1 (3.0)	3 (9.0)	2 (6.0)	2 (5.9)	4 (11.6)
Toronto Public Health	4,899 (166.7)	3,628 (122.9)	3,740 (128.2)	5,326 (178.4)	7,517 (241.6)
Wellington-Dufferin-Guelph Public Health	118 (38.0)	87 (27.5)	120 (37.4)	120 (36.7)	117 (35.1)
Windsor-Essex County Health Unit	211 (48.6)	183 (41.7)	251 (57.1)	276 (61.0)	235 (50.2)
York Region Public Health Services	437 (36.6)	326 (26.9)	348 (28.5)	406 (33.0)	539 (43.2)
Total	11,149 (76.5)	9,122 (61.8)	9,823 (66.2)	11,743 (77.5)	14,184 (90.9)

Data sources: Cases: iPHIS; Statistics Canada⁵

Appendix B

Table B1. Number and percentage of *N. gonorrhoeae* isolates tested at PHO by azithromycinMIC: Ontario, 2019-2023

Azithromycin MIC (mg/L)	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
<=0.25	859 (59.2%)	390 (53.4%)	375 (55.9%)	503 (64.3%)	559 (54.2%)
0.5	330 (22.8%)	234 (32.0%)	193 (28.8%)	191 (24.4%)	270 (26.2%)
1.0	239 (16.5%)	92 (12.6%)	94 (14.0%)	82 (10.5%)	184 (17.9%)
2.0	11 (0.8%)	6 (0.8%)	5 (0.8%)	1 (0.1%)	5 (0.5%)
>=4.0	11 (0.8%)	9 (1.2%)	4 (0.6%)	5 (0.6%)	13 (1.3%)
Total	1,450	731	671	782	1,031

Data source: PHO LIMS

MIC breakpoint = \leq 1.0 mg/L

Table B2. Number and percentage of <i>N. gonorrhoeae</i> isolates tested at PHO by cefixime MI	IC:
Ontario, 2019-2023	

Cefixime MIC (mg/L)	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
<=0.03	1,328 (91.6%)	644 (88.1%)	620 (92.4%)	729 (93.2%)	880 (85.4%)
0.06	43 (3.0%)	22 (3.0%)	18 (2.7%)	26 (3.3%)	96 (9.3%)
0.12	48 (3.3%)	52 (7.1%)	28 (4.2%)	25 (3.2%)	49 (4.8%)
0.25	25 (1.7%)	13 (1.8%)	5 (0.8%)	2 (0.3%)	5 (0.5%)
>=0.50	6 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Total	1,450	731	671	782	1,031

Data source: PHO LIMS MIC breakpoint = ≤0.25 mg/L Table B3. Number and percentage of *N. gonorrhoeae* isolates tested at PHO by ceftriaxoneMIC: Ontario, 2019-2023

Ceftriaxone MIC (mg/L)	2019 n (%)	2020 n (%)	2021 n (%)	2022 n (%)	2023 n (%)
<=0.03	1,418 (97.8%)	716 (98.0%)	659 (98.2%)	772 (98.7%)	996 (96.6%)
0.06	26 (1.8%)	13 (1.8%)	11 (1.6%)	8 (1.0%)	33 (3.2%)
0.12	6 (0.4%)	2 (0.3%)	1 (0.2%)	1 (0.1%)	1 (0.1%)
0.25	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.1%)	0 (0.0%)
>=0.50	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Total	1,450	731	671	782	1,031

Data source: PHO LIMS MIC breakpoint = ≤0.25 mg/L

Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Gonorrhea in Ontario: focus on 2023. Toronto, ON: King's Printer for Ontario; 2025.

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