Syphilis Cheat Sheet for Health Care Providers

October 2024

Syphilis

- Caused by Treponema pallidum (spirochete bacterium)
- Primarily spreads from person-to-person by direct contact with a primary lesion (chancre) or secondary skin or mucosal lesions, usually during vaginal, oral or anal intercourse
- Vertical transmission in pregnancy – as early as 9 weeks transplacental, up to and including during delivery with contact of genital lesions
- Primary lesions may be internal or go unnoticed/undiagnosed, they can occur on or around the penis, vagina, anus, rectum, lips or mouth
- Historically, syphilis has disproportionately affected men who have sex with men, but as of lately, many health units have been reporting an increase in syphilis affecting men who have sex with women, and women of childbearing age (Infectious Disease Trends in Ontario-Interactive Tool, Public Health Ontario).

Recommended Screening

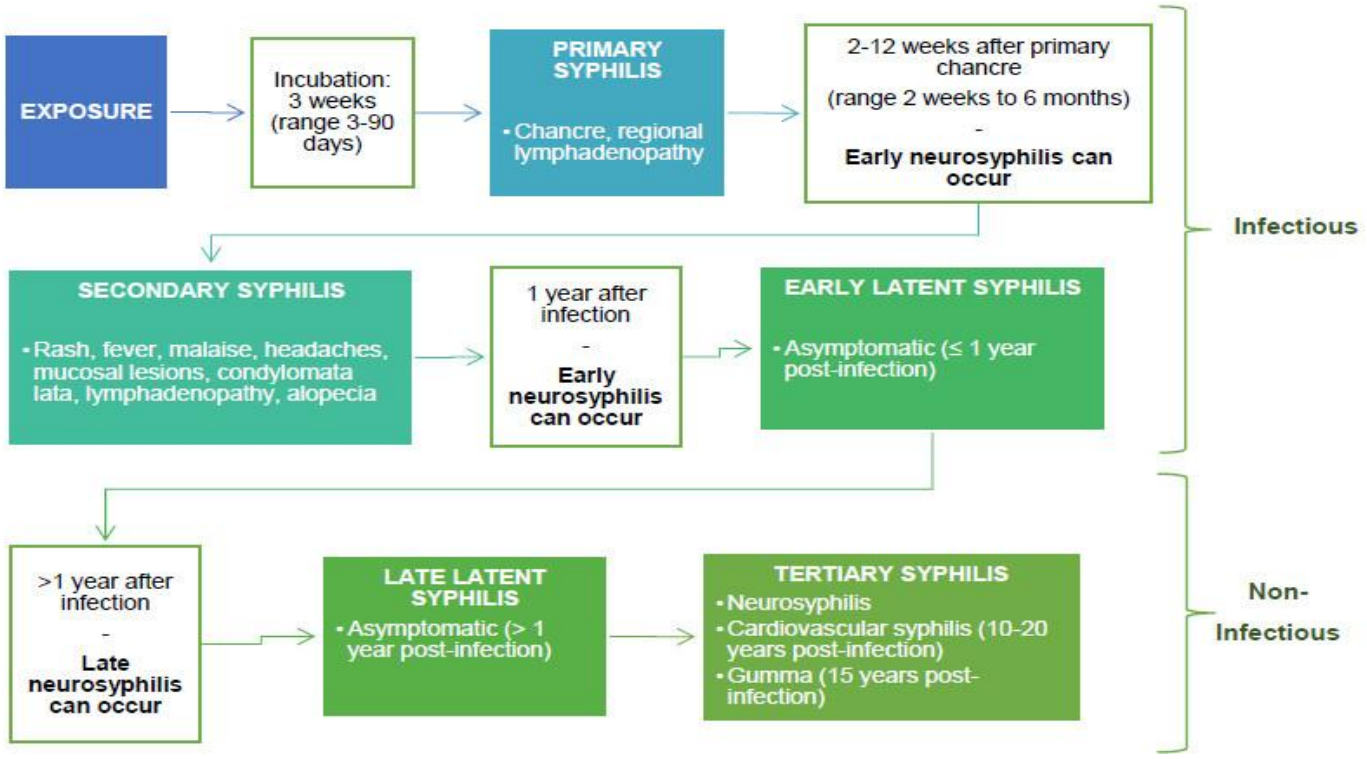
- All pregnant people (in first trimester/first prenatal visit, at 28-32 weeks, at delivery and consider screening those at ongoing risk more frequently-recommended by the Public Health Agency of Canada)
- All people who deliver a stillborn after 20 weeks gestation
- Symptomatic people, or clinical suspicion of syphilis
- People with the following risk factors:
    - New or multiple partners
    - Unprotected sexual activity - oral, genital, anal
    - Sexual contact with known case or partner from country/region with high prevalence
    - Previous syphilis, HIV infection, other STBBI
    - Born to person diagnosed with infectious syphilis during pregnancy
    - Member of vulnerable populations
    - Other - anonymous sexual partnering, substance abuse

