



---

# MMWR<sup>TM</sup>

## Morbidity and Mortality Weekly Report

---

Weekly

Published June 16, 2006, for 2004 / Vol. 53 / No. 53

---

### Summary of Notifiable Diseases — United States, 2004

The *MMWR* series of publications is published by the Coordinating Center for Health Information and Service, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

#### SUGGESTED CITATION

Centers for Disease Control and Prevention. Summary of notifiable diseases—United States, 2004. Published June 16, 2006, for MMWR 2004;53(No. 53):[inclusive page numbers].

#### Centers for Disease Control and Prevention

Julie L. Gerberding, MD, MPH  
*Director*

Dixie E. Snider, MD, MPH  
*Chief Science Officer*

Tanja Popovic, MD, PhD  
*Associate Director for Science*

#### Coordinating Center for Health Information and Service

Steven L. Solomon, MD  
*Director*

#### National Center for Health Marketing

Jay M. Bernhardt, PhD, MPH  
*Director*

#### Division of Scientific Communications

Judith R. Aguilar  
*(Acting) Director*

Mary Lou Lindegren, MD  
*Editor, MMWR Series*

Suzanne M. Hewitt, MPA  
*Managing Editor, MMWR Series*

Teresa F. Rutledge  
*Lead Technical Writer/Editor*

Jeffrey D. Sokolow, MA  
*Project Editor*

Lynda G. Cupell  
*Visual Information Specialist*

Quang M. Doan, MBA  
Erica R. Shaver  
*Information Technology Specialists*

## CONTENTS

Preface .....	2
Background .....	2
Infectious Diseases Designated as Notifiable at the National Level During 2004 .....	3
Data Sources .....	4
Interpreting Data .....	5
Transition in NNDSS Data Collection and Reporting .....	5
Highlights .....	6
PART 1. Summaries of Notifiable Diseases in the United States, 2004 .....	17
TABLE 1. Reported cases of notifiable diseases, by total cases, rank of the total cases, and rate (per 100,000 population) — United States, 2004 .....	18
TABLE 2. Reported cases of notifiable diseases, by geographic division and area — United States, 2004 ...	20
TABLE 3. Reported cases and incidence of notifiable diseases, by age group — United States, 2004 .....	29
TABLE 4. Reported cases and incidence of notifiable diseases, by sex — United States, 2004 .....	31
TABLE 5. Reported cases and incidence of notifiable diseases, by race — United States, 2004 .....	33
TABLE 6. Reported cases and incidence of notifiable diseases, by ethnicity — United States, 2004 .....	35
TABLE 7. Deaths from selected notifiable diseases — United States, 2002 .....	37
PART 2. Graphs and Maps for Selected Notifiable Diseases in the United States, 2004 .....	39
Selected Reading .....	71

## Summary of Notifiable Diseases — United States, 2004

Prepared by  
Ruth Ann Jajosky, DMD  
Patsy A. Hall, Annual Summary Coordinator  
Deborah A. Adams  
Felicia J. Dawkins  
Pearl Sharp  
Willie J. Anderson  
J. Javier Aponte  
Gerald F. Jones  
David A. Nitschke  
Carol A. Worsham  
Nelson Adekoya, DrPH  
Timothy Doyle, MPH

National Center for Public Health Informatics,  
Coordinating Center for Health Information and Service, CDC

---

## Preface

The *Summary of Notifiable Diseases — United States, 2004* contains the official statistics, in tabular and graphic form, for the reported occurrence of nationally notifiable infectious diseases in the United States for 2004. Unless otherwise noted, the data are final totals for 2004 reported as of December 2, 2005. These statistics are collected and compiled from reports sent by state health departments to the National Notifiable Diseases Surveillance System (NNDSS), which is operated by CDC in collaboration with the Council of State and Territorial Epidemiologists (CSTE). The *Summary* is available at <http://www.cdc.gov/mmwr/summary.html>. This site also includes publications from previous years.

The Highlights section presents noteworthy epidemiologic and prevention information for 2004 for selected diseases and additional information to aid in the interpretation of surveillance and disease-trend data. Part 1 contains tables showing incidence data for the nationally notifiable diseases during 2004.\* The tables provide the number of cases reported to CDC for 2004 nationwide as well as the distribution of cases by geographic location and the patient's demographic characteristics (age, sex, race, and ethnicity). Part 2 contains graphs and maps that depict summary data for certain notifiable diseases described in tabular form in Part 1. The Selected Reading section presents general and disease-specific references for notifiable infectious diseases. These references provide additional information on surveillance and epidemiologic concerns, diagnostic concerns, and disease-control activities.

Comments and suggestions from readers are welcome. To increase the usefulness of future editions, comments about the current report and descriptions about how information is or could be used are invited. Comments should be sent to Public Health Surveillance Team — NNDSS, National Center for Public Health Informatics at [soib@cdc.gov](mailto:soib@cdc.gov).

\* Because no cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome-associated coronavirus (SARS-CoV) disease; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in the United States during 2004, these diseases do not appear in the tables in Part 1. For certain other nationally notifiable diseases, incidence data were reported to CDC but are not included in the tables or graphs of this *Summary*. Data on chronic hepatitis B and hepatitis C virus infection (past or present) are undergoing data quality review. Data on ehrlichiosis attributable to other or unspecified agents are being withheld from publication pending the outcome of discussions about the reclassification of certain *Ehrlichia* species, which will probably affect how data in this category are reported. Data on human immunodeficiency virus (HIV) infections are not included because HIV infection (not acquired immunodeficiency syndrome [AIDS]) reporting has been implemented on different dates and by using different methods than for AIDS case reporting; however, these data are summarized in the Highlights section.

## Background

The infectious diseases designated as notifiable at the national level during 2004 are listed on page 3. A notifiable disease is one for which regular, frequent, and timely information regarding individual cases is considered necessary for the prevention and control of the disease. A brief history of the reporting of nationally notifiable infectious diseases in the United States is available at <http://www.cdc.gov/epo/dphsi/nndsshis.htm>. In 1961, CDC assumed responsibility for the collection and publication of data on nationally notifiable diseases. NNDSS is neither a single surveillance system nor a method of reporting. Certain NNDSS data are reported to CDC through separate surveillance information systems and through different reporting mechanisms; however, these data are aggregated and compiled for publication purposes.

