

TECHNICAL NOTES

Sexually Transmitted Infections (STI) Laboratory Data Tool

Updated: September 2025

Introduction

The Sexually Transmitted Infections (STI) Laboratory Data Tool is designed to provide timely and locally relevant anonymized STI data to inform clinical decision making, public health practice, and surveillance for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG). These data can be used to inform key decisions about: whom to test; which infections to test for; empiric antimicrobial therapy that should be offered before individual results become available; and who to target in sexual health promotion, prevention, screening, counselling, and contact tracing activities.

Data Sources

- The STI Laboratory Data tool includes data from January 2010 to present from the Public Health Ontario Laboratory Information Management System (LIMS).
- Data are updated on the 15th of each month.

Methods

Organisms

- *Chlamydia trachomatis* (CT) identified by nucleic acid amplification test (NAAT) and culture
- *Neisseria gonorrhoeae* (NG) identified by NAAT, culture, and Gram stain

Testing algorithm and methods

- NAAT is the recommended method for initial screening or testing for CT and NG infections. Currently, screening is performed with the Roche cobas® CT/NG Assay, a duplex real-time PCR assay for the qualitative detection of CT and NG. Prior to December 2021, CT and NG testing was performed using the GenProbe Aptima Combo 2® NAAT.
- CT and NG culture are performed using standard bacterial culture methods. The recommendation for NG culture has changed over time. Please refer to the [Canadian Guidelines on Sexually Transmitted Infections for Current Recommendations](#). As of December 2021, MALDI-ToF replaced probe-based NG confirmation for NG culture.
- NG may be identified by microscopy using Gram stain in cases of urethritis in males.

- For current information on testing algorithm and methods, refer to:
 - [Chlamydia trachomatis/Neisseria gonorrhoeae NAAT Test Information Sheet](#)
 - [Neisseria gonorrhoeae Culture Test Information Sheet](#)
 - [Chlamydia trachomatis Culture Test Information Sheet](#)

Antimicrobial susceptibility testing (AST) for NG

- AST is performed by agar dilution.
- Minimum inhibitory concentration (MIC) is the minimum concentration in mg/L at which bacterial growth is inhibited by an antibiotic (e.g. 0.06 mg/L, 0.12 mg/L). Clinical relevance of these values is specific to the antibiotic.
- Interpretation is the classification of the NG isolate as susceptible (S), intermediate (I), or resistant/non-susceptible (R) based on MIC values as defined by the Clinical Laboratories Standards Institute (CLSI).¹ Interpretations are based on the edition of the CLSI M100 that was current in that year. MICs in previous years are not re-interpreted with new editions. For guidance on the interpretation of MICs, please see Table A1.

Data Caveats

- Data represent unique specimens as opposed to individuals or cases. As a result, the same individual may be counted multiple times.
- “Inconclusive” results are included in the totals with negative NAAT test results.
- Data do not include the following:
 - Tests performed for individuals residing outside of Ontario, as determined by patient’s postal code.
 - Tests performed for proficiency or quality control purposes.
 - Tests with results indicating “invalid”, “contaminated”, or “toxic to culture”.
- Trends over longer periods should be interpreted with caution as PHO’s laboratory testing methods and algorithms have changed over time.
- PHO does not perform all testing for CT and NG in Ontario; therefore, these data only cover a portion of tests in the province. PHO performs the majority of AST for NG in Ontario
- Public health unit was assigned using patient postal code. If not provided, submitter postal code was used.
- Data for the most recent month may be incomplete due to pending results.

References

1. Clinical and Laboratory Standards Institute (CLSI). M100: performance standards for antimicrobial susceptibility testing. 35th ed. Wayne, PA: CLSI; 2025.

Appendix A

Table A1. MIC interpretations

Antibiotic	CLSI S	CLSI I	CLSI R	EUCAST S	EUCAST R
Penicillin	≤ 0.06	0.12 – 1	≥ 2	≤ 0.06	> 1
Tetracycline	≤ 0.25	0.5 – 1	≥ 2	≤ 0.5	> 0.5
Ciprofloxacin	≤ 0.06	0.12 – 0.5	≥ 1	≤ 0.03	> 0.06
Azithromycin*	≤ 1	-	-		
Spectinomycin	≤ 32	64	≥ 128	≤ 64	> 64
Cefixime	≤ 0.25	-	-	≤ 0.125	> 0.125
Ceftriaxone	≤ 0.25	-	-	≤ 0.125	> 0.125

CLSI, Clinical and Laboratory Standards Institute, M100-35th Edition.

EUCAST, European Committee on Antimicrobial Susceptibility Testing Breakpoint tables for interpretation of MICs and zone diameters v. 15.0 (see [EUCAST Clinical breakpoints and dosing of antibiotics](#)).

*EUCAST provides an epidemiological cut-off value (ECOFF) for azithromycin of 1 mg/L.

There are no CLSI or EUCAST interpretive criteria for erythromycin.

S=Susceptible, I=Intermediate, R=Resistant.

All values are mg/L.

Citation

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How to Cite This Tool

Generic Citation

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