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Syphilis (Treponema pallidum) 2018 Case Definition | CDC  
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National Notifiable Diseases Surveillance System (NNDSS)  
Explore Topics  
Search  
Search  
Clear Input  
For Everyone  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View all  
Related Topics:  
NDC Application  
View All  
search  
close search  
search  
National Notifiable Diseases Surveillance System (NNDSS)  
Menu  
Close  
search  
For Everyone  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View All  
Related Topics  
NDC Application  
View All  
National Notifiable Diseases Surveillance System (NNDSS)  
About About National Notifiable Diseases Surveillance System  
What is Case Surveillance?  
Case Surveillance Modernization  
Infectious Disease Tables  
Non-Infectious Disease Data  
Technical Resource Center  
Case Surveillance in Action  
Contact Us  
View All  
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Case Definitions  
Message Mapping Guides  
Supporting Documents for Implementation  
Event Codes & Other Surveillance Resources  
Syphilis (  
Treponema pallidum  
)  
2018 Case Definition  
Syphilis (  
Treponema pallidum  
)  
2018 Case Definition  
NOTE:  
A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions. Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient’s health needs.  
CSTE Position Statement(s)  
17-ID-11  
Subtype(s)  
Syphilis, primary  
Syphilis, secondary  
Syphilis, early non-primary non-secondary  
Syphilis, unknown duration or late  
Syphilis, Congenital  
Syphilitic Stillbirth  
Background  
Syphilis is a sexually transmitted disease (STD) caused by the bacterium  
Treponema pallidum  
. Syphilis is passed from person to person through direct contact with a syphilitic chancre. Chancres occur mainly on the external genitals, vagina, anus, or in the rectum but can also 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 transmit it through the placenta to the fetus or at birth to the neonate. 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 chancres who are in the primary or secondary stage, many of these chancres are unrecognized. Thus, transmission may occur from persons who are unaware of their infection.  
In the United States, testing for syphilis is currently being done using two algorithms. The traditional one has consisted of initial screening with an inexpensive nontreponemal test, followed by retesting reactive specimens with a more specific treponemal test. Quantitative nontreponemal tests are used to monitor responses to treatment or to indicate new infections. In the last 5–10 years, there has been an increase in the adoption of automated treponemal tests by laboratories which has resulted in the syphilis testing algorithm being reversed. Many laboratories now use an automated treponemal test as the initial screening test followed by a nontreponemal test. While this algorithm is more timely and cost effective for laboratories, it does have a ~14–40% false-positive rate with a second treponemal test often being used to help determine what clinical action should be taken.  
Syphilis infections have continued to increase since their nadir in 2000–2001. Primary and secondary syphilis (the most infectious forms) had a rate of 2.1/100,000 (6,103 cases) in 2001; in 2015, this rate was 7.5/100,000 (23,872), the highest reported since 1994. While cases continue to occur primarily among males with men having sex with men being the primary risk factor, cases among women have also increased. Along with these dramatic increases in adult syphilis, congenital syphilis cases have also been increasing since 2012 with 487 cases reported in 2015 (12.4/100,000 live births). In addition, multiple jurisdictions have observed increases in ocular syphilis, a clinical manifestation that can occur at any stage of syphilis. However, at present, data on severe clinical manifestations such as ocular syphilis are not sufficiently captured in national syphilis case report data. Preliminary data for 2016 indicates an increase in syphilis infections of all stages, including congenital syphilis.  
Subtype(s) Case Definition  
Expand All  
Syphilis, primary  
Clinical Description  
A stage of infection with  
Treponema pallidum  
characterized by one or more ulcerative lesions (e.g. chancre), which might differ considerably in clinical appearance.  
Laboratory Criteria For Diagnosis  
Confirmatory:  
Demonstration of  
T. pallidum  
by darkfield microscopy in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool,  
OR  
Demonstration of  
T. pallidum  
by polymerase chain reaction (PCR) or equivalent direct molecular methods in any clinical specimen.  