The list of nationally notifiable diseases is revised periodically. A disease might be added to the list as a new pathogen emerges, or a disease might be deleted as its incidence declines. Public health officials at state health departments and CDC collaborate in determining which diseases should be nationally notifiable. CSTE, with input from CDC, makes recommendations annually for additions and deletions. Although disease reporting is mandated by legislation or regulation at the state and local levels, state reporting to CDC is voluntary. Thus, the list of diseases considered notifiable varies slightly by state. Current and historic national public health surveillance case definitions used for classifying and enumerating cases consistently across reporting jurisdictions are available at <http://www.cdc.gov/epo/dphsi/nndsshis.htm>.

All states report conditions that were designated as internationally quarantinable and notifiable (i.e., cholera, plague, and yellow fever) in compliance with the International Health Regulations (IHR) issued by the World Health Organization (WHO). In May 2005, the World Health Assembly adopted revised IHR. The current IHR will be replaced by the 2005 IHR when it becomes official on June 15, 2007, unless an earlier implementation date is adopted. The 2005 IHR revision stipulates that smallpox, poliomyelitis caused by wild-type poliovirus, human influenza caused by a new subtype, and SARS-CoV are directly reportable to WHO. In addition, the 2005 IHR includes an open-ended algorithm to determine which other conditions or events require mandatory reporting to WHO because they might constitute a public health emergency of international concern. Conditions that use the algorithm to determine notifiability include, but are not limited to, cholera, pneumonic plague, yellow fever, and West Nile fever (1).

1. World Health Organization. Third report of Committee A. Annex 2. Available at [http://www.who.int/gb/ebwha/pdf\\_files/WHA58/A58\\_55-en.pdf](http://www.who.int/gb/ebwha/pdf_files/WHA58/A58_55-en.pdf).

## Infectious Diseases Designated as Notifiable at the National Level During 2004

Acquired immunodeficiency syndrome (AIDS)	Listeriosis
Anthrax	Lyme disease
Botulism	Malaria
Brucellosis	Measles
Chancroid	Meningococcal disease
<i>Chlamydia trachomatis</i> , genital infection	Mumps
Cholera	Pertussis
Coccidioidomycosis	Plague
Cryptosporidiosis	Poliomyelitis, paralytic
Cyclosporiasis	Psittacosis
Diphtheria	Q fever
Ehrlichiosis	Rabies
Human granulocytic	Animal
Human monocytic	Human
Human, other or unspecified agent	Rocky Mountain spotted fever
Encephalitis/meningitis, arboviral	Rubella
California serogroup	Rubella, congenital syndrome
Eastern equine	Salmonellosis
Powassan	Severe acute respiratory syndrome–associated coronavirus (SARS-CoV) disease
St. Louis	Shigellosis
Western equine	Smallpox*
West Nile	Streptococcal disease, invasive, group A
Enterohemorrhagic <i>Escherichia coli</i> (EHEC)	Streptococcal toxic-shock syndrome
EHEC O157:H7	<i>Streptococcus pneumoniae</i> , invasive disease
EHEC shiga toxin–positive, serogroup non-O157	Drug-resistant, all ages
EHEC shiga toxin–positive, not serogrouped	Age <5 years
Giardiasis	Syphilis
Gonorrhea	Syphilis, congenital
<i>Haemophilus influenzae</i> , invasive disease	Tetanus
Hansen disease (leprosy)	Toxic-shock syndrome (other than streptococcal)
Hantavirus pulmonary syndrome	Trichinellosis <sup>†</sup>
Hemolytic uremic syndrome, postdiarrheal	Tuberculosis
Hepatitis A, viral, acute	Tularemia
Hepatitis B, viral, acute	Typhoid fever
Hepatitis B, viral, chronic	Vancomycin-intermediate <i>Staphylococcus aureus</i> infection (VISA) <sup>§</sup>
Hepatitis B, perinatal infection	Vancomycin-resistant <i>Staphylococcus aureus</i> infection (VRSA) <sup>§</sup>
Hepatitis C, acute	Varicella
Hepatitis C, virus infection (past or present)	Varicella deaths
Human immunodeficiency virus (HIV) infection	Yellow fever
Adult (age ≥13 yrs)	
Pediatric (age <13 yrs)	
Influenza-associated pediatric mortality*	
Legionellosis	

\* New for 2004, as of October 4, 2004.

<sup>†</sup> Formerly referred to as trichinosis.

<sup>§</sup> New for 2004, as of January 1, 2004.

## Data Sources

Provisional data concerning the reported occurrence of nationally notifiable infectious diseases are published weekly in the *MMWR*. After each reporting year, staff in state health departments finalize reports of cases for that year with local or county health departments and reconcile the data with reports previously sent to CDC throughout the year. These data are compiled in final form in the *Summary*.

Notifiable disease reports are the authoritative and archival counts of cases. They are approved by the appropriate chief epidemiologist from each submitting state or territory before being published in the *Summary*. Data published in *MMWR Surveillance Summaries* or other surveillance reports produced by CDC programs might not agree exactly with data reported in the annual *Summary* because of differences in the timing of reports, the source of the data, or surveillance methodology.

Data in the *Summary* were derived primarily from reports transmitted to CDC's National Center for Public Health Informatics from health departments in the 50 states, five territories, New York City, and the District of Columbia. More information regarding infectious notifiable diseases, including case definitions, is available at <http://www.cdc.gov/epo/dphsi/phs.htm>. Policies for reporting notifiable disease cases can vary by disease or reporting jurisdiction. The case-status categories used to determine which cases reported to NNDSS are published, by disease or condition, are listed in the "print criteria" column of the 2006 NNDSS event code list (available at <http://www.cdc.gov/epo/dphsi/phs/files/NNDSSeventcodelistJanuary2006.pdf>).

Final data for certain diseases are derived from the surveillance records of the following CDC programs. Requests for further information regarding these data should be directed to the appropriate program.

