

Appendix B: Provincial Case Definitions for Diseases of Public Health Significance

Disease: Syphilis

Effective: February 2019

Syphilis

1.0 Provincial Reporting

Confirmed cases of disease

2.0 Type of Surveillance

Case-by-case

3.0 Case Classification

3.1 Confirmed Case-Primary Syphilis

Laboratory confirmation of infection:

- Identification of *Treponema Pallidum* (*T. pallidum*) by dark-field microscopy, direct fluorescent antibody microscopy, nucleic acid amplification test (NAAT), or equivalent examination of material from a chancre or a regional lymph node

OR

- Presence of one or more typical lesions (chancres), and reactive treponemal serology, regardless of non-treponemal test (NTT) reactivity, in individuals with no previous history of syphilis

OR

- Presence of one or more typical lesions (chancres) and a significant (i.e., fourfold or greater) rise in the titre over the last known NTT in individuals with a past history of appropriate syphilis treatment

3.2 Confirmed Case-Secondary Syphilis

Laboratory confirmation of infection:

- Identification of *T. pallidum* by dark-field microscopy, direct or indirect fluorescent antibody microscopy, NAAT or equivalent examination of mucocutaneous lesions, condylomata lata and reactive serology (non-treponemal and treponemal)

OR

- Presence of typical signs or symptoms of secondary syphilis (e.g., mucocutaneous lesions, alopecia, loss of eyelashes and lateral third of eyebrows, iritis, generalized lymphadenopathy, fever, malaise or splenomegaly) and either a reactive serology (non-treponemal and treponemal) or a significant (i.e., fourfold or greater) rise in titre of a NTT

3.3 Confirmed Case-Early Latent Syphilis (<1 year after infection)

Laboratory confirmation of infection:

- An asymptomatic patient with reactive serology (treponemal and/or non-treponemal)* who within the past 12 months had one of the following:
 - Non-reactive serology
 - Previous signs/symptoms suggestive of primary or secondary syphilis
 - Exposure to a sexual partner with primary, secondary or early latent syphilis

3.4 Confirmed Case-Late Latent Syphilis (>1 year after infection) or of Unknown Duration of Infection)

Laboratory confirmation of infection:

- An asymptomatic patient with reactive serology (treponemal and/or non-treponemal) who does not meet the criteria for early latent disease

AND one of the following:

- who has not been previously treated adequately for syphilis

OR

- has a prior history of syphilis and a significant (i.e., fourfold or greater) rise in titre of a NTT > 12 months ago

3.5 Confirmed Case-Neurosyphilis

3.5.1 Infectious (<1 year after infection)

Laboratory confirmation of infection:

- Fits the criteria in 3.1, 3.2 OR 3.3 above,

AND one of the following:

- Reactive cerebrospinal fluid – venereal diseases research laboratory (CSF-VDRL) in non-bloody cerebrospinal fluid (CSF)
- Clinical evidence of neurosyphilis and either elevated CSF leukocytes or elevated CSF protein in the absence of other known causes

3.5.2 Non-infectious (>1 year after infection)

Laboratory confirmation of infection:

- Reactive treponemal serology regardless of non-treponemal serology reactivity

AND one of the following:

- Reactive CSF-VDRL in non-bloody CSF

* **Note:** If the individual has a prior history of adequate syphilis treatment, their reactive serology should include a significant (i.e., fourfold or greater) rise in titre of an NTT in the last 12 months.

- Clinical evidence of neurosyphilis and either elevated CSF leukocytes or elevated CSF protein in the absence of other known causes

3.6 Confirmed Case-Early Congenital Syphilis (within 2 years of birth)

Laboratory confirmation of infection:

- Identification of *T. pallidum* by dark-field microscopy, direct fluorescent antibody microscopy, NAAT or equivalent examination of material from nasal discharges, skin lesions, placenta, umbilical cord or autopsy material of a newborn (up to 4 weeks of age)

OR

- Reactive serology (non-treponemal and treponemal) from venous blood (not cord blood) in an infant/child with clinical, laboratory or radiographic evidence of congenital syphilis

OR

- Detection of *T. pallidum* deoxyribonucleic acid (DNA) in an appropriate clinical specimen

3.7 Confirmed Case-Tertiary Syphilis Other than Neurosyphilis

Laboratory confirmation of infection:

- Reactive treponemal serology (regardless of NTT reactivity) together with characteristic late abnormalities of the cardiovascular system, bone, skin or other structures, in the absence of other known causes of these abnormalities. (*T. pallidum* is rarely seen in these lesions, although when present, is considered diagnostic.)