Testing

- Serology - automated RPR test system
    - screen with CMIA -> if reactive, confirm with RPR -> if non-reactive, confirm with TPPA
- Lesions - direct fluorescence
    - serous exudate from chancre or lesions ****see PHO instructions on how to obtain sample and also complete serology for staging****
- CSF - lumbar puncture
    - suspected cases of neurosyphilis
    - monitoring of treatment of diagnosed neurosyphilis
    - patients with HIV and any stage of syphilis
    - infants with suspected congenital syphilis

**consider testing for other ST-BBIs (Chlamydia, Gonorrhea, HIV)

History/Manifestation of Syphilis



Source: Syphilis in Canada Report; Public Health Agency of Canada 2020.

Interpretation of serology results

Serology Screening Test (CMIA)[1]	Confirmatory Test (RPR)	Confirmatory Test (TPPA)[1]	Possible Interpretations/ Recommendations
Non-reactive	Not tested	Not tested	• No confirmatory testing is performed if syphilis screen result is non-reactive. • Early incubating syphilis can be non-reactive before antibodies have developed. • If not done already, repeat syphilis serology testing is recommended in 4 weeks for individuals suspected of syphilis infection or re-infection. • Patients suspected of congenital syphilis should be referred to an infectious diseases or a paediatric specialist.

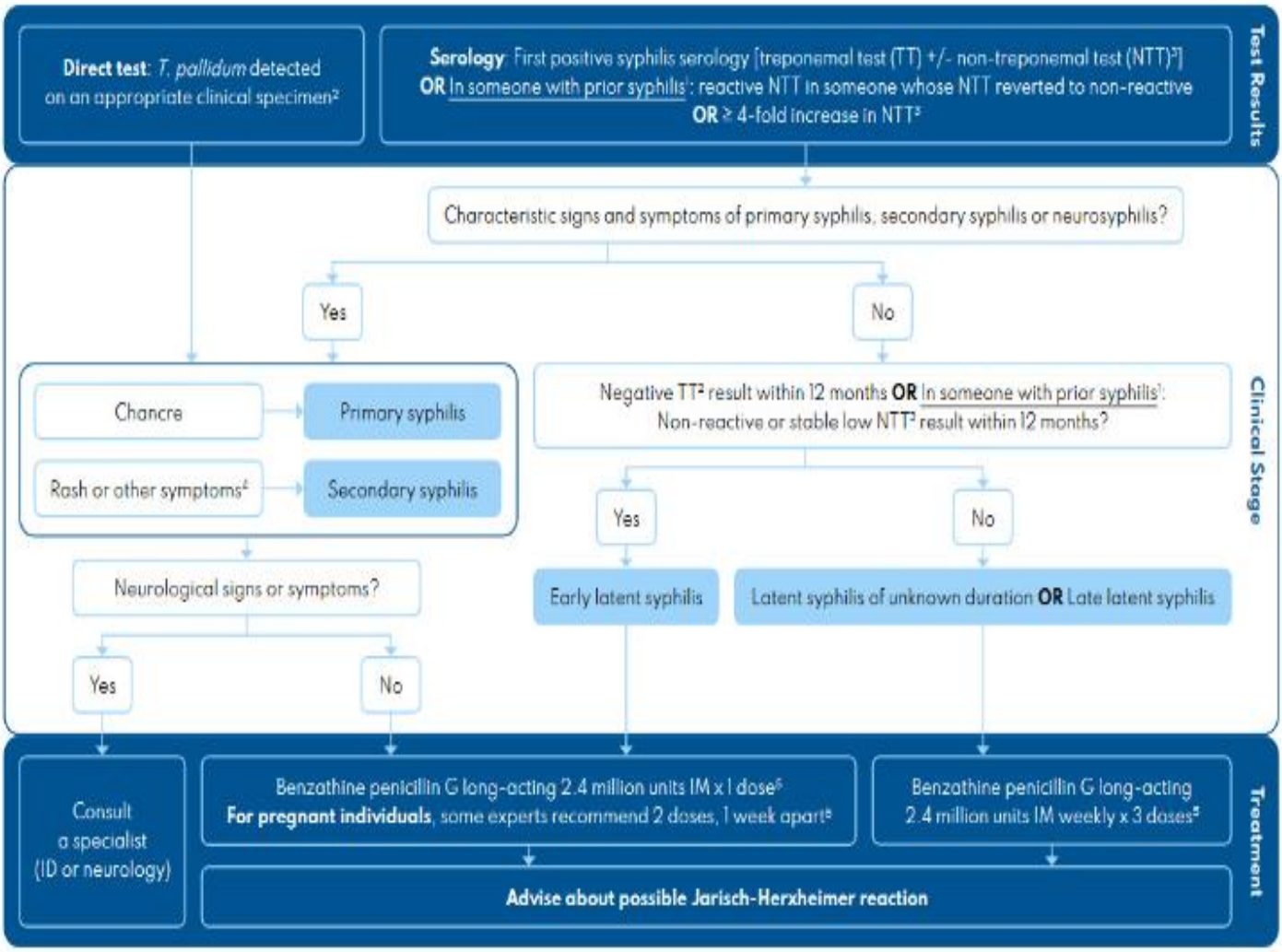
Serology Screening Test (CMIA)[1]	Confirmatory Test (RPR)	Confirmatory Test (TPPA)[1]	Possible Interpretations/ Recommendations
Reactive	Reactive (titer)	Not tested	• Consistent with recent or prior syphilis infection. • If not done already, repeat syphilis serology testing is recommended in 4 weeks for individuals suspected of syphilis infection or re-infection.
Reactive	Reactive (titer)	Reactive/ Non-reactive/ Indeterminate	**Patients ≤18 months** • TPPA testing is completed even with a reactive RPR. • Suggestive of congenital infection. • Patients suspected of congenital syphilis should be referred to an infectious diseases or a paediatric specialist. Consider repeat serology at recommended intervals.*
Reactive	Non-reactive	Reactive/ Previous Reactive	• Consistent with recent or prior syphilis infection. • If not done already, repeat syphilis serology testing is recommended in 4 weeks for individuals suspected of syphilis infection or re-infection. **Patients ≤18 months** • Does not rule out congenital infection. • Patients suspected of congenital syphilis should be referred to an infectious diseases or a paediatric specialist. Consider repeat serology at recommended intervals.*
Reactive	Non-reactive	Non-reactive	• Results consistent with false reactive screening test. • Rare alternate interpretations include early syphilis, previously treated, or late latent syphilis. • If not done already, repeat syphilis serology testing is recommended in 4 weeks for ndividuals suspected of syphilis infection or re-infection.

