



# Syphilis

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## Disease Plan

### Quick Links

[www.cdc.gov/std/treatment](http://www.cdc.gov/std/treatment)

[http://health.utah.gov/epi/diseases/syphilis/std\\_form.pdf](http://health.utah.gov/epi/diseases/syphilis/std_form.pdf)

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**Questions about this disease plan?**

**Contact the Utah Department of Health Bureau of Epidemiology: 801-538-6191.**

## ✓ WHY IS SYPHILIS IMPORTANT TO PUBLIC HEALTH?

Syphilis is a complex, sexually transmitted disease comprised of several stages throughout the duration of infection. Untreated syphilis can cause clinical manifestations affecting the cardiovascular system, skin, bone, and other tissues. Neurological manifestations are also possible. Pregnant women who have syphilis can pass this infection on to the child *in utero*. If left untreated, severe birth defects and fetal death can occur.

## ✓ DISEASE AND EPIDEMIOLOGY

### Clinical Description

An acute or chronic disease characterized clinically by a primary lesion, a secondary eruption involving skin and mucous membranes, long periods of latency, and late lesions of the skin, bone viscera, the central nervous system (CNS), and cardiovascular system.

**Primary Syphilis:** In the primary stage of syphilis, the average time between infection with syphilis and the development of a painless lesion known as a chancre is 21 days, but can range from 10-90 days. Chancres most frequently occur in the genital, oral, perineal, or anal area; however, any part of the body may be infected.

**Secondary Syphilis:** In the secondary stage, disseminated skin rash and lesions of the mucous membranes are most common. Other manifestations include malaise, lymphadenopathy, mucous patches (elevated patches in the mouth or anus), condylomata lata (syphilitic wart-like lesions generally in the perineal and perirectal areas) and alopecia (patchy hair loss).

**Early Latent Syphilis:** This stage of infection occurs in the first year of infection, and the patient is entirely free of symptoms.

**Late Latent Syphilis:** Late latent syphilis is an asymptomatic period occurring greater than 1 year after infection.

**Late Syphilis with Clinical Manifestations (including late benign syphilis and cardiovascular syphilis):** Clinical manifestations of late syphilis may include inflammatory lesions of the cardiovascular system, (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis) or other tissue. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. The late stages of syphilis can develop in about 15% of people who have not been treated for syphilis, and can appear 10-20 years after infection was first acquired. If neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred more than 12 months ago, the case should be reported as late syphilis.

**Neurosyphilis:** Central nervous system (CNS) involvement can occur during any stage of syphilis, and is no longer considered a stage of syphilis. Stages of syphilis that include neurological involvement mean that there is an infection of the central nervous system with *Treponema pallidum*, as evidenced by manifestations including syphilitic meningitis,

meningovascular syphilis, optical involvement including interstitial keratitis and uveitis, general paresis, including dementia, and tabes dorsalis.

**Congenital Syphilis:** A condition caused by an infection *in utero* with *Treponema pallidum*. A wide spectrum of severity exists, from unapparent infection to severe cases that are clinically apparent at birth. An infant or child (aged <2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (non-viral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

**Syphilis Stillbirth:** A fetal death that occurs after a 20-week gestation, or in which the fetus weighs greater than 500 g, and the mother had untreated or inadequately treated syphilis at delivery.

## Causative Agent

Syphilis is caused *Treponema pallidum*, a corkscrew shaped bacteria (spirochete).

## Differential Diagnosis

The differential diagnosis for primary syphilis includes chancroid, granuloma inguinale, trauma to the penis, genital herpes, lymphogranuloma venereum, malignancy, or a fixed drug eruption may cause lesions resembling a chancre. An important distinguishing feature is that a chancre is usually painless. The differential diagnosis for secondary syphilis lesions includes pityriasis rosea, which may closely resemble psoriasis, erythema multiforme, or a drug eruption.