### **National Center for Health Statistics (NCHS)**

Office of Vital and Health Statistics Systems (deaths from selected notifiable diseases).

### **National Center for Infectious Diseases (NCID)**

Division of Bacterial and Mycotic Diseases (toxic-shock syndrome; streptococcal disease, invasive, group A; and streptococcal toxic-shock syndrome).

Division of Vector-Borne Infectious Diseases (ArboNET surveillance data regarding arboviral encephalitis/meningitis).

Division of Viral and Rickettsial Diseases (animal rabies, hantavirus pulmonary syndrome, influenza-associated pediatric mortality, and SARS-CoV).

### **National Center for HIV, STD, and TB Prevention (NCHSTP)**

Division of HIV/AIDS Prevention — Surveillance and Epidemiology (acquired immunodeficiency syndrome [AIDS] and human immunodeficiency virus [HIV] infection).

Division of STD Prevention (chancroid, chlamydia, gonorrhea, and syphilis).

Division of TB Elimination (tuberculosis).

### **National Immunization Program (NIP)**

Epidemiology and Surveillance Division (poliomyelitis and varicella deaths).

Population estimates for the states are derived from NCHS estimates of the July 1, 2000–July 1, 2003, U.S. resident population from the Vintage 2003 postcensal series by year, county, age, sex, race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau (available at <http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm>). Population numbers for territories are 2003 estimates from the U.S. Census Bureau International Data Base Data Access–Display Mode (available at <http://www.census.gov/main/ipc/www/idbprint.html>). The choice of population denominators for incidence reported in the *MMWR* is based on 1) the availability of census population data at the time of preparation for publication and 2) the desire for consistent use of the same population data to compute incidence reported by different CDC programs. Incidence in the *Summary* is calculated as the number of reported cases for each disease or condition divided by either the U.S. resident population for the specified demographic population or the total U.S. residential population, multiplied by 100,000. When a nationally notifiable disease is associated with a specific age restriction, the same age restriction is applied to the population in the denominator of the incidence calculation. In addition, population data from states in which the disease or condition was not notifiable or was not available were excluded from incidence calculations. Unless otherwise stated, disease totals for the United States do not include data for American Samoa, Guam, Puerto Rico, the U.S. Virgin Islands, or the Commonwealth of the Northern Mariana Islands.

## Interpreting Data

Incidence data in the *Summary* are presented by the date of report to CDC as determined by the *MMWR* week and year assigned by the state or territorial health department. Data are reported by the state in which the patient resided at the time of diagnosis. For certain nationally notifiable infectious diseases, surveillance data are reported independently to different CDC programs. Thus, surveillance data reported by other CDC programs might vary from data reported in the *Summary* because of differences in 1) the date used to aggregate data (e.g., date of report or date of disease occurrence), 2) the timing of reports, 3) the source of the data, 4) surveillance case definitions, and 5) policies regarding case jurisdiction (i.e., which state should report the case to CDC).

The data reported in the *Summary* are useful for analyzing disease trends and determining relative disease burdens. However, these data must be interpreted in light of reporting practices. Disease reporting is likely incomplete, and completeness might vary depending on the disease. The degree of completeness of data reporting might be influenced by the diagnostic facilities available; control measures in effect; public awareness of a specific disease; and the interests, resources, and priorities of state and local officials responsible for disease control and public health surveillance. Finally, factors such as changes in methods for public health surveillance, introduction of new diagnostic tests, or discovery of new disease entities can cause changes in disease reporting that are independent of the true incidence of disease.

Public health surveillance data are published for selected racial and ethnic populations because these variables can be risk markers for certain notifiable diseases. Race and ethnicity data also can be used to highlight populations for focused prevention efforts. However, caution must be used when drawing conclusions from reported race and ethnicity data. Different racial/ethnic populations might have different patterns of access to health care, potentially resulting in data that are not representative of actual disease incidence among specific racial/ethnic populations. Surveillance data reported to NNDSS are in either individual case-specific form or summary form (i.e., aggregated data for a group of cases). Summary data often lack demographic information (e.g., race); therefore, the demographic-specific rates presented in the *Summary* might be underestimated.

In addition, not all race and ethnicity data are collected uniformly for all diseases. For example, certain disease programs collect data on race and ethnicity by using one or two variables, based on the 1977 standards for collecting such data issued by the Office of Management and the Budget (OMB). However, beginning in 2003, certain CDC programs, including the tuberculosis program, implemented OMB's 1997 revised standards for collecting such data; these programs collect data on multiple races per person by using multiple race variables. Additionally, although the recommended standard for classifying a person's race or ethnicity is based on self-reporting, this procedure might not always be followed.

## Transition in NNDSS Data Collection and Reporting

Before 1990, data were reported to CDC as cumulative counts rather than individual case reports. In 1990, states began electronically capturing and reporting individual case reports (without personal identifiers) to CDC by using the National Electronic Telecommunication System for Surveillance (NETSS). In 2001, CDC launched the National Electronic Disease Surveillance System (NEDSS), now a component of the Public Health Information Network, to promote the use of data and information system standards that advance the development of efficient, integrated, and interoperable surveillance information systems at the local, state, and federal levels. CDC has developed the NEDSS Base System (NBS), a public health surveillance information system that can be used by states that do not wish to develop their own NEDSS-based systems. The objective of NEDSS is to improve the accuracy, completeness, and timeliness of disease reporting at the local, state, and national level. In 2003, CDC encouraged states using NBS to move from NETSS to NEDSS reporting standards. In 2004, six states used NEDSS to transmit nationally notifiable infectious diseases to CDC; as of March 2005, a total of 10 states used NEDSS to transmit these data to CDC. More information concerning NEDSS is available at <http://www.cdc.gov/NEDSS>.

A major feature of NBS is the ability to capture data already in electronic form (e.g., electronic laboratory results, which are needed for case confirmation) rather than enter these data manually as in NETSS.

## Highlights for 2004

Below are summary highlights for certain national notifiable diseases. Highlights are intended to assist in the interpretation of major occurrences that affect disease incidence or surveillance trends (e.g., outbreaks, vaccine licensure, or policy changes).

