October 2015

Syphilis

Surveillance Protocol

Provider Responsibilities

1. Report all positive laboratory results to the Bureau of Public Health/ DSHH for primary, secondary and early latent (less than 1 year duration), and congenital syphilis within 24 hours.
2. Report all positive laboratory results to the state health department for late latent syphilis (duration longer than 1 year) within 1 week.
3. Notify the state department of health of the treatment of reportable STDs (following WV Reportable Infectious Disease protocol) by completing the treatment card (VD-91) and mailing it to the address (printed in red) at the bottom of the form.
4. Evaluate and test patients who present with signs and symptoms.
5. Prophylactically treat all sexual contacts to persons with a positive laboratory result.
6. Conduct syphilis screening on all pregnant females.
7. Interview persons who test positive to obtain identifying and locating information about partners during the time frame relative to the stage of disease.
8. Adequately treat patients with positive laboratory test according the most current CDC treatment guidelines: www.cdc.gov/std/treatment/default.htm
9. Contact the district Public Health Investigator for assistance to contact patients and/or partners. (The Public Health Investigator is more commonly referred to as a Disease Intervention Specialist or DIS and will be referenced as such throughout this protocol.)

Laboratory Responsibilities

1. Report all positive syphilis cases to the Bureau of Public Health/ DSHH by e-mail, phone or fax a copy of the laboratory result.
   A. Serologic evidence – within 1 week.
   B. Positive Darkfield – within 24 hours.

Local Health Responsibilities

Give patients referred by DIS a high priority for testing, treating and counseling. It is critical that all patients who receive testing and/or treatment for syphilis also receive HIV testing.

1. Education and Outreach
   A. Educate providers about the importance of identifying pregnant women who test positive for syphilis.
   B. Educate the general public about syphilis signs and symptoms and risk factors.
2. Investigations

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a. Interview patient
b. Contact the district DIS within 24 hours of receiving positive laboratory results for assistance with interviewing and contact tracing.
c. Keep the district DIS informed about the progress being made to contact the patient.
d. If possible have the local DIS present to assist with giving test results and conducting initial interview.
e. If the DIS is not available, interview the patient for all signs, symptoms and contacts within the last year.

3. Lost to Follow Up
   A. A case may be considered lost to follow up at the local level one week after the case was identified and after the local health department has documented at least:
      a. Three phone call attempts.
      b. One letter (preferably certified).
   B. If the local health department is still unable to locate the patient after one week, the district DIS should be asked to assist with the case.

Disease Intervention Specialist Responsibilities

1. Make a good faith effort to find patients referred by local health.
2. Encourage the patient to seek testing and/or treatment.
3. Interview the referred original patient for all contacts, with the time-frame being based on the stage of syphilis.
4. Provide partner notification to named contacts if needed.
5. Refer partners to local health for testing and/or treatment.
6. Follow up with cases and contacts as necessary to assure that they receive education, testing and treatment as needed.

State Health Responsibilities

1. Prompt and complete reporting of syphilis cases to the Center for Disease Control (CDC)
2. Provide technical expertise and consultation regarding surveillance, investigation, control measures and prevention of syphilis.
3. Notify the CDC of suspected outbreaks identified in West Virginia and assist local health departments in obtaining the knowledge and resources necessary for investigations of a syphilis outbreak.
4. Summarize surveillance data for syphilis on an annual basis.

Syphilis

Surveillance Protocol

5. Offer laboratory testing of syphilis through the Office of Laboratory Services (OLS) at no cost for patients and their partners.
6. Assist with difficult investigations including:
   A. Interface with providers on behalf of local health departments as necessary
   B. Provide assistance via DIS to local health departments for investigating cases that are lost to follow up.

Disease Control Objectives

1. Identify the stage of disease for all syphilis cases.
2. Identify and investigate all syphilis cases.
3. Identify and investigate outbreaks of syphilis in a timely fashion so that appropriate control measures can be applied.

