

Syphilis Investigation Guideline

Note: A Disease Intervention Specialist from the Kansas Department of Health and Environment, STD Control Program, will investigate all reports.

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Note: All probable and confirmed cases of syphilis must be reported to KDHE within 24 hours. All reports will be investigated by a Disease Intervention Specialist from the Kansas STD Control Program.

Syphilis

Disease Management and Investigative Guidelines

CASE DEFINITION

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

A. Clinical Description for Public Health Surveillance:

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

B. Laboratory Criteria for Diagnosis:

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

C. Case Classification:

- Confirmed: A clinically compatible case that is laboratory confirmed.
 - Probable: A clinically compatible case with one or more ulcers (chancres) consistent with primary syphilis and a reactive serologic 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]).
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Syphilis, secondary

A. Clinical Description for Public Health Surveillance:

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.

B. Laboratory Criteria for Diagnosis:

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

C. Case Classification:

- Confirmed: A clinically compatible case that is laboratory confirmed.
 - Probable: A clinically compatible case with a nontreponemal (VDRL or RPR) titer greater than or equal to 4.
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Syphilis, latent

A. Clinical Description for Public Health Surveillance:

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.

B. Case Classification:

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 or RPR), and a reactive treponemal test (i.e., FTA-ABS or MHA-TP), or
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer.

Syphilis, late, with clinical manifestations other than neurosyphilis (late benign syphilis and cardiovascular syphilis)

A. Clinical Description for Public Health Surveillance:

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.

B. 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).

C. Case Classification:

- Confirmed: A clinically compatible case that is laboratory confirmed.
- 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.

Neurosyphilis

A. Clinical Description for Public Health Surveillance:

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

B. Laboratory Criteria for Diagnosis:

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

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C. Case Classification:

- Confirmed: Syphilis of any stage that meets the laboratory criteria for neurosyphilis.
 - 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, and
 - Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities.
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Syphilis, Congenital

A. Clinical Description for Public Health Surveillance:

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 less than 2 years) may have signs such as hepatosplenomegaly, rash, condyloma latum, 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).

B. 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.

C. Case Classification:

- Confirmed: A case that is laboratory confirmed.
 - 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, or
 - Any evidence of congenital syphilis on radiographs of long bones, or
 - A reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL), or
 - An elevated CSF cell count or protein (without other cause), or
 - A reactive fluorescent treponemal antibody absorbed--19S-IgM antibody test or IgM enzyme-linked immunosorbent assay.
-

D. Laboratory Tests:

Isolates are not required to be sent to the State Public Health Laboratory; however, they are equipped to test for syphilis if requested.

- Specimen: Serum, clotted blood or CSF.
- Amount: Blood 3-5 ml, CSF 2-3 ml.

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- Remarks: For additional information and/or questions concerning isolate collection, sample transport and laboratory kits call (785) 296-1620. An online manual of laboratory tests is also available at <http://www.kdhe.state.ks.us/labs/links.html>

E. Bioterrorism Potential:

None.

F. Outbreak Definition:

There are no formal outbreak definitions; however, the investigator may consider the possibility of an outbreak when there is an unusual clustering of cases in time and/or space. While outbreaks can occur within all socioeconomic groups and geographic regions, they are most likely to occur within low socioeconomic groups in urban locales.

INVESTIGATOR RESPONSIBILITIES

A. Investigation Tasks and Activities:

- Report all probable and suspect cases to the STD program within 24 hours of initial report at 785-296-5596 or fax a report to 785-296-5590.
- A Disease Intervention Specialist from the Kansas STD Control Program will conduct an epidemiological investigation to identify the possible source of infection and to locate additional cases and/or contacts in the community. Tasks associated with the investigation include:
 - Ensure all identified contacts are interviewed and assessed for syphilis, and
 - Ensure that the case and their sexual partners (*i.e.*, contacts) have access to appropriate medical treatment, and
 - Follow up with all confirmed cases and ensure serologic testing is completed 2-3 months after initial treatment to assess the efficacy of the treatment, and
 - Maintain accurate records of the investigation and individuals involved (*i.e.*, case and contacts).

B. Notifications:

All sexual partner notification services will be completed by a Disease Intervention Specialist from the STD Section of the Kansas Department of Health & Environment.

EPIDEMIOLOGY

Syphilis has a worldwide distribution with an increased prevalence noted in developing countries; however, more than 32,000 cases were reported in the United States in 2002. It is most commonly reported in persons 20-39 years of age and is 3.5 times more prevalent in men than in women. There are an increasing number of outbreaks reported among men who have sex with men (MSM) suggesting that rates of syphilis among MSM may be increasing.