Serology Screening Test (CMIA)[1]	Confirmatory Test (RPR)	Confirmatory Test (TPPA)[1]	Possible Interpretations/ Recommendations
			Patients ≤18 months • Inconclusive syphilis serology. • Patients suspected of congenital syphilis should be referred to an infectious diseases or a paediatric specialist.
Reactive	Non-reactive	Indeterminate	• Inconclusive syphilis serology results • Possible interpretations include false positive, or early, old treated or untreated syphilis. • If not done already, repeat syphilis serology testing is recommended in 4 weeks for individuals suspected of syphilis infection or re-infection. • Patients suspected of congenital syphilis should be referred to an infectious diseases or a paediatric specialist.

*Maternal antibody transfer can be present in infants for up to 18 months.

Source: Public Health Ontario September 2023.

Staging and Treatment



Source: Public Health Agency of Canada March 2024.

Recommended treatment of syphilis in non-pregnant adults

Stage	Preferred treatment	Alternative treatment for people with penicillin allergies
Primary, secondary and early latent syphilis	Benzathine penicillin G-LA 2.4 million units IM as a single dose	• Doxycycline 100 mg PO BID for 14 days • In exceptional circumstances and when close follow-up is assured: o Ceftriaxone 1 g IV or IM daily for 10 days
Latent, late latent, cardiovascular syphilis and gumma	Benzathine penicillin G-LA 2.4 million units IM weekly for three (3) doses	• Consider penicillin desensitization o Doxycycline 100 mg PO BID for 28 days • In exceptional circumstances and when close follow-up is assured: o Ceftriaxone 1 g IV or IM daily for 10 days
All adults: Neurosyphilis	Refer to a neurologist or infectious disease specialist	

Recommended treatment for infectious syphilis in pregnancy

Preferred treatment	Alternative treatment for people with penicillin allergies
Benzathine penicillin G-LA 2.4 million units IM as a single dose or Benzathine penicillin-LA G 2.4 million units IM as a single dose weekly for two (2) doses.	Strongly consider penicillin desensitization followed by treatment with penicillin There is no satisfactory alternative to penicillin for the treatment of syphilis in pregnancy. Insufficient data exist to recommend ceftriaxone in pregnancy

Recommended serological test follow-up after treatment

Stage	Frequency of post treatment serology test
Primary, secondary and early latent	• 3, 6 and 12 months
Late latent and tertiary syphilis (except neurosyphilis)	• 12 and 24 months
Neurosyphilis	• 6, 12 and 24 months
Co-infected with HIV	• 3, 6, 12 and 24 months and yearly thereafter regardless of stage

Adequate serologic response in infectious syphilis

Stage	Frequency of post treatment serology test
Primary syphilis	• 4-fold drop at 6 months 8-fold drop at 12 months
Secondary syphilis	• 8-fold drops at 6 months 16-fold drop at 12 months
Early latent syphilis	• 4-fold drop at 12 months

Source: Syphilis Guide; Public Health Agency of Canada 2023 Syphilis guide: Treatment and follow-up - Canada.ca

For more in depth information, consult the Syphilis guide: Key information and resources - Canada.ca