

# **A P P E N D I X**



## Interpreting STD Surveillance Data

Much of the information in this document is based on cases of nationally notifiable sexually transmitted diseases (STDs) reported to the Division of STD Prevention (DSTDP), National Center for HIV, STD, and TB Prevention (NCHSTP), Centers for Disease Control and Prevention (CDC), by the STD control programs and health departments in the 50 states, the District of Columbia, selected cities, U.S. dependencies and possessions, and independent nations in free association with the United States. Included among the dependencies, possessions, and independent nations are Guam, Puerto Rico, and the Virgin Islands. These entities are identified as “outlying areas” of the United States in selected figures and tables.

### Reporting Formats

STD morbidity data used in this report are based on a combination of hardcopy reporting forms and electronic data received via the National Electronic Telecommunications System for Surveillance (NETSS).

### Summary Hardcopy Forms

The following hardcopy forms were used to report national STD morbidity data:

1. FORM CDC 73.998: Monthly Surveillance Report of Early Syphilis. This monthly hardcopy reporting form was used to report 1984-2002 summary data for P&S syphilis and early latent syphilis by county and state.

2. FORM CDC 73.688: Sexually Transmitted Disease Morbidity Report. This quarterly hardcopy reporting form was used to report 1963-2002 summary data for all stages of syphilis, congenital syphilis, gonorrhea, chancroid, chlamydia, and other STDs by sex and source of report (private vs. public) for the 50 states, Washington, D.C., and 64 selected cities (including San Juan, PR) and outlying areas of the United States. Note: National chlamydia data did not become available until 1996. Congenital syphilis was dropped from this aggregate form in 1995 and replaced by the case-specific CDC 73.126 form listed below.

3. FORM CDC 73.2638: Report of Civilian Cases of Primary & Secondary Syphilis, Gonorrhea, and Chlamydia by Reporting Source, Sex, Race/Ethnicity, and Age Group. This annual hardcopy form was used to report 1981-2002 summary data for P&S syphilis, gonorrhea, and chlamydia by age, race, sex and source (public vs. private) for all states and 7 large cities (Baltimore, Chicago, New York City, Los Angeles, Philadelphia, San Francisco, and Washington, D.C.), and outlying areas of the United States. Note: National chlamydia data did not become available until 1996.

4. FORM CDC 73.126: Congenital Syphilis (CS) Case Investigation and Report. This case-specific hardcopy form continues to be used to report 1983-2004 detailed data for congenital syphilis

for the states (including city, county and zip code information after 1990) and outlying areas of the United States.

## NETSS

Electronic data reported through NETSS comprise the nationally notifiable disease information that is published in the Morbidity and Mortality Weekly Report (MMWR).

As of December 31, 2003, all 50 states and Washington, D.C. had converted from summary hardcopy reporting to electronic submission of line-listed (i.e., case-specific) STD data via NETSS. Guam, Puerto Rico and the Virgin Islands continue to report using summary hardcopy forms.

Jurisdictions differ in their ability to resolve differences in total cases derived from summary hardcopy monthly, quarterly, and annual reports (as well as electronically submitted line-listed data). Thus, depending on the database used, there may be discrepancies in the total number of cases among the figures and tables for earlier years. In most instances, these discrepancies are less than 5% of total reported cases and have minimal impact on national case totals and rates. However, for a specific area, the discrepancies may be larger.

**Reports and corrections sent to CDC on hardcopy forms and for NETSS electronic data through April 29, 2005 have been included in this report. Data received after this date will appear in subsequent issues. The data in the figures and tables in this document supersede those in all earlier publications.**

## Population Denominators and Rate Calculations

Crude incidence rates (new cases/population) were calculated on an annual basis per 100,000 population. In this report, the 2004 rates for the United States, all states, cities and outlying areas were calculated by dividing the number of cases reported from each area in 2004 by the estimated area-specific 2003 population (the most current detailed population file available at time of publication). For the United States, rates were calculated using Bureau of the Census population estimates for 1981 through 1989 (Bureau of the Census; United States Population Estimates by Age, Sex and Race: 1980-1989 [Series P-25, No. 1045]; Washington: U.S. Government Printing Office, 1990; and United States Population Estimates by Age, Sex and Race: 1989 [Series P-25, No. 1057]; Washington: U.S. Government Printing Office, 1990). Rates for states and counties were calculated using published intercensal estimates based on Bureau of the Census population estimates for 1980-1989 (Irwin R; 1980-1989 Intercensal Population Estimates by Race, Sex, and Age; Alexandria, [VA]: Demo-Detail, 1992; machine-readable data file). The National Center for Health Statistics released bridged race population counts for 2000-2003 resident population based on the Census 2000 counts. These estimates resulted from bridging the 31 race categories used in Census 2000, as specified in the 1997 Office of Management and Budget (OMB) standards, to the four race groups specified under the 1977 OMB standards. The files were prepared under a collaborative arrangement with the U.S. Census Bureau. The population counts for 1990-1999 were also updated to incorporate the bridged single-race estimates of the April 1, 2000 resident population. These files were prepared by the U.S. Census Bureau with support from the National Cancer Institute. **Due to use of the updated population data, rates for the period 1990-2003 may be different from prior Surveillance Reports.**

