Point of Care Syphilis Desk Reference

Government of Northwest Territories

Syphilis is a sexually transmitted infection (STI) caused by the bacterium *Treponema pallidum*. If untreated this chronic infection progresses through primary, secondary and tertiary stages, and produces neurosyphilis and congenital syphilis as distinct syndromes.

ASSESS RISKS

Epidemiology:
https://www.hss.gov.nt.ca/sites/hss/files/resources/syphilis-rates.pdf

- Direct sexual contact with an infected partner

oral  anal  genital 

- Unprotected sex
- History of STIs
- Multiple sex partners
- Anonymous sex partners
- Injection drug use (IDU)
- Compromised decision making due to substances

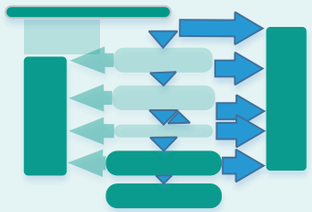
Pregnancy

Risk for congenital syphilis  vertical transmission

ASSESS SIGNS & SYMPTOMS

(if present)

See page 2



CHOOSE TEST[1]

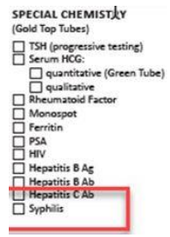
(based on risk or symptoms)

Swab

- chancre
- skin and mucous membrane lesions

Universal Transport Media for PCR

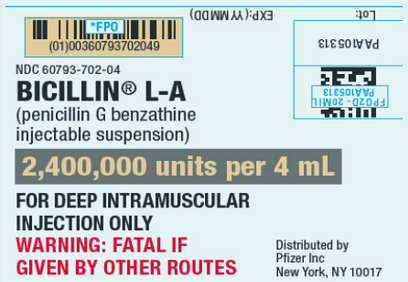
Syphilis serology



NWT Laboratory Requisition

TREATMENT[2]

- Positive test result or
- At risk and symptomatic
- Sexual contact of a confirmed case in last 90 days[2]



Benzathine penicillin G (Bicillin-LA) 2.4 million units IM in a single dose is preferred treatment for primary, secondary and early latent syphilis

PUBLIC HEALTH ACTIONS for Healthcare Providers

CLINICIAN

- Treat to prevent transmission
- Test for other STIs (including HIV)
- Consider routine immunizations as well as HAV, HBV, HPV
- Provide case with serologic follow-up lab requisitions[3]
- Complete and send the NWT STI Case Investigation Form and the NWT STI Contact Tracing Form to Office of the Chief Public Health Officer (OCPHO)

FAX 867 873 0442

OCPHO

- Acts as a resource to the field
- Audits case management and follow-up
- Conducts epidemiologic analysis of sexually transmitted infections

[1]Syphilis Testing

- Testing automatically includes EIA, RPR and TPPA.
- Detect *T. pallidum* infection with **nucleic acid amplification testing of lesions** of primary or secondary syphilis, or **by antibody detection**. ProvLab Alberta performs enzyme immunoassay (EIA) as an initial test followed by *T. pallidum* particle agglutination (TPPA) as a confirmatory test. Rapid plasma reagin (RPR) detects non-treponemal antibodies which increase during syphilis infection. Quantification of RPR titers through serial dilution estimates disease activity. By monitoring over time, RPR titers estimate response to treatment and can detect re-infection.

[2]Syphilis Treatment

- If clinicians diagnose or treat individuals empirically, they should still **TEST** and **NOTIFY** public health for appropriate follow up.
- *Clinicians collaborate with OCPHO to stage syphilis.*
- Diagnosis of congenital or neurosyphilis requires further investigations—please consult pediatrics, neurology, obstetrics or infectious disease as appropriate.
- If case is HIV positive consult with an infectious disease specialist.
- Long acting Benzathine penicillin G (Bicillin®) is preferred as it achieves detectable levels of penicillin for 2-4 weeks. NAME ALERT: BENZYLPENICILLIN G IS SHORT-ACTING AND NOT APPROPRIATE FOR SINGLE DOSE OR WEEKLY THERAPY
- If a person is a sexual contact of a person with confirmed primary, secondary, or early latent syphilis in the preceding 90 days, Public Health Agency of Canada endorses treatment with Benzathine peniciilin G 2.4 million units IM as a single dose at the time of testing.
- If there is high concern for primary or secondary syphilis AND high concern that tested individuals will not follow up for treatment, use clinical judgement regarding empiric treatment at the time of testing.
- Interpretation of syphilis serology should be made in conjunction with the OCPHO and/or a colleague experienced in this area using: https://www.albertahealthservices.ca/assets/wf/plab/wf-provlab-interpretation-of-syphilis-serology.pdf

