

## SYPHILIS

(Primary, Secondary, Early Latent, Late Latent, Latent of Unknown Duration, Late with Clinical Manifestations other than Neurosyphilis, Syphilitic Stillbirth, Congenital)

### REPORTING INFORMATION

- **Class B1:** Report by the close of the next business day after the case or suspected case presents and/or a positive laboratory result to the local public health department where the patient resides. If patient residence is unknown, report to the local public health department in which the reporting health care provider or laboratory is located.
- Reporting Form(s) and/or Mechanism: [Ohio Confidential Reportable Disease form](#) (HEA 3334, rev. 1/09), [Positive Laboratory Findings for Reportable Disease form](#) (HEA 3333, rev. 8/05), the local health department via the Ohio Disease Reporting System (ODRS), or telephone.
- Additional reporting information, with specifics regarding the key fields for ODRS Reporting can be located in [Section 7](#).

### AGENT

*Treponema pallidum*, a spirochete, classified as a bacterium. Motile with 6-14 spirals.

### CASE DEFINITION

#### Clinical Description

Syphilis is a complex sexually transmitted disease that has a highly variable clinical course. Classification by a clinician with expertise in syphilis may take precedence over the following case definitions developed for surveillance purposes.

#### Syphilis, Primary

##### Clinical description

A stage of infection with *Treponema pallidum* characterized by one or more chancres (ulcers); chancres may 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

Suspect: A clinically compatible case without laboratory confirmation.

Probable: A clinically compatible case with one or more ulcers (chancres) consistent with primary syphilis and a reactive serological test (nontreponemal: Venereal Disease Research Laboratory [VDRL] or rapid plasma reagin [RPR]; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS] or microhemagglutination assay for antibody to *T. pallidum* [MHA-TP])

Confirmed: A clinically compatible case that is laboratory confirmed.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

## **Syphilis, Secondary**

### **Clinical Description**

A stage of infection caused by *T. pallidum* and characterized by localized or diffuse mucocutaneous lesions, often with generalized lymphadenopathy. The primary chancre may still be present.

### **Laboratory Criteria for Diagnosis**

- Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, DFA-TP or equivalent methods.

### **Case Classification**

Suspect: A clinically compatible case without laboratory confirmation.

Probable: A clinically compatible case with a nontreponemal (i.e. VDRL, RPR) titer greater than or equal to 4.

Confirmed: A clinically compatible case that is laboratory confirmed.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

## **Syphilis, Latent**

### **Clinical Description**

A stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs. Latent syphilis is subdivided into early, late and unknown categories, based on the duration of infection.

### **Case Classification**

Suspect: a clinically compatible case without laboratory testing.

Probable: no clinical signs or symptoms of syphilis and the presence of one of the following:

- No past diagnosis of syphilis, a reactive nontreponemal test (i.e. VDRL, RPR) and a reactive treponemal test (i.e. FTA-ABS, MHA-TP).
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating four-fold or greater increase from the last nontreponemal test titer.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

## **Syphilis, Early Latent**

### **Clinical Description**

A subcategory of latent syphilis. When initial infection has occurred within the previous 12 months, latent syphilis is classified as early latent.

### **Case Classification**

Suspect: A clinically compatible case without laboratory testing.

Probable: Latent syphilis (see Syphilis, Latent) in a person who has evidence of having acquired the infection within the previous 12 months based upon one or more of the following criteria:

- Documented seroconversion or four-fold or greater increase in titer of a nontreponemal 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 who had confirmed or probable primary or secondary syphilis or probable early latent syphilis (documented independently as duration <1 year).
- Reactive nontreponemal and treponemal tests from a person whose only possible exposure occurred within the preceding 12 months.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case

### **Syphilis, Late Latent**

#### **Clinical Description**

A subcategory of latent syphilis. When initial infection has occurred >1 year previously, latent syphilis is classified as late latent.

#### **Case Classification**

Suspect: A clinically compatible case without laboratory testing.

Probable: Latent syphilis (see Syphilis, Latent) in a patient who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, Early Latent) and whose age and titer do not meet the criteria specified for latent syphilis of unknown duration.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

### **Syphilis, Latent, of Unknown Duration**

#### **Clinical Description**

A subcategory of latent syphilis. When the date of initial infection cannot be established as having occurred within the previous year and the patient's age and titer meet criteria described below, latent syphilis is classified as latent syphilis of unknown duration.

#### **Case Classification**

Suspect: A clinically compatible case without laboratory testing.