Population estimates for 1980-1988 for areas outside the United States were obtained from the Bureau of the Census (Bureau of the Census; population estimates for Puerto Rico and the outlying areas: 1980 to 1988; Current Population Reports [Series P-25, No. 1049]; Washington: U.S. Government Printing Office, 1989). From 1989 to 2002, population estimates for Guam were obtained from the Guam Bureau of Statistics and Plans, estimates for Puerto Rico were obtained from the Bureau of Census; and estimates for the Virgin Islands were obtained from the University of the Virgin Islands. After 2002, population estimates for all outlying areas were obtained from the Bureau of Census web site. The 2003-2004 rates were calculated using the 2003 population estimates.

Rates of congenital syphilis for 1989-2003 were calculated using live births from the National Center for Health Statistics (NCHS) (Vital Statistics: Natality Tapes 1989-2002 or Vital Statistics Reports, United States 1999, Vol. 48 No.10-Natality). Race-specific rates for 2002-2004 were calculated using live births for 2002. Rates before 1989 were calculated using published live birth data (NCHS; Vital Statistics Report, United States, 1988 [Vol.1–Natality]).

## **Reporting Practices**

Although most areas generally adhere to the case definitions for STDs found in *Case Definitions for Infectious Conditions under Public Health Surveillance*,<sup>1</sup> there may be differences in the policies and systems for collecting surveillance data. Thus, comparisons of case numbers and rates between jurisdictions should be interpreted with caution. However, since case definitions and surveillance activities within a given area remain relatively stable, trends should be minimally affected by these differences. In many areas, the reporting from publicly supported institutions (e.g., STD clinics) has been more complete than from other sources (e.g., private practitioners). Thus, trends may not be representative of all segments of the population.

## **Reporting of City-specific Surveillance Data**

City-specific STD incidence data and rates should be considered estimates since the data may be derived from county data and only approximate city jurisdictions for some cities. Based on past reporting methods, including the transition from summary hardcopy reporting to NETSS reporting, the definition for a selected city can depend on a particular county code, city code, and/or locally-assigned site code. Dependent upon the city jurisdiction definition, city-specific incidence data and rates may be equivalent to those of the county, a proportion of the county, or a combination of the counties in which the city is located. These population data are updated annually, based on estimates from the Bureau of Census, and are verified by the STD project areas.

## **Management of Unknown, Missing or Invalid Age Group, Race/Ethnicity, and Sex Data**

The percentage of unknown, missing or invalid data for age group, race/ethnicity, and sex varies from year to year, state to state, and by disease for reported STDs (Table A1). When the percentage of unknown, missing, or invalid data for the variables - age group, race/ethnicity, and sex - exceeds 50% for any state, the state's incidence data and population data are excluded from the tables presenting data stratified by one or more of these variables (e.g. Table A1). For those states reporting > 50% valid data for these variables, unknown, missing or invalid data are redistributed based on the state's distribution of known age group, race/ethnicity, and sex data, respectively. As a result of this procedure,

incidence and rate data stratified by one or more of the variables - age group, race/ethnicity, and sex – may not accurately reflect total national incidence or rates.

## **Classification of STD Morbidity Reporting Sources**

Prior to 1996, states classified the source of case reports as either private source (including private physicians, and private hospitals and institutions) or public (clinic) source (primarily STD clinics). As states began reporting morbidity data electronically in 1996, the classification categories for source of case reports expanded to include the following data sources: STD clinics, HIV counseling and testing sites, drug treatment clinics, family planning clinics, prenatal/obstetrics clinics, tuberculosis clinics, private physicians/HMOs, hospitals (inpatient), emergency rooms, correctional facilities, laboratories, blood banks, National Job Training Program (formerly Job Corps), school-based clinics, mental health providers, military, and other unspecified sources. Limited data analysis of the data reported electronically after 1996 confirmed that the new STD clinic source of report data corresponded to the earlier reporting source category, public (clinic) source. Therefore, source of case report data for the period 1984-2004 are presented as STD clinic or non-STD clinic only (Table A2).

## **Chlamydia Morbidity Reporting**

Trends in chlamydia morbidity reporting from many areas are more reflective of changes in diagnosis, screening, and reporting practices rather than actual trends in disease incidence. Cases and rates of reported chlamydia in sex-specific tables are underestimated due to some reported cases with unknown sex. Despite problems with under-reporting, it is important to publish available data to emphasize the large numbers of cases of chlamydia being detected in the United States. As areas develop chlamydia prevention and control programs, including improved surveillance systems to monitor trends, the data should improve and become more representative of true trends in disease.

New York City has been reporting chlamydia cases since 1984. However, the State of New York, with the exception of New York City, initiated chlamydia reporting during the year 2000. As a result, the number of chlamydia cases reported by the state of New York (including the cities of Buffalo, Rochester and Yonkers) prior to the year 2001 may be incomplete, and the rate for New York State is underestimated. To be consistent with the practice used in earlier years, New York State chlamydia morbidity data were included in the calculation of overall national chlamydia rates.