### AIDS

Since 1981, confidential name-based AIDS surveillance has been the cornerstone of national, state, and local efforts to monitor the scope and impact of the HIV epidemic. The data have multiple uses, including developing policy to help prevent and control AIDS. However, because of the introduction of therapies that effectively slow the progression of the infection, AIDS data no longer adequately represent the populations affected by the epidemic. By providing a window into the epidemic at an earlier stage, HIV data, combined with AIDS data, better represent the overall impact. As of the end of 2004, a total of 43 areas (38 states, Puerto Rico, and four U.S. territories) had implemented confidential name-based HIV reporting. These 43 areas have integrated name-based HIV surveillance into their AIDS surveillance systems, whereas other jurisdictions have used other methods for reporting cases of HIV infection. Under no configuration are names or other personal identifying information collected at the national level.

During 1998–1999, declines in AIDS rates began to level. This trend followed a period of sharp declines in reported cases after 1996, when highly effective antiretroviral therapies were introduced. At the end of 2004, an estimated 415,193 persons were living with AIDS. After a substantial decrease in the number of deaths among persons with AIDS during the late 1990s, the rate of decrease flattened through 2004. The number of deaths among persons with AIDS decreased 66% during 1995–2000. During 2001–2003, the number of deaths reported remained stable; however, in 2004, the number of deaths decreased 10%, compared with the number reported in 2001.

### Anthrax

No cases of anthrax were reported in the United States in 2004. One incident was reported in which laboratory workers were inadvertently exposed to viable spores during the conduct of research on inactivated vegetative organisms. Exposed laboratorians were given postexposure antibiotic prophylaxis. No adverse health effects were reported among the laboratorians (1). This incident highlights the importance of appropriate biosafety procedures and adequate sterility testing when working with inactivated *Bacillus anthracis* or other select agents. Naturally occurring anthrax

epizootics are commonly reported in the United States; two occurred in 2004, affecting livestock in South Dakota and livestock and game animals in Texas. No human cases resulted.

1. CDC. Inadvertent laboratory exposure to *Bacillus anthracis*—California, 2004. MMWR 2005;54:301–4.

### Botulism

Botulism is a severe paralytic illness caused by the toxins of *Clostridium botulinum*. Exposure to toxin can occur by ingestion (foodborne botulism), *in situ* production from *C. botulinum* colonization of a wound (wound botulism) or the gastrointestinal tract (infant botulism), or by injection of pharmacologic preparations of toxin (treatment-associated botulism) (1). In 2004, cases were attributed to foodborne botulism, wound botulism, infant botulism, and treatment-associated botulism resulting from injection of an unlicensed concentrated preparation of toxin (2).

1. Sobel J. Botulism. Clin Infect Dis 2005;41:1167–73.
2. Lee J, Sobel J, Maslanka S. Botulism in the United States, 2004 [Presentation]. Interagency Botulism Research Coordinating Committee Conference (IBRCC), Baltimore, Maryland, December 5–8, 2005.

### Brucellosis

In 2004, five cattle herds in three states were reported by the U.S. Department of Agriculture to be affected by brucellosis. No human cases of brucellosis were associated with the affected herds. One affected state was able to maintain its brucellosis-free designation, and 48 states remain designated free of cattle brucellosis by the U. S. Department of Agriculture (1). *Brucella abortus* remains enzootic in elk and bison in the greater Yellowstone National Park area, and *Brucella suis* is enzootic in feral swine in the southeast. Hunters exposed to these animals might be at increased risk for infection. The majority of human cases in the United States occur among returned travelers or immigrants from countries with endemic brucellosis and are associated with consumption of unpasteurized milk or soft cheeses. Pathogenic *Brucella* species are considered category B biologic threat agents because of a high potential for aerosol transmission. For the same reason, biosafety level 3 practices, containment and equipment are recommended for laboratory manipulations of isolates.



1. Donch DA, Gertonson AA, Gilsdorf MJ. U.S. Cooperative State-Federal Brucellosis Eradication Program status report for January 1, 2004–December 31, 2004. Washington, DC: U.S. Department of Agriculture; 2005. Available at [http://aphis.usda.gov/vs/nahps/brucellosis/yearly\\_report/yearly-report.html](http://aphis.usda.gov/vs/nahps/brucellosis/yearly_report/yearly-report.html).

## Cholera

In 2004, five laboratory-confirmed cases of cholera, all caused by toxigenic *Vibrio cholerae* O1, were reported to CDC. Four (80%) infections were acquired outside the United States, and one (20%) infection, believed to have been acquired through imported seafood, occurred in Hawaii. No patients died. Although the annual average incidence of cholera during 1995–2000 was 10.2 cases per 100,000 population, during 2001–2004, average annual incidence was three cases per 100,000 population (1). This general decrease might reflect a trend towards fewer cases of cholera in Latin America and worldwide, as reported by the World Health Organization (2).

1. Steinberg EB, Greene KD, Bopp CA, Cameron DN, Wells JG, Mintz ED. Cholera in the United States, 1995–2000: trends at the end of the millennium. *J Infect Dis*. 2001;184:799–802.
2. World Health Organization. Cholera, 2004. *Wkly Epidemiol Rec* 2005;80:261–8.

## Coccidioidomycosis

During 2003–2004, the number of reported cases of coccidioidomycosis increased 32% (1). The majority of these cases occurred in California and Arizona. Increases are probably attributable to recent changes in land use, demographics, and climate in endemic areas, although certain cases might be attributable to increased physician awareness and testing. New efforts are needed to determine the amount of undertesting by health-care providers so as to accurately define the burden of disease.

1. CDC. Summary of notifiable diseases—United States, 2003. *MMWR* 2005;52:6–19.

## Encephalitis/Meningitis, Arboviral (West Nile Virus)

During 2004, for the sixth consecutive year, epidemic and epizootic West Nile virus (WNV) activity occurred in the United States (1), particularly in California, Arizona, and Colorado. A high incidence of neuroinvasive WNV disease continued to occur in the Midwest and Great Plains states. Other states experienced perennial reemergence in areas of previous activity, and continued geographic expansion into counties of Western states.

