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Let’s talk about Doxy-PEP

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Andrea Chittle, MD, MPH, CCFP

February 10, 2026

Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

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Bio – Austin Zygmunt

- Certified in Family Medicine by the College of Family Physicians of Canada
- Certified in Public Health & Preventive Medicine by the Royal College of Physicians and Surgeons of Canada
- Public Health Physician with Public Health Ontario, specializing in sexually transmitted and bloodborne infections.
- Assistant Professor in the Department of Family Medicine at the University of Ottawa

Disclosures of relationships with a for-profit and/or a not-for-profit organization - Austin Zygmunt

Nature of relationship(s)	Name of for-profit or not-for-profit organization(s)	Description of relationship(s)
Any direct financial payments including receipt of honoraria	Ontario HIV Treatment Network (OHTN)	Participated as an invited speaker for the 2025 Ontario HIV Clinic Network Education day. The OHTN provided reimbursement for travel and accommodation and waived the event registration fee.
Membership on advisory boards or speakers' bureaus	None	
Funded grants or clinical trials	None	
Patents on a drug, product or device	None	
All other investments or relationships that could be seen by a reasonable, well-informed participant as having the potential to influence the content of the educational activity	MAX Ottawa	Former volunteer Board member (09/2023–09/2025) with MAX Ottawa, a community-based non-profit organization dedicated to advancing the health and well-being of queer men, trans, and non-binary individuals across the National Capital Region.

Bio – Andrea Chittle

- Certified in Family Medicine and holds a Master of Public Health degree
- Medical Advisor, Sexually Transmitted and Blood-Borne Infections Surveillance Division, Public Health Agency of Canada
- Physician in City of Hamilton's Sexual Health Clinics and Sexual Assault and Domestic Violence Care and Treatment Centre at Guelph General Hospital

Disclosures – Andrea Chittle

Relationships with financial sponsors

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- Patents: N/A
- Other: Employee of the Public Health Agency of Canada

Mitigating potential bias

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Objectives

By the end of this event, participants will be able to:

- Describe recent epidemiologic trends for syphilis, chlamydia and gonorrhea in Ontario
- Apply national recommendations on the use of Doxy-PEP for the prevention of bacterial sexually transmitted infections
- Refer to the Public Health Agency of Canada's sexually transmitted and blood-borne infections (STBBI) resources for healthcare professionals to make evidence-informed decisions about STI prevention and management

Outline

- Trends in the epidemiology of bacterial sexually transmitted infections (STIs) in Ontario
  - Chlamydia
  - Gonorrhea
  - Infectious Syphilis
- New National Advisory Committee on Sexually Transmitted and Blood-Borne Infections (NAC-STBBI) Recommendations on doxycycline post-exposure prophylaxis (Doxy-PEP)
  - Process for developing the recommendations
  - Summary of the recommendations
  - Case example

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Bacterial STIs in Ontario, 2015 - 2024

Dr. Austin Zygmunt, MSc, MD, CCFP, FRCPC

Public Health Physician, Communicable Disease Control, Public Health Ontario

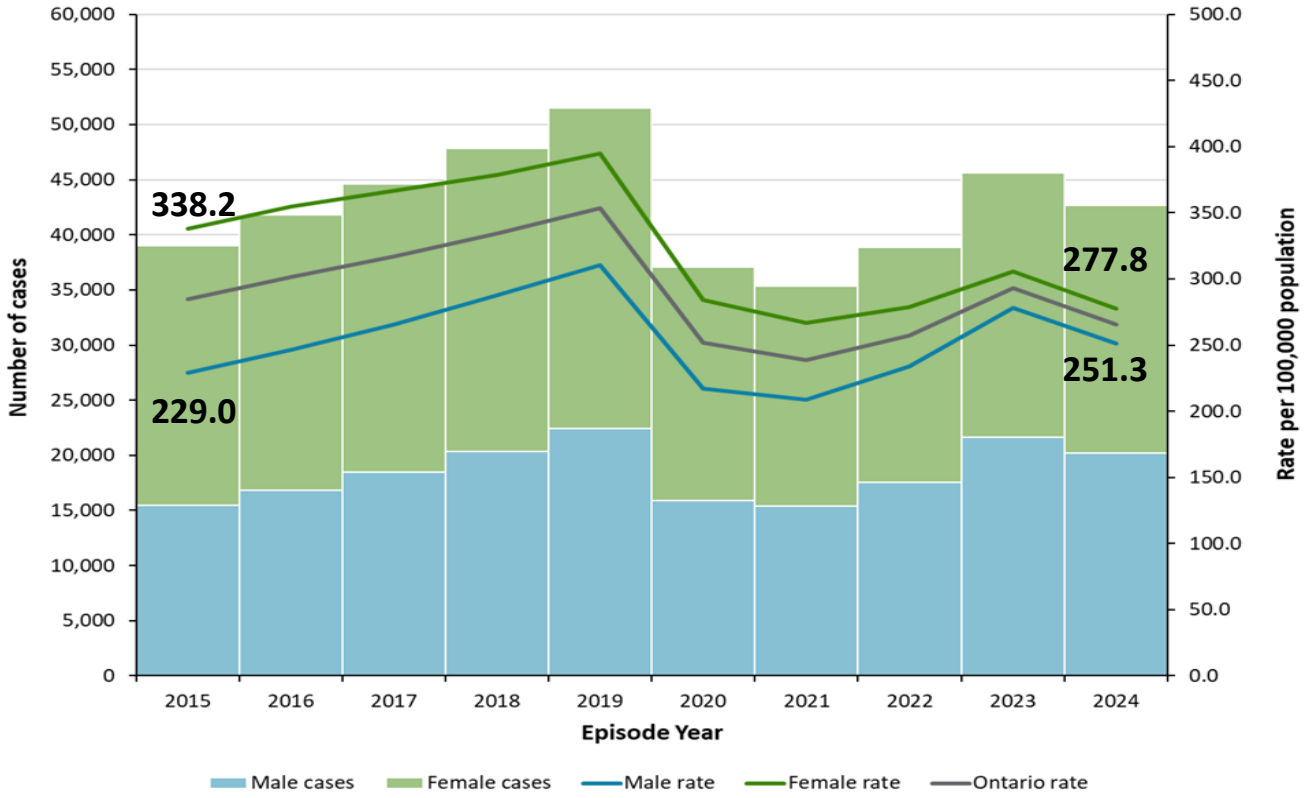
February 10, 2026

Outline

- Recent trends in the epidemiology of bacterial STIs in Ontario
  - Chlamydia
  - Gonorrhea
  - Infectious Syphilis
- Summary

Chlamydia: Trends in Ontario from 2015 to 2024

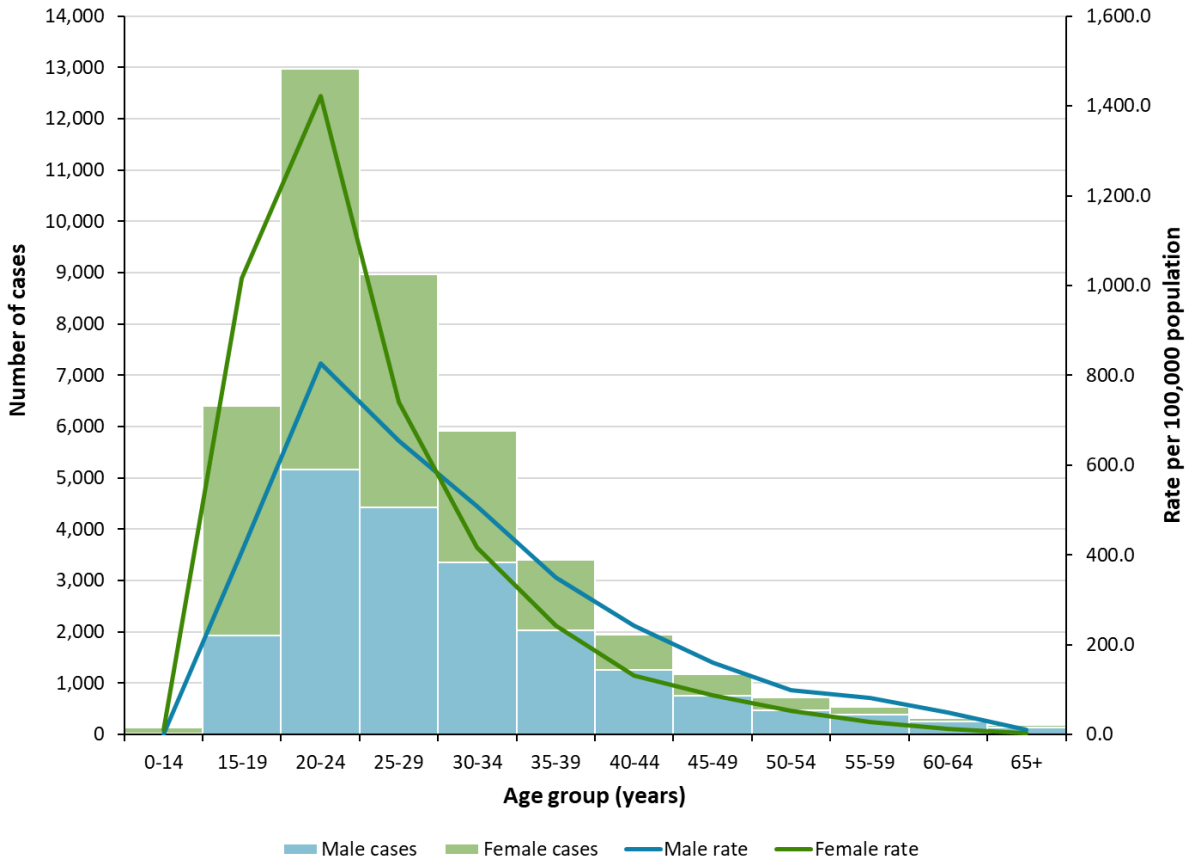
- Chlamydia case counts and rates have not returned to pre-pandemic levels.
- Females represent the majority of reported chlamydia cases, however, the proportion of cases among males has been steadily increasing over time.



Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Chlamydia in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario. Chlamydia in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/C/26/chlamydia-focus-ontario-2024.pdf

Chlamydia: Trends in Ontario in 2024



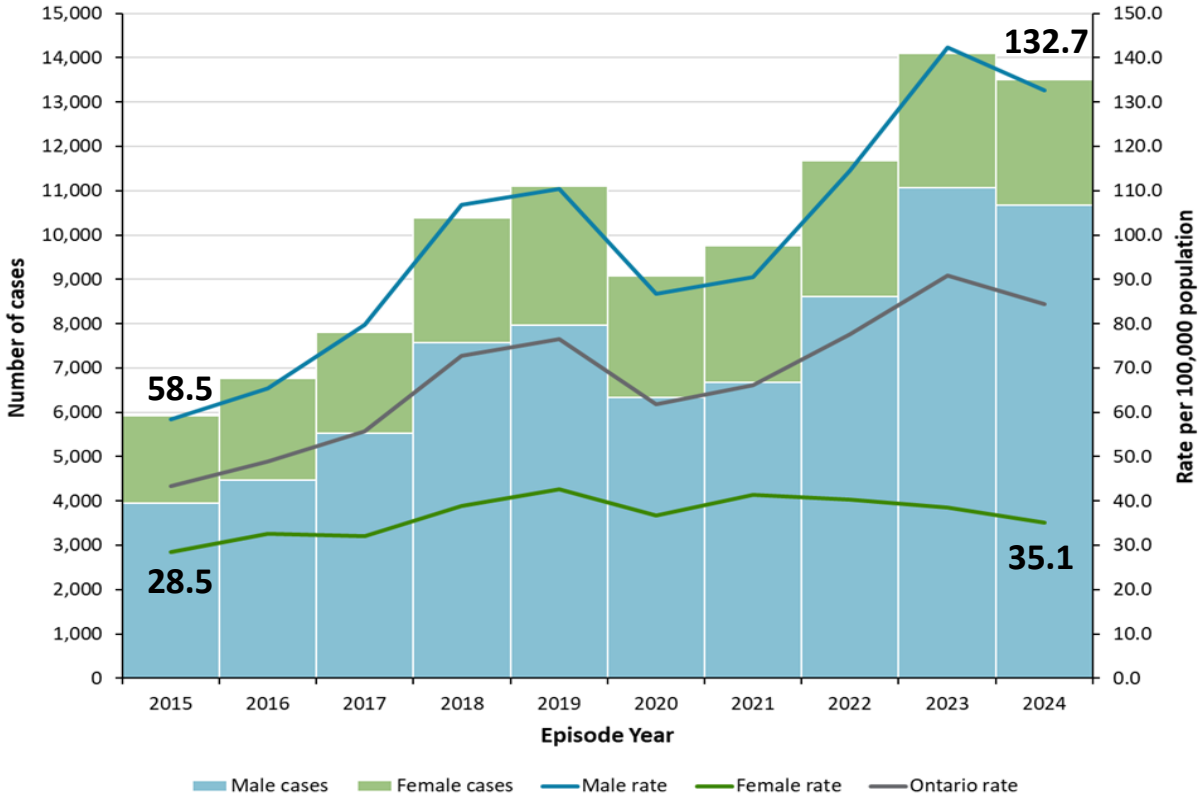
- The highest burden of chlamydia infections is among those aged 15–34 years.
- Younger females and older males experience higher incidence rates than their opposite sex counterparts.
- After age group 20-24, incidence declines steadily for both males and females, with substantially lower rates observed in older age groups.

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Chlamydia in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario. Chlamydia in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/C/26/chlamydia-focus-ontario-2024.pdf

Gonorrhea: Trends in Ontario from 2015 to 2024

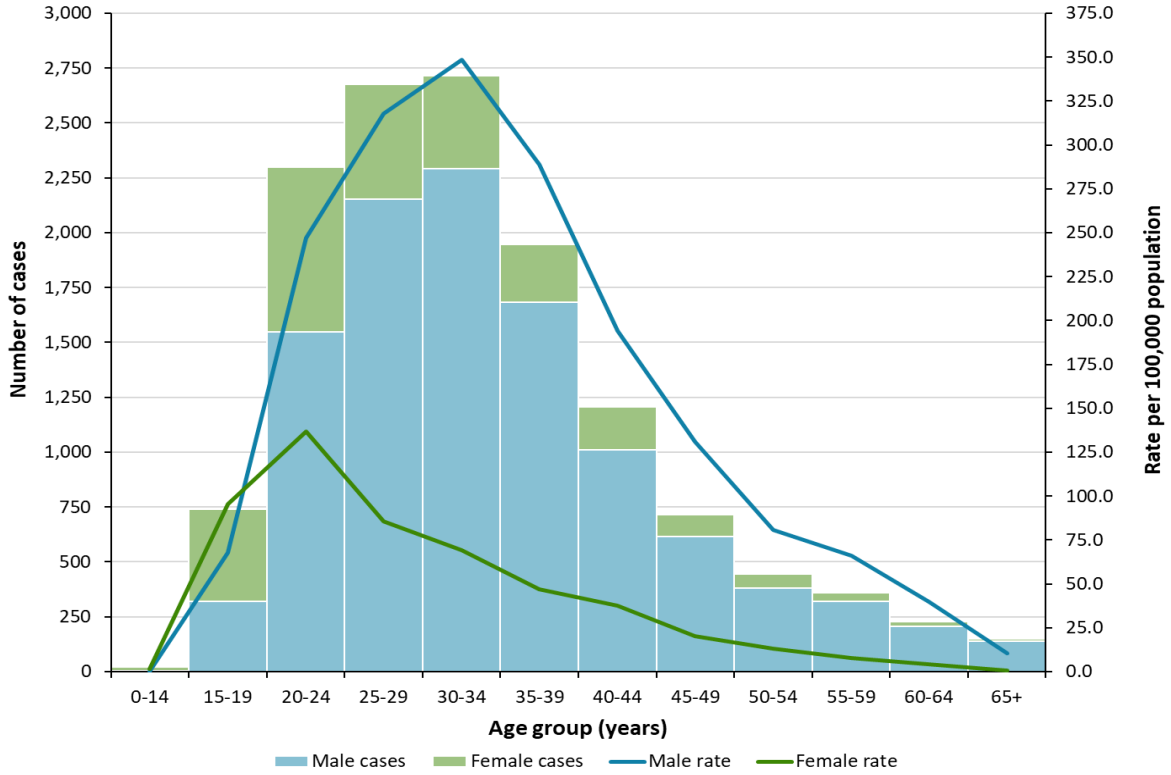
- Gonorrhea incidence has nearly doubled over the past decade, driven primarily by more infections among males.
- In 2024, the incidence of gonorrhea in males was almost four times higher than for females.



Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Gonorrhea in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario (PHO). Gonorrhea in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/G/26/gonorrhea-ontario-focus-2024.pdf

Gonorrhea: Trends in Ontario in 2024



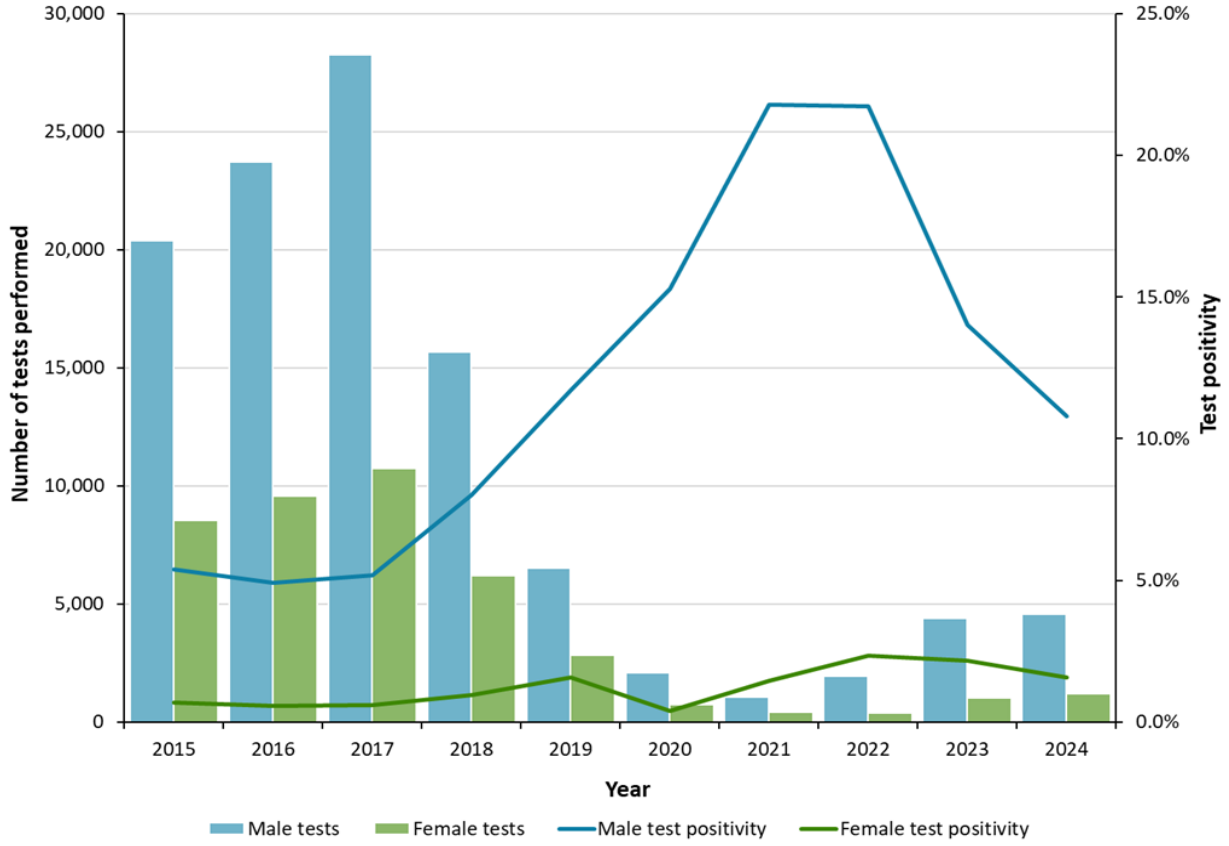
- The highest burden of gonorrhea was among adults in their early 20s to late 30s.
- The highest incidence in males occurred in the 30–34 age group, while in females it occurred in the 20–24 group.

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Gonorrhea in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario (PHO). Gonorrhea in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/G/26/gonorrhea-ontario-focus-2024.pdf

Gonorrhea: Culture Testing Volume and Positivity at PHO from 2015 to 2024

- At PHO, *N. gonorrhoeae* culture testing volumes decreased considerably after the introduction of rectal and pharyngeal nucleic acid amplification testing (NAAT) in 2018.
- Among males, culture submissions dropped by more than 80% between 2017 and 2024.
- Male test positivity peaked in 2021-22 and in recent years has declined but remained above pre-pandemic levels.



Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Gonorrhea in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario (PHO). Gonorrhea in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/G/26/gonorrhea-ontario-focus-2024.pdf

Gonorrhea: Antimicrobial Susceptibility of *N. gonorrhoeae* Isolates tested at PHO, 2020 - 2024

- Majority of *N. gonorrhoeae* isolates tested at PHO between 2020 and 2024 were susceptible to first-line treatments: ceftriaxone (99.9%), cefixime (99.9%), and azithromycin (98.2%).
- In 2024, 5 gonorrhea cases with non-susceptibility to ceftriaxone were identified in Ontario.

	Percentage Susceptible* (%)					
Antimicrobial	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Ceftriaxone	100.0	100.0	100.0	99.9	99.4	99.9
Cefixime	100.0	100.0	100.0	99.9	99.4	99.9
Azithromycin	97.9	98.7	99.2	98.2	96.9	98.2
Total Isolates Tested	726	668	777	1,024	827	4,022

*as per Clinical and Laboratory Standards Institute's (CLSI) M100 Performance Standards for Antimicrobial Susceptibility Testing (35th Ed., 2025)

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Gonorrhea: Tetracycline Susceptibility of *N. gonorrhoeae* Isolates Tested at PHO, 2020 - 2024

- Tetracyclines (e.g., doxycycline) are not first-line treatments for gonorrhea.
- As doxycycline can be used as bacterial STI post-exposure prophylaxis (doxy-PEP) for certain high-risk populations, it is important to monitor tetracycline-class antimicrobial resistance trends.
- Tetracycline resistance for *N. gonorrhoeae* isolates tested at PHO steadily between 2020 and 2024.