## Laboratory Identification

- Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy
  - Demonstration of *T. pallidum* in late lesions by special stains
  - Reactive polymerase chain reaction (PCR) or equivalent direct molecular tests
  - Reactive nontreponemal serologic tests
- Reactive Venereal Disease Research Laboratory [VDRL] serologic test
- Reactive rapid plasma reagin [RPR] serologic test
- Reactive results with equivalent serologic methods
  - Reactive treponemal serologic tests
- Reactive fluorescent treponemal antibody absorbed [FTA-ABS] serologic test
- Reactive *T. pallidum* particle agglutination [TP-PA] serologic test
- Reactive treponemal enzyme immunoassay (EIA) serologic test
- Reactive treponemal chemiluminescence immunoassay (CIA) serologic test
- Reactive results with equivalent serologic methods
  - Reactive Venereal Disease Research Laboratory [VDRL] in a specimen of cerebrospinal fluid
- In addition, other laboratory test results associated with congenital syphilis:
  - Demonstration of *T. pallidum* in lesions, body fluids, or neonatal discharge by darkfield
- Microscopy

- Demonstration of *T. pallidum* by polymerase chain reaction (PCR) or other equivalent direct
- Molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord or autopsy
- Material
  - Demonstration of *T. pallidum* by immunohistochemistry (IHC), or special stains (e.g., silver staining) of specimens from lesions, placenta, umbilical cord, or autopsy material

NOTE: Treponemal and/or nontreponemal tests are often performed to confirm or follow up a reactive serologic test for syphilis. All such confirmatory test results (both reactive and nonreactive) should be reported when available, but their availability should not delay report of an initial reactive serologic test result. All reactive results should be reported regardless of treatment status of the patient.

## **Treatment**

Penicillin G., administered parenterally, is the preferred drug for all stages of syphilis.

### ***Primary Secondary or Early Latent Syphilis***

**Benzathine penicillin G** 2.4 million units IM in a single dose.

### ***Late Latent Syphilis or Latent Syphilis of Unknown Duration or Late Syphilis***

**Benzathine penicillin G** 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1 week intervals (up to 9 days apart for non-pregnant women).

### ***Neurosyphilis and Ocular Syphilis***

**Aqueous crystalline penicillin G** 18-24 million units per day, administered as 3-4 million units IV every 4 hours or continuous infusion, for 10-14 days.

### ***Congenital Syphilis***

**Aqueous crystalline penicillin G** 100,000-150,000 units/kg/day, administered as 500,000 units/kg/dose IV every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days.

**OR**

**Procaine penicillin G** 50,000 units/kg/dose IM in a single daily dose for 10 days.

For additional treatment options and alternatives, visit [www.cdc.gov/std/treatment](http://www.cdc.gov/std/treatment) for the Sexually Transmitted Disease Treatment Guidelines, 2015.

## **Case Fatality**

Up to 20% of untreated cases die from this disease. Untreated early syphilis in pregnant women results in perinatal death in up to 40% of cases.

## Reservoir

Humans are the only known natural hosts.

## Transmission

Syphilis is transmitted by direct contact with a syphilitic sore, known as a chancre, during vaginal, anal, or oral sex. Transmission may also occur across the placenta prior to birth. Transmission rarely occurs by blood transfusion.

## Susceptibility

Susceptibility is universal, though only approximately 30% of exposures result in infection.

## Incubation Period

The incubation period of primary syphilis is 9-90 days, with a median incubation period of 21 days. The incubation period is 3-6 months for secondary syphilis.

## Period of Communicability

Patients are most infectious during the primary and secondary stages of syphilis when symptoms, such as lesions or a rash, are present.

## Epidemiology

Syphilis is a complex, sexually transmitted disease comprised of several stages throughout the duration of infection. Primary and secondary rates have been sporadic since 2004 in Utah, reaching a 10-year high in 2013 with a rate of 2.6 cases per 100,000 population/year, then dropping to 1.6 cases per 100,000 population/year in 2014. In 2014, 94% (n=83) of the early syphilis cases reported in Utah were males, of which 84% were men who have sex with men (MSM). Females and racial minorities were much more likely to be identified in the late latent stage. Primary and secondary rates among Utahns have remained almost half of the national rate for the past 10 years.

## ✓ PUBLIC HEALTH CONTROL MEASURES

### Public Health Responsibility

- Investigate all suspect cases of disease and fill out and submit appropriate disease investigation forms.
- Provide education to the general public and clinicians regarding disease transmission and prevention.
- Identify clusters or outbreaks of this disease.
- Identify sources of exposure and stop further transmission.

## Prevention

- Emphasis should be placed on early detection and effective treatment of patients with transmissible syphilis and their contacts.
- Educate the community regarding general health promotion measures:
  - Provide health and sex instruction that teaches the value of delaying sexual activity until the onset of sexual maturity, as well as the importance of establishing mutually monogamous relationships and reducing the numbers of sexual partners.
- Protect the community and control STDs in sex workers and their clients:
  - Discourage multiple sexual partners and anonymous or casual sexual activity.
  - Teach methods of personal prophylaxis applicable before, during, and after exposure, especially the correct and consistent use of condoms.
- Ensure access to health care facilities for early diagnosis and treatment:
  - Encourage their use through education of the public about symptoms of sexually transmitted infections and modes of transmission.
  - Make these services culturally appropriate, readily accessible, and acceptable, regardless of economic status.
  - Establish intensive case-finding programs that include interviewing patients and partner notification.
  - Implement repeated serological screening for syphilis within special populations with known high incidence of STDs.
  - Exclude other STD infections (e.g., HIV) through testing.

