



## Strengthening STD Prevention and Control for Health Departments

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### Technical Assistance Note # 1 | Case-based surveillance of STDs (CT, GC, syphilis)

#### From Strategy Area I: Conduct Surveillance

1. Conduct Chlamydia surveillance
2. Conduct Gonorrhea surveillance
3. Conduct syphilis surveillance
  - a. Collect, manage, analyze, interpret, and disseminate data on identified cases of chlamydia (1a), gonorrhea (2a), and syphilis (3a), ensuring timely capture of core epidemiologic variables available on laboratory reports

#### Why DSTDP included these strategies

Collecting, analyzing, and interpreting data are necessary to describe the local epidemiology of a disease and to be able to respond to suspected outbreaks; disseminating data helps to keep providers, the public, and other necessary stakeholders informed. These activities are at the heart of public health and surveillance. Chlamydia, gonorrhea, and syphilis are reportable in all jurisdictions and are nationally notifiable conditions. As many STDs are asymptomatic, case reports represent only a portion of new infections; however, case reports can describe the minimum burden of disease across population groups and provide information on the local epidemiology of STDs in a jurisdiction. Conducting regular data quality checks and implementing quality improvement activities can help ensure case reports accurately reflect diagnosed and reported cases in your jurisdiction.

#### Key Definitions

**Core variables:** Variables that are essential for counting and/or investigating reported cases accurately and for describing trends in reported cases in key populations at the local and state level. The majority of these variables should be reported to CDC for monitoring national trends; however, some core variables are not able to be transmitted via NETSS (National Electronic Telecommunications System for Surveillance) or the STD MMG (Message Mapping Guide). Variables considered core vary by disease.

#### Considerations for implementation

##### Activities for Conducting Case-based STD Surveillance

- Receive, process, and store laboratory and provider case reports in an STD surveillance information system
  - Ensure data collected and stored are consistent with variables and value sets in the generic, STD, and congenital syphilis message mapping guides (MMGs)
  - De-duplicate case reports which likely represent the same infection
  - Ensure that the *MMWR* week variable is assigned to the date that most closely represents date of infection

- Ensure electronic laboratory reports (ELR) are processed electronically and are populating the correct fields in a case record in the STD surveillance system
- Consider working with local laboratories to increase the proportion of cases that are reported electronically and with relevant information (e.g., anatomic site)
- Transmit STD case report data weekly to CDC
  - Adopt generic, STD, and congenital syphilis MMGs and transmit data to CDC using these HL7 templates
  - Until MMGs are implemented, ensure mapping of the NETSS extract file is in adherence with the current NETSS Record layout
  - Notify DSTDP if a transition to a new surveillance information system is planned or if any issues are identified that will affect upcoming/future data transmissions
- Conduct routine (e.g., weekly) evaluation of trends in the STD case report data received year-to-date, month-to-date, and in the prior week for increases or decreases in reporting
  - Review data by meaningful geographic level (e.g., region, county), demographics, reporting provider and laboratory, and key dates (e.g., date of specimen collection and the date of report to the health department)
  - Identify any aberrations in reported cases (e.g., notable change in number of cases reported) that might indicate a data quality issue (e.g., a provider is no longer reporting) or a change in incidence (e.g., an outbreak)
  - Investigate aberrations to determine likely cause. If needed, reach out to reporting providers to remedy data quality issues
  - Consider creating a standardized weekly report that is automated



**For the regular review of STD case report data, jurisdictions should consider forming a STD data quality workgroup that meets routinely to discuss increases or decreases in case reports, as well as the completeness and timeliness of STD case reporting, and identify and initiate action items for follow-up.**

- Conduct routine (e.g., monthly) data quality checks of STD case report data, including, but not limited to:
  - Review data to ensure core epidemiological variables are complete for CT, GC, and syphilis case reports
  - Identify any providers or laboratories with considerable reporting lags (e.g., providers who report cases with a specimen collection date >30 days prior)
  - Identify any inconsistencies in case report data (e.g., conflicting dates, anatomic sites not appropriate for sex of patient or diagnostic test reported, etc.)
  - Work with local reporting entities to investigate and remedy any identified data quality issues
- Perform a routine, automated electronic data match with the HIV Surveillance system (eHARS) to evaluate STD/HIV co-infection. These findings can be used to describe the epidemiology of STDs in your jurisdiction and to identify opportunities for STD and HIV prevention interventions
  - An integrated data advisory committee that supports PCSI (Program Collaboration and Service Integration) could also facilitate access to and use of related data sources from HIV, Hepatitis, TB, and other programs.
- On at least an annual basis, generate a summary report that provides the most current data on STDs in your jurisdiction, as well as important trends over time. Disseminate reports and other data summaries to key internal and external stakeholders
- Consider evaluating your STD surveillance system to ensure system is meeting public health objectives for STD surveillance. Creating a flow chart that documents flow of data into and out of your surveillance system may be useful

- To go above and beyond, implement electronic case reporting with high-volume providers

## Specific Considerations for Chlamydia

- Core (e.g., specimen collection date) and non-core (e.g., race) variables should be reported to CDC if they are available at the local level and are in the NETSS record layout or the STD MMG
- Focus on conducting quality improvement activities to ensure complete data for core variables available on laboratory reports. Core variables for all chlamydia cases are: age, sex, county, diagnosing facility type, specimen collection date, and anatomic site of infection

Core variables	CT	GC
Age	✓	✓
Sex	✓	✓
County	✓	✓
Diagnosing facility type	✓	✓
Specimen collection date	✓	✓
Anatomic site of infection	✓	✓