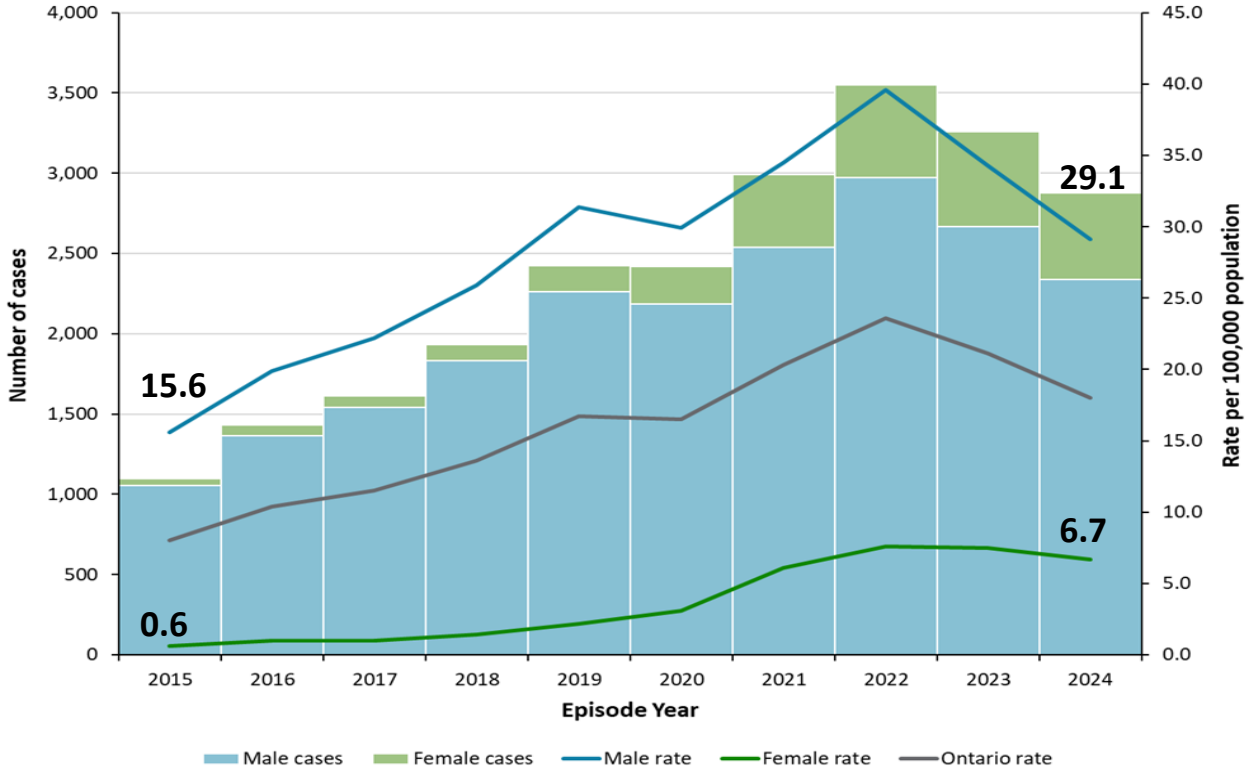
	Tetracycline Susceptibility* (%)				
	2020	**2021**	**2022**	**2023**	**2024**
Susceptible	10.6	9.9	7.3	6.9	4.5
Intermediate	68.0	75.1	79.5	74.6	62.9
Resistant	21.3	15.0	13.1	18.5	32.6
Total Isolates Tested	726	668	777	1,024	827

*as per Clinical and Laboratory Standards Institute's (CLSI) M100 Performance Standards for Antimicrobial Susceptibility Testing (35th Ed., 2025)

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Gonorrhea in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Infectious Syphilis: Trends in Ontario from 2015 to 2024

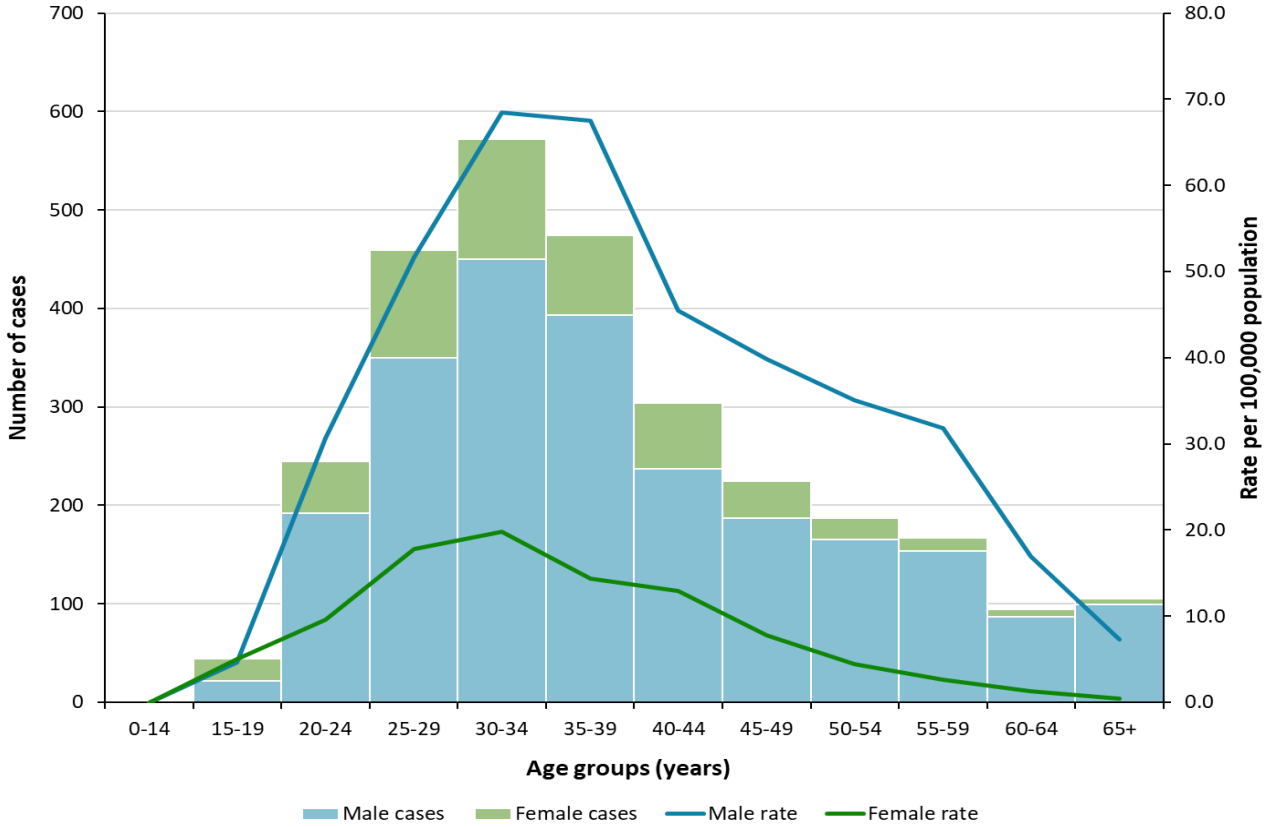
- Incidence of infectious syphilis nearly tripled between 2015 and 2022, then declined in 2023 and 2024.
- Males account for the majority of cases, though their proportion of total cases has decreased over time.
- Incidence among females increased more than tenfold over the past 10 years.



Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario. Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/S/26/syphilis-ontario-focus-2024.pdf

Infectious Syphilis: Trends in Ontario in 2024



- The highest incidence of infectious syphilis is among adults in their mid 20s to late 30s.
- Rates among adult males are substantially higher than adult females.

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario. Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/S/26/syphilis-ontario-focus-2024.pdf

Infectious Syphilis: Risk Factors Reported by Sex in 2024

Risk factor	Males (%)	Females (%)
Sex with same sex	66.2	4.1
No condom used	50.2	68.9
Sex with opposite sex	28.0	79.3
Repeat STI	36.6	24.9
>1 sexual contact in the last 6 months	21.0	19.3
Anonymous sex	19.2	13.1
New sexual contact in last 2 months	15.4	13.9
Impaired judgement due to drugs and/or alcohol	4.8	13.5
Inhalation drug use	2.7	10.4
Injection drug use	2.1	9.5
Bath house	1.2	0.0

Note: Of all infectious syphilis cases, 2,664 (91.7%) identified at least one risk factor, excluding those reported as 'Unknown'

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Public Health Ontario. Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto (ON): 2026. Available from: https://www.publichealthontario.ca/-/media/Documents/S/26/syphilis-ontario-focus-2024.pdf

Summary of bacterial STI trends in Ontario: 2015 - 2024

- Chlamydia is the most common bacterial STI, with highest incidence among those ages 15-29, and the gap between males and females is narrowing over time.
- Gonorrhea incidence has nearly doubled since 2015, predominantly driven by an increase in infections among males.
- Infectious syphilis incidence surged up to 2022 and despite a recent decline it remains elevated, with highest incidence in adults aged 25-39 and rapidly increasing rates among females.
- Shifts in bacterial STI testing practices (e.g., increased use of NAAT and reduced use of culture) and evolving anti-microbial resistance patterns for gonorrhea, particularly in the context of interventions such as Doxy-PEP, highlight the need for continued monitoring and surveillance.
  - *Information on Neisseria gonorrhoeae Culture, Reference Identification and Susceptibility is available from: https://www.publichealthontario.ca/en/laboratory-services/test-information-index/neisseria-gonorrhoeae-culture*

Provincial surveillance reports on bacterial STIs

Available on PHO's webpage for bacterial Sexually Transmitted Infections (STIs):

- Chlamydia in Ontario – Focus on 2024
- Gonorrhea in Ontario – Focus on 2024
- Infectious Syphilis and Early Congenital Syphilis in Ontario – Focus on 2024

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- Karen Johnson

For More Information About this Presentation, Contact

Public Health Ontario - Communicable Disease Control at:

Communicable.DiseaseControl@oahpp.ca

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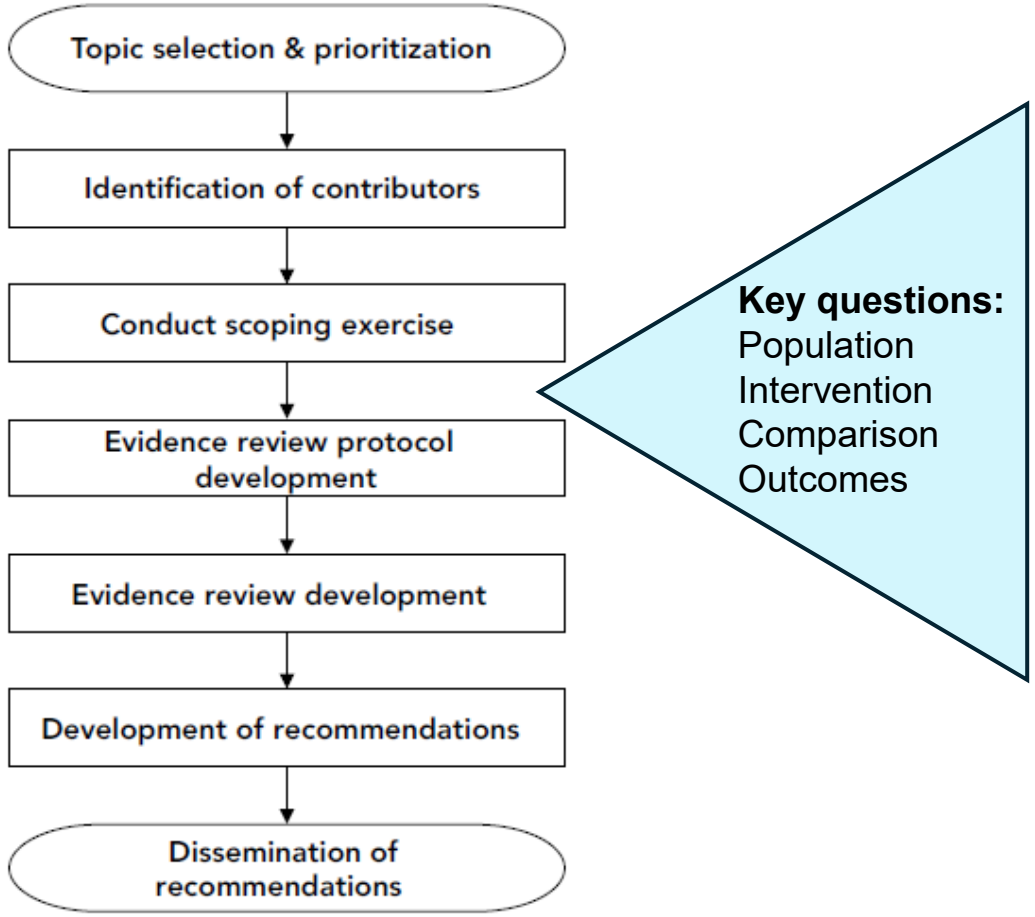
Ontario