The number of chlamydia cases occurring in the fourth quarter of 2000 for the State of Colorado were not available. These cases were projected based on case counts from the first three quarters.

## **Syphilis Morbidity Reporting**

"Total syphilis" or "all stages of syphilis" includes primary, secondary, early latent, late (including neurosyphilis, late latent, late with clinical manifestations, and unknown latent), and congenital syphilis. Cases of latent syphilis of unknown duration, neurosyphilis, and late syphilis with clinical manifestations are included in late and late latent syphilis totals.

In 1996, "late syphilis with clinical manifestations other than neurosyphilis (late benign and cardiovascular syphilis)" was added to the syphilis case definition (see STD Case Definitions in this **Appendix**).

## **Congenital Syphilis Morbidity Reporting**

In 1988, the surveillance case definition for congenital syphilis was changed. This case definition has greater sensitivity than the former definition.<sup>2</sup> In addition, many areas have greatly enhanced active case finding for congenital syphilis since 1988. For these reasons, the number of reported cases increased dramatically during 1989-1991. As a result of this change in surveillance activity a period of transition during which trends cannot be clearly interpreted has resulted; however, all reporting areas had implemented the new case definition for reporting congenital syphilis by January 1, 1992. Therefore, the reliability of trends is expected to have stabilized after this date.

In addition to changing the case definition for congenital syphilis, CDC introduced a new data collection form (CDC 73.126) in 1990 (revised October 2003). Since 1995, the data collected on this form have been used for reporting congenital syphilis reported cases and associated rates. This form is used to collect individual case information which allows more thorough analysis of case characteristics. For the purpose of analyses by race/ethnicity, if either the race or ethnicity question was answered, the case was included. For example, if "white" race was marked, but ethnicity was left blank, the individual was counted as "non-Hispanic white". Congenital syphilis cases were reported by state and city of residence of the mother for the period 1995 through 2004.

## **Chlamydia, Gonorrhea, and Syphilis Prevalence Monitoring**

Chlamydia and gonorrhea test positivity and syphilis seroreactivity were calculated for the following: women attending family planning clinics, prenatal clinics, the National Job Training Program, men attending STD clinics and a large primary care clinic participating in the MSM Prevalence Monitoring Project, and men and women entering corrections facilities. Positivity was calculated by dividing the number of positive tests for chlamydia, gonorrhea, or syphilis (numerator) by the total number of positive and negative tests for each disease (denominator) and was expressed as a percentage. Except for the National Job Training Program screening data, the denominators for these data sources may include more than one test from the same individual if that person was tested more than once during a year. Various laboratory test methods were used for all of these data sources except the National Job Training Program and, for most of the figures shown, no adjustments of test positivity were made based on laboratory test type and sensitivity. However, for Figure 8 and Figure J, the chlamydia test results for each test type were weighted to reflect the sensitivity of the test used.<sup>3</sup> The weights used in this adjustment are the reciprocals of the sensitivities of the laboratory test methods used. These test-specific sensitivities were defined as estimates from published evaluations of chlamydia screening tests.<sup>4,5</sup> Limitations of this adjustment include: unknown dates when laboratories changed tests, missing information on the test method, variation of test sensitivity within a technology type, and no adjustment for supplemental testing such as negative grey zone testing.

For more details on chlamydia prevalence, refer to the following annual publication: Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2004 Supplement: Chlamydia Prevalence Monitoring Project Annual Report 2004*. Atlanta, GA: U.S. Department of Health and Human Services (available first quarter 2006).

In the MSM Prevalence Monitoring Project the syphilis seroreactivity data in most instances do not reflect confirmatory testing and thus biologic false positive test results were not systematically excluded. The extent to which these data reflect prevalence of active syphilis infection varies by site. Similarly, in the Corrections Prevalence Monitoring Project, syphilis seroreactivity test results were

not confirmed. Only a few juvenile corrections sites submitted data to CDC, making overall interpretation difficult due to the small sample size. Because only selected corrections facilities participated in the Corrections Prevalence Monitoring Project, state-specific positivity for syphilis, chlamydia, and gonorrhea may not be representative of all corrections facilities in the state.

Prevalence data for region- and state-specific figures were published with permission from the Regional Infertility Prevention Program, selected state STD prevention programs, and the National Job Training Program.

## **Gonococcal Isolate Surveillance Project (GISP)**

Data on antimicrobial susceptibility in *Neisseria gonorrhoeae* were collected through the Gonococcal Isolate Surveillance Project (GISP), a sentinel system of 28 STD clinics and five regional laboratories located throughout the United States. For more details on findings from GISP gonorrhea surveillance activities, refer to the following annual publication: Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2004 Supplement: Gonococcal Isolate Surveillance Project (GISP) Annual Report 2004*. Atlanta, GA: U.S. Department of Health and Human Services (available first quarter 2006).

## **Definition of DHHS Regions**

The ten U.S. Department of Health and Human Services (DHHS) regions referred to in the text and figures include the following jurisdictions: Region I = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Region II = New Jersey, New York, Puerto Rico, and U.S. Virgin Islands; Region III = Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia; Region IV = Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee; Region V = Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Region VI = Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Region VII = Iowa, Kansas, Missouri, and Nebraska; Region VIII = Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming; Region IX = Arizona, California, Guam, Hawaii, and Nevada; and Region X = Alaska, Idaho, Oregon, and Washington.

