SYPHILIS - CONGENITAL

Case Definition

Confirmed case – Early congenital syphilis:

Laboratory confirmation of infection in a live birth:

- Identification of *Treponema pallidum* by nucleic acid detection (PCR or equivalent), fluorescent antibody or equivalent examination of material in an appropriate clinical specimen (see Laboratory Comments)
  OR
- Reactive serology (non-treponemal **and** treponemal) from venous blood (not cord blood) in an infant or in a child **with** clinical, radiographic or other laboratory evidence of congenital syphilis[1]
  OR
- Infant's RPR titre at least fourfold higher than the mother/birthing parent's RPR titre in samples collected during the immediate postnatal period
  OR
- Persistent positive treponemal serology in a child older than 18 months of age

AND

- Younger than two years of age at the time of meeting the criteria AND no other suspected source of exposure

Confirmed case – Late congenital syphilis

Laboratory confirmation of infection:

- Identification of *T. pallidum* by nucleic acid detection (PCR or equivalent), fluorescent antibody or equivalent examination of material in an appropriate clinical specimen (see Laboratory Comments)
  OR
- Reactive serology (non-treponemal **and/or** treponemal) in an individual **with** clinical, radiographic or other laboratory evidence of congenital syphilis[1]

AND

- Two or more years of age at the time of meeting the criteria **and** no other suspected source of exposure

Probable case – Early congenital syphilis

- Does not meet criteria for "Confirmed case – Early congenital syphilis"
  AND
- Reactive serology (non-treponemal and/or treponemal) from venous blood (not umbilical cord blood) in an infant or in a child whose mother/birthing parent had untreated or inadequately treated[2] syphilis prior to delivery
  AND

[1] Includes any evidence of congenital syphilis such as any features suggestive of congenital syphilis on radiographs of long bones; reactive CSF VDRL; an elevated CSF cell count or protein (without other cause); anemia; skeletal abnormalities (e.g. osteochondritis, saber shins); hepatosplenomegaly; skin rash; condylomata lata; rhinitis (snuffles); pseudoparalysis; meningitis; ascites; interstitial keratitis; lymphadenopathy; dental abnormalities (e.g. Hutchinson's teeth, mulberry molars); sensory neural hearing loss; intrauterine growth restriction; prematurity; or any other abnormality not better explained by an alternative diagnosis. Syphilis is one of the 'great imitators' and has to be considered in the differential diagnosis if there is any risk factor, not just if there are clear clinical (exam or lab) findings.

[2] Adequate treatment is: treatment with penicillin therapy appropriate for the stage of syphilis infection that was completed at least 4 weeks before delivery; and sufficient reduction in maternal/birthing parent non-treponemal titers; and no evidence of reinfection.
A lack of verbal or written confirmation of treatment should be considered "inadequate treatment." Refer to current Canadian guidelines for additional information.

- Younger than two years of age at the time of meeting the criteria and no other suspected source of exposure

Confirmed case – Syphilitic stillbirth

A fetal death that occurs after 20 weeks gestation or in which the fetal weight is greater than 500 g with laboratory confirmation of infection [i.e. identification of Treponema pallidum by nucleic acid detection (PCR or equivalent), fluorescent antibody or equivalent examination of material in an appropriate clinical specimen (see Laboratory Comments)]

Probable case – Syphilitic stillbirth

- Does not meet criteria for "Confirmed case – Syphilitic stillbirth"
  AND
- A fetal death that occurs after 20 weeks gestation or in which the fetal weight is greater than 500 g where the mother/birthing parent had untreated or inadequately treated[2] syphilis prior to delivery
  AND
- No other cause of stillbirth established

Laboratory Comments

In addition to venous blood samples, appropriate clinical specimens for the diagnosis of congenital syphilis include nasal secretions, skin lesions, fluid from blisters or exudative skin rashes, placenta, umbilical cord, or autopsy clinical material. Cord blood should not be used for infant testing.

Syphilis serological results can be affected by the timing of maternal/birthing parent infection. If syphilis is acquired close to delivery, maternal/birthing parent and newborn serological tests may initially be negative. Reactive syphilis serological tests in an infant can represent infant infection or trans-placental passage of antibodies. In the absence of congenital infection, antibodies are expected to decline and clear by 18 months of age. Infant non-treponemal titres at least fourfold higher than maternal/ birthing parent titres (using the same non-treponemal test) at birth supports a diagnosis of congenital syphilis. A fourfold or greater rise in infant non-treponemal titre supports a diagnosis of congenital syphilis.

Additional Comments

Case re-classification may be necessary as more information is collected about a case e.g. if treponemal serology is persistently positive in a child aged between 18 and 24 months **without** clinical, laboratory or radiographic evidence of congenital syphilis, the case classification should be amended from "Probable case – Early congenital syphilis" to "Confirmed case – Early congenital syphilis."

Diagnosis of congenital 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.

Congenital syphilis includes cases of perinatally-acquired syphilis in infants and children. It can be challenging to differentiate congenital from acquired syphilis in children. Infants with congenital syphilis may be asymptomatic for months to years. Radiographic changes in the metaphysis and epiphysis of long bones support a diagnosis of congenital syphilis; normal imaging does not rule out congenital syphilis. Cerebrospinal fluid abnormalities can be found in either congenital or acquired syphilis. Consider the possibility of sexual abuse if acquired syphilis is diagnosed in a child; suspected abuse is reportable to Child Welfare Services.

Stillbirth is defined by Statistics Canada as "death prior to the complete expulsion or extraction from its mother of a product of conception irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. Only fetal deaths where the

product of conception has a birth weight of 500 grams or more or the duration of pregnancy is 20 weeks or longer are registered in Canada."

Reporting Requirements

Report confirmed and probable cases to DHW Surveillance via Panorama.

Select appropriate initial staging option in the "staging" field in Panorama

- Update the staging field if/when new information becomes available.

Additional Forms

None.

Outbreak Definitions

The following criteria should be considered to help identify a possible syphilis outbreak:

An outbreak should be declared when there is a frequency of infectious and/or congenital syphilis incidence in excess of the usual frequency of syphilis within a geographic area and/or population. Declaration of an outbreak is at the discretion of the Medical Officer of Health (MOH). Case definitions according to stage should be entered in a timely manner to facilitate early detection of a change in trends.

Factors to consider when assessing the usual frequency of disease:

- The number of cases and incidence in the last 3-, 6-, and 12-month period
- The percent increase in incidence from the last 3, 6, and 12 months
- Importantly, certain factors may increase the frequency of disease reported, without necessarily indicating an outbreak. These include 1) changes to testing methods, reporting methods, and/or case definitions; 2) in-migration of individuals who likely acquired the infection outside of the province, but were only diagnosed upon entry.

Factors to consider when determining if there is an outbreak in a geographic area and/or population:

- The geographical spread of disease (province/zone/cluster)
- Whether the cases are associated with a specific setting (e.g. correctional facility, sex club, chat room, university campus, etc.)
- Whether the cases are associated with certain demographic groups (e.g. individuals living in the inner city, women of childbearing age, etc.) or subpopulations who may be at higher risk of syphilis (e.g. men who have sex with men, people living with HIV, people who inject drugs etc.)
- Whether there are known epidemiological links between cases

Appendix: Updates to congenital syphilis surveillance guidelines

Date	Updates
December 2024	Creation of congenital syphilis surveillance guidelines document with additional staging and outbreak definitions.