NEW NAC-STBBI Recommendations on doxycycline post-exposure prophylaxis (Doxy-PEP)

Note: The use of doxycycline as prophylaxis against bacterial sexually transmitted infections is an **off-label** use

Process for developing NAC-STBBI recommendations



Adapted from: Shanmugasegaram, Gadient & Gale-Rowe, 2020, p.399/450

Where to find PHAC's STBBI recommendations

Online

Sexually transmitted and blood-borne infections: Guides for health professionals

Mobile

CDN STBBI Guidelines mobile app

Available on the App store or Google Play

Prophylactic doxycycline for STI prevention: Environmental scan

- Rapidly changing; area of ongoing study
- Some international organizations (e.g., ASHM, 2024; BASHH, 2025; DSTIG, 2024; US CDC, 2024) have published guidance on use of Doxy-PEP for GBMSM and transgender women at increased risk of STI/TP, embedded within STBBI services; ASHM and BASHH specify its role for preventing TP
- BREACH (2024) recommends limiting Doxy-PEP to medically supervised settings and clinical studies
- Consistent guidance to counsel users about unknowns and potential impacts on the emergence and acceleration AMR

ASHM: Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine;
BASHH: British Association for Sexual Health and HIV; BREACH: Belgian Research HIV Consortium;
DSTIG: Deutsche STI-Gesellschaft;
US CDC: United States Department of Health and Human Services Centers for Disease Control and Prevention

Prophylactic doxycycline for STI prevention: Key questions

1. Should Doxy-PEP or standard care be used in cisgender GBMSM and TGW at risk of *Chlamydia trachomatis* (CT), *Neisseria gonorrhoeae* (NG) or *Treponema pallidum* (TP) infection?
2. Should Doxy-PEP or standard care be used for sexually active adolescents and adults at risk of CT, NG or TP infection?
3. Should Doxy-PrEP or standard care be used in cisgender GBMSM and TGW at risk of CT, NG or TP infection?
4. Should Doxy-PrEP or standard care be used in sexually active adolescents and adults at risk of CT, NG or TP infection?

(PHAC, 2025a)

Evidence summary: Key question 1

- In clinical studies among cisgender GBMSM and TGW, Doxy-PEP worked very well to prevent chlamydia and syphilis; in some studies, Doxy-PEP prevented gonorrhea infections
- Published models have: identified efficient Doxy-PEP prescribing strategies; projected the duration of Doxy-PEP's effectiveness for NG prevention considering baseline rates of doxycycline resistance in NG; and projected Doxy-PEP's impact on TP incidence
- Clinical data, laboratory data, genomic and *in silico* data, and published models indicate that use of tetracycline-class antibiotics broadly, and of Doxy-PEP in particular, creates selection pressure that can increase antibiotic resistance and multidrug resistance in NG and in commensal and pathogenic bacteria, for example *Stapylococcus aureus*

(PHAC, 2025a)

Recommendations: Key question 1

Recommendation 1: Doxycycline post-exposure prophylaxis for cisgender gay, bisexual and other men who have sex with men (GBMSM), and transgender women (TGW)

The NAC-STBBI suggests offering doxycycline post-exposure prophylaxis (200 mg orally, taken within 72 hours of exposure) to cisgender GBMSM and TGW at increased risk of bacterial STI as a component of comprehensive STBBI services to reduce the risk of syphilis, chlamydia and possibly gonorrhea. (Conditional recommendation, moderate certainty of evidence)

Use of doxycycline as prophylaxis against bacterial sexually transmitted infections is off-label use of this drug.

(PHAC, 2025a)

https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/national-advisory-committee-stbbi/recommendations-prophylactic-doxycycline-prevention-bacterial-sti-chlamydia-gonorrhea-syphilis.html

Recommendations: Key question 1

Recommendation 1:

Remarks

- There is no consensus definition for "increased risk" at this time. Examples of behaviours that can increase an individual's risk of bacterial STI include, but are not limited to, elements such as:
  - prior bacterial STI(s),
  - those with 10 or more partners in the last 6 months or condomless sex with multiple partners,
  - those engaging in "chemsex" (using stimulants during sex e.g. crystal methamphetamine), and
  - individuals engaging in group sex.
- Users are advised to take no more than 1 dose (200 mg) in a 24-hour period.
- To minimize antimicrobial use, if a Doxy-PEP user has multiple sexual partners during a period of 2-3 consecutive days (e.g. a weekend), a single dose of 200 mg Doxy-PEP at the end of the 72-hour period (e.g. on Monday morning after the weekend) should adequately cover their STI risk.
- The use of Doxy-PEP should be reassessed every three to six months as an individual's risk may change over time.

(PHAC, 2025a)

Recommendations: Key question 1

Recommendation 1:

Remarks (continued)

- Clinicians should follow existing STI screening recommendations as outlined in PHAC's STBBI guides for health professionals. The optimal frequency of STI screening for individuals taking Doxy-PEP is not known. The NAC-STBBI recommends targeted "opt-out" syphilis, chlamydia and gonorrhea screening as frequently as every 3 months when serving population groups and/or communities experiencing high prevalence of syphilis (and other STBBI), including GBMSM.
- Given antimicrobial resistance concerns, when testing for NG, the NAC-STBBI recommends collecting specimens for both culture and NAAT in several scenarios, including for individuals with symptoms and when assessing NG contacts. For individuals who are diagnosed with NG using NAAT specimens only, collect a specimen for culture prior to administering treatment, as long as doing so does not delay treatment.
- To enable monitoring of tetracycline resistance, routine antimicrobial susceptibility testing by laboratories is recommended.
- Use of doxycycline as prophylaxis against bacterial sexually transmitted infections (STI) is an off-label indication.

(PHAC, 2025a)

Recommendations: Key question 1

Recommendation 2: Counselling on risks for shared decision making

To inform shared clinical decision-making about Doxy-PEP use, the NAC-STBBI recommends discussing personal, community (e.g., GBMSM) and population-level risks of antimicrobial resistance with individuals considering this intervention.

(Strong recommendation, moderate certainty of evidence)

(PHAC, 2025a)

Recommendations: Key question 1

Recommendation 2:

Remarks

Clinicians are advised to discuss the following elements with individuals taking Doxy-PEP:

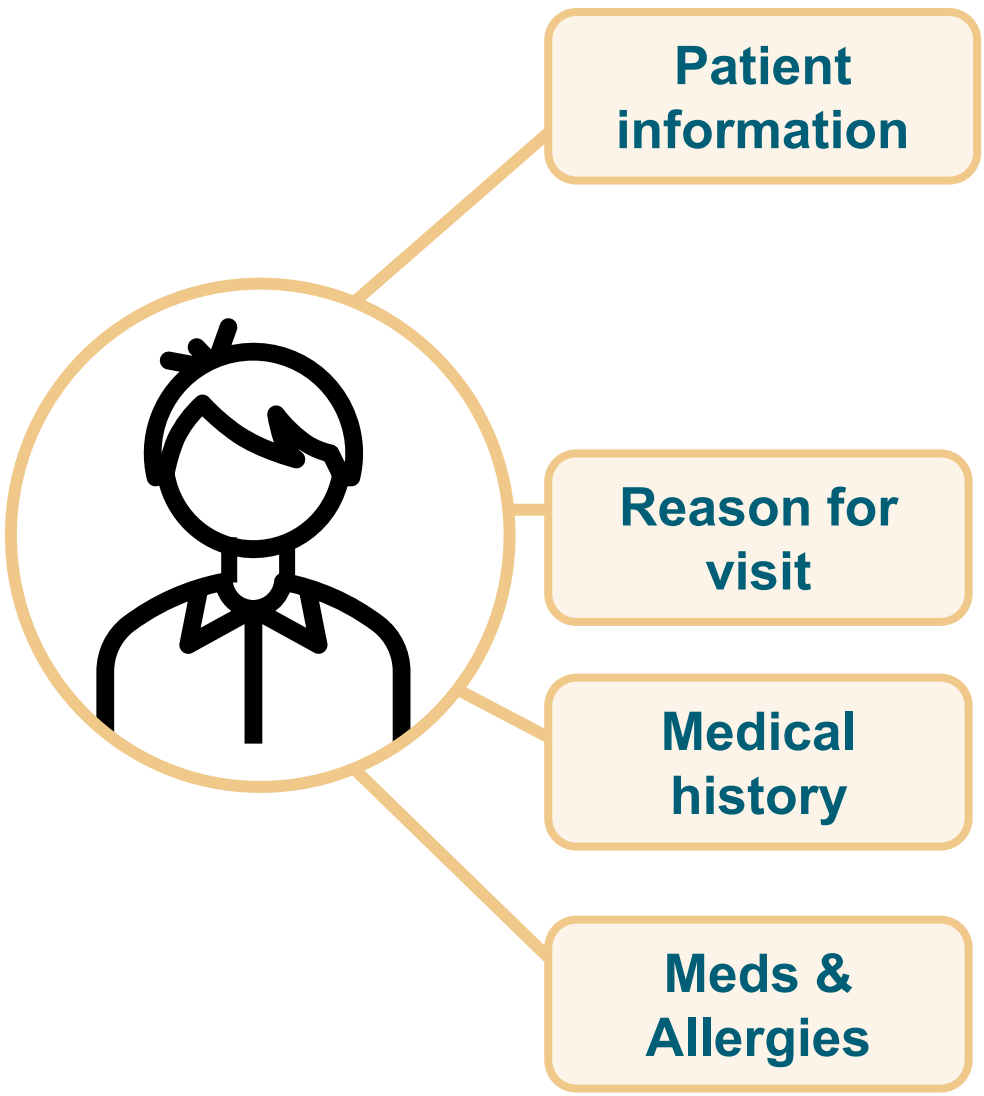
- Existing evidence raises concerns about the potential of Doxy-PEP to contribute to the acceleration of tetracycline resistance in NG and indicates that any initial benefit for the prevention of NG may not be sustained over the long term.
- Globally, high antimicrobial use among GBMSM has been linked to a disproportionate burden of emergent and circulating AMR pathogens. Extra consideration should be given to prudent use of antimicrobials with this population.
- To date, tetracycline resistance in *Chlamydia trachomatis* and *Treponema pallidum* subspecies *pallidum* has not been documented in humans, although TP has developed antimicrobial resistance to other antibiotic classes.
- Use of Doxy-PEP may be linked to increased rates of tetracycline resistance in *Staphylococcus aureus.*
- Clinicians should inform patients that only doxycycline has been proven effective for the prevention of bacterial STI. Individuals should be discouraged from taking other classes of antibiotics as prophylaxis to prevent these STI.