## Chemoprophylaxis

All sexual partners should receive prophylaxis.

## Vaccine

None.

## Isolation and Quarantine Requirements

**Isolation:** Avoid sexual contact until treatment is completed.

**Hospital:** Standard body substance precautions.

**Quarantine:** Not applicable.

## ✓ CASE INVESTIGATION

### Reporting

All cases of syphilis are reportable, even asymptomatic (latent) syphilis. Syphilis is a complex, sexually transmitted disease that has a highly variable clinical course. Adherence to the following surveillance case definitions will facilitate understanding the epidemiology of this disease across the U.S.

#### Criteria to determine whether a case should be reported to public health authorities

Criterion	Syphilis of Any Stage
<i>Clinical Presentation</i>	
Ulcerative lesion (e.g., chancre)	C
Localized or diffuse mucocutaneous lesions (non-pruritic macular, maculopapular, papular or pustular lesions), generalized lymphadenopathy, mucous patches, condyloma lata, alopecia	C
Evidence of congenital syphilis on physical examination	C
Evidence of congenital syphilis on radiographs of long bones	C
Syphilitic lesions of the cardiovascular system, skin, bone or other tissue	C
Neurologic manifestations, clinical symptoms or signs consistent with neurosyphilis without other known causes	C
Any death certificate that lists syphilis as a cause of death or a significant condition contributing to death	S
<i>Laboratory Findings</i>	
Demonstration of <i>Treponema pallidum</i> in clinical specimens by darkfield microscopy	S
Demonstration of <i>T. pallidum</i> in late lesions by special stains	S
Reactive polymerase chain reaction test (PCR) or equivalent direct molecular methods	S
Reactive non-treponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods)	S
Reactive treponemal serologic test (fluorescent treponemal antibody absorbed [FTA-ABS], <i>T. pallidum</i> particle agglutination [TP-PA]), enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods)	S
Reactive Venereal Disease Research Laboratory [VDRL] test in a specimen of cerebrospinal fluid	S

Reactive fluorescent treponemal antibody absorbed –19S-IgM antibody test or IgM enzyme-linked immunosorbent assay in an infant	S
An elevated CSF protein or CSF leukocyte count in the absence of other known causes	C
<i>Epidemiological Risk Factors</i>	
An infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant. (Inadequate treatment consists of any non-penicillin therapy or penicillin given <30 days before delivery)	S

Notes:

S = This criterion alone is Sufficient to report a case.

C = This finding corroborates (e.g., supports) the diagnosis of—or is associated with—syphilis, but is not required for reporting.

## Case Definition

### Syphilis (2014)

Epidemiologists classify infections according to the following:

#### Criteria for defining a case of syphilis

Criterion	Case Definition											
	Confirmed					Probable						
	1	2	Neuro*	Late	Cong	1	2	Latent		Neuro*	Late	Cong
								E	L			
<i>Clinical Presentation</i>												
Ulcerative lesion (e.g., chancre)	N	C				N	C	A	A			
Localized or diffuse mucocutaneous lesions (non-pruritic macular, maculopapular, papular or pustular lesions), generalized lymphadenopathy, mucous patches, condyloma lata, alopecia (at least one of these is required)		N					N	A	A			

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Syphilitic inflammatory lesions of the cardiovascular system, (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis) or other tissue or structure				O				A	A		O	
Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities								A	A	N		
Neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred >12 months ago				O						N	O	
Evidence of congenital syphilis on physical examination (see signs and stigmata, based upon age, detailed below)												O
An infant or child (aged <2 years) with signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition)												O
A child with stigmata of congenital syphilis (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose,												O