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DISEASE OVERVIEW

A. Agent:

Syphilis is caused by the spirochete *Treponema pallidum*.

B. Clinical Description:

Symptoms are best described by group and/or stage of disease, including: primary, secondary, latent and late.

- **Syphilis, primary:** The primary stage of syphilis is characterized by one or more painless, superficial ulcerations (chancres) at the site of exposure. The lesions may be seen at any site in the genital, anorectal, or oropharyngeal tracts. The chancre is usually firm, round, small and painless. They usually last 3 - 6 weeks and heal without treatment. If untreated, the infection will progress to secondary syphilis.
- **Syphilis, secondary:** Secondary disease is characterized by macular, maculopapular, or papular skin lesions usually involving the palms, soles and flexor areas of the extremities. Other parts of the body may be involved. Sometimes the rash is so faint it may not be noticed. Other symptoms may include: fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches and fatigue. These symptoms may last 2 - 6 weeks and may recur. If untreated, the infection will progress to latent syphilis.
- **Syphilis, latent:** Latent syphilis has no clinical signs or symptoms; however, serologic tests for syphilis will be positive. Early latent disease (*i.e.*, <1 year) is differentiated from late disease (*i.e.*, >1 year) for treatment purposes only.
- **Syphilis, late:** Late syphilis (tertiary syphilis) is rare; however when it occurs, it causes extensive damage the internal organs, including: the brain, nerves, eyes, heart, blood vessels, liver, bones and joints. Symptoms are consistent with the organ system involved and may include: difficulty coordinating muscle movements, paralysis, numbness, gradual blindness and dementia. Death may occur.

C. Reservoirs:

Humans.

D. Mode(s) of Transmission:

Direct person-to-person transmission by sexual contact with an infected persons moist mucosal or cutaneous lesion. Congenital syphilis occurs by transplacental transmission of *T. pallidum*.

E. Incubation Period:

The incubation period for primary syphilis ranges from 10 - 90 days with an average of 21 days.

F. Period of Communicability:

Individuals are infectious during periods when they have primary or secondary mucosal or cutaneous lesions; this rarely occurs beyond the 1st

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year of infection. Fetal infection occurs with high frequency in untreated early infections of pregnant women but may occur during latent syphilis as well.

G. Susceptibility and Resistance:

Susceptibility is universal with an attack rate of approximately 30% per exposure.

H. Treatment:

Penicillin, administered parenterally, is the preferred drug for treatment of all stages of syphilis. For complete treatment guidelines refer to the current STD Treatment Guidelines CDC Sexually transmitted diseases treatment guidelines 2002. MMWR 2002;51 (No. RR-6) available at <http://www.cdc.gov/std/treatment/rr5106.pdf>

STANDARD CASE INVESTIGATION AND CONTROL METHODS¹

Standard investigation activities include the following: 1) Confirmation of the diagnoses (*i.e.*, case definition), 2) Collection of relevant demographic and clinical data (*e.g.*, age, sex, disease syndromes and/or symptoms), 3) Determination of the setting (*e.g.*, community, hospital, daycare or other facility), and 4) Investigation of possible epidemiologic links among cases (*e.g.*, cluster, family, co-workers). Most of the information can be obtained from the case person, healthcare provider and/or the medical record. The investigator may want to also review previous reported cases in the region and/or state. Additional investigation activities include:

A. Identify Potential Source of Infection:

To help identify the source of the infection the investigator should direct their investigation on the following potential source(s) of infection.

- Sexual partners, if possible, obtain name, address including alternative address, and date(s) of exposure for each sexual partner.

B. Identify Potential Exposed Individuals / Populations (Contacts):

The definition of a contact depends upon what stage the case is upon treatment, the following are recommended dates

- Primary Syphilis: All sexual partners from the date of treatment back to 90 days preceding the onset of symptoms.
- Secondary Syphilis: All sexual partners from the date of treatment back to 6 1/2 months preceding the onset of symptoms.
- Early Latent: All sexual partners within the last year preceding treatment.

C. Isolation, Work and Daycare Restrictions:

Cases are to refrain from sexual contact until completion of treatment and healing of lesions.

¹ The investigation will be completed by a Disease Intervention Specialists from the STD Section of the Kansas Department of Health & Environment.

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D. Follow-up of Cases:

Serological tests should be redrawn 2-3 months following treatment to ensure efficacy of treatment.

E. Protection of Contacts:

Contacts will need to be interviewed by Disease Intervention Specialists of the STD Section of the Kansas Department of Health & Environment.

F. Environmental Measures:

None.