Supportive:  
A reactive nontreponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods),  
OR  
A reactive treponemal serologic test (  
T. pallidum  
particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods).\*  
\* These treponemal tests supersede older testing technologies, including microhemagglutination assay for antibody to  
T. pallidum  
[MHA-TP].  
Case Classification  
Probable  
A case that meets the clinical description of primary syphilis and the supportive laboratory criteria.  
Confirmed  
A case that meets the clinical description of primary syphilis and the confirmatory laboratory criteria.  
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 signs can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present.\*  
\*Because of the wide array of symptoms and signs possibly indicating secondary syphilis, serologic tests for syphilis and a physical examination are crucial to determining if a case should be classified as secondary syphilis.  
Laboratory Criteria For Diagnosis  
Confirmatory:  
Demonstration of  
T. pallidum  
by darkfield microscopy in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool,  
OR  
Demonstration of  
T. pallidum  
by polymerase chain reaction (PCR) or equivalent direct molecular methods in any clinical specimen.  
Supportive:  
A reactive nontreponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods),  
AND  
A reactive treponemal serologic test (  
T. pallidum  
particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods).  
Case Classification  
Probable  
A case that meets the clinical description of secondary syphilis and the supportive laboratory criteria.  
Confirmed  
A case that meets the clinical description of secondary syphilis and the confirmatory laboratory criteria.  
Syphilis, early non-primary non-secondary  
Clinical Description  
A stage of infection caused by  
T. pallidum  
in which initial infection has occurred within the previous 12 months, but there are no signs or symptoms of primary or secondary syphilis.  
Laboratory Criteria For Diagnosis  
Supportive:  
A current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer, unless there is evidence that this increase was not sustained for >2 weeks.  
Case Classification  
Probable  
A person with no clinical signs or symptoms of primary or secondary syphilis who has one of the following:  
No prior history of syphilis,  
AND  
a current reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods),  
AND  
a current reactive treponemal test (e.g., TP-PA, EIA, CIA, or equivalent serologic methods),  
OR  
A prior history of syphilis and meets the supportive laboratory criteria.  
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, unless there is evidence that this increase was not sustained for >2 weeks  
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  
Meets epidemiologic criteria  
Epidemiological Criteria:  
A history of sexual exposure to a partner within the previous 12 months who had primary, secondary, or early non-primary non-secondary syphilis (documented independently as duration <12 months).  
Only sexual contact (sexual debut) was within the previous 12 months.  
Syphilis, unknown duration or late  
Clinical Description  
A stage of infection caused by  
T. pallidum  
in which initial infection has occurred >12 months previously or in which there is insufficient evidence to conclude that infection was acquired during the previous 12 months.  
Case Classification  
Probable  
A person with no clinical signs or symptoms of primary or secondary syphilis who meets one of the following sets of criteria:  
No prior history of syphilis, and a current reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), and a current reactive treponemal test (e.g., TP-PA, EIA, CIA, or equivalent serologic methods),  
OR  
A prior history of syphilis, and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer, unless there is evidence that this increase was not sustained for >2 weeks,  
OR  
Clinical signs or symptoms and laboratory results that meet the likely or verified criteria for neurologic, ocular, otic, or late clinical manifestations syphilis (see below)  
AND  
who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, early non-primary non-secondary)  
Comments  
Although cases of syphilis of unknown duration are grouped together with late syphilis for the purposes of surveillance, the conservative clinical and public health responses to these cases will differ when there is uncertainty about the duration of infection. When faced with uncertainty, clinicians should act conservatively and treat unknown duration syphilis as if it were late infection, with three doses of benzathine penicillin. In contrast, the most conservative approach for STD control programs would be to manage cases of syphilis of unknown duration as early non-primary non-secondary infections and search for partners who may have been recently infected. Because this would not be feasible for most STD control programs, programs should consider prioritizing cases of syphilis of unknown duration with higher nontreponemal titers (e.g., 1:32 or higher) for investigation and partner services. Although nontreponemal titers cannot reliably distinguish between early infection (<12 months duration) and late infection (>12 months duration), nontreponemal titers usually are higher early in the course of syphilis infection.  