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rhagades, or Clutton joints)													
Evidence of congenital syphilis on radiographs of long bones (e.g., metaphyseal and epiphyseal changes)													O
<i>Laboratory Findings</i>													
Demonstration of <i>Treponema pallidum</i> in clinical specimens by darkfield microscopy	O	O				A	A						
Reactive polymerase chain reaction test (PCR) or equivalent direct molecular methods	O	O		O		A	A					A	
Reactive non-treponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma regain [RPR], or equivalent serologic methods)			O			O		N	N	O			
Reactive Venereal Disease Research Laboratory [VDRL], rapid plasma regain [RPR], or equivalent serologic test with a titer ≥4							N						
Reactive Venereal Disease Research Laboratory [VDRL], rapid plasma regain [RPR], or equivalent serologic test demonstrating a fourfold or greater increase in titer								O <sup>1</sup>	O <sup>1</sup>				
Reactive Venereal Disease Research Laboratory [VDRL] test in a specimen of cerebrospinal fluid			N								A		O

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Reactive treponemal serologic test (fluorescent treponemal antibody absorbed [FTA-ABS], T. pallidum particle agglutination [TP-PA]), enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods)			O				O	N	N	N	O	N	N
Elevated CSF protein or CSF leukocyte count in absence of other known cause											N		O
Demonstration of <i>T. pallidum</i> in late lesions by special stains				O								A	
Demonstration of <i>Treponema pallidum</i> by darkfield microscopy, fluorescent antibody, or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material													A
Reactive fluorescent treponemal antibody absorbed –19S-IgM antibody test or IgM enzyme-linked immunosorbent assay													O
<i>Epidemiological Risk Factors</i>													
An infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant (Inadequate treatment consists of any non-penicillin therapy or penicillin given <30 days before delivery)													O



Notes:

**\*When reporting neurosyphilis to CDC, the case should be reported as the stage of infection with “neurologic manifestations present” noted in the case report data.**

N = This criterion in conjunction with all other “N” and any “O” criteria in the same column is required to classify a case.

O = At least one of these “O” criteria in each category in the same column (e.g., clinical presentation and laboratory findings)—in conjunction with all other “N” criteria in the same column—is required to classify a case.

A = This criterion must be absent (e.g., NOT present) for the case to meet the case definition.

C = This finding corroborates (e.g., supports) the diagnosis of—or is associated with—syphilis, but is not included in the case definition.

<sup>1</sup>If there is a history of past therapy for syphilis, a fourfold increase in nontreponemal titer must be present.

## Syphilis, primary

### Clinical description

A stage of infection with *T. pallidum* characterized by one or more chancres (e.g., chancre or ulcers); chancres might differ considerably in clinical appearance.

### Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods.

### Case classification

*Probable*: a case that meets the clinical description of primary syphilis with a reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS], *T. pallidum* particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods)<sup>1</sup>.

*Confirmed*: a clinically compatible case that is laboratory confirmed.

## Syphilis, secondary

### Clinical description

A stage of infection caused by *T. pallidum* characterized by localized or diffuse mucocutaneous lesions (e.g., rash — such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other symptoms can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present. Because of the wide array of symptoms possibly indicating secondary syphilis, serologic tests for syphilis and a thorough sexual history and physical examination are crucial to determining if a case should be classified as secondary syphilis.

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<sup>1</sup>These treponemal tests supersede older testing technologies, including microhemagglutination assay for antibody to *T. pallidum* [MHA-TP].

### Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.

### Case classification

*Probable*: a case that meets the clinical description of secondary syphilis with a nontreponemal (VDRL, RPR, or equivalent serologic methods) titer  $\geq 4$  AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods).

*Confirmed*: a case that meets the clinical description of secondary syphilis with at least one sign or symptom, that is laboratory confirmed.

## Syphilis, early latent

### Clinical description

A subcategory of latent syphilis (a stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs) when initial infection has occurred within the previous 12 months.

### Case classification

*Probable*: a person with no clinical signs or symptoms of syphilis who has one of the following:

- No past diagnosis of syphilis, AND a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), AND a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), **OR**
- A current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer.
- **AND** evidence of having acquired the infection within the previous 12 months based on one or more of the following criteria:
  - Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months
  - Documented seroconversion of a treponemal test during the previous 12 months
  - A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
  - A history of sexual exposure to a partner within the previous 12 months who had primary, secondary, or early latent syphilis (documented independently as duration <12 months)
  - Only sexual contact was within the last 12 months (sexual debut)

*Confirmed*: There is no confirmed case classification for early latent syphilis.

## Syphilis, late latent

### Clinical description

A subcategory of latent syphilis (a stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs) when initial infection has occurred >12 months previously.

### Case classification

*Probable*: a person with no clinical signs or symptoms of syphilis who has one of the following:

- No past diagnosis of syphilis, AND a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), AND a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), **OR**
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer AND who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, early latent).