G. Education:

Cases and their contacts should be provided information including:

- The method of transmission of STD's, and
- The importance of taking medication, and
- Complications of the disease, and
- The need to practice safer sex (*i.e.*, condom usage) and/or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.

MANAGING SPECIAL SITUATIONS

A. Reported Incidence Is Higher than Usual/Outbreak Suspected:

If you suspect an outbreak, consult with the STD Control Program at the KDHE (785-296-5596). They can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross county lines that would be difficult to detect at the local level.

ADDITIONAL INFORMATION / REFERENCES

- American Academy of Pediatrics. 2003 *Red Book: Report of the Committee on Infectious Disease, 26th Edition*. Illinois, Academy of Pediatrics, 2003.
- Heymann. D., ed., *Control of Communicable Diseases Manual, 18th Edition*. Washington, DC, American Public Health Association, 2004.
- Case definitions for Infectious Conditions Under Public Health Surveillance, Division of Public Health Surveillance and Informatics, Nationally Notifiable Infectious Diseases, United States 2005. Available at: <http://www.cdc.gov/epo/dphsi/PHS/infdis2005.htm>
- Kansas Department of Health and Environment, Bureau of Epidemiology. *Disease Protocols*, 2001.
- County of Los Angeles, Department of Health, Public Health Programs and Services, *Communicable Diseases Manual*, June 2003.
- Oklahoma State Department of Health, Communicable Diseases Division. *The Epidemiologic Follow-up of Communicable Diseases in Oklahoma*, 2001.

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- Missouri Department of Health and Senior Services, Section of Communicable Disease Control & Veterinary Public Health, *Communicable Disease Investigation Reference Manual*. 2001.
- Oregon Health Services Website. Available at <http://www.ohd.hr.state.or.us>
- Commonwealth of Massachusetts, Department of Public Health Website. Available at <http://www.state.ma.us/dph/>
- CDC Website. Available at <http://www.cdc.gov/health/default.htm>

Syphilis Investigation and Documentation Checklist

TASK	DATE	INITIALS
Report Received:	___/___/___	_____
Assigned to Investigator:	___/___/___	_____
Reported to KDHE STD Program:	___/___/___	_____
Met Case Definition: <input type="checkbox"/> Yes <input type="checkbox"/> No	___/___/___	_____
Case Interviewed: MOGE: <input type="checkbox"/> Yes <input type="checkbox"/> No Reason: _____	___/___/___	_____
Contacts Identified and/or Interviewed by KDHE DIS: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> None If Yes, Name(s): _____	___/___/___	_____
Contacts Treated: <input type="checkbox"/> Yes <input type="checkbox"/> No If No, Name(s): _____	___/___/___	_____
2-3 Month Serologic Testing of Case Person Neg.:	___/___/___	_____
Case Closed and Filed:	___/___/___	_____
Comments: _____		

Case Name: _____ **Number:** _____

Principal Investigator: _____ **Date:** ___/___/___

Case Reviewed By: _____ **Date:** ___/___/___

KANSAS NOTIFIABLE DISEASE FORM

Today's Date: ___ / ___ / ___

Patient's Name: _____
Last First Middle

Day Phone: _____ Evening Phone: _____

Residential Address: _____

City: _____ Zip: _____ County: _____

Ethnicity: Hispanic or Latino Not Hispanic or Latino Unknown

Race: American Indian/Alaska Native Asian Black or African American
Native Hawaiian or Other Pacific Islander White Unknown
(Circle all that apply)

Sex: M F Date of Birth: ___ / ___ / ___ Age if DOB unknown: _____

Disease Name: _____

Symptoms:
Onset: ___ / ___ / ___ State the 3 most prominent symptoms:

Symptom 1: _____ Symptom 2: _____ Symptom 3: _____

Outbreak associated? Y N Died? Y N

Institutional Residence? None Nursing Home Correctional Residential Hospital Psych

Physician Name: _____ Physician Phone: _____

Laboratory Information:

Specimen Collection Date: ___ / ___ / ___ Date Reported To You: ___ / ___ / ___

Name of Test Performed: _____ Results of Test: _____

Name of Laboratory: _____ Laboratory Results Attached? Y N

Treatment Information:

Date of Treatment: ___ / ___ / ___ Treatment Type and Dosage: _____
Treatment Status: Complete On-going Discontinued

Name of person reporting: _____ Phone: _____

Comments: _____

Mail reports to your local health department or to: BEDP – Disease Surveillance, 1000 SW Jackson, Suite 210, Topeka, KS 66612-1274. Reports can also be *faxed toll free* to: 1-877-427-7318. (Rev. 04/2004)