(PHAC, 2025a)

Case: Ric

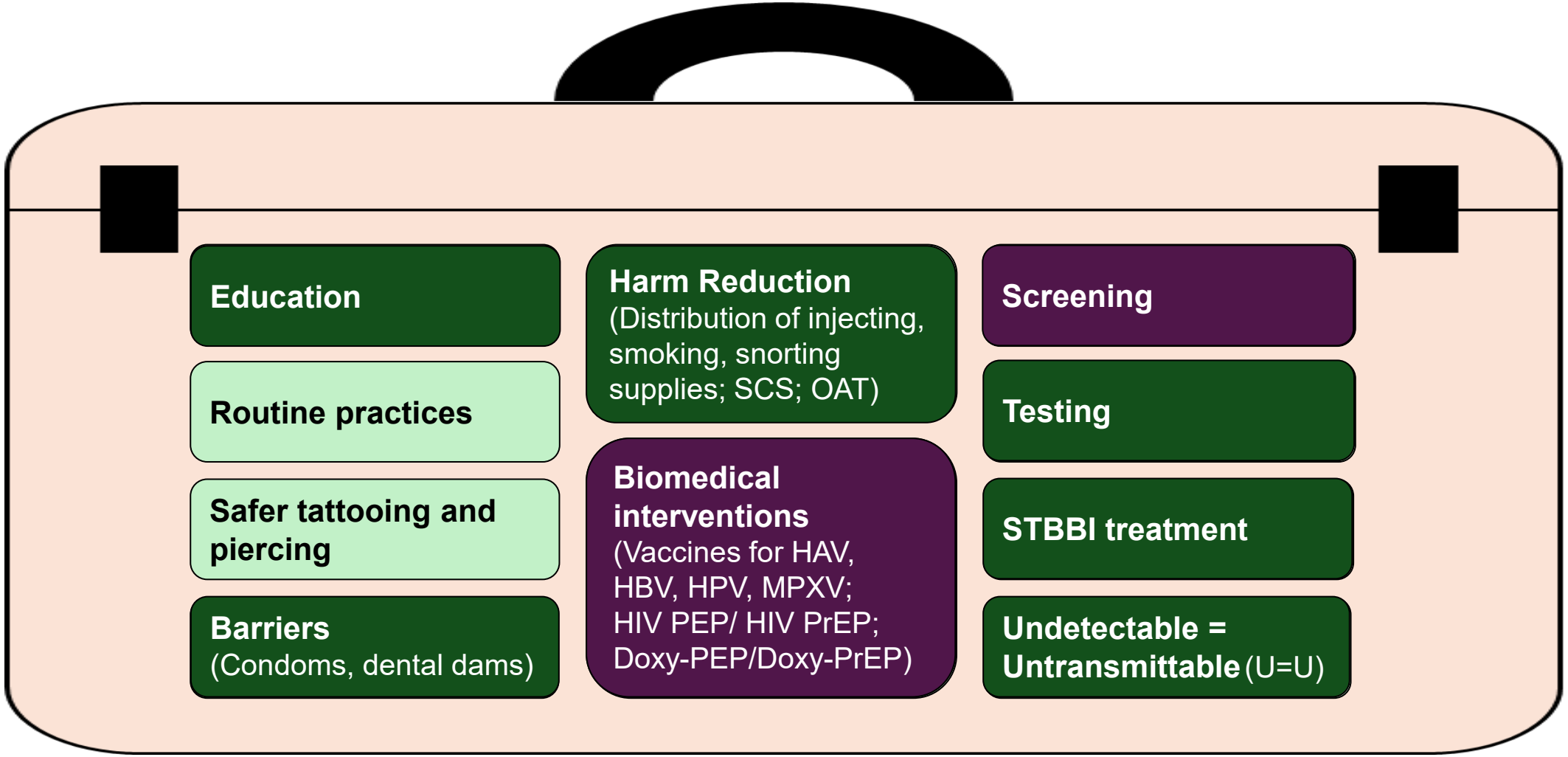
This is a fabricated case

Case : Ric

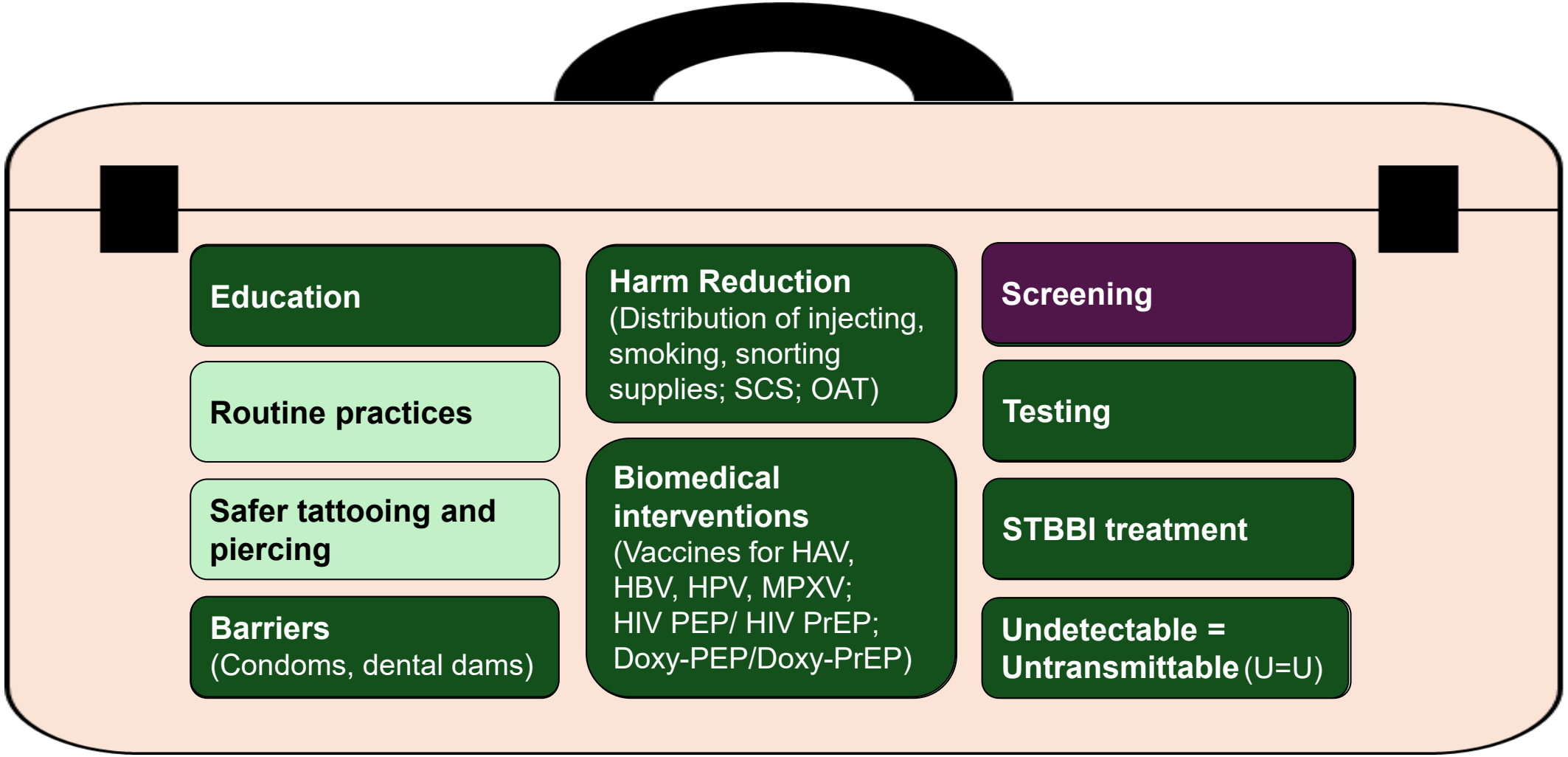


- 27-year-old cisgender man (he | him)
- Computer programmer
- Partners are cisgender men; has insertive and receptive anal and oral sex; 3 partners in the last 2 months; no recent travel outside of Canada
- Has shared inhalation equipment when using substances, most recently 1 year ago
- No history of tattoos or piercings performed in unregulated or non-licensed settings
- Routine HIV PrEP follow-up visit
- No known STBBI exposures; no STBBI symptoms
- Gonorrhea (urine, throat) 6 months ago
- Secondary syphilis 2 years ago; RPR titre declined to stable low value of 1:1
- Vaccinated against Vaccinated against hepatitis A and B viruses (HAV, HBV), human papillomavirus (HPV) and monkeypox virus (MPXV)
- Tenofovir disoproxil fumarate/emtricitabine 300 mg/ 200 mg PO OD
- No known drug allergies