In 2004, a total of 40 states and the District of Columbia reported cases of WNV disease among humans. Of these cases, 45% were West Nile neuroinvasive disease (WNND), 54% were uncomplicated fever, and 5% were clinically unspecified. Of the WNND cases, 8% were fatal. Four states (Arizona, California, Colorado, and Texas) accounted for 64% of all reported human cases. Illness onset dates were April 23–December 30; December 30 is the latest date on which onset of human WNV disease was reported in the United States. The epidemic peak occurred during the week ending August 16. A total of 224 presumptively WNV-viremic blood donors were identified through nationwide blood screening, 125 (56%) of whom were from Arizona, California, and Colorado.

In addition, 47 states reported WNV-infected dead birds; and 38 states reported WNV-infected horses and other WNV-infected animals. *Culex* mosquitoes accounted for 94% of reported WNV-positive pools. *Cx. tarsalis* was the most commonly reported WNV-infected mosquito species and was considered a major epizootic and epidemic vector in states west of the Mississippi river.

1. O'Leary DR, Marfin AA, Montgomery SP, et al. The epidemic of West Nile virus in the United States, 2002. *Vector-Borne Zoonotic Dis* 2004;4:61–9.

## Enterohemorrhagic *Escherichia coli*

*Escherichia coli* O157:H7 has been nationally notifiable since 1994 (1). In 2000, the Council for State and Territorial Epidemiologists passed a resolution in which all Shiga-toxin producing *E. coli* were made nationally notifiable under the name enterohemorrhagic *E. coli* (EHEC); national surveillance for EHEC began in 2001. Surveillance categories for EHEC include 1) EHEC O157:H7; 2) EHEC, serogroup non-O157; and 3) EHEC, not serogrouped. During 1994–1999, reported infections with the most well-known pathogen in this group, *E. coli* O157:H7, increased annually, to a peak of 4,744 cases in 1999. This increase was attributable in part to the increasing ability of laboratories to identify this pathogen. During 2003–2004, incidence reported by active surveillance in FoodNet decreased substantially and progressively compared with 1996–1998; incidence of *E. coli* O157 infections reported by FoodNet sites in 2004 declined below the 2010 national target of one case per 100,000 persons (2).

During 2004, cases of enterohemorrhagic *E. coli* were reported from 50 states, the District of Columbia, and Puerto Rico. Of these, 80% were classified as EHEC O157:H7; 10% as EHEC, serogroup non-O157; and 10% as EHEC, not serogrouped.

Diagnosis solely on the basis of detection of Shiga toxin does not protect the public's health. Characterizing *E. coli* isolates by serotype and pulsed-field gel electrophoresis (PFGE) patterns is critical to detect, investigate, and halt outbreaks. Therefore, broth culture media or specimens in which Shiga toxin is detected should be cultured for *E. coli* or submitted to state public health laboratories for *E. coli* isolation, and isolates should be confirmed and characterized at state public health laboratories.

Healthy cattle, which harbor the organism as part of the bowel flora, are the main animal reservoir for *E. coli* O157:H7 and other Shiga-toxin producing *E. coli*. The majority of reported outbreaks are caused by contaminated food or water. The substantial decline in cases during 2003–2004 coincided with industry and regulatory control activities and with a decrease in the contamination of ground beef (3). Direct transmission from animals and their environments to humans in settings such as petting zoos and through the pet trade remains a growing public health concern (4), and prevention recommendations have been developed and disseminated (5).

1. Mead PS, Griffin PM. *Escherichia coli* O157:H7. *Lancet* 1998;352:1207–12.
2. CDC. Preliminary FoodNet Data on the incidence of infection with pathogens transmitted commonly through food—selected sites, United States, 2004. *MMWR* 2005;54:352–6.
3. Naugle AL, Holt KG, Levine P, Eckel R. 2005 Food Safety and Inspection Service regulatory testing program for *Escherichia coli* O157:H7 in raw ground beef. *J Food Prot* 2005;68:462–8.
4. Crump JA, Sulka AC, Langer AJ, et al. An outbreak of *Escherichia coli* O157:H7 infections among visitors to a dairy farm. *N Engl J Med* 2002;347:555–60.
5. CDC. Compendium of measures to prevent disease associated with animals in public settings, 2005. *MMWR* 2005;54(No. RR-4):1–12.

## Gonorrhea

In 2004, the gonorrhea rate (113.5 cases per 100,000 population) was the lowest ever reported in the United States (1). Although the gonorrhea rate among women (116.5) remained slightly higher than that among men (110.0) for the third straight year, rates for both men and women have been decreasing since 2000. Decreases have been recorded predominantly among black men and women; rates among non-Hispanic white men and women and among all Hispanics have increased slightly since 2000. However, the rate per 100,000 population for blacks remains 19 times higher than that for whites, with the highest rate being among persons aged 15–24 years (2,079.8) and persons aged 20–24 years (2,487.2).

1. CDC. Sexually transmitted disease surveillance, 2004. Atlanta, GA: U.S. Department of Health and Human Services. In press.

## Hansen Disease (Leprosy)

The number of reported cases of Hansen disease (HD) in the United States peaked at 361 in 1985 and has declined since 1988. HD outpatient clinics operated under the guidance and direction of the U.S. Department of Health and Human Services, Health Resources and Services Administration exist in Boston, Massachusetts; Chicago, Illinois; Maricopa County, Arizona; Los Angeles, Martinez, and San Diego, California; Miami, Florida; San Juan, Puerto Rico; Seattle, Washington; New York City, New York; and Dallas, Houston, San Antonio, and Harlingen, Texas. Services provided to HD patients include diagnosis, treatment, follow-up of patients and contacts, monitoring disability, disability prevention, education, maintenance of the referral system of HD health-care services, and maintenance of the HD registry and database. More information is available at <http://bphc.hrsa.gov/nhdp/default.htm>.

## Hepatitis A

Hepatitis A vaccine is recommended for persons at increased risk for hepatitis A (e.g., international travelers, men who have sex with men [MSM], injection drug users [IDUs], and non-IDUs) and also for children in states and counties that historically have had consistently elevated rates of hepatitis A.