AND

- No clinical or laboratory evidence of neurosyphilis

4.0 Laboratory Evidence

4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of syphilis:

- Detection of *T. pallidum* or its DNA by validated methods
- Reactive non-treponemal and treponemal serology
- Reactive treponemal serology regardless of non-treponemal serology in persons with no previous history of syphilis
- A significant (i.e., fourfold or greater) rise in non-treponemal titre

4.2 Approved/Validated Tests

- Dark-field/direct fluorescent antibody microscopy for *T. pallidum*
- Non-treponemal tests (rapid plasma reagin [RPR], VDRL)
- Treponemal tests (treponema pallidum particle agglutination [TP-PA], chemiluminescent immunoassay [CLIA], fluorescent treponemal antibody absorbed [FTA-ABS])
- NAAT for *T. pallidum*

4.3 Indications and Limitations

- Diagnosis of syphilis requires a combination of history including epidemiologic risk factors or exposure, physical examination, and laboratory tests as there is no single optimum diagnostic criterion
- Dark-field microscopy testing for *T. pallidum* is not reliable for oral/rectal lesions, as non-pathogenic treponemas may be present. Instead, direct fluorescent antibody test for *T. pallidum* should be used on such specimens
- Reliability of *serological* tests depends on the type of test and stage of disease.
- NTTs have reduced sensitivity in primary syphilis and late latent syphilis
- Persons from endemic countries infected with other treponemas such as yaws, pinta and bejel can cause biological false positive serological results.

5.0 Clinical Evidence

A clinical consultation is necessary for diagnosis.

Primary syphilis is characterized by one or more superficial ulcerations or chancres, which may differ considerably in clinical appearance, at site of exposure and regional lymphadenopathy.

Secondary syphilis generally develops following resolution of primary lesion though the primary ulcerative lesion may still be present. It is characterized by macular, maculopapular or papular lesions or a rash, typically involving the trunk, palms, and soles, generalized lymphadenopathy, fever, sore throat, malaise and mucosal lesions. A small number of cases may experience alopecia, meningitis, headaches, uveitis and retinitis.

Latent syphilis is serological evidence of infection in the absence of symptoms.

Tertiary syphilis is rare, may manifest as gummas of the skin, musculoskeletal system, or internal organs, with cardiovascular and neurological involvement, and typically is not infectious.

During secondary, latent and tertiary stages of syphilis, the central nervous system (CNS) can be infected causing neurosyphilis. Individuals with neurosyphilis can be asymptomatic or experience headache, vertigo, dementia, changes to their personality, and ataxia. Co-infection with HIV increases the risk of development of neurosyphilis.

Early congenital syphilis can result in stillbirth, hydrops fetalis or preterm birth, as well as other systemic complications within the first 4-8 weeks of life.

6.0 ICD 10 Code(s)

A50.0 Early congenital syphilis, symptomatic

A50.1 Early congenital syphilis, latent

A51 Early syphilis

A52 Late syphilis

7.0 Sources

Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System: Syphilis (*Treponema pallidum*) - 2018 Case Definition [Internet]. Atlanta, GA: U.S. Department of Health & Human Services; 2018 [cited February 23, 2018]. Available from: <https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/>

Public Health Agency of Canada. Syphilis. In: Case Definitions for Communicable Diseases under National Surveillance. Canada Communicable Disease Report. 2009;35S2.

Public Health Agency of Canada. Canadian Guidelines on Sexually Transmitted Infections [Internet]. Ottawa, ON: Her Majesty the Queen in Right of Canada; 2018 [cited May 15, 2018]. Available from: <https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections.html>

8.0 Document History

Table 1: History of Revisions

Revision Date	Document Section	Description of Revisions
December 2014	General	New template. Treponema Pallidum identified as <i>T. pallidum</i> . “Nucleic acid testing” and “Nucleic acid amplification test” identified as NAAT. “Non-treponemal test” identified as NTT. Title of Section 8.0 changed from “References” to “Sources”. Section 9.0 Document History added.
December 2014	3.6 Confirmed Case-Early Congenital Syphilis (within 2 years of birth)	NAAT included in list of tests under first bullet.

Revision Date	Document Section	Description of Revisions
December 2014	4.2 Approved/Validated Tests	<p>“Chemiluminescent immunoassay [CLIA]” added and “Enzyme immunoassay [EIA]” removed from the list of treponemal tests in the third bullet.</p> <p>“NAT for <i>T. pallidum</i>” changed to “NAAT for <i>T. pallidum</i>” in fourth bullet.</p>
December 2014	4.3 Indications and Limitations	<p>In second bullet, “treponemes” changed to “treponemas”.</p> <p>Last bullet added: “Persons from endemic countries infected with other treponemas such as yaws, pinta and bejel can cause biological false positive serological results”.</p>
December 2014	5.0 Clinical Evidence	Entire section revised with bullets #2-6 added.
December 2014	8.0 Sources	Updated.
February 2019	General	<p>Minor revisions were made to support the regulation change to Diseases of Public Health Significance</p> <p>Confirmed latent case now includes: has a prior history of syphilis and a significant (i.e., fourfold or greater) rise in titre of a NTT > 12 months ago.</p>
February 2019	6.0 ICD 10 Code(s)	Entire section revised.