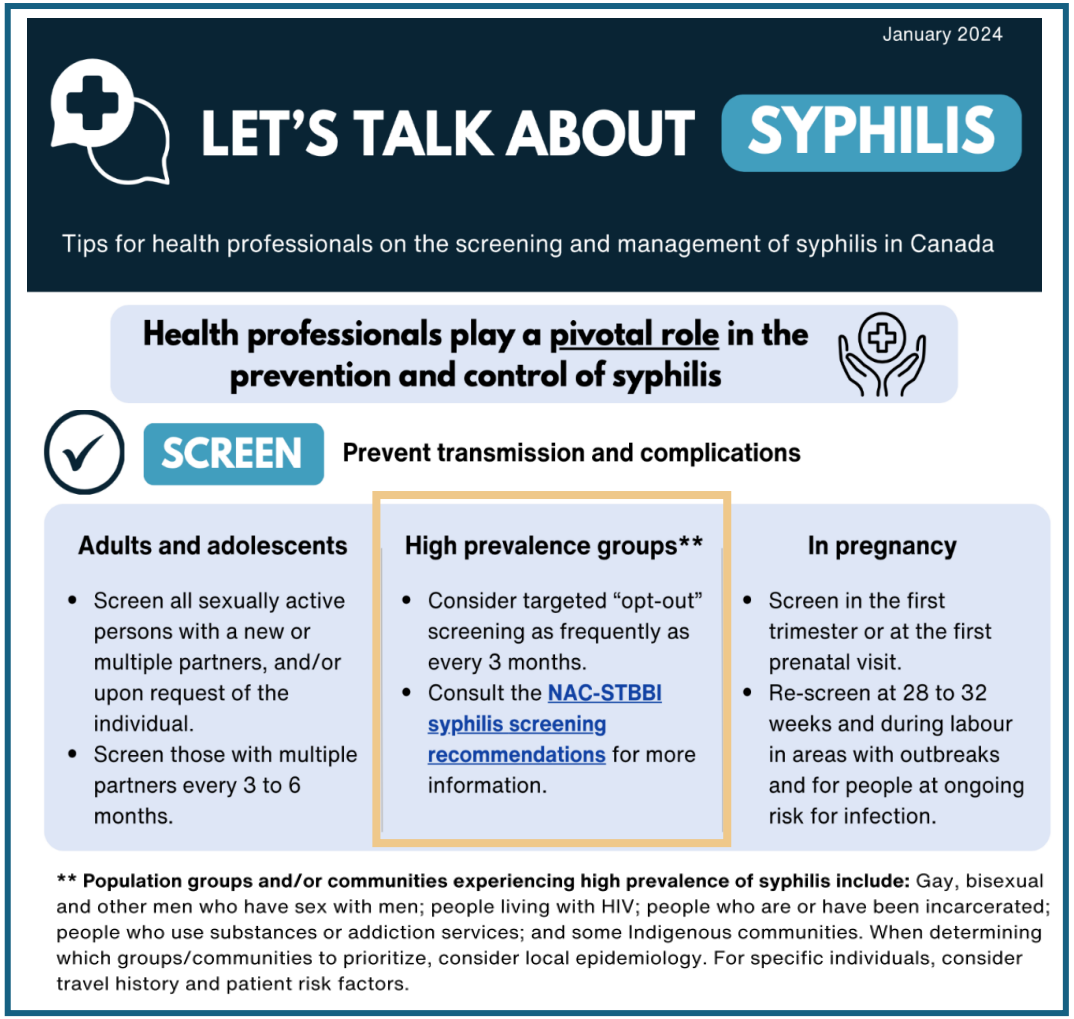
STBBI prevention methods



STBBI prevention methods: Screening



Syphilis screening for non-pregnant adolescents and adults



January 2024

LET'S TALK ABOUT **SYPHILIS**

Tips for health professionals on the screening and management of syphilis in Canada

Health professionals play a pivotal role in the prevention and control of syphilis

SCREEN Prevent transmission and complications

Adults and adolescents

- Screen all sexually active persons with a new or multiple partners, and/or upon request of the individual.
- Screen those with multiple partners every 3 to 6 months.

High prevalence groups**

- Consider targeted "opt-out" screening as frequently as every 3 months.
- Consult the NAC-STBBI syphilis screening recommendations for more information.

In pregnancy

- Screen in the first trimester or at the first prenatal visit.
- Re-screen at 28 to 32 weeks and during labour in areas with outbreaks and for people at ongoing risk for infection.

** **Population groups and/or communities experiencing high prevalence of syphilis include:** Gay, bisexual and other men who have sex with men; people living with HIV; people who are or have been incarcerated; people who use substances or addiction services; and some Indigenous communities. When determining which groups/communities to prioritize, consider local epidemiology. For specific individuals, consider travel history and patient risk factors.

Find this infographic and other syphilis resources here:

(PHAC 2024a; PHAC 2025c)

UPDATE: Gonorrhea and chlamydia screening for non-pregnant adolescents and adults

Consider **annual** gonorrhea & chlamydia screening for all sexually active persons younger than 30 years

Consider gonorrhea & chlamydia screening **every 3-6 months** for all persons with multiple sexual partners or a new partner since last testing

Consider “opt-out” screening for gonorrhea & chlamydia **as frequently as every 3 months** in populations or communities experiencing high rates of STBBI, such as: gay, bisexual and other men who have sex with men (GBMSM); people living with HIV; people who are or have been incarcerated; people who use substances or access addiction services; some Indigenous communities

Explore options to increase screening uptake, including: opportunistic screening; increasing accessibility and normalizing testing (e.g. outreach testing, opt-out screening); facilitating sample collection through non-invasive specimen collection, including self-sampling

(PHAC, 2025d; PHAC, 2025e; PHAC, 2025f)

Gonorrhea and chlamydia screening: Extragenital sites

Collect pharyngeal specimens for gonorrhea and chlamydia screening for:

- Females with a history of performing oral sex
- Males with a history of performing oral sex who are at high risk of exposure (e.g. GBMSM, multiple sexual partners, sexual partner(s) at high risk of infection)

Collect rectal specimens for gonorrhea and chlamydia screening for:

- People with a history of receptive anal intercourse, regardless of history of condom use

Note: Consider rectal screening for gonorrhea and chlamydia for all GBMSM, regardless of history of receptive anal intercourse

(PHAC, 2025d; PHAC, 2025e; PHAC, 2025f)

Gonorrhea and chlamydia screening specimens

Urogenital specimens	• First-void urine for nucleic acid amplification testing (**NAAT**) • Urethral^ swab for **NAAT** • Endocervical swab for **NAAT** • Vaginal swab for **NAAT** (self-^ or clinician-collected)
Extragenital specimens	• Pharyngeal swab for **NAAT** (self-^ or clinician-collected) • Rectal swab for **NAAT** (self-^ or clinician-collected)

AND consider collecting specimens for **gonorrhea** culture and antimicrobial susceptibility (**C+S**):
- for gonorrhea contacts; or
- if sexual abuse or assault is suspected; or
- if infection may have been acquired in countries or areas with high rates of antimicrobial resistance*

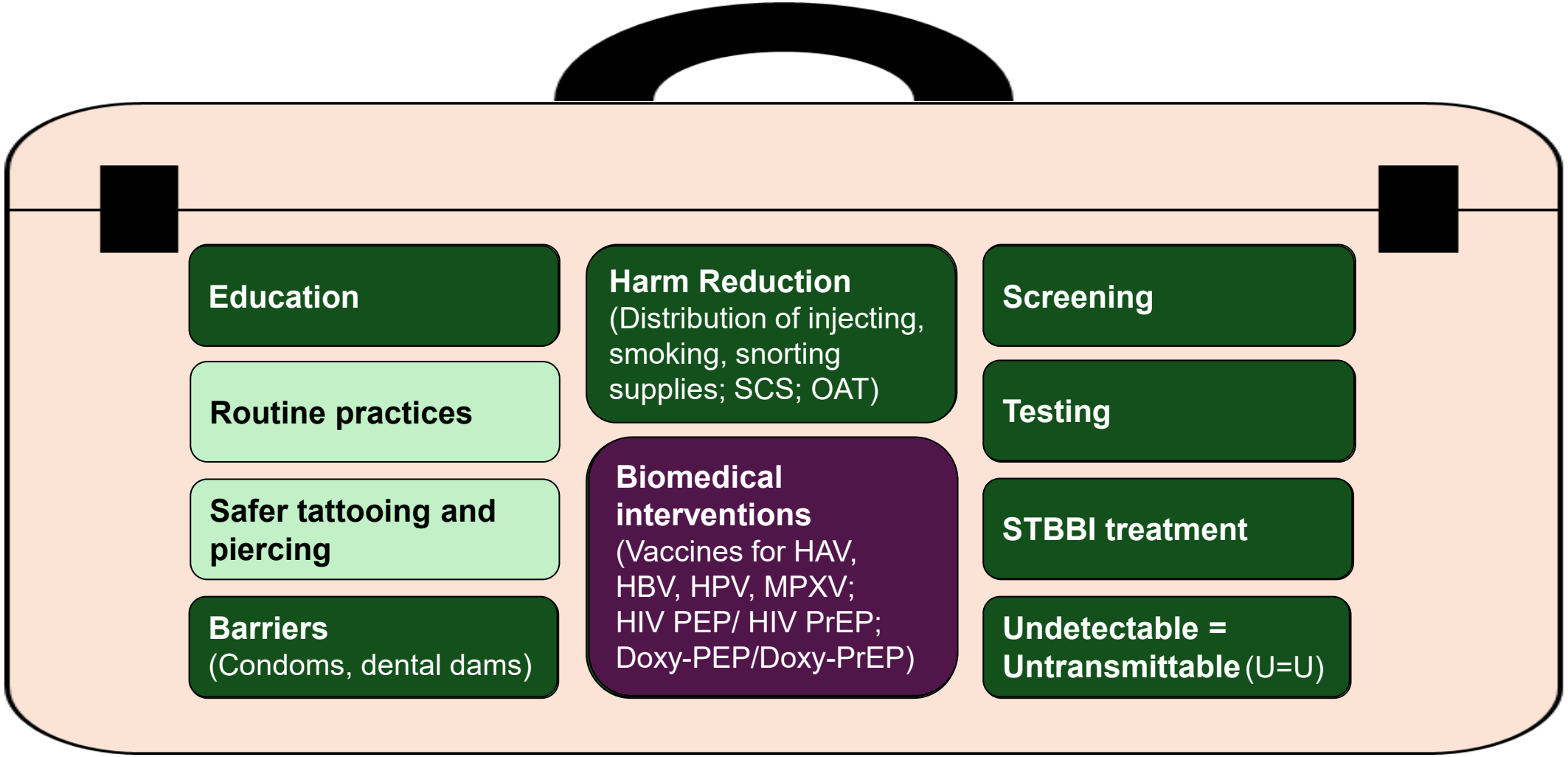
^ Confirm acceptability of specimen types and collection techniques with laboratory

* AMR-NG strains have been detected in Canada, Japan, Europe, and Australia, with many associated with travel to South-East Asia

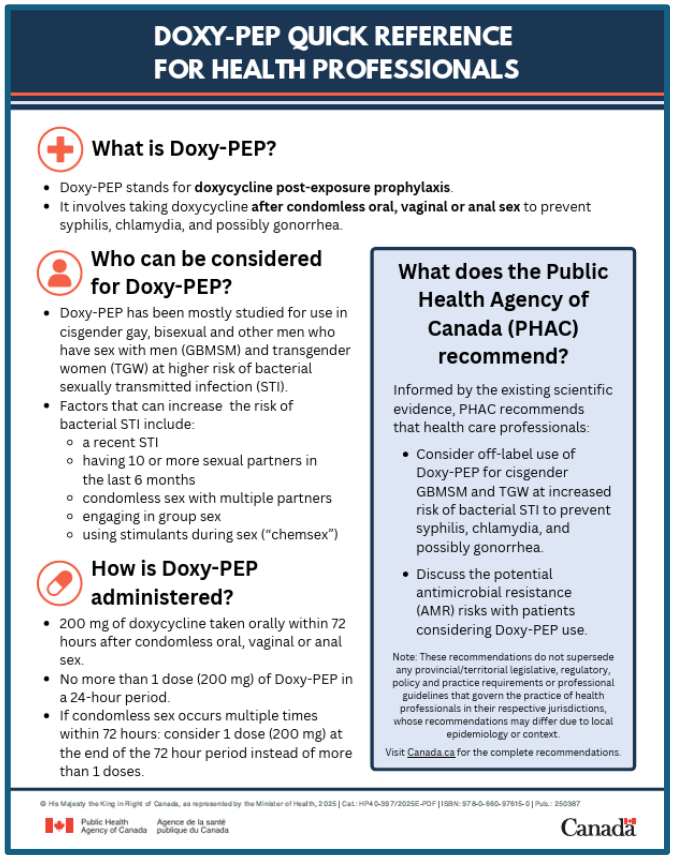
CORRECTION : ROUTINE COLLECTION OF SPECIMENS FOR CULTURE IN ADDITION TO NAAT IS NOT INDICATED IN PREGNANCY. THE STBBI GUIDES WILL BE CORRECTED TO REFLECT THIS.