Since routine childhood vaccination was recommended in 1999 in states where hepatitis A rates were consistently elevated, the overall hepatitis A rate has declined dramatically. In 2004, the rate (1.9 per 100,000 population) was the lowest yet recorded, with 5,683 cases reported. Declines have been greater among age groups and regions where routine vaccination of children is recommended, likely reflecting the result of the current vaccination strategy. To maintain and further reduce the current low rates, the strategy was expanded in October 2005 to include routine vaccination nationwide of children aged 12–23 months (3).

Although rates among children have declined among all races and ethnicities, the decline among Hispanic children has been less than that among non-Hispanics. The highest rates among children are now among non-Hispanics in states not covered by recommendations for routine childhood hepatitis A vaccination.

The decline in rates among children, particularly those in vaccinating states, has resulted in a substantial shift in the epidemiologic profile of this disease in the United States. Rates in the western states, which historically have been higher than in other regions, are now similar to rates in the rest of the country, and rates among adults are higher than

those among children. In addition, the pattern of reported risk factors has shifted, with an increasing proportion of cases occurring among adults in persons at high risk, including MSM and illegal drug users. In addition, as transmission of hepatitis A virus (HAV) has declined within the United States, the proportion of cases attributed to travel to countries in which hepatitis A is endemic has increased for all age groups and is now the most frequently reported risk factor among persons with hepatitis A virus aged <15 years.

1. CDC. Prevention of hepatitis A through active or passive immunization. MMWR 1996;45(No. RR-15).
2. CDC. Prevention of hepatitis A through active or passive immunization. MMWR 1999;48(No. RR-12).
3. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-7). In press.

## Hepatitis B

During 1990–2004, the number of acute hepatitis B cases reported annually declined 68% (1). This steady decline has coincided with the implementation of a national strategy to achieve the elimination of hepatitis B. The primary elements of this strategy are 1) screening of all pregnant women for hepatitis B virus (HBV) infection with the provision of postexposure prophylaxis to infants born to infected women; 2) routine vaccination of all infants and children aged <19 years; and 3) vaccination of others at increased risk for hepatitis B (e.g., health-care workers, men who have sex with men [MSM], injection-drug users [IDUs], and household and sex contacts of persons with chronic HBV infection).

In 2004, the rate among children aged <13 years, the cohort born since routine infant vaccination was implemented, was 0.07 per 100,000 population, representing a 94% decline for that age group since 1990. By race and ethnicity, the highest rates among children continue to be recorded among Asian/Pacific Islanders (API), followed by blacks, American Indians/Alaska Natives, and whites. Since 1990, however, the disparity between the population with the highest (API) and the lowest (whites) incidence has been reduced >90%. Evaluation of verified cases reported during 2001–2002 indicated that eight (42%) of the 19 cases that were followed up occurred among children born outside the United States; six (75%) of these eight children were international adoptees (2). Since 1990, rates among adolescents aged 14–18 years have also declined approximately 94%, but the 2004 rate (0.4 per 100,000 population) remains substantially higher than the rate for children aged <13 years.

During 1990–1999, rates among adults declined 63% but have since remained approximately unchanged. Among adults, a high proportion of cases occur among persons in identified risk groups (i.e. IDUs, MSM, and persons with multiple sex partners) indicating a need to strengthen efforts to reach these populations with vaccine.

1. CDC. Hepatitis B virus: a comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination. MMWR 1991;40(No. RR-13).
2. CDC. Acute hepatitis B among children and adolescents—United States, 1990–2002. MMWR 2004;53:1015–8.

## HIV Infection, Adult

By December 2003, all 50 states and the District of Columbia had implemented HIV surveillance systems, including both name-based and nonname-based systems. Since 2000, a total of 35 areas (33 states, Guam, and the U.S. Virgin Islands) have had laws or regulations requiring name-based confidential reporting for adults/adolescents with confirmed HIV infection, in addition to reporting of persons with AIDS. In 2002, CDC initiated a system to monitor HIV incidence; in 2003, CDC expanded this system and also initiated a national HIV behavioral surveillance system. CDC will assess the implementation and effectiveness of prevention activities through multiple monitoring systems, including use of new performance indicators for state and local health departments and community-based organizations (1).

At the end of 2004, a total of 209,937 adults and adolescents in the 35 areas were living with HIV infection (not AIDS). Estimated prevalence of HIV infection (not AIDS) in this group was 136.7 per 100,000 population (2). In these areas, 2004 was the first year in which mature HIV surveillance data (i.e., available since at least 2000) could be used to allow for stabilization of data collection and for adjustment of the data in order to monitor trends. Data from additional areas will be included in analyses when ≥4 years of case reports have accrued.

1. CDC. Advancing HIV prevention: new strategies for a changing epidemic—United States, 2003. MMWR 2003;52:329–32.
2. CDC. HIV/AIDS surveillance report, 2004. Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at <http://www.cdc.gov/hiv/stats/hasrlink.htm>.

## HIV Infection, Pediatric

In the 35 areas (33 states, Guam, and the U.S. Virgin Islands) that have had laws or regulations since 2000 requiring confidential name-based reporting for children aged <13 years with confirmed HIV infection, an estimated

2,636 children were living with HIV infection (not AIDS) at the end of 2004. Estimated prevalence of HIV infection (not AIDS) in this group was 7.9 per 100,000 population (1).

1. CDC. HIV/AIDS surveillance report, 2004. Atlanta, GA: US Department of Health and Human Services, CDC, Vol. 16; 2005. Available at <http://www.cdc.gov/hiv/stats/hasrlink.htm>.

## Influenza-Associated Pediatric Mortality

A substantial number of pediatric influenza-associated deaths were reported to CDC during the 2003–04 influenza season (CDC, unpublished data, 2004). In October 2004, CDC added influenza-associated pediatric mortality to the list of conditions voluntarily reportable to the National Notifiable Diseases Surveillance System (NNDSS) (1); at the same time, the Council of State and Territorial Epidemiologists (CSTE) and CDC worked together to draft recommendations for national reporting of pediatric deaths with laboratory confirmation of influenza, and these recommendations were approved at the 2004 CSTE annual meeting (2). Reporting for this condition began in week 40 (week ending October 9, 2004) of the 2004–05 influenza season. The cumulative year-to-date provisional incidence is published each week in the *MMWR* Table I for low-incidence nationally notifiable infectious diseases.