## **Other Data Sources**

### **National Disease and Therapeutic Index (NDTI)**

The information on the number of initial visits to private physicians' offices for sexually transmitted diseases was based on analysis of data from the National Disease and Therapeutic Index (NDTI) (machine-readable files or summary statistics for the period 1966 through 2004). For more information on this database, contact IMS Health, 660 W. Germantown Pike, Plymouth Meeting, PA 19462; Telephone: (800) 523-5333.

### **National Hospital Discharge Survey (NHDS)**

The information on patients hospitalized for pelvic inflammatory disease or ectopic pregnancy was based on analysis of data from the National Hospital Discharge Survey (machine-readable files for years 1980-2003), an ongoing nationwide sample survey of short-stay hospitals in the United States, conducted by the National Center for Health Statistics. For more information, see Graves EJ;

1988 Summary: National Hospital Discharge Survey; Advance data No. 185; Hyattsville (MD): National Center for Health Statistics, 1990.

## **National Hospital Ambulatory Medical Care Survey (NHAMCS-ER)**

The National Hospital Ambulatory Medical Care Survey (NHAMCS-ER) (machine-readable files for 1995-2003) was used to obtain estimates of the number of emergency room visits for pelvic inflammatory disease among women ages 15 to 44. The estimates generated using these data sources (NHDS and NHAMCS) are based on statistical surveys and therefore have sampling variability associated with the estimates.

## **Healthy People 2010 Objectives**

Healthy People 2010<sup>6</sup> is a set of health objectives for the U.S. to achieve over the first decade of the new century. It is used by people, States, communities, professional organizations, and others to help develop programs to improve health. Healthy People 2010 builds on initiatives pursued over the past two decades. The 1979 Surgeon General's Report, Healthy People, and Healthy People 2000: National Health Promotion and Disease Prevention Objectives both established national health objectives and served as the basis for the development of State and community plans. Like its predecessors, Healthy People 2010 was developed through a broad consultation process, built on the best scientific knowledge and designed to measure programs over time. Healthy People 2010 is organized into 28 focus areas, each with objectives and measures designed to drive action that will support two overarching goals: 1) increasing the quality and years of healthy life and 2) eliminating health disparities.

Focus area 25 of Healthy People 2010 - Sexually Transmitted Diseases, contains objectives and measures related to STDs. The baselines, HP2010 targets and annual progress toward the targets are reported in Table A3. The year 2010 targets for the diseases addressed in this report are: primary and secondary syphilis—0.2 case per 100,000 population; congenital syphilis—1.0 case per 100,000 live births; and gonorrhea—19.0 cases per 100,000 population. An additional target established in the HP2010 objectives is to reduce the *Chlamydia trachomatis* test positivity to 3% among females aged 15-24 years who attend family planning and STD clinics and among males aged 15- 24 who attend STD clinics.

## **GPRA Goals**

The Government Performance and Results Act of 1993 (GPRA) was enacted by Congress to increase the confidence of citizens in the capability of the federal government, to increase the effectiveness and accountability of federal programs, to improve service delivery, to provide agencies a uniform tool for internal management and to assist Congressional decision making. GPRA requires each agency to have a performance plan with long-term outcomes and annual, measurable performance goals and to report on these plans annually, comparing results with annual goals. There are two STD GPRA goals: 1) reduction in pelvic inflammatory disease (PID) and 2) elimination of syphilis. Each of these goals has measures. The long-term goals and measures of progress are reported in Table A4.

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- <sup>1</sup> Centers for Disease Control and Prevention. Case definitions for infectious conditions under public health surveillance, 1997. *MMWR* 1997;46(No. RR-10;1).
  - <sup>2</sup> Kaufman RE, Jones OG, Blount JH, Wiesner PJ. Questionnaire survey of reported early congenital syphilis: problems in diagnosis, prevention, and treatment. *Sexually Transmitted Diseases* 1977;4:135-9.
  - <sup>3</sup> Webster Dicker L, Mosure DJ, Levine WC, Black CM, Berman SM. The impact of switching laboratory tests on reported trends in *Chlamydia trachomatis* infections. *Am J Epidemiol* 2000;151:430-435.
  - <sup>4</sup> Newhall WJ, DeLisle S, Fine D, et al. Head-to-head evaluation of five different non-culture chlamydia tests relative to a quality-assured culture standard. *Sexually Transmitted Diseases* 1994;21:S165-6.
  - <sup>5</sup> Black CM, Marrazzo J, Johnson RE, et al. Head-to-head multicenter comparison of DNA probe and nucleic acid amplification tests for *Chlamydia trachomatis* infection in women performed with an improved reference standard. *J Clin Micro* 2002;40:3757-3763.
  - <sup>6</sup> U.S. Department of Health and Human Services. *Healthy People 2010* 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.