(PHAC, 2025e; PHAC, 2025f; PHAC, 2025g)

STBBI prevention methods: Doxy-PEP



Doxy-PEP to prevent syphilis, chlamydia, and possibly gonorrhea



DOXY-PEP QUICK REFERENCE FOR HEALTH PROFESSIONALS

What is Doxy-PEP?

- Doxy-PEP stands for **doxycycline post-exposure prophylaxis**.
- It involves taking doxycycline **after condomless oral, vaginal or anal sex** to prevent syphilis, chlamydia, and possibly gonorrhea.

Who can be considered for Doxy-PEP?

- Doxy-PEP has been mostly studied for use in cisgender gay, bisexual and other men who have sex with men (GBMSM) and transgender women (TGW) at higher risk of bacterial sexually transmitted infection (STI).
- Factors that can increase the risk of bacterial STI include:
  - a recent STI
  - having 10 or more sexual partners in the last 6 months
  - condomless sex with multiple partners
  - engaging in group sex
  - using stimulants during sex ("chemsex")

How is Doxy-PEP administered?

- 200 mg of doxycycline taken orally within 72 hours after condomless oral, vaginal or anal sex.
- No more than 1 dose (200 mg) of Doxy-PEP in a 24-hour period.
- If condomless sex occurs multiple times within 72 hours: consider 1 dose (200 mg) at the end of the 72 hour period instead of more than 1 doses.

What does the Public Health Agency of Canada (PHAC) recommend?

Informed by the existing scientific evidence, PHAC recommends that health care professionals:

- Consider off-label use of Doxy-PEP for cisgender GBMSM and TGW at increased risk of bacterial STI to prevent syphilis, chlamydia, and possibly gonorrhea.
- Discuss the potential antimicrobial resistance (AMR) risks with patients considering Doxy-PEP use.

Note: These recommendations do not supersede any provincial/territorial legislative, regulatory, policy and practice requirements or professional guidelines that govern the practice of health professionals in their respective jurisdictions, whose recommendations may differ due to local epidemiology or context.

Visit Canada.ca for the complete recommendations.

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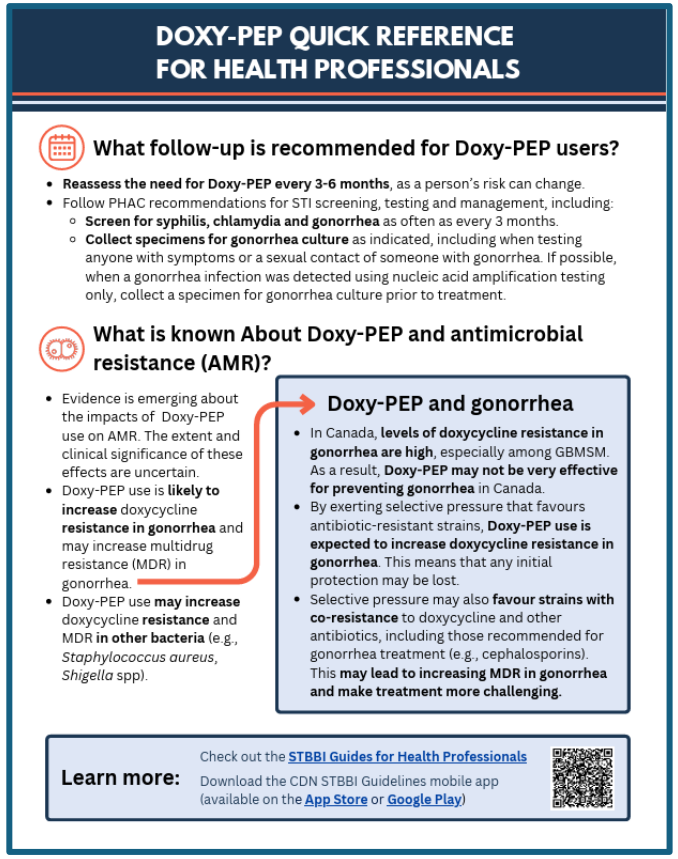

DOXY-PEP QUICK REFERENCE FOR HEALTH PROFESSIONALS

What follow-up is recommended for Doxy-PEP users?

- **Reassess the need for Doxy-PEP every 3-6 months**, as a person's risk can change.
- Follow PHAC recommendations for STI screening, testing and management, including:
  - **Screen for syphilis, chlamydia and gonorrhea** as often as every 3 months.
  - **Collect specimens for gonorrhea culture** as indicated, including when testing anyone with symptoms or a sexual contact of someone with gonorrhea. If possible, when a gonorrhea infection was detected using nucleic acid amplification testing only, collect a specimen for gonorrhea culture prior to treatment.

What is known About Doxy-PEP and antimicrobial resistance (AMR)?

- Evidence is emerging about the impacts of Doxy-PEP use on AMR. The extent and clinical significance of these effects are uncertain.
- Doxy-PEP use is **likely to increase** doxycycline **resistance in gonorrhea** and may increase multidrug resistance (MDR) in gonorrhea.
- Doxy-PEP use **may increase** doxycycline **resistance** and MDR **in other bacteria** (e.g., *Staphylococcus aureus*, *Shigella* spp).

Doxy-PEP and gonorrhea

- In Canada, **levels of doxycycline resistance in gonorrhea are high**, especially among GBMSM. As a result, **Doxy-PEP may not be very effective for preventing gonorrhea** in Canada.
- By exerting selective pressure that favours antibiotic-resistant strains, **Doxy-PEP use is expected to increase doxycycline resistance in gonorrhea**. This means that any initial protection may be lost.
- Selective pressure may also **favour strains with co-resistance** to doxycycline and other antibiotics, including those recommended for gonorrhea treatment (e.g., cephalosporins). This **may lead to increasing MDR in gonorrhea and make treatment more challenging.**

Learn more:

Check out the STBBI Guides for Health Professionals

Download the CDN STBBI Guidelines mobile app (available on the App Store or Google Play)

Find this infographic here:

(PHAC, 2025h)

Case: Ric

- Would like to undergo screening for gonorrhea and chlamydia (throat swab, anal swab, urine) and for syphilis, HIV and hepatitis C (blood)
- Would like to use Doxy-PEP

℞

Doxycycline 100 mg

Take 2 tablets (200 mg) PO within 72 hours after condomless sex as needed

Do not exceed 200 mg per 24 hours

Note: If multiple episodes of condomless sex are anticipated within a 72-hour period, take one 200 mg dose at the end of the 72-hour period

Quantity: 60 tablets

Repeats: 0

- Advised to seek regular STI screening and STI testing if he notices symptoms

Case : Ric

Test	Source	Result
Chlamydia trachomatis NAAT	Urine	Not detected
Neisseria gonorrhoeae NAAT	Urine	Not detected
Chlamydia trachomatis NAAT	Throat	Not detected
Neisseria gonorrhoeae NAAT	Throat	Not detected
Chlamydia trachomatis NAAT	Rectum	Not detected
Neisseria gonorrhoeae NAAT	Rectum	Not detected
HIV-1/-2 antigen/antibody chemiluminescent microparticle immunoassay (CMIA)	Serum	Non-reactive
Hepatitis C antibody	Serum	Non-reactive
Treponema pallidum CMIA	Serum	Reactive
Rapid plasma regain (RPR)	Serum	Reactive, 1:1

Summary

- There are a range of effective and complementary STBBI prevention methods

- PHAC's STBBI Guides contain evidence-based public health guidance for STBBI prevention
  - Consider targeted "opt-out" screening for syphilis, chlamydia and gonorrhea as frequently as every 3 months when serving population groups/communities experiencing high rates of STBBI
  - Off-label use of Doxy-PEP can be considered as part of comprehensive STBBI care for cisgender GBMSM and transgender women at increased risk of bacterial STI to prevent syphilis, chlamydia, and possibly gonorrhea
    - Healthcare professionals should discuss the potential AMR risks with patients considering Doxy-PEP use

Thank you!

Any Questions?

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Appendices

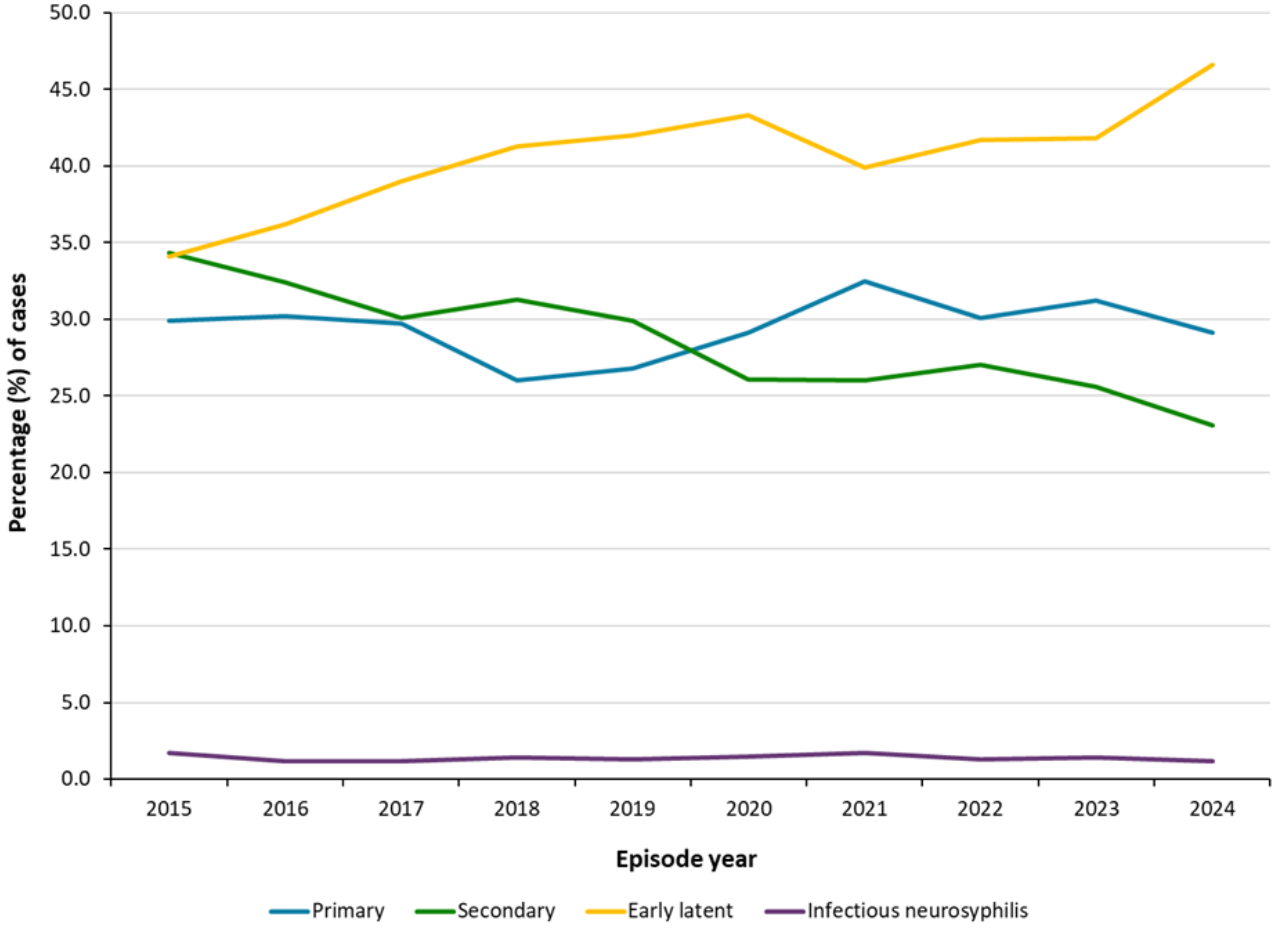
Bacterial STI Surveillance in Ontario

- Positive test results for bacterial STIs (chlamydia, gonorrhea, and syphilis) are reported to local public health units (PHUs) in Ontario.
- The local PHU conducts a case investigation (i.e., interviews client) and collects data on:

Demographics (age, sex, place of residence)	Risk factors and exposure history	Clinical history and onset date	Current and previous test results	Treatment history

- PHUs enter these data into the Ministry of Health's integrated Public Health Information System (iPHIS).
- Public Health Ontario (PHO) monitors and reports on bacterial STIs using case data from iPHIS and testing data from the PHO's laboratory.
- Annual provincial bacterial STI surveillance reports are available on PHO's Sexually Transmitted Infections (STIs) webpage.