1. CDC. Mid-year addition of influenza-associated pediatric mortality to the list of nationally notifiable diseases, 2004. *MMWR* 2004;53:951–2.
2. Council of State and Territorial Epidemiologists. Influenza-associated pediatric mortality. Atlanta, GA: Council of State and Territorial Epidemiologists; 2004. Available at <http://www.cste.org/PositionStatementsResolution2.htm>.

## Legionellosis

Legionellosis includes two distinct clinical entities: Legionnaires disease (which is characterized by fever, respiratory symptoms, and pneumonia) and Pontiac fever (which is characterized by fever and headache but no evidence of pneumonia). In 2004, the number of cases of legionellosis reported to CDC by state health departments remained above the baseline established before 2003, a year in which an increase in the number of cases was temporally related to excessive rainfall (1). Potential explanations for persistently high case counts include a real increase in the incidence of disease, increased diagnostic testing ordered by clinicians, increased reporting to state health departments, or a combination of all three.

In 2004, an increased number of cases of Legionnaires disease and Pontiac fever associated with overnight travel to hotels or aboard cruise ships were reported (2–4). Approximately 20% of all cases of Legionnaires disease are associated with recent travel; the majority of these cases are thought to be associated with potable water systems in hotels or whirlpool spas in hotels or on board cruise ships. Legionnaires disease is often treated empirically with broad-spectrum antibiotics that are effective against multiple etiologies of community-acquired pneumonia (5), and <10% of all cases are reported to state health departments. The incubation period of Legionnaires disease is 2–10 days, although well-documented cases have occurred >10 days after exposure (6). Because travelers often return home before developing symptoms, clinicians or state health departments are unlikely to be aware of more than one case resulting from a particular travel-related exposure, which complicates the detection of outbreaks.

To address the problem of travel-associated legionellosis, state health departments, the Council of State and Territorial Epidemiologists (CSTE), and CDC are collaborating to improve reporting of travel-associated legionellosis. In 2005, CSTE adopted a position statement aimed at setting goals for timelier reporting of such cases and establishing more current diagnostic criteria (7). Information on preventing travel-associated legionellosis has been published (8).

1. Hicks LA, Rose CE, Khalifah A, et al. Heavy rainfall is associated with increased risk for legionellosis—Mid-Atlantic States, 2003 [Presentation]. Presented at the 42nd Annual Meeting of the Infectious Diseases Society of America, Boston, MA; September 30–October 3, 2004.
2. CDC. Cruise-ship-associated legionnaires disease—November 2003–May 2004. *MMWR* 2005;54:1153–5.
3. CDC. Legionnaires disease associated with potable water in a hotel—Ocean City, Maryland, October 2003–February 2004. *MMWR* 2005;54:165–8.
4. Hicks LA, Burnsed L, Fields B, et al. Travel and tribulations: an explosive outbreak of legionellosis among guests of a hotel—Oklahoma, 2004 [Presentation]. Presented at the 54th Annual Epidemic Intelligence Service Conference, Atlanta, GA; April 11–15, 2005.
5. Mandell LA, Bartlett JG, Dowell SF, File TM Jr, Musher DM, Whitney C. Update of practice guidelines for the management of community-acquired pneumonia in immunocompetent adults. *Clin Infect Dis* 2003;37:1405–33.
6. Den Boer JW, Yzerman EP, Schellekens J, et al. A large outbreak of Legionnaires' disease at a flower show, the Netherlands, 1999. *Emerg Infect Dis* 2002;8:37–43.
7. Council of State and Territorial Epidemiologists. Strengthening surveillance for travel-associated legionellosis and revised case definition for legionellosis. Atlanta, GA: Council of State and Territorial Epidemiologists; 2005. Available at <http://www.cste.org/position%20statements/searchbyyear2005.asp>.
8. CDC. Health information for international travel, 2005–2006. Atlanta, GA: US Department of Health and Human Services, Public Health Service, CDC; 2005:180–2.

## Listeriosis

Listeriosis is a severe but uncommon infection caused by *Listeria monocytogenes*; it was made a nationally notifiable disease in 2000. Listeriosis is primarily foodborne and occurs most frequently among persons who are older, pregnant, or immunocompromised. During 2004, cases of listeriosis were reported from 47 states and the District of Columbia.

Molecular subtyping of *L. monocytogenes* isolates and sharing of that information through PulseNet has enhanced the ability of public health officials to detect and investigate outbreaks of listeriosis. Recent outbreaks have been linked to ready-to-eat meat (1) and unpasteurized fresh cheese (2). During 2004, incidence of listeriosis as reported to FoodNet active surveillance was 0.27 cases per 100,000 population, representing a decrease of 40% compared with 1996–1998 (3).

In January 2001, the Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), and CDC released a national *Listeria* Action Plan to help guide control efforts by industry, regulators, and public health officials (4), and in November 2003, FDA and CDC updated their components of the plan (5). Also in 2003, USDA issued new regulations aimed at further reducing *L. monocytogenes* contamination of ready-to-eat meat and poultry products (6). All clinical isolates should be submitted to state public health laboratories for pulsed-field gel electrophoresis (PFGE) pattern determination, and all persons with listeriosis should be interviewed by a public health specialist or health-care provider using a standard form (available from CDC at telephone 404-639-2206).