[3]Serologic follow-up of infectious syphilis is done 1, 3, 6 and 12 months after treatment. As set out in the CDN guidelines below, or as prescribed by an ID specialist, other follow-up is required for congenital, non-infectious and neurosyphilis as well as those with HIV.

FOR MORE INFORMATION ON SYPHILIS INCLUDING DIAGNOSIS, INTERPRETING SEROLOGY, OR MANAGEMENT, SEE: Canadian Guidelines on Sexually Transmitted Infections—Management and Treatment of specific infections-Syphilis.
Available at: https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections/canadian-guidelines-sexually-transmitted-infections-27.html

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VERTICAL TRANSMISSION

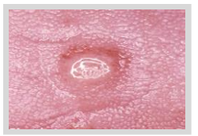
- Risk highest in untreated primary or secondary syphilis, lower in latent syphilis, may occur in late latent syphilis.
- May occur with breast feeding or during vaginal delivery if syphilitic lesion present

EXPOSURE

3 weeks (mean); 3-90 days (range)

PRIMARY SYPHILIS
Transmissible through sexual contact, sharing needles

- Single or multiple chancres at site of infection
- Chancre may be asymptomatic and difficult to visualize
- +/- regional lymphadenopathy
- Chancre may persist up to six weeks

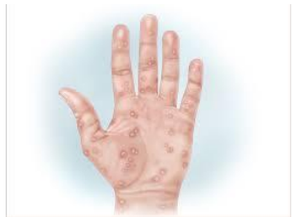


- oral
- anal
- genital

7 weeks (mean); 2 weeks - 6 months (range)

SECONDARY SYPHILIS
Transmissible through sexual contact, sharing needles

- Muco-cutaneous rash develops in >95% of individuals. Often non-pruritic, sometimes involving palms and soles.
- Possibly fever, malaise, pharyngitis, alopecia, lymphadenopathy
- Chancre may still be present



3-4 months (mean)

EARLY LATENT SYPHILIS--within one year of infection
Transmissible through sexual contact, sharing needles

- Asymptomatic, no signs on physical exam

LATE LATENT SYPHILIS—greater than one year since infection
<u>Not transmissible</u> through sexual contact, sharing needles

- Asymptomatic, no signs on physical exam

TERTIARY SYPHILIS
<u>Not transmissible</u> through sexual contact

- Cardiovascular (aortitis, aortic valvular disease, syphilitic aneurysm)
- "gummatous" syphilis (presence of necrotizing gummas to viscera, bone, skin)

CONGENITAL SYPHILIS

- Fetal death
- Stillbirth
- Low birthweight, neonatal sepsis, anemia, jaundice, splenomegaly, renal complications, pneumonia
- May be asymptomatic at birth
- Other symptoms in first 3 months of life include rash, rhinitis

NEUROSYPHILIS

- neuro-ophthalmologic symptoms and signs
- vascular/stroke syndromes
- acute or chronic meningitis
- tabes dorsalis /spinal cord signs
- dementia

References:

1. Public Health Agency of Canada. Canadian Guidelines on Sexually Transmitted Infections—Management and Treatment of specific infections-Syphilis. Available at: https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections/canadian-guidelines-sexually-transmitted-infections-27.html

2. Chapter 239 Syphilis (Treponema pallidum) in Bennett JE, Dolin R, Blaser MJ Mandell GL, Douglass RG. Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases. 2015.

3. Garnett GP et al. The Natural History of Syphilis. Implications for the Transmission Dynamics and Control of Infection. Sexually Transmitted Diseases. 1997. 24 (4) 185-200