**Table A2. Reported cases of sexually transmitted disease by sex and reporting source: United States, 2004**

<i>Disease</i>	<i>Non-STD Clinic</i>			<i>STD Clinic</i>			<i>Total*</i>		
	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Chlamydia	128,209	588,112	717,732	73,948	94,197	168,318	210,396	716,675	929,462
Gonorrhea	83,335	131,392	215,113	67,106	30,832	97,988	157,303	172,142	330,132
Primary Syphilis	1,117	132	1,249	883	109	993	2,026	241	2,269
Secondary Syphilis	3,257	630	3,888	1,361	368	1,729	4,696	1,014	5,711
Early Latent Syphilis	3,484	1,426	4,912	1,852	877	2,731	5,433	2,331	7,768
Late and Late Latent Syphilis <sup>†</sup>	7,105	4,689	11,839	3,058	2,095	5,171	10,340	6,896	17,300
Neurosyphilis	552	143	695	84	33	117	650	182	833
Chancroid	10	7	17	8	1	9	19	9	30

\*Totals include unknown sex and reporting source.

<sup>†</sup>Late and late latent syphilis includes cases of unknown duration, late syphilis with clinical manifestations, and neurosyphilis.

See Appendix (Classification of STD Morbidity Reporting Source).

**Table A3. Healthy People 2010 Sexually Transmitted Diseases Objective Status**

<i>HP 2010 Objectives</i>	<i>Baseline Year</i>	<i>Baseline</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>HP 2010 Target</i>
<b>25-1 Reduce the proportion of adolescents and young adults with <i>Chlamydia trachomatis</i> infections</b>										
a. Females aged 15 to 24 years attending family planning clinics	1997	5.0%	6.1%*	5.6%*	5.9%*	5.8%*	6.0%*	6.4%*	6.9%*	3.0%
b. Females aged 15 to 24 years attending STD clinics	1997	12.2%	13.5%*	13.7%*	13.5%*	13.3%*	13.5%*	14.1%*	15.3%*	3.0%
c. Males aged 15 to 24 years attending STD clinics	1997	15.7%	16.9%*	17.0%*	16.4%*	17.0%*	17.5%*	19.3%*	20.8%*	3.0%
<b>25-2 Reduce gonorrhea (cases per 100,000 population)</b>	1997	123.0	129.2	129.3	128.7	126.8	122.0	115.2	113.5	19.0
<b>25-3 Eliminate sustained domestic transmission of primary and secondary syphilis (cases per 100,000 population)</b>	1997	3.2	2.5	2.4	2.1	2.1	2.4	2.5	2.7	0.2
<b>25-4 Reduce the proportion of adults aged 20 to 29 years with genital herpes infection</b>	1988-94	17.0%	NA	NA	NA	NA	11.0%	NA	NA	14.0%
<b>25-6 Reduce the proportion of females aged 15 to 44 years who have ever required treatment for pelvic inflammatory disease (PID)</b>	1995	8.0%	NA	NA	NA	NA	5.0%	NA	NA	5.0%
<b>25-7 Reduce the proportion of childless females with fertility problems who have had a sexually transmitted disease or who have required treatment for pelvic inflammatory disease (PID)</b>	1995	27.0%	NA	NA	NA	NA	22.0%	NA	NA	15.0%
<b>25-9 Reduce congenital syphilis (cases per 100,000 live births)</b>	1997	27.0	21.4	14.5	14.3	12.4	11.4	10.7	8.8	1.0

<i>HP 2010 Objective</i>	<i>Data Source</i>
25-1	STD Surveillance System (STDSS), CDC, NCHSTP.
25-2	STD Surveillance System (STDSS), CDC, NCHSTP.
25-3	STD Surveillance System (STDSS), CDC, NCHSTP.
25-4	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
25-6	National Survey of Family Growth (NSFG), CDC, NCHS.
25-7	National Survey of Family Growth (NSFG), CDC, NCHS.
25-9	STD Surveillance System (STDSS), CDC, NCHSTP.

\*Overall positivity not adjusted for changes in laboratory test method and associated increases in test sensitivity.

NOTE: Healthy People 2010 developmental objectives are not addressed in this report.

NA=Not available.

**Table A4. Government Performance Results Act (GPRA) Sexually Transmitted Diseases Goals and Measures**

<i>GPRA Goals</i>	<i>Baseline</i>	<i>Annual Target</i>	<i>Actual Performance</i>	<i>Long-Term Goal</i>
	<i>2002</i>	<i>2004</i>	<i>2004</i>	<i>2010</i>
<b>Goal 1: Reduction in PID (as measured by initial visits to physicians in women 15-44 years of age)</b>	<b>197,000</b>	<b>163,000</b>	<b>132,000</b>	<b>168,000</b>
a. Prevalence of Chlamydia in high-risk women ≤ 25 years	10.1%*	9.1%*	9.7%*	8.6%*
b. Prevalence of Chlamydia in women ≤ 25 years in family planning clinics	5.6%*	5.2%*	6.3%*	4.9%*
c. Incidence of Gonorrhea/100,000 population in women 15-44 years of age	279	252	278	237
<b>Goal 2: Elimination of Syphilis (as measured by incidence of P&amp;S Syphilis/100,000 population)</b>	<b>2.4</b>	<b>2.5</b>	<b>2.7</b>	<b>2.2</b>
a. Incidence of P&S Syphilis/100,000 population - men	3.8	4.5	4.7	4.2
b. Incidence of P&S Syphilis/100,000 population - women	1.1	0.5	0.8	0.38
c. Incidence of Congenital Syphilis/100,000 live births	10.2	5.4	8.8	3.9
d. Black:white rate ratio of P&S Syphilis	8:1	3.5:1	5.6:1	3:1

