



## Strengthening STD Prevention and Control for Health Departments

### Technical Assistance Note # 5 | Conduct surveillance of adverse outcomes of STDs

#### From Strategy Area I: Conduct Surveillance

##### 5. Conduct surveillance of adverse outcomes of STDs

- a. Conduct active surveillance of adverse outcomes of adult syphilis including neurosyphilis and otic and ocular syphilis through sentinel approaches, collecting variables including, but not limited to: neurologic manifestations, ocular manifestations, otic manifestations, and late clinical manifestations. These are in addition to the stage of syphilis and the core epidemiologic variables listed for P&S syphilis above

### Why DSTDP included these strategies

Syphilitic infections in adults have continued to rise dramatically in the United States. In addition, multiple jurisdictions have observed increases in ocular syphilis, a clinical manifestation that is a severe consequence of untreated syphilitic infection and can occur at any stage of syphilis. However, previously, data on severe clinical manifestations such as ocular syphilis and neurosyphilis have not been sufficiently captured in national syphilis case report data.

Revisions to the syphilis surveillance case definition and case report variables related to clinical manifestations of syphilis were made and took effect January 1, 2018. These revisions were made to ensure consistent and accurate reporting of cases and the appropriate capture of clinical manifestations, especially neurologic and ocular manifestations and late clinical manifestations (see “Key Definitions” below). It is important that public health clinics and facilities are able to capture this information to improve active surveillance of adverse outcomes of adult syphilis such that we are able to accurately characterize the current epidemic and any future epidemiologic changes.

Because this information may not be routinely collected, it is important for health departments to actively work with providers to evaluate patients with syphilis appropriately for these clinical manifestations and include protocols in public health clinics to ensure this information is adequately captured.

### Key Definitions

#### Neurologic Manifestations of Syphilis: Classification

- **Possible:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms consistent with neurosyphilis without other known causes for these clinical abnormalities
- **Likely:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms consistent with neurosyphilis without other known causes for these clinical abnormalities AND elevated cerebrospinal fluid (CSF) protein or CSF leukocyte count in the absence of other known causes for these abnormalities
- **Verified:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms consistent with neurosyphilis without other known causes for these clinical abnormalities AND reactive VDRL in CSF in the absence of grossly bloody contamination of CSF

## Ocular Manifestations of Syphilis: Classification

- **Possible:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms consistent with ocular syphilis without other known causes for these clinical abnormalities
- **Likely:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms 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:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms 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 PCR or equivalent direct molecular methods

## Otic Manifestations of Syphilis: Classification

- **Possible:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms consistent with otosyphilis without other known causes for these clinical abnormalities
- **Likely:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms 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:** Reactive nontreponemal and treponemal serologic tests AND clinical signs/symptoms 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 PCR or equivalent direct molecular methods

## Late Clinical Manifestations of Syphilis: Classification

- **Likely:** Reactive nontreponemal and treponemal serologic tests AND characteristic abnormalities or lesions of the cardiovascular system, skin, bone, 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
- **Verified (Non-neurologic):** Reactive nontreponemal and treponemal serologic tests AND characteristic abnormalities or lesions of the cardiovascular system, skin, bone, or other tissue in the absence of other known causes of these abnormalities AND demonstration of *T. pallidum* in late lesions by special stains or equivalent methods, or by PCR or equivalent direct molecular methods or by demonstration of pathologic changes that are consistent with *T. pallidum* infection on histologic examination of late lesions
- **Verified (Neurologic):** Reactive nontreponemal and treponemal serologic tests AND 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

## Considerations for implementation

- Health departments should plan for how surveillance of adverse outcomes of syphilis will be conducted, including, but not limited to, collecting information on neurologic, ocular, otic, and late clinical manifestations from persons reported with any stage of syphilis. Specifically, consider how these data will be:
  - collected (e.g., patient interviews, provider follow-up)
  - consumed and stored in the surveillance information system (e.g., surveillance information system will be updated), and

- transmitted to CDC as part of routine case reporting (e.g., weekly NETSS extract will be revised to include clinical manifestation variables or STD message mapping guide [MMG] will be implemented).
- Ensure STD case report form is updated with the 2018 revised syphilis case definitions as outlined in CSTE position statement (see “Other Resources” below)
- In order to collect variables required for this surveillance, local disease intervention specialists (DIS) and public health STD providers should routinely ask patients with syphilis about possible symptoms of neurologic, ocular, otic, or late clinical manifestations during patient interviews
  - For those patients who are symptomatic, DIS and clinic providers should make appropriate and effective referrals to other providers and/or sub-specialists if there are clinical evaluations (e.g., ophthalmologic exam) and/or procedures (e.g., lumbar punctures) that public health clinics are unable to provide, and ensure that results are documented in patient’s health department record
  - Public health departments should consider collaborating with local providers to ensure complete collection of clinical data
  - Cases with any of these manifestations should be reported according to their stage (Primary, Secondary, Early Non-Primary Non-Secondary, or Unknown Duration or Late Syphilis), and the clinical manifestations should be noted in the case report data using the appropriate variable
- Health departments should have treatment protocols for neurosyphilis/ocular syphilis in public health clinics to ensure that all cases are treated according to current CDC recommendations
- Consider following up on cases presenting with symptoms of neurosyphilis/ocular syphilis to evaluate for persistent or worsening symptoms and to ensure the evaluation and/or treatment is complete, if applicable
- To go above and beyond, consider monitoring screening and management practices of local providers, such as inquiring about presence of symptoms, ability to perform lumbar punctures/document CSF findings, perform ophthalmologic exams (when applicable), and other related procedures
  - This information can help with interpretation of data trends and can also be used to update provider referral sheets and identify opportunities for provider education
  - Health departments should consider facilitating provider education to improve the recognition of neurologic, ocular, otic, or late clinical manifestations of syphilis by providers and to familiarize them with current STD treatment guidelines

## Other resources

- Clinical Advisory: Ocular Syphilis in the United States: <https://www.cdc.gov/std/syphilis/clinicaladvisoryos2015.htm>
- Ocular Syphilis – Eight Jurisdictions, United States, 2014–2016: <https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a2.htm>
- Syphilis – 2018 Case Definition: <https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/>
- For transmission of data to CDC:
  - NETTS Implementation Guide: [https://www.cdc.gov/std/program/STD-NETSSIMPLN-V5\\_2018Jan.pdf](https://www.cdc.gov/std/program/STD-NETSSIMPLN-V5_2018Jan.pdf)
  - STD Message Mapping Guide: <https://wwwn.cdc.gov/nndss/case-notification/message-mapping-guides.html>
- CDC treatment guidelines: <https://www.cdc.gov/std/tg2015/default.htm>

For more information or feedback on this document, contact your DSTDP Prevention Specialist or email [STD\\_PCHD@cdc.gov](mailto:STD_PCHD@cdc.gov). CDC’s Division of STD Prevention, Program Development and Quality Improvement Branch, developed this document for recipients of PS19-1901 STD PCHD to provide additional clarification of strategies outlined in that NOFO and to support program implementation. The content here does not represent additional NOFO requirements nor official CDC recommendations. Issue date: April 2019