Syphilis
Investigation Guideline

Note: A Behavioral Intervention Specialist (BIS) from the Kansas Department of Health and Environment (KDHE), STI/HIV Section, will investigate all reports. Please contact the STI/HIV Section immediately if a case of syphilis is suspected: 785-296-5596.

CONTENT: **VERSION DATE:**

Investigation Protocol:

- **Investigation Guideline** **05/2013**

Revision History:

Date	Replaced	Comments
5/2013	11/2005	Clarification of disease stage definitions and investigation protocols.

Released 11/2005
Version 05/2013

Syphilis
Disease Management and Investigation Guidelines

CASE DEFINITION

Syphilis is a complex sexually transmitted infection 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.

CASE DEFINITION – Primary (CDC, 2008)

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.

Laboratory Criteria for Case Classification:

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

Case Classification (Primary):

- **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]).

CASE DEFINITION – Secondary (CDC, 2008)

Clinical Description for Public Health Surveillance (Acute):
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 Case Classification:

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

Case Classification (Secondary):

- **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.

CASE DEFINITION – Latent (CDC, 2008)

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 (less than one year's duration), late (greater than one year's duration), and unknown (duration of infection unknown) categories based on the duration of infection.

Case Classification (Latent):

- **Probable**: No clinical signs or symptoms of syphilis and the presence of one of the following:
  - **o** 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
  - **o** Past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal titer.

CASE DEFINITION – Congenital (CDC, 2008)

Clinical Description for Public Health Surveillance (Acute):

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 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).

Laboratory Criteria for Case Classification:

- 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 (Congenital):

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

LABORATORY ANALYSIS

Specimens are not required to be sent to the State Public Health Laboratory; however, serological testing for Syphilis is provided by the Serology section.

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

For additional information and/or questions concerning isolate collection, sample transport and laboratory kits call (785) 296-1620 or refer to the online resource guide at: www.kdheks.gov/labs/lab_ref_guide.htm.

EPIDEMIOLOGY

CDC estimates that, annually, 55,400 people in the United States get new syphilis infections. During 2011, there were 46,042 reported new cases of syphilis. Of those cases, 13,970 were primary and secondary (P&S) syphilis, the earliest and most transmissible stages of syphilis. In 2011, men who have sex with men (MSM) accounted for 72% of all P&S syphilis cases.

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 typically characterized by a single painless superficial ulceration (chancre) at the site of exposure. However, there may be more than one chancre present. The chancre appears at the location where syphilis enters the body, and therefore may be seen at any site in the genital, anorectal, or oropharyngeal tracts. The chancre is usually firm, round, small and painless. Because the sore is painless, it can easily go unnoticed. The chancre typically last approximately 3 weeks and will heal regardless of whether or not a person is treated. However, if the infected person does not receive adequate treatment, the infection will progress to the secondary stage.

Syphilis, secondary: Secondary disease is characterized by macular, maculopapular, or papular skin lesions usually involving the palms, soles and flexor areas of the extremities, although other parts of the body may be involved. The rash may be so faint that it goes unnoticed. Rashes associated with the secondary stage of syphilis usually do not itch. The characteristic rash of secondary syphilis may appear as rough, red, or reddish brown spots both on the palms of the hands and the soles of the feet. However, rashes with a different appearance may occur on other parts of the body, sometimes resembling rashes caused by other diseases. Other symptoms may include: fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches and fatigue. These symptoms typically last 2 - 6 weeks and may recur. If untreated, the infection will progress to the latent stage.

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 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 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 2010available at: www.cdc.gov/std/treatment/2010/std-treatment-2010-rr5912.pdf.

NOTIFICATION TO PUBLIC HEALTH AUTHORITIES

Report all confirmed, probable, and suspect cases to the STI/HIV Section within 24 hours of initial report at 785-296-5596 or fax a report to 785-296-5590.

INVESTIGATOR RESPONSIBILITIES

A Behavioral Intervention Specialist (BIS) from KDHE will complete all investigation and case activity. There are no local responsibilities beyond the initial reporting requirements unless additional information and/or help are requested.

STANDARD CASE INVESTIGATION AND CONTROL METHODS

Case Investigation

The medical provider who reported or ordered testing of the case will be contacted by the BIS to obtain the following:

- Information on symptoms and onset dates.
- Diagnosis date of disease.
- Laboratory testing results and dates.
- Information on hospitalizations, including location and dates
- Current treatment.
- Outcomes: disabilities, survived or date of death
- Case's demographic data and contact information (birth date, county, sex, race/ethnicity, occupation, address, phone number(s))

Contact Investigation

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..

Isolation, Work and Daycare Restrictions

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

Case Management

Cases will be managed by attending medical provider. Serological tests should be redrawn 2-3 months following treatment to ensure efficacy of treatment.

Contact Management

Contacts will need to be interviewed by Behavioral Intervention Specialists of the STI/HIV Section of the Kansas Department of Health & Environment.

Environmental Measures

None.

Education

Cases and their contacts should be provided information including:

- The method of transmission of STI'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. Outbreak Investigation:

1) Outbreak definition:
    - Higher than usual number of cases or unusual clustering of cases in time and/or space.
    - If you suspect an outbreak, consult with the STI/HIV Section 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.
2) Recommendations will be made based on CDC guidance.

DATA MANAGEMENT AND REPORTING TO THE KDHE

A. Collect and organize data.

B. Report data by fax (785-296-0792).
- Local health departments and medical providers should report data using KS Notifiable Disease Form.

ADDITIONAL INFORMATION / REFERENCES

A. Treatment / Differential Diagnosis: 2010 CDC STD Treatment Guidelines available at: www.cdc.gov/std/treatment/2010/default.htm

B. Epidemiology, Investigation and Control: Heymann. D., ed., Control of Communicable Diseases Manual, 19th Edition. Washington, DC, American Public Health Association, 2009.

C. Case Definitions: CDC Division of Public Health Surveillance and Informatics, Available at: www.cdc.gov/ncphi/disss/nndss/casedef/case_definitions.htm

D. Kansas Regulations/Statutes Related to Infectious Disease: www.kdheks.gov/epi/regulations.htm

E. Additional Information (CDC): www.cdc.gov/std/syphilis/STDFact-Syphilis.htm