<i>GPRA Goals</i>	<i>Data Source</i>
1	National Disease and Therapeutic Index (IMS Health).
1-a	National Job Training Program.
1-b	STD Surveillance System (STDSS), CDC, NCHSTP.
1-c	STD Surveillance System (STDSS), CDC, NCHSTP.
2	STD Surveillance System (STDSS), CDC, NCHSTP.
2-a	STD Surveillance System (STDSS), CDC, NCHSTP.
2-b	STD Surveillance System (STDSS), CDC, NCHSTP.
2-c	STD Surveillance System (STDSS), CDC, NCHSTP.
2-d	STD Surveillance System (STDSS), CDC, NCHSTP.

\*Median state-specific chlamydia prevalence among women was not adjusted for changes in laboratory test method and associated increases in test sensitivity.

# STD Surveillance Case Definitions

## PART 1. CASE DEFINITIONS<sup>1</sup> FOR NATIONALLY NOTIFIABLE INFECTIOUS DISEASES

### Chancroid (Revised 9/96)

#### **Clinical description**

A sexually transmitted disease characterized by painful genital ulceration and inflammatory inguinal adenopathy. The disease is caused by infection with *Haemophilus ducreyi*.

#### **Laboratory criteria for diagnosis**

- Isolation of *H. ducreyi* from a clinical specimen

#### **Case classification**

*Probable*: a clinically compatible case with both a) no evidence of *Treponema pallidum* infection by darkfield microscopic examination of ulcer exudate or by a serologic test for syphilis performed  $\geq 7$  days after onset of ulcers and b) either a clinical presentation of the ulcer(s) not typical of disease caused by herpes simplex virus (HSV) or a culture negative for HSV.

*Confirmed*: a clinically compatible case that is laboratory confirmed

### Chlamydia trachomatis, Genital Infections (Revised 9/96)

#### **Clinical description**

Infection with *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted; however, the infection is often asymptomatic in women. Perinatal infections may result in inclusion conjunctivitis and pneumonia in newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum (see Lymphogranuloma Venereum) and trachoma.

#### **Laboratory criteria for diagnosis**

- Isolation of *C. trachomatis* by culture or
- Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid

#### **Case classification**

*Confirmed*: a case that is laboratory confirmed

### Gonorrhea (Revised 9/96)

#### **Clinical description**

A sexually transmitted infection commonly manifested by urethritis, cervicitis, or salpingitis. Infection may be asymptomatic.

#### **Laboratory criteria for diagnosis**

- Isolation of typical gram-negative, oxidase-positive diplococci (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, or

- Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid, or
- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male

### **Case classification**

*Probable:* a) demonstration of gram-negative intracellular diplococci in an endocervical smear obtained from a female or b) a written morbidity report of gonorrhea submitted by a physician

*Confirmed:* a case that is laboratory confirmed

### **Syphilis (All Definitions Revised 9/96)**

Syphilis is a complex sexually transmitted disease 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.

#### **Syphilis, primary**

##### *Clinical description*

A stage of infection with *Treponema pallidum* characterized by one or more chancres (ulcers); chancres might differ considerably in clinical appearance.

##### *Laboratory criteria for diagnosis*

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

##### *Case classification*

*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])

*Confirmed:* a clinically compatible case that is laboratory confirmed

#### **Syphilis, secondary**

##### *Clinical description*

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 diagnosis*

- Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, DFATP, or equivalent methods

##### *Case classification*

*Probable:* a clinically compatible case with a nontreponemal (VDRL or RPR) titer  $\geq 4$

*Confirmed:* a clinically compatible case that is laboratory confirmed

## **Syphilis, latent**

### *Clinical description*

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, late, and unknown categories based on the duration of infection.

### *Case classification*

*Probable:* no clinical signs or symptoms of syphilis and the presence of one of the following:

- 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)
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer

## **Syphilis, early latent**

### *Clinical description*

A subcategory of latent syphilis. When initial infection has occurred within the previous 12 months, latent syphilis is classified as early latent.

### *Case classification*

*Probable:* latent syphilis (see Syphilis, latent) in a person who has 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
- A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
- A history of sexual exposure to a partner who had confirmed or probable primary or secondary syphilis or probable early latent syphilis (documented independently as duration < 1 year)
- Reactive nontreponemal and treponemal tests from a person whose only possible exposure occurred within the preceding 12 months

## **Syphilis, late latent**

### *Clinical description*

A subcategory of latent syphilis. When initial infection has occurred > 1 year previously, latent syphilis is classified as late latent.

### *Case classification*

*Probable:* latent syphilis (see Syphilis, latent) in a patient who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, early latent) and whose age and titer do not meet the criteria specified for latent syphilis of unknown duration.