Probable: Latent syphilis (see Syphilis, Latent) that does not meet the criteria for early latent syphilis, and the patient is aged 13-35 years and has a nontreponemal titer >32.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

## Neurosyphilis

### Clinical Description

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

### Laboratory Criteria for Diagnosis

- Reactive serologic test for syphilis and reactive VDRL in cerebrospinal fluid (CSF).

### Case Classification

Suspect: A clinically compatible case without laboratory confirmation.

Probable: syphilis of any stage, a negative VDRL in cerebrospinal fluid (CSF), and both the following:

- Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities *and*
- 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

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

## Syphilis, Late, with Clinical Manifestations other than Neurosyphilis (Late Benign Syphilis and Cardiovascular Syphilis)

### Clinical Description

Clinical manifestations of late syphilis other than neurosyphilis may include inflammatory lesions of the cardiovascular system, skin and bone. 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.

### Laboratory Criteria for Diagnosis

- Demonstration of *T. pallidum* in late lesions by fluorescent antibody or special stains (although organisms are rarely visualized in late lesions).

### Case Classification

Suspect: A clinically compatible case without laboratory confirmation.

Probable: Characteristic abnormalities or lesions of the cardiovascular system, skin, bone or other structures with a reactive treponemal test, in the absence of other known causes of these abnormalities and without CSF abnormalities and clinical symptoms or signs consistent with neurosyphilis.

Confirmed: A clinically compatible case that is laboratory confirmed

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

### Comment

Analysis of CSF for evidence of neurosyphilis is necessary in the evaluation of late

syphilis with clinical manifestations.

### **Syphilitic Stillbirth**

#### **Clinical Description**

A fetal death that occurs after a 20 week gestation or in which the fetus weighs greater than 500g and the mother had untreated or inadequately treated<sup>1</sup> syphilis at delivery.

#### **Comment**

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

### **Syphilis, Congenital**

#### **Clinical Description**

A condition caused by infection in utero with *Treponema pallidum*. A wide spectrum of severity exists and only the most 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 *T. pallidum* by darkfield microscopy, fluorescent antibody or other specific stains in specimens from lesions, placenta, umbilical cord or autopsy material.

#### **Case classification**

Suspect: A clinically compatible case without laboratory or medical confirmation.

Probable: A condition affecting an infant whose mother had untreated or inadequately treated<sup>1</sup> 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.
- Any reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL).
- An elevated CSF cell count or protein (without other cause).
- A reactive fluorescent treponema antibody absorbed (FTA-ABS), 19S-IgM antibody test or IgM enzyme-linked immunoabsorbent assay.

Confirmed: A clinically compatible case that is laboratory confirmed.

Not a Case: This status will not generally be used when reporting a case, but may be used to reclassify a report if investigation revealed that it was not a case.

#### **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

---

<sup>1</sup>Inadequate treatment consists of any non-penicillin therapy or penicillin given less than 30 days before delivery.

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 upon the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children, as well as syphilitic stillbirths.

## **PUBLIC HEALTH MANAGEMENT**

### **Case**

All early infectious primary, secondary, early latent (less than one year duration) and congenital syphilis cases should be reported promptly.

### Treatment

Consult the most recent CDC-published "STD Treatment Guidelines" for recommended therapy. Copies of the guidelines are available from the Ohio Department of Health (ODH) STD Prevention Program 614-466-2446 and on the Internet at the CDC Web Site (<http://www.cdc.gov>).

### **Contacts**

Each case of diagnosed primary, secondary and early latent (under one year's duration) syphilis should be referred to a Disease Intervention Specialist (DIS) so that specialized skills and assistance in contact tracing can be immediately initiated. Physicians have a responsibility to society as well as to their patients. Untreated syphilitic patients are a public health threat to themselves and others. Contact tracing will help locate infected individuals who can continue infecting others and who might develop severe manifestations of late syphilis.

### Screening

The use of serologic testing for the diagnosis of syphilis continues on a large scale. A common problem in clinical practice is the management of patients with unexpected reactive serologic tests for syphilis. This situation, which excludes those patients with signs of early syphilis or a well-documented history of past treponemal infection, occurs most often with elderly patients who might reveal a reactive nontreponemal test in the course of care for other medical problems. The first step in the diagnostic evaluation of such patients is the exclusion of a false positive test result. Tests should be repeated on a second serum sample, and if the nontreponemal test is reactive, the serum should be further evaluated with an FTA-ABS or MHA-TP test. In taking a history for treponemal disease, the clinician should consider the possibilities both of syphilis, either congenital or acquired, and of nonvenereal treponematosis. A history of nonvenereal treponemal infection does not exclude the possibility of syphilis. Even after taking a careful history and doing a physical examination, the clinician may still not be sure if the patient has syphilis. With the exception of patients with underlying fatal illnesses, patients should be treated for syphilis, using schedules recommended for syphilis of more than one year's duration.