Disease Prevention Objectives

1. Reduce the incidence of syphilis through education and outreach.
2. Adequately treat all patients and contacts.
3. Obtain identifying and locating information about all contacts.

Disease Surveillance Objectives

1. Determine the incidence of syphilis in West Virginia.
2. Detect outbreaks of syphilis in West Virginia.

Public Health Significance

In 2014, the sixty-two diagnosed cases of early syphilis (primary, secondary, and early latent stages) were among forty-seven males (75.8%) and fifteen females (24.2%). Six of these cases (9.7%), all males, were aged 45 and older; two females (3.2%) and one male (1.6%) were among the 40 to 44 age group; two females (3.2%) and seven males (11.3%) were among the 35 to 39 age group; three females (4.8%) and four males (6.5%) were among the 30 to 34 age group; four females(6.5%) and eleven males (17.7%) were among the 25 to 29 age group; two females (3.2%) and fifteen males (24.2%) were among the 20 to 24 age group; and two females (3.2%) and three males (4.8%) were among the15 to 19 age group.

Clinical Description

Symptoms of syphilis in adults are divided into stages:

Primary Stage

October 2015

Syphilis

Surveillance Protocol

During the first (primary) stage of syphilis, a chancre (sore) is present at the site of inoculation. It may be a single sore, but there may also be multiple sores. The sore is usually firm, round, and painless. Because the sore is painless, it can easily go unnoticed. If the sore is painful, it is because of a secondary infection or because it is not syphilis. The sore lasts 3 to 6 weeks and heals regardless of whether or not the patient receives treatment. Even though the sore goes away, the patient must still receive treatment so the infection does not move to the secondary stage.

Secondary Stage

During the secondary stage, the patient may have skin rashes and/or sores in the mouth, vagina, or anus (also called mucous membrane lesions). This stage usually starts with a rash on one or more areas of the body. The rash can show up when the primary sore is healing or several weeks after the sore has healed. The rash can look like rough, red, or reddish brown spots on the palms of the hands and/or the bottoms of the feet. Or the rash may present only on the trunk of the body. The rash usually does not itch and it is sometimes so faint that it is not noticeable. Other symptoms can include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue (feeling very tired). The symptoms from this stage will go away whether or not the patient receives treatment. Without the right treatment, the infection will move to the latent and possibly late stages of syphilis.

Latent and Late Stages

The latent stage of syphilis begins when all of the symptoms from earlier stages disappear. Latent syphilis occurring within the first year after infection is referred to as *early latent* syphilis and after the first year, is referred to as *late, latent* syphilis. Without treatment, the patient can continue to have syphilis in the body for years without any signs or symptoms. Most people with untreated syphilis do not develop late stage syphilis (also referred to as tertiary syphilis). However, when it does occur it is very serious and would manifest 10–30 years after the infection began. However, with co-infection of HIV, the late stage symptoms may appear within the first year. Symptoms of the late stage of syphilis include difficulty coordinating muscle movements, paralysis (not able to move certain parts of the body), numbness, blindness, and dementia (mental disorder). In the late stages of syphilis, the disease damages internal organs and can result in death.

Etiologic Agent

Syphilis is a systemic disease caused by the bacterium *Treponema pallidum.*

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October 2015

Syphilis

Surveillance Protocol

Reservoir

Humans are the only known host.

Mode of Transmission

Any sexually active person can get syphilis through unprotected vaginal, anal, or oral sex. A person should get tested regularly for syphilis if the person is pregnant, is a man who has sex with men, has HIV infection, and/or has partner(s) who have tested positive for syphilis. Syphilis can also be spread from an infected mother to her unborn baby. **To protect the unborn baby, the pregnant female should be tested for syphilis during pregnancy and at delivery and receive immediate treatment if the test is positive.**

Incubation Period

The time between exposure to syphilis and onset of symptoms is usually 3 to 6 weeks. Because syphilis sores can be hidden in the vagina, anus, under the foreskin of the penis, or in the mouth, it may not be obvious that a sex partner has syphilis.