Syphilis, Congenital  
Clinical Description  
A condition caused by infection in utero with  
Treponema pallidum  
. A wide spectrum of severity exists, from inapparent infection to severe cases that 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 (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 of lesions, body fluids, or neonatal nasal discharge,  
OR  
Polymerase chain reaction (PCR) or other equivalent direct molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material,  
OR  
Immunohistochemistry (IHC), or special stains (e.g., silver staining) of 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 non-treponemal test for syphilis (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods)  
AND  
any one of the following:  
Any evidence of congenital syphilis on physical examination (see Clinical description)  
Any evidence of congenital syphilis on radiographs of long bones  
A reactive cerebrospinal fluid (CSF) venereal disease research laboratory test (VDRL) test  
In a non-traumatic lumbar puncture, an elevated CSF leukocyte (white blood cell, WBC) count or protein (without other cause):  
Suggested parameters for abnormal CSF WBC and protein values:  
During the first 30 days of life, a CSF WBC count of >15 WBC/mm3 or a CSF protein >120 mg/dl is abnormal.  
After the first 30 days of life, a CSF WBC count of >5 WBC/mm3 or a CSF protein >40 mg/dl, regardless of CSF serology.The treating clinician should be consulted to interpret the CSF values for the specific patient.  
\*Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.  
Confirmed  
A case that is laboratory confirmed.  
Comments  
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, WBC count, and protein 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. While maternal antibodies can complicate interpretation of serologic tests in an infant, reactive tests past 18 months of age are considered to reflect the status of the child. 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.  
Syphilitic Stillbirth  
Clinical Description  
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.  
\*Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.  
Comments  
For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.  
Comments  
Additional information to be collected on clinical manifestations of reported syphilis cases  
Syphilis is a systemic infection that, if untreated, can cause a variety of clinical manifestations, including:  
Signs and symptoms of primary and secondary syphilis (see above case definitions)  
Latent infections (i.e., those lacking any signs or symptoms)  
Neurologic, ocular, or otic manifestations (neurosyphilis, ocular syphilis, or otosyphilis), which can occur at any stage of syphilis  
Late clinical manifestations (tertiary syphilis), which generally occur after 15–30 years of untreated infection  
The following provides guidance for reporting neurologic, ocular, otic, and late clinical manifestations of syphilis. Cases should be reported according to stage of infection, as defined above (e.g., primary syphilis; secondary syphilis; early non-primary, non-secondary syphilis; or unknown duration or late syphilis) and the clinical manifestations should be reported in the case report data, as defined below.  
Neurologic Manifestations:  
Neurologic manifestations (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.  
Clinical description  
Infection of the central nervous system with  
T. pallidum  
, as evidenced by manifestations including syphilitic meningitis, meningovascular syphilis, general paresis, including dementia, and tabes dorsalis.  
Classification of neurologic manifestations (neurosyphilis)  
Possible:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and clinical symptoms or signs that are consistent with neurosyphilis without other known causes for these clinical abnormalities.  
Likely:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) with both of the following:  
Clinical symptoms or signs that are consistent with neurosyphilis without other known causes for these clinical abnormalities,  
AND  
Elevated cerebrospinal fluid (CSF) protein (>50 mg/dL2) or leukocyte count (>5 white blood cells/cubic millimeter CSF) in the absence of other known causes of these abnormalities.  
Verified:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) with both of the following:  
Clinical symptoms or signs that are consistent with neurosyphilis without other known causes for these clinical abnormalities,  
AND  
A reactive VDRL in CSF in the absence of grossly bloody contamination of the CSF.  