### **Prevention and Control**

If control of syphilis is to be achieved, it is essential that all contacts be examined. Primary, secondary and early latent (under one year duration) syphilis contacts and

cluster suspects should be prophylactically (epidemiologically) treated during their first visit immediately after this physical examination and stat RPR serology results. All contacts, infected and not infected, should be referred to a skilled Disease Intervention Specialist (DIS) for an epidemiologic interview. Very rapid case follow-up is essential for syphilis control.

HIV Coinfection: Patients with coexisting HIV infection need closer follow-up: nontreponemal titers should be checked 3, 6, 9, 12 and 24 months after treatment. Patients with early syphilis whose titers increase, or whose titers fail to decrease four-fold within 6-12 months should be evaluated for neurosyphilis and should be retreated. Their CSF abnormalities could be due to HIV-related infection, to neurosyphilis, or both.

**What is syphilis?**

Syphilis is a sexually transmitted disease (STD) caused by the bacterium *Treponema pallidum*. It has often been called "the great imitator" because so many of the signs and symptoms are indistinguishable from those of other diseases.

**How common is syphilis?**

In the United States, health officials reported over 36,000 cases of syphilis in 2006, including 9,756 cases of primary and secondary (P&S) syphilis. In 2006, half of all P&S syphilis cases were reported from 20 counties and 2 cities; and most P&S syphilis cases occurred in persons 20 to 39 years of age. The incidence of P&S syphilis was highest in women 20 to 24 years of age and in men 35 to 39 years of age. Reported cases of congenital syphilis in newborns increased from 2005 to 2006, with 339 new cases reported in 2005 compared to 349 cases in 2006.

Between 2005 and 2006, the number of reported P&S syphilis cases increased 11.8 percent. P&S rates have increased in males each year between 2000 and 2006 from 2.6 to 5.7 and among females between 2004 and 2006. In 2006, 64% of the reported P&S syphilis cases were among men who have sex with men (MSM).

**How do people get syphilis?**

Syphilis is passed from person to person through direct contact with a syphilis sore. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Transmission of the organism occurs during vaginal, anal, or oral sex. Pregnant women with the disease can pass it to the babies they are carrying. Syphilis cannot be spread through contact with toilet seats, doorknobs, swimming pools, hot tubs, bathtubs, shared clothing, or eating utensils.

**What are the signs and symptoms in adults?**

Many people infected with syphilis do not have any symptoms for years, yet remain at risk for late complications if they are not treated. Although transmission occurs from persons with sores who are in the primary or secondary stage, many of these sores are unrecognized. Thus, transmission may occur from persons who are unaware of their infection.

Primary Stage

The primary stage of syphilis is usually marked by the appearance of a single sore (called a chancre), but there may be multiple sores. The time between infection with syphilis and the start of the first symptom can range from 10 to 90 days (average 21 days). The chancre is usually firm, round, small, and painless. It appears at the spot where syphilis entered the body. The chancre lasts 3 to 6 weeks, and it heals without treatment. However, if adequate treatment is not administered, the infection progresses to the secondary stage.

Secondary Stage

Skin rash and mucous membrane lesions characterize the secondary stage. This stage typically starts with the development of a rash on one or more areas of the body. The rash usually does not cause itching. Rashes associated with secondary syphilis can appear as the chancre is healing or several weeks after the chancre has healed. The

characteristic rash of secondary syphilis may appear as rough, red, or reddish brown spots both on the palms of the hands and the bottoms of the feet. However, rashes with a different appearance may occur on other parts of the body, sometimes resembling rashes caused by other diseases. Sometimes rashes associated with secondary syphilis are so faint that they are not noticed. In addition to rashes, symptoms of secondary syphilis may include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue. The signs and symptoms of secondary syphilis will resolve with or without treatment, but without treatment, the infection will progress to the latent and possibly late stages of disease.