Period of Communicability

All persons who have primary and/or secondary symptoms of syphilis present are infectious.

Case Definition

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.

Primary Stage

1. Clinical Description
   A stage of infection with *Treponema pallidum* characterized by one or more chancres (ulcers); chancres might differ considerably in clinical appearance.
2. Laboratory Criteria for Diagnosis
   A demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods.
3. 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

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absorbed [FTA-ABS], T. pallidum particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods).
Confirmed: a clinically compatible case that is laboratory confirmed

Secondary Stage

1. 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.
2. 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.
3. Case classification
   Probable: A case that meets the clinical description of secondary syphilis with a nontreponemal (VDRL, RPR, or equivalent serologic methods) titer ≥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 demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, DFA-TP, or equivalent methods.

Early Latent Stage

1. 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.
2. 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).

There is no confirmed case classification for early latent syphilis.

Syphilis, late latent stage

1. 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.

2. 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).

   There is no confirmed case definition for late latent syphilis.

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

1. 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 more than 12 months ago, the case should be reported as "late syphilis."

2. 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.
3. 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. 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

Neurosyphilis can occur at any stage of syphilis. If the patient has neurologic manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if neurologic manifestations were not present) and "neurologic manifestations" should be noted in the case report data. If no other stage is appropriate, the case should be staged as "late, with clinical manifestations."

1. Clinical description
   Infection of the central nervous system with *T. pallidum*, as evidenced by manifestations including syphilitic meningitis, meningovascular syphilis, optical involvement including interstitial keratitis and uveitis, general paresis, including dementia, and tabes dorsalis.

2. Laboratory criteria for diagnosis
   A reactive VDRL in cerebrospinal fluid (CSF)
   AND either

- A reactive treponemal serologic test for syphilis (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods).

OR

- A reactive nontreponemal serologic test for syphilis (VDRL, RPR, or equivalent serologic method).

3. Case classification

Probable: syphilis of any stage with a negative VDRL test in CSF specimen and either:

A reactive treponemal serologic test for syphilis (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods),

OR

A reactive non-treponemal serologic test for syphilis (VDRL, RPR, or equivalent serologic method),

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.

Syphilitic Stillbirth

1. Clinical description

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

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

Syphilis, Congenital (Revised 9/96)

1. 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).

Syphilis

Surveillance Protocol

2. 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
3. Case classification
   Probable: a condition affecting an infant whose mother had untreated or inadequately treated[1] 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 cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL)
   - An elevated CSF cell count or protein (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
   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.

Prevention Interventions

There is currently no preventive vaccine for syphilis; therefore the best preventive strategy is safe sex, which includes;

- Being in a mutually monogamous relationship.
- Limiting the number of sex partners.
- Avoid using alcohol or other drugs before and during sexual intercourse.
- Using latex condoms correctly and consistently.
- Using a condom-safe lubricant.
- Abstinence.

[1] Inadequate treatment consists of any non-penicillin therapy or penicillin administered < 30 days before delivery.

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October 2015

Syphilis

Surveillance Protocol

Treatment

Treatment should be according to the most current CDC STD Treatment Guidelines. These may be found at: www.cdc.gov/std/treatment/default.htm

Surveillance Indicators

1. Proportion of cases with complete demographic information
2. Proportion of cases identified through Family Planning screening
3. Proportion of cases identified during STD clinics.
4. Proportion of cases identified through private providers.

References

CDC 2014 STD Treatment Guidelines
www.cdc.gov/std/treatment/default.htm

CDC Syphilis Fact Sheet
http://www.cdc.gov/std/syphilis/STDFact-Syphilis.htm

CDC PART 1. Case Definitions for Nationally Notifiable Infectious Diseases
http://www.cdc.gov/std/stats/CaseDefinitions-2014.pdf

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