*Confirmed*: There is no confirmed case definition for late latent syphilis.

## Syphilis, late, with clinical manifestations (including late benign syphilis and cardiovascular syphilis)

### Clinical description

Clinical manifestations of late syphilis may include inflammatory lesions of the cardiovascular system, (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis) or other tissue. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. Late syphilis usually becomes clinically manifest only after a period of 15-30 years of untreated infection. If only neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred >12 months ago, the case should be reported as "late syphilis".

### Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in late lesions by special stains (although organisms are rarely visualized in late lesions), or equivalent methods, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.

### Case classification

*Probable*: characteristic abnormalities or lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis), or other tissue AND a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), in the absence of other known causes of these

abnormalities. Cerebrospinal Fluid (CSF) abnormalities and clinical symptoms or signs consistent with neurologic manifestations of syphilis might be present.

*Confirmed:* a case that meets the clinical description of late syphilis that is laboratory confirmed.

## **Neurosyphilis**

### **Clinical description**

Evidence of central nervous system infection with *T. pallidum*.

### **Laboratory criteria for diagnosis**

A reactive serologic test for syphilis and reactive VDRL in CSF.

### **Case classification**

*Probable:* syphilis of any stage, a negative VDRL in CSF, and both the following:

- Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities;
- Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities.

*Confirmed:* syphilis of any stage that meets the laboratory criteria for neurosyphilis.

## **Syphilitic Stillbirth**

### **Clinical case definition**

A fetal death that occurs after a 20-week gestation or in which the fetus weighs greater than 500 g and the mother had untreated or inadequately treated\* syphilis at delivery.

### **Comment**

For reporting purposes, syphilitic stillbirths should be reported as cases of congenital syphilis.

\*Inadequate treatment consists of any non-penicillin therapy or penicillin given <30 days before delivery.

## **Syphilis, Congenital**

### **Clinical description**

A condition caused by infection in utero with *Treponema pallidum*. A wide spectrum of severity exists, and only severe cases are clinically apparent at birth. An infant or child (aged <2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

### **Laboratory criteria for diagnosis**

Demonstration of *Treponema pallidum* by darkfield microscopy, fluorescent antibody, or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material.

### **Case classification**

*Probable*: a condition affecting an infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant, **OR** an infant or child who has a reactive treponemal test for syphilis **AND** any one of the following:

- Any evidence of congenital syphilis on physical examination
- Any evidence of congenital syphilis on radiographs of long bones
- A reactive VDRL test in a specimen of CSF
- An elevated CSF protein or CSF leukocyte count (without other cause)
- A reactive fluorescent treponemal antibody absorbed--19S-IgM antibody test or IgM enzyme-linked immunosorbent assay

Confirmed: A case that is laboratory confirmed.

### **\*Comment**

*Congenital and acquired syphilis may be difficult to distinguish when a child is seropositive after infancy. Signs of congenital syphilis may not be obvious, and stigmata may not yet have developed. Abnormal values for CSF VDRL, cell count, and protein, as well as IgM antibodies, may be found in either congenital or acquired syphilis. Findings on radiographs of long bones may help because radiographic changes in the metaphysis and epiphysis are considered classic signs of congenitally acquired syphilis. The decision may ultimately be based on maternal history and clinical judgment. In a young child, the possibility of sexual abuse should be considered as a cause of acquired rather than congenital syphilis, depending on the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.*

## **Case Investigation Process**

- Contact medical provider to gather patient demographics, clinical, and treatment information, as well as patient notification status.
- Fill out a morbidity form.
- Conduct a Client Interview.
- Fill out a client interview record on original patient and field records for contacts and suspects identified.
- Conduct field investigations on contacts and suspects.
- Provide/facilitate treatment based on case definitions and follow-up for contacts.
- Re-interview client for additional contacts and suspects.
- Complete interview record.

## Outbreaks

A syphilis outbreak occurs when the observed rate of disease in a geographical area exceeds the normal (endemic) rate.

## Identifying Case Contacts

The stage of disease determines the criteria for partner notification:

- For primary syphilis, all sexual contacts during the 3 months preceding onset of symptoms.
- For secondary syphilis, all sexual contacts during the 6 months preceding onset of symptoms.
- For early latent syphilis, all sexual contacts of the preceding year, if time of primary and secondary cannot be established.
- For late and late latent syphilis, long-term partners, and children of infected mothers.
- For congenital syphilis, all members of the immediate family.
  - If appropriate treatment of the mother prior to the last month of pregnancy cannot be established, all infants born to seroactive mothers should be treated.