#### Late and Latent Stages

The latent (hidden) stage of syphilis begins when primary and secondary symptoms disappear. Without treatment, the infected person will continue to have syphilis even though there are no signs or symptoms; infection remains in the body. This latent stage can last for years. 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. In the late stages of syphilis, the disease may subsequently damage the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Signs and symptoms of the late stage of syphilis include difficulty coordinating muscle movements, paralysis, numbness, gradual blindness, and dementia. This damage may be serious enough to cause death.

#### **How does syphilis affect a pregnant woman and her baby?**

The syphilis bacterium can infect the baby of a woman during her pregnancy. Depending on how long a pregnant woman has been infected, she may have a high risk of having a stillbirth (a baby born dead) or of giving birth to a baby who dies shortly after birth. An infected baby may be born without signs or symptoms of disease. However, if not treated immediately, the baby may develop serious problems within a few weeks. Untreated babies may become developmentally delayed, have seizures, or die.

#### **How is syphilis diagnosed?**

Some health care providers can diagnose syphilis by examining material from a chancre (infectious sore) using a special microscope called a dark-field microscope. If syphilis bacteria are present in the sore, they will show up when observed through the microscope.

A blood test is another way to determine whether someone has syphilis. Shortly after infection occurs, the body produces syphilis antibodies that can be detected by an accurate, safe, and inexpensive blood test. A low level of antibodies will likely stay in the blood for months or years even after the disease has been successfully treated. Because untreated syphilis in a pregnant woman can infect and possibly kill her developing baby, every pregnant woman should have a blood test for syphilis.

#### **What is the link between syphilis and HIV?**

Genital sores (chancres) caused by syphilis make it easier to transmit and acquire HIV infection sexually. There is an estimated 2- to 5-fold increased risk of acquiring HIV if exposed to that infection when syphilis is present.

Ulcerative STDs that cause sores, ulcers, or breaks in the skin or mucous membranes, such as syphilis, disrupt barriers that provide protection against infections. The genital ulcers caused by syphilis can bleed easily, and when they come into contact with oral and rectal mucosa during sex, increase the infectiousness of and susceptibility to HIV. Having

other STDs is also an important predictor for becoming HIV infected because STDs are a marker for behaviors associated with HIV transmission.

### **What is the treatment for syphilis?**

Syphilis is easy to cure in its early stages. A single intramuscular injection of penicillin, an antibiotic, will cure a person who has had syphilis for less than a year. Additional doses are needed to treat someone who has had syphilis for longer than a year. For people who are allergic to penicillin, other antibiotics are available to treat syphilis. There are no home remedies or over-the-counter drugs that will cure syphilis. Treatment will kill the syphilis bacterium and prevent further damage, but it will not repair damage already done.

Because effective treatment is available, it is important that persons be screened for syphilis on an on-going basis if their sexual behaviors put them at risk for STDs.

Persons who receive syphilis treatment must abstain from sexual contact with new partners until the syphilis sores are completely healed. Persons with syphilis must notify their sex partners so that they also can be tested and receive treatment if necessary.

### **Will syphilis recur?**

Having syphilis once does not protect a person from getting it again. Following successful treatment, people can still be susceptible to re-infection. Only laboratory tests can confirm whether someone has syphilis. Because syphilis sores can be hidden in the vagina, rectum, or mouth, it may not be obvious that a sex partner has syphilis. Talking with a health care provider will help to determine the need to be re-tested for syphilis after being treated.

### **How can syphilis be prevented?**

The surest way to avoid transmission of sexually transmitted diseases, including syphilis, is to abstain from sexual contact or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected. Avoiding alcohol and drug use may also help prevent transmission of syphilis because these activities may lead to risky sexual behavior. It is important that sex partners talk to each other about their HIV status and history of other STDs so that preventive action can be taken.

Genital ulcer diseases, like syphilis, can occur in both male and female genital areas that are covered or protected by a latex condom, as well as in areas that are not covered. Correct and consistent use of latex condoms can reduce the risk of syphilis, as well as genital herpes and chancroid, only when the infected area or site of potential exposure is protected.

Condoms lubricated with spermicides (especially Nonoxynol-9 or N-9) are no more effective than other lubricated condoms in protecting against the transmission of STDs. Use of condoms lubricated with N-9 is not recommended for STD/HIV prevention. Transmission of an STD, including syphilis cannot be prevented by washing the genitals, urinating, and/or douching after sex. Any unusual discharge, sore, or rash, particularly in the groin area, should be a signal to refrain from having sex and to see a doctor immediately.