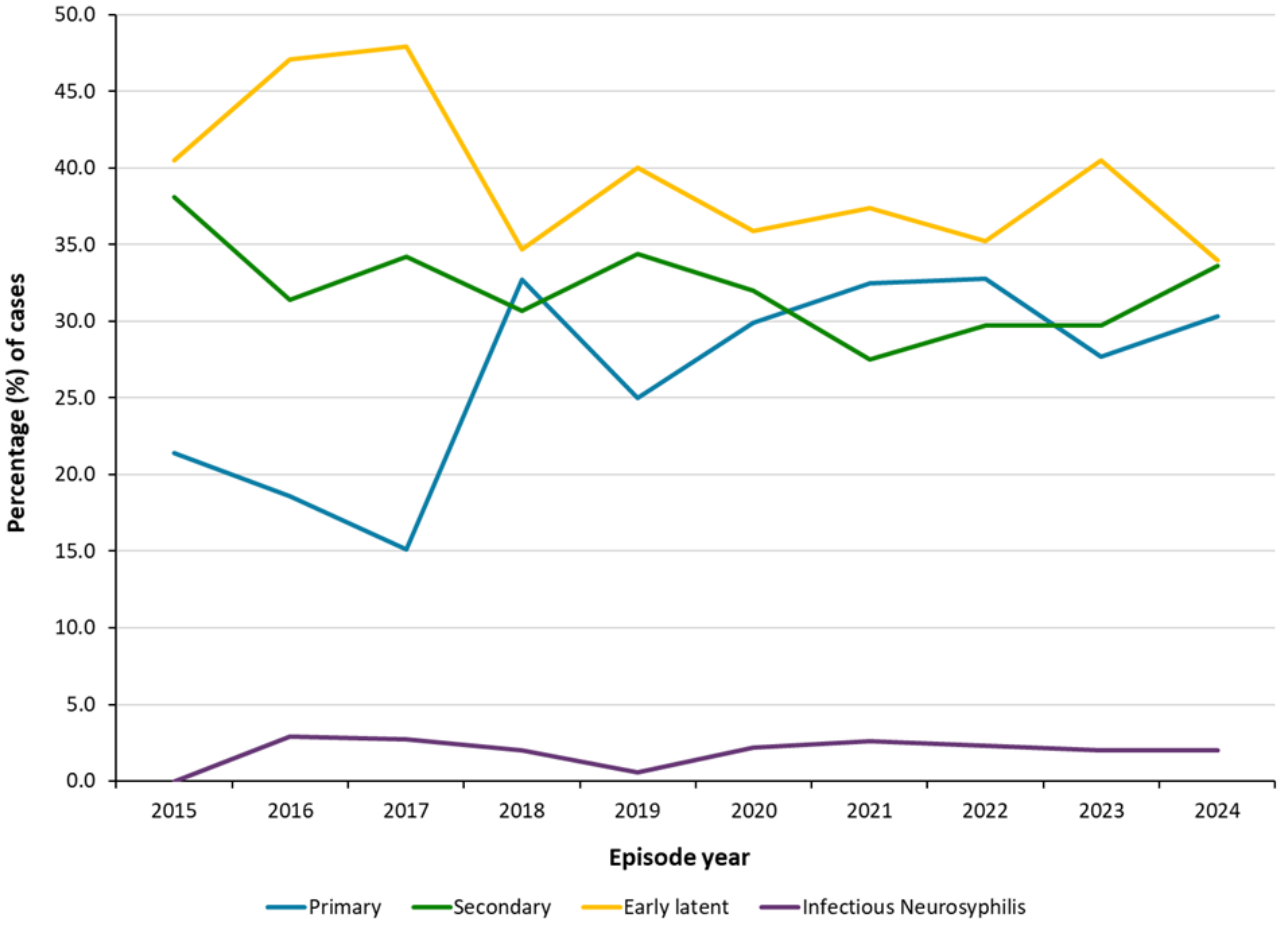
Percentage of Male Infectious Syphilis Cases by Staging at Time of Diagnosis: Ontario, 2015-2024



- Between 2015 and 2024, the proportion of infectious syphilis cases staged as:
  - Primary syphilis remained relatively stable
  - Secondary syphilis decreased
  - Early latent syphilis increased
  - Infectious neurosyphilis remained stable
- In 2024, the greatest proportion of male cases have been staged as early latent syphilis (46.6%)

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Percentage of Female Infectious Syphilis Cases by Staging at Time of Diagnosis: Ontario, 2015-2024



- Between 2015 and 2024, the proportion of infectious syphilis cases staged as:
  - Primary syphilis fluctuated
  - Secondary syphilis remained stable
  - Infectious neurosyphilis remained stable
- Since 2015, the greatest proportion of female cases have been staged as early latent syphilis (averaging 39.3%)
- However, the proportion of cases staged as secondary syphilis was the same as early latent syphilis in 2024

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Gonorrhea: Antimicrobial Susceptibility of *N. gonorrhoeae* Isolates tested at PHO, 2020 - 2024

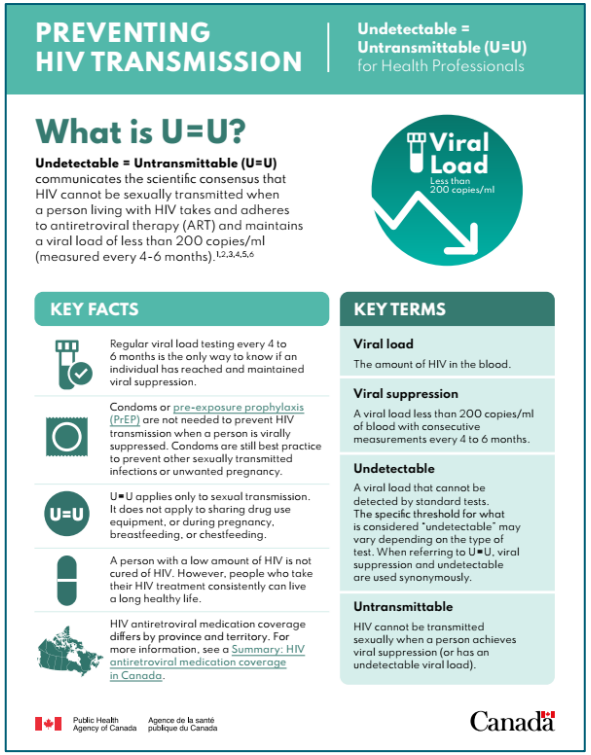
	Percentage Susceptible* (%)					
Antimicrobial	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Ceftriaxone	100.0	100.0	100.0	99.9	99.4	**99.9**
Cefixime	100.0	100.0	100.0	99.9	99.4	**99.9**
Azithromycin	97.9	98.7	99.2	98.2	96.9	**98.2**
Total Isolates Tested	726	668	777	1,024	827	**4,022**

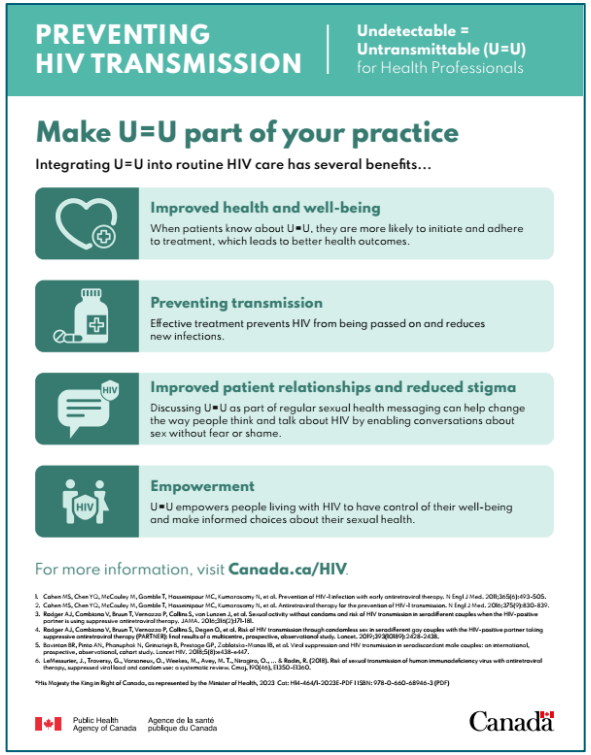
*as per Clinical and Laboratory Standards Institute's (CLSI) M100 Performance Standards for Antimicrobial Susceptibility Testing (35th Ed., 2025)

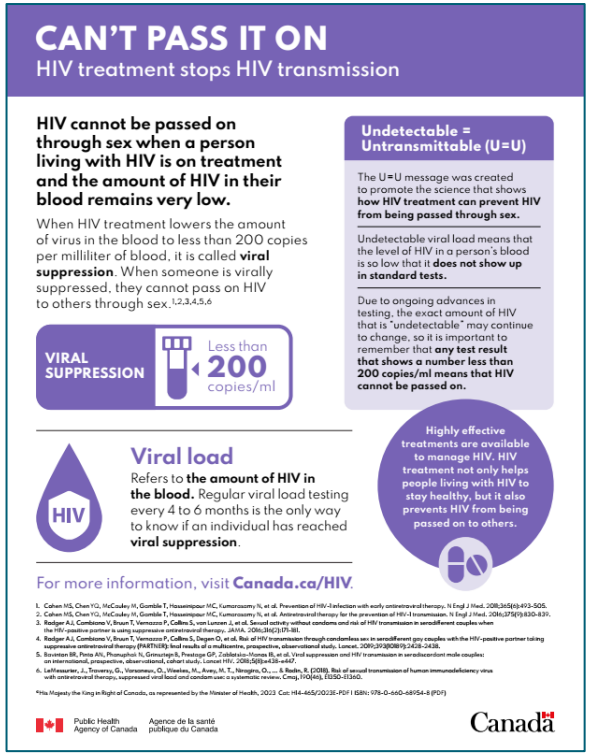
- The vast majority of *N. gonorrhoeae* isolates tested at PHO between 2020 and 2024 were susceptible to ceftriaxone, cefixime, and azithromycin.
- In 2024, 5 gonorrhea cases with non-susceptibility to ceftriaxone were reported in Ontario

Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Gonorrhea in Ontario: Focus on 2024. Toronto, ON: King's Printer for Ontario; 2026.

Undetectable = Untransmittable (U=U) resources for clinicians







Find these infographics and other HIV resources here:

(PHAC, 2025b)