



# **Syphilis Surveillance Supplemental Slides, 2014–2018**

## **Technical Notes**

**Division of STD Prevention**  
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## **Background**

In the United States, the national rate of primary and secondary (P&S) syphilis has increased almost every year since 2001.<sup>1</sup> In 2018, a total of 35,063 cases of P&S syphilis were reported in the United States, and the national rate was 10.8 cases per 100,000 population. This rate represents a 14.9% increase compared with 2017, and a 71.4% increase compared with 2014.

The *Syphilis Surveillance Supplemental Slides, 2014–2018* provide surveillance data on selected reported behaviors and characteristics among the reported P&S syphilis cases in the United States during 2014–2018, stratified by sex and sex of sex partners and region. The slide deck is available at: [will be added once website is built]. All data tables for slides are available in excel format at: [will be added once website is built].

*Syphilis Surveillance Supplemental Slides, 2014–2018* are best viewed as a companion to *Sexually Transmitted Disease Surveillance 2018*,<sup>1</sup> which includes descriptions of trends in the number of syphilis cases and rates over time, as well as comparisons of syphilis rates and trends among demographic groups. Both of these publications are intended as reference documents for policy makers, program managers, researchers, and others who are concerned with syphilis and its public health implications.

## **Methods**

### **Nationally Notifiable STD Surveillance**

P&S syphilis case report data were extracted from the National Notifiable Diseases Surveillance System (NNDSS), the system through which the Centers for Disease Control and Prevention (CDC) receives syphilis and other notifiable sexually transmitted disease (STD) case data. Case report data include demographic information and, for cases interviewed or investigated by the local health department, also include additional information about behaviors and characteristics, such as information about sex partners and drug use within the past 12 months. P&S syphilis cases are typically prioritized by STD control programs for case investigation and are, therefore, more likely to be reported with data on risk factors compared to cases with other stages of syphilis.

Nationally notifiable STD surveillance data are collected and compiled from reports sent by the STD control programs and health departments in all 50 states, the District of Columbia, and selected cities to CDC. Data are also collected from reports sent by health departments in United States dependencies and possessions, and independent nations in free association with the United States (hereafter referred to as “territories”). Data presented in this report are limited to cases reported by the 50 states and District of Columbia, and do not include cases reported by territories.

### **Case Definitions**

The Council of State and Territorial Epidemiologists (CSTE) recommends that state health departments report cases of selected diseases to CDC’s NNDSS. Case definitions are periodically revised using CSTE’s Position Statements and provide uniform criteria of nationally notifiable conditions for reporting purposes. The most current syphilis surveillance case definitions and archived syphilis case definitions are available at the NNDSS website: <https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/>.

## Missing data

P&S syphilis cases are typically prioritized by STD control programs for case investigation, and are, therefore, more likely to be reported with data on risk factors compared to cases with other stages of syphilis. However, some cases are submitted with missing or unknown data. For these slides, the proportion of cases reporting each behavior or characteristic was calculated among cases with known data for that variable. That is to say, cases with unknown data for each variable were excluded from the analysis. The denominators used to estimate the proportion represent the number of cases with known data for that variable.

## Selected reported behaviors and characteristics

**Drug use:** For these supplemental slides, trends in the proportion of cases that reported using injection drugs, methamphetamines, or heroin in the past 12 months are presented. Other drug use variables are collected (e.g., used nitrates/poppers), but are not included in this report. Injection drug use is collected and reported as a “yes/no” question; therefore, the proportion of cases with reported injection drug use was calculated among those cases reported with a “yes” response or a “no” response. However, some local health departments collected data on the other drug use variables (e.g., methamphetamine) in a “check all that apply” format and therefore did not routinely report “no” responses to these variables. For these drug variables, missing data could indicate either (1) the case reported that he/she did not use that drug, or (2) truly missing/unknown data. For this reason, for each of the drug variables other than injection drug use, missing and unknown responses for the variable were considered to be “no” responses and were included in the denominator for that variable if they had a “yes” response to any other of the drug variables and did not have a “no” response to any of the other drug variables.

**Sex with a person who injects drugs (PWID):** For these supplemental slides, trends in the proportion of cases that reported having sex with a person who injects drugs in the past 12 months are presented. The proportion of cases reporting this behavior was calculated among cases with known data for this variable; cases with unknown data for each variable were excluded from the analysis.

**Sex of sex partners:** For these supplemental slides, trends are presented stratified by sex and sex of sex partners (male cases only). As with drug-use variables, data on sexual partnerships are sometimes collected using affirmative responses only (e.g., “check all that apply”), so missing data may indicate “no” responses. Consequently, sex and sex of sex partner variables were coded using all available data, treating missing responses the same as “no.” Male cases were categorized as gay, bisexual, or other men who have sex with men (MSM) if they reported having sex with any male partner in the last 12 months, regardless of their response to having female partners. Male cases were categorized as men who have sex with women only (MSW) if they reported having sex with female partners in the last 12 months and did not report having sex with a man, including if their response to the item about male partners was missing. All female cases were included in the analysis. Cases with unknown sex and males without data on sex of sex partners were excluded from the analysis.

**Region:** For these supplemental slides, trends are presented stratified by region. Regions were defined according to census regions of the United States: the West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming); Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin);

South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia); and Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont).

## **Interpreting Trends in Proportions**

These trends in the proportion of P&S syphilis cases that reported certain behaviors or characteristics should be interpreted in the context of overall case burden and trends during this time period. Specifically, it is important to note that the majority of P&S syphilis cases are among MSM, and that the number of MSM, MSW, and female cases increased during 2014–2018. Therefore, it is possible that trends in the **proportion** of cases reporting a specific behavior differ from trends in the **number** of cases reporting this behavior; the proportion of cases that reported a behavior could have remained stable while the number of cases reporting that behavior increased. For this reason, both numbers and proportions are included in the data tables for reference.

## **Additional Resources**

For additional STD surveillance data and information, please see the following:

- *Sexually Transmitted Disease Surveillance 2018*, available at <https://www.cdc.gov/std/stats18/default.htm>
- Recommendations for Public Health Surveillance of Syphilis in the United States, available at <https://www.cdc.gov/std/SyphSurvReco.pdf>
- NCHHSTP AtlasPlus, an interactive tool for accessing STD surveillance data, as well as HIV/AIDS, TB, and viral hepatitis data; available at: <https://www.cdc.gov/nchhstp/atlas/>

## **References**

1. Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2018*. Atlanta: U.S. Department of Health and Human Services; 2019. Available at: <https://www.cdc.gov/std/stats18/default.htm>