## Case Contact Management

A fundamental feature of programs for syphilis control is the interviewing of patients to identify sexual contacts from whom the infection was acquired, in addition to those whom the patient infected.

- All sexual partners of confirmed cases of primary syphilis during the 3 months preceding onset of symptoms should be examined, tested, and treated.
- All sexual partners of confirmed cases of secondary syphilis during the 6 months preceding onset of symptoms should be examined, tested, and treated.
- For early latent syphilis, all sexual contacts of the preceding year, if time of primary and secondary cannot be established should be examined and tested. All cases of confirmed cases of early syphilis exposed within 90 days of examination should receive treatment.
- For late and late latent syphilis, long-term partners, and children of infected mothers should be examined and tested.
- For congenital syphilis, all members of the immediate family should be examined and tested. If adequate and appropriate treatment of the mother prior to the last month of pregnancy cannot be established, all infants born to seroactive mothers should be treated.
- All patients who have syphilis should be tested for HIV.

## ✓ REFERENCES

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## ✓ VERSION CONTROL

V.08.15 Updated epidemiological information, adding Utah specific epidemiology. Updated the treatment section according to 2015 CDC treatment guidelines. Added Minimum Data Set (MDS), added Table of Contents, updated swim lanes.

V.12.15 Changed incubation period for secondary syphilis to 3-6 months from 3-12 months.

## ✓ UT-NEDSS Minimum/Required Fields by Tab

### MORBIDITY EVENT

#### Demographic

- Last Name, First Name
- Street Name, Street Number, Unit Number
- City, State, County, Zip Code
- Date of Birth
- Area Code, Phone Number
- Birth Gender
- Ethnicity, Race
- Disposition (if promoted contact)
- Disposition Date (if promoted contact)
- Contact Type (if promoted contact)

#### Clinical

- Disease
- Date Diagnosed
- Pregnant, Expected Delivery Date
- Weeks Gestation at Diagnosis
- Pregnancy in Past 12 Months
- Pregnancy Outcome, Date Pregnancy Outcome
- Treatment Given, Treatment
- Date of Treatment
- Clinician Last Name
- Clinician Area Code, Clinician Phone
- Diagnostic Facility (DF), Type of facility:
- Method of Case Detection
- Symptoms Observed or Present
- Clinician Observed Symptoms
- Clinician Observed Symptom Type (if applicable)
- Clinician Observed CDC Anatomic Sites
- Lesions Present
- Patient Observed Symptoms
- Patient Observed Symptom Type (if applicable)
- Patient Observed Anatomical Site (if applicable)
- Neurological Involvement
- Date of Earliest Symptom Observation
- Duration of Symptoms

- Additional Symptoms
- Previous HIV Testing, HIV Status
- Previous STD Diagnosis
- HIV Testing This Event, HIV Result This Event (if applicable)

#### Laboratory

- Lab
- Test Type, Organism, Test Result
- Specimen Source, Collection Date
- Specimen Source: (Specimen source section)
- Collection Date: (Specimen source section)
- Non-Treponemal Serologic Test Type
- Quantative Test Result

#### Investigation

- Date Case Assigned
- Was the case interviewed?
  - (if yes) Interview date:
  - (if yes) Interview period:
  - (if no) Reason not interviewed:
- Date closed:
- Met sex partners via the Internet?
- Had sex with a male? Had sex with a female?
- Had sex with an anonymous partner?
- Had sex with a person known to be an IDU?
- Had sex while intoxicated/high on drugs?
- Exchanged drugs and/or money for sex?
- Been incarcerated?
- Engaged in IDU?
- If male, is the patient MSM?
- If female, had sex with a person known MSM?
- Drug Use:

**Contacts**

- Number sex partners during interview period
- Total number of sex partners in past 12 months

**Reporting**

- Date first reported to public health

**Administrative**

- LHD Investigation Start Date, LHD Close Date
- LHD Case Status
- State Case Status (completed by UDOH)
- Outbreak Association

**CONTACT EVENT**

**Demographic**

- Contact First Name
- Contact Address County
- Contact Date of Birth
- Contact Area Code, Contact Phone Number
- Contact Birth Gender
- Contact Disposition, Contact Disposition Date
- Contact Type

**Clinical**

- Contact Disease
- Contact Lab Collection Date
- Contact Pregnant, Contact Pregnancy Due Date (if applicable)
- Contact Treatment Given
- Contact Date of Treatment (if applicable)
- Contact Lab Test Results