Ocular Manifestations:  
Ocular manifestations (ocular syphilis) can occur at any stage of syphilis. If the patient has ocular manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if ocular manifestations were not present) and ocular manifestations should be noted in the case report data.  
Clinical description  
Infection of any eye structure with  
T. pallidum  
, as evidenced by manifestations including posterior uveitis, panuveitis, anterior uveitis, optic neuropathy, and retinal vasculitis. Ocular syphilis may lead to decreased visual acuity including permanent blindness.  
Classification of ocular manifestations (ocular syphilis)  
Possible:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and clinical symptoms or signs consistent with ocular syphilis without other known causes for these clinical abnormalities.  
Likely:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:  
Clinical symptoms or signs consistent with ocular syphilis without other known causes for these clinical abnormalities,  
AND  
Findings on exam by an ophthalmologist that are consistent with ocular syphilis in the absence of other known causes for these abnormalities  
Verified:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:  
Clinical symptoms or signs consistent with ocular syphilis without other known causes for these clinical abnormalities,  
AND  
Demonstration of  
T. pallidum  
in aqueous or vitreous fluid by darkfield microscopy, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.  
Otic Manifestations:  
Otic manifestations can occur at any stage of syphilis. If the patient has otic manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if otic manifestations were not present) and otic manifestations should be noted in the case report data.  
Clinical description  
Infection of the cochleovestibular system with  
T. pallidum  
, as evidenced by manifestations including sensorineural hearing loss, tinnitus, and vertigo.  
Classification of otic manifestations (otosyphilis)  
Possible:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and clinical symptoms or signs consistent with otosyphilis without other known causes for these clinical abnormalities.  
Likely:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:  
Clinical symptoms or signs consistent with otosyphilis without other known causes for these clinical abnormalities,  
AND  
Findings on exam by an otolaryngologist that are consistent with otosyphilis in the absence of other known causes for these abnormalities  
Verified:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:  
Clinical symptoms or signs consistent with otosyphilis without other known causes for these clinical abnormalities,  
AND  
Demonstration of  
T. pallidum  
in inner ear fluid by darkfield microscopy, or by polymerase chain reaction (PCR) or equivalent direct molecular detection methods.  
Late Clinical Manifestations:  
Late clinical manifestations of syphilis usually develop only after a period of 15–30 years of untreated infection. Therefore, if the patient has late clinical manifestations of syphilis, the case should be reported with the appropriate stage of infection (for the vast majority of cases, unknown duration or late syphilis) and late clinical manifestations should be noted in the case report data.  
Clinical description  
Late clinical manifestations of syphilis (tertiary 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. In addition, certain neurologic manifestations (e.g., general paresis and tabes dorsalis) are also late clinical manifestations of syphilis.  
Classification of late clinical manifestations of syphilis (tertiary syphilis)  
Likely:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) with either of the following:  
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, in the absence of other known causes of these abnormalities,  
OR  
Clinical signs and symptoms consistent with late neurologic manifestations of syphilis (e.g., general paresis, including dementia, or tabes dorsalis) in a case that meets the criteria for likely neurologic manifestations of syphilis (see above)  
Verified:  
A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and either of the following:  
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 in the absence of other known causes of these abnormalities, in combination with either demonstration of  
T. pallidum  
in late lesions by special stains or equivalent methods, or by polymerase chain reaction (PCR) or equivalent direct molecular methods, or demonstration of pathologic changes that are consistent with  
T. pallidum  
infection on histologic examination of late lesions,  
OR  
Clinical signs and symptoms consistent with late neurologic manifestations of syphilis (e.g., general paresis, including dementia, or tabes dorsalis) in a case that meets the criteria for verified neurologic manifestations of syphilis (see above).  
Related Case Definition(s)  
Syphilis (  
Treponema pallidum  
) | 2014 Case Definition  
Syphilis (  
Treponema pallidum  
) | 1996 Case Definition  
Syphilis (  
Treponema pallidum  
) | 1990 Case Definition  
Back to Top  
Sources  
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