## **Syphilis, latent, of unknown duration**

### *Clinical description*

A subcategory of latent syphilis. When the date of initial infection cannot be established as having occurred within the previous year and the patient's age and titer meet criteria described below, latent syphilis is classified as latent syphilis of unknown duration.

### *Case classification*

*Probable:* latent syphilis (see Syphilis, latent) that does not meet the criteria for early latent syphilis, and the patient is aged 13–35 years and has a nontreponemal titer  $\geq 32$

### **Neurosyphilis**

#### *Clinical description*

Evidence of central nervous system infection with *T. pallidum*

#### *Laboratory criteria for diagnosis*

- A reactive serologic test for syphilis and reactive VDRL in cerebrospinal fluid (CSF)

#### *Case classification*

*Probable:* syphilis of any stage, a negative VDRL in CSF, and both the following:

- Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities
- Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities

*Confirmed:* syphilis of any stage that meets the laboratory criteria for neurosyphilis

### **Syphilis, late, with clinical manifestations other than neurosyphilis (late benign syphilis and cardiovascular syphilis)**

#### *Clinical description*

Clinical manifestations of late syphilis other than neurosyphilis may include inflammatory lesions of the cardiovascular system, skin, and bone. 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. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection.

#### *Laboratory criteria for diagnosis*

Demonstration of *T. pallidum* in late lesions by fluorescent antibody or special stains (although organisms are rarely visualized in late lesions)

#### *Case classification*

*Probable:* characteristic abnormalities or lesions of the cardiovascular system, skin, bone, or other structures with a reactive treponemal test, in the absence of other known causes of these abnormalities, and without CSF abnormalities and clinical symptoms or signs consistent with neurosyphilis

*Confirmed:* a clinically compatible case that is laboratory confirmed

#### *Comment*

Analysis of CSF for evidence of neurosyphilis is necessary in the evaluation of late syphilis with clinical manifestations.

## **Syphilitic Stillbirth**

### *Clinical description*

A fetal death that occurs after a 20-week gestation or in which the fetus weighs > 500 g and the mother had untreated or inadequately treated\* syphilis at delivery

### *Comment*

For reporting purposes, syphilitic stillbirths should be reported as cases of congenital syphilis.

## **Syphilis, Congenital (Revised 9/96)**

### ***Clinical description***

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 < 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 *T. pallidum* by darkfield microscopy, fluorescent antibody, or other specific stains in 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 treponemal test for syphilis and any one of the following:

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

*Confirmed*: a case that is laboratory confirmed

### ***Comment***

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, cell count, and protein, as well as IgM antibodies, 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. 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.

\*Inadequate treatment consists of any nonpenicillin therapy or penicillin administered < 30 days before delivery.

## PART 2. CASE DEFINITIONS<sup>1</sup> FOR NON-NOTIFIABLE INFECTIOUS DISEASES

### **Genital Herpes (Herpes Simplex Virus) (Revised 9/96)**

#### ***Clinical description***

A condition characterized by visible, painful genital or anal lesions

#### ***Laboratory criteria for diagnosis***

- Isolation of herpes simplex virus from cervix, urethra, or anogenital lesion, or
- Demonstration of virus by antigen detection technique in clinical specimens from cervix, urethra, or anogenital lesion, or
- Demonstration of multinucleated giant cells on a Tzanck smear of scrapings from an anogenital lesion

#### ***Case classification***

*Probable:* a clinically compatible case (in which primary and secondary syphilis have been excluded by appropriate serologic tests and darkfield microscopy, when available) with either a diagnosis of genital herpes based on clinical presentation (without laboratory confirmation) or a history of one or more previous episodes of similar genital lesions

*Confirmed:* a clinically compatible case that is laboratory confirmed

#### ***Comment***

Genital herpes should be reported only once per patient. The first diagnosis for a patient with no previous diagnosis should be reported.

### **Genital Warts (Revised 9/96)**

#### ***Clinical description***

An infection characterized by the presence of visible, exophytic (raised) growths on the internal or external genitalia, perineum, or perianal region

#### ***Laboratory criteria for diagnosis***

- Histopathologic changes characteristic of human papillomavirus infection in specimens obtained by biopsy or exfoliative cytology or
- Demonstration of virus by antigen or nucleic acid detection in a lesion biopsy

#### ***Case classification***

*Probable:* a clinically compatible case without histopathologic diagnosis and without microscopic or serologic evidence that the growth is the result of secondary syphilis

*Confirmed:* a clinically compatible case that is laboratory confirmed

#### ***Comment***

Genital warts should be reported only once per patient. The first diagnosis for a patient with no previous diagnosis should be reported.

### **Granuloma Inguinale**

#### ***Clinical description***

A slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area caused by infection with *Calymmatobacterium granulomatis*. A clinically compatible case would have one or more painless or minimally painful granulomatous lesions in the anogenital area.