## Specific Considerations for Gonorrhea

- Core (e.g., specimen collection date) and non-core (e.g., race) variables should be reported to CDC if they are available at the local level and are in the NETSS record layout or the STD MMG
- Focus on conducting quality improvement activities to ensure complete data for core variables available on laboratory reports for all cases of gonorrhea and conduct enhanced surveillance to collect enhanced variables on a representative sample of gonorrhea cases. Core variables for all gonorrhea cases are: age, sex, county, diagnosing facility type, specimen collection date, and anatomic site of infection. Core variables for enhanced surveillance of a representative sample of gonorrhea cases are: age, sex, county, diagnosing facility type, specimen collection date, anatomic site(s) of infection, race/ethnicity, gender identity/sexual orientation, sex of sex partner(s), clinical signs/symptoms, pregnancy status, HIV status, partner treatment (i.e., EPT provision), gonorrhea-related sequelae (i.e., presence of pelvic inflammatory disease (PID), disseminated gonococcal infection (DGI), etc.), substance use, date of diagnosis, treatment received (including names and doses of treatment), date of treatment, co-infection with other STDs, and history of GC infection
- Refer to **TA Notes #2 and #2b** for more information on conducting gonorrhea surveillance, including conducting enhanced surveillance

## Specific Considerations for Syphilis

- Variables considered core vary by stage of syphilis. Regardless of the stage of syphilis, core and non-core variables should be reported to CDC if they are available at the local level and are in the NETSS record layout or the STD MMG
- For all stages of syphilis, focus on conducting quality improvement activities to ensure complete data for core variables available on laboratory reports. Core variables for all syphilis cases are: age, sex, county, diagnosing facility type, and specimen collection date.

- For primary and secondary syphilis, focus on conducting quality improvement activities to ensure completed data for core variables. Core variables specifically for primary and secondary syphilis cases are: age, sex, county, diagnosing facility type, specimen collection date, race/ethnicity, gender identity/sexual orientation, sex of sex partner(s), pregnancy status, clinical signs/symptoms, HIV status, substance use, treatment received, date of treatment, and history of syphilis.
- Refer to **TA Note #3** for additional information on conducting syphilis surveillance, **TA Note #4** for more about congenital syphilis surveillance and **TA Note #5** for conducting surveillance on adverse sequelae of syphilis, including neurosyphilis and ocular syphilis.

Core variables	Syphilis (all stages)	All P&S syphilis
Age	✓	✓
Sex	✓	✓
County	✓	✓
Diagnosing facility type	✓	✓
Specimen collection date	✓	✓
Race/ethnicity		✓
Gender identity		✓
Sexual orientation		✓
Sex of sex partners		✓
Pregnancy status		✓
Clinical signs/symptoms		✓
HIV status		✓
Substance use		✓
Treatment received		✓
Date of treatment		✓
History of syphilis		✓



The STD MMG identifies “required,” “preferred,” and “optional” variables. Required variables are mandatory for sending the message and if not present, the message will error out. Preferred and optional variables are important to send to CDC but will not result in an error. The STD-specific variables designated as required in the NETSS Record Layout are equivalent to the preferred variables in the STD MMG. These designations are different from the definition of a core variable. Core and non-core variables should be reported to CDC if they are available at the local level and are in the NETSS record layout or the STD MMG;

however, quality improvement activities to increase completeness should only be conducted on core variables.



Some core variables are not included in the NETSS Record layout or the STD MMG. For example, date of treatment is a core variable for P&S syphilis cases but cannot be transmitted to CDC using the STD MMG. Regardless of inclusion in the STD MMG, jurisdictions should use core variables in local analyses to describe and respond to local epidemics.

## Other Resources

- 2017 CDC STD Surveillance Report: <https://www.cdc.gov/std/stats17/default.htm>
- NNDSS Surveillance Case Definitions: <https://www.cdc.gov/nndss/case-definitions.html>
- De-Duplication Guidance for Gonorrhea and Chlamydia Laboratory Reports: <https://www.cdc.gov/std/laboratory/de-duplication-guidance-june2016.pdf>
- Guidance on Classifying STD Case Reports into *MMWR* Week: [https://www.cdc.gov/std/program/MMWR-week-guidance\\_2018January.pdf](https://www.cdc.gov/std/program/MMWR-week-guidance_2018January.pdf)
- MMGs and Artifacts. Available at: <https://www.cdc.gov/nndss/case-notification/message-mapping-guides.html>
- The National Electronic Telecommunications System for Surveillance (NETSS) CDC Implementation Plan for STD Surveillance Data: [https://www.cdc.gov/std/program/STD-NETSSIMPLN-V5\\_2018Jan.pdf](https://www.cdc.gov/std/program/STD-NETSSIMPLN-V5_2018Jan.pdf)
- Groseclose SL, Buckeridge DL. Public Health Surveillance Systems: Recent Advances in Their Use and Evaluation. *Annu Rev Public Health*. 2017 Mar 20;38:57-79. doi: 10.1146/annurev-publhealth-031816-044348. Epub 2016 Dec 15. Review. Available at: [https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-031816-044348?url\\_ver=Z39.88-2003&rfr\\_id=ori%3Arid%3Acrossref.org&rfr\\_dat=cr\\_pub%3Dpubmed](https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-031816-044348?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub%3Dpubmed)
- Centers for Disease Control and Prevention. Updated guidelines for evaluating public health surveillance systems: recommendations from the guidelines working group. *MMWR* 2001;50(No. RR-13). Available at: <https://www.cdc.gov/mmwr/PDF/rr/rr5013.pdf>

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