**Laboratory criteria for diagnosis**

- Demonstration of intracytoplasmic Donovan bodies in Wright or Giemsa-stained smears or biopsies of granulation tissue

**Case classification**

*Confirmed*: a clinically compatible case that is laboratory confirmed

**Lymphogranuloma Venereum****Clinical description**

Infection with L1, L2, or, L3 serovars of *Chlamydia trachomatis* may result in a disease characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis. The infection is usually sexually transmitted.

**Laboratory criteria for diagnosis**

- Isolation of *C. trachomatis*, serotype L1, L2, or L3 from clinical specimen, or
- Demonstration by immunofluorescence of inclusion bodies in leukocytes of an inguinal lymph node (bubo) aspirate, or
- Positive microimmunofluorescent serologic test for a lymphogranuloma venereum strain of *C. trachomatis*

**Case classification**

*Probable*: a clinically compatible case with one or more tender fluctuant inguinal lymph nodes or characteristic proctogenital lesions with supportive laboratory findings of a single *C. trachomatis* complement fixation titer of > 64

*Confirmed*: a clinically compatible case that is laboratory confirmed

**Mucopurulent Cervicitis (Revised 9/96)****Clinical description**

Cervical inflammation that is not the result of infection with *Neisseria gonorrhoeae* or *Trichomonas vaginalis*. Cervical inflammation is defined by the presence of one of the following criteria:

- Mucopurulent secretion (from the endocervix) that is yellow or green when viewed on a white, cotton-tipped swab (positive swab test)
- Induced endocervical bleeding (bleeding when the first swab is placed in the endocervix)

**Laboratory criteria for diagnosis**

- No evidence of *N. gonorrhoeae* by culture, Gram stain, or antigen or nucleic acid detection, and no evidence of *T. vaginalis* on wet mount

**Case classification**

*Confirmed*: a clinically compatible case in a female who does not have either gonorrhea or trichomoniasis

**Comment**

Mucopurulent cervicitis (MPC) is a clinical diagnosis of exclusion. The syndrome may result from infection with any of several agents (see *Chlamydia trachomatis*, Genital Infections). If gonorrhea, trichomoniasis, and chlamydia are excluded, a clinically compatible illness should be classified as

MPC. An illness in a female that meets the case definition of MPC and *C. trachomatis* infection should be classified as chlamydia.

### **Nongonococcal Urethritis (Revised 9/96)**

#### **Clinical description**

Urethral inflammation that is not the result of infection with *Neisseria gonorrhoeae*. Urethral inflammation may be diagnosed by the presence of one of the following criteria:

- A visible abnormal urethral discharge, or
- A positive leukocyte esterase test from a male aged < 60 years who does not have a history of kidney disease or bladder infection, prostate enlargement, urogenital anatomic anomaly, or recent urinary tract instrumentation, or
- Microscopic evidence of urethritis ( $\geq 5$  white blood cells per high-power field) on a Gram stain of a urethral smear

#### **Laboratory criteria for diagnosis**

- No evidence of *N. gonorrhoeae* infection by culture, Gram stain, or antigen or nucleic acid detection

#### **Case classification**

*Confirmed*: a clinically compatible case in a male in whom gonorrhea is not found, either by culture, Gram stain, or antigen or nucleic acid detection

#### **Comment**

Nongonococcal urethritis (NGU) is a clinical diagnosis of exclusion. The syndrome may result from infection with any of several agents (see *Chlamydia trachomatis*, Genital Infection). If gonorrhea and chlamydia are excluded, a clinically compatible illness should be classified as NGU. An illness in a male that meets the case definition of NGU and *C. trachomatis* infection should be classified as chlamydia.

### **Pelvic Inflammatory Disease (Revised 9/96)**

#### **Clinical case definition**

A clinical syndrome resulting from the ascending spread of microorganisms from the vagina and endocervix to the endometrium, fallopian tubes, and/or contiguous structures. In a female who has lower abdominal pain and who has not been diagnosed as having an established cause other than pelvic inflammatory disease (PID) (e.g., ectopic pregnancy, acute appendicitis, and functional pain), all the following clinical criteria must be present:

- Lower abdominal tenderness, and
- Tenderness with motion of the cervix, and
- Adnexal tenderness

In addition to the preceding criteria, at least one of the following findings must also be present:

- Meets the surveillance case definition of *C. trachomatis* infection or gonorrhea
- Temperature > 100.4 F (> 38.0 C)
- Leukocytosis > 10,000 white blood cells/mm<sup>3</sup>
- Purulent material in the peritoneal cavity obtained by culdocentesis or laparoscopy

- Pelvic abscess or inflammatory complex detected by bimanual examination or by sonography
- Patient is a sexual contact of a person known to have gonorrhea, chlamydia, or nongonococcal urethritis

**Case classification**

*Confirmed:* a case that meets the clinical case definition

**Comment**

For reporting purposes, a clinician's report of PID should be counted as a case.

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<sup>1</sup> Centers for Disease Control and Prevention. Case definitions for infectious conditions under public health surveillance, 1997. *MMWR* 1997;46(No. RR-10;1).

## STD Project Directors, STD Program Managers, and State and Territorial Epidemiologists

We gratefully acknowledge the contributions of state STD project directors, STD program managers, and state and territorial epidemiologists to this report. The persons listed were in the positions shown as of September 27, 2005.

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