1. Gottlieb SL, Newbern EC, Griffin PM et al. Multistate outbreak of listeriosis linked to turkey deli meat and subsequent changes in US regulatory policy. *Clin Infect Dis* 2006;42:29–36.
2. MacDonald PDM, Whitwam RE, Boggs JD et al. Outbreak of listeriosis among Mexican immigrants caused by illicitly produced Mexican-style cheese. *Clin Infect Dis* 2005;40:677–82.
3. CDC. Preliminary FoodNet Data on the incidence of infection with pathogens transmitted commonly through food—selected sites, United States, 2004. *MMWR* 2005;54:352–356.
4. Food and Drug Administration, US Department of Agriculture, CDC. Reducing the risk of *Listeria monocytogenes*: joint response to the President. Available at <http://www.foodsafety.gov/~dms/lmriplan.html>.
5. Food and Drug Administration, CDC. Reducing the risk of *Listeria monocytogenes*: FDA/CDC 2003 update of the *Listeria* Action Plan. Available at <http://www.cfsan.fda.gov/~dms/lmr2plan.html>.
6. US Department of Agriculture, Food Safety and Inspection Service. Control of *Listeria monocytogenes* in ready-to-eat meat and poultry products; Final Rule. *Federal Register* 2003;68:34208–54.

## Lyme Disease

The number of reported Lyme disease cases decreased for the second consecutive year, with 17% fewer cases reported in 2004 than in 2002. However, much of this decrease can be attributed to modifications of the surveillance systems or reporting mechanisms in two high-incidence states.

The risk for Lyme disease and other tickborne illnesses can be reduced by avoiding tick-infested areas, using insect repellent containing N,N-diethyl-m-toluamide (DEET), and checking daily for attached ticks. Persons can also reduce their risk for peridomestic tick exposure through landscape modifications, correctly timed applications of pesticide, and use of commercial bait boxes (1,2).

1. Stafford KC III. Tick management handbook: an integrated guide for homeowners, pest control operators, and public health officials for the prevention of tick-associated disease. New Haven, CT: Connecticut Agricultural Experiment Station; 2004. Available at <http://www.cdc.gov/ncidod/dvbid/lyme/resources/handbook.pdf>.
2. Hayes EB and Piesman J. How can we prevent Lyme disease? *N Eng J Med* 2003;348:2424–30.

## Measles

During 2004, the number of confirmed cases of measles reported in the United States was a record low. Cases occurred in 13 states; 27 cases were internationally imported and resulted in six secondary cases. For four cases, the sources are classified as unknown because no link to importation could be detected. The majority of infected persons were aged <5 years. Two outbreaks occurred, both from imported sources. In one outbreak that involved nine persons, measles occurred among nine adopted children from China; a secondary case occurred in an unvaccinated U.S. resident. In a second outbreak that involved three persons, an unvaccinated U.S. resident aged 19 years with a nonmedical exemption returned to the United States from India while infectious (1,2). Two secondary cases resulted, including one in an airline passenger who was seated directly beside the index patient. Measles can be prevented by adhering to recommendations for vaccination, including guidelines for travelers (3,4).

1. Dayan GH, Ortega-Sanchez IR, LeBaron CW. The cost of containing one case of measles: the economic impact on the public health infrastructure, Iowa, 2004. *Pediatrics* 2005;116:1–4.
2. CDC. Imported measles case associated with nonmedical vaccine exemption—Iowa, March 2004. *MMWR* 2004;53:244–6.
3. CDC. Preventable measles among U.S. residents, 2001–2004. *MMWR* 2005;54:817–20.
4. CDC. Measles, mumps, and rubella—vaccine use and strategies for elimination of measles, rubella, and congenital rubella syndrome and control of mumps: recommendations of the Advisory Committee on Immunization practices (ACIP). *MMWR* 1998;47(No. RR-8):38–9.

## Meningococcal Disease

*Neisseria meningitidis* is a leading cause of bacterial meningitis and sepsis in the United States. During 2004, the number of invasive meningococcal disease cases reported to CDC decreased 22%, compared with the number reported in 2003. The case-fatality ratio (10%–14%) remains high, and 11%–19% of survivors have serious health sequelae. Rates of meningococcal disease are highest among infants, with a second peak at age 18 years (CDC, unpublished data, 2004).

A new tetravalent (A, C, Y, W-135) meningococcal conjugate vaccine ([MCV4] Menactra™; manufactured by Sanofi Pasteur, Swiftwater, Pennsylvania) was licensed in January 2005 for persons aged 11–55 years. CDC's Advisory Committee on Immunization Practices (ACIP) recommends routine vaccination with MCV4 of young adolescents aged 11–12 years, adolescents at high school entry if not vaccinated previously, college freshmen living in dormitories, and other populations at increased risk (1). The new conjugate vaccine should become a key addition to meningococcal disease prevention strategies.

1. CDC. Prevention and control of meningococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2005;54(No. RR-7):1–21.

## Pertussis

In 2004, incidence of reported pertussis increased for the third year in a row, to 8.9 cases per 100,000 population, more than twice the rate reported in 2003. The number of cases was the highest reported since 1959. Of the cases for which age was reported, 10% occurred among infants aged <6 months who were too young to have received the first 3 of the 5 doses of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine recommended by age 6 years. This age group had the highest reported rate (136.5 per 100,000 population). Among older infants aged 6–11 months, the rate was 31.8 per 100,000. Among older children and adults, rates were 16.9 among children aged 1–4 years, 12.6 among children aged 5–9 years, 23.9 among children and adolescents aged 10–19 years, and 3.5 among adults aged ≥20 years.

Pertussis continues to cause morbidity in the United States despite high coverage levels for childhood pertussis vaccine. During 1994–2004, the reported pertussis rate per 100,000 population increased from 1.8 to 8.9. How much

of this increase reflects greater recognition and better reporting of cases is unclear (1,2). Although infants have the highest morbidity associated with pertussis, adolescents and adults now account for the majority (67%) of reported cases. They become susceptible to disease when vaccine-induced immunity wanes, approximately 5–10 years after pertussis vaccination (2).

Two tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine, adsorbed (Tdap) products were licensed by the Food and Drug Administration in 2005 as single-dose booster vaccines to provide protection against tetanus, diphtheria, and pertussis. CDC's Advisory Committee on Immunization Practices (ACIP) recommends the routine use of Tdap vaccines among adolescents aged 11–18 years in place of tetanus and diphtheria toxoids (Td) vaccines (3). ACIP also has made a provisional recommendation that adults aged 19–64 years receive a single dose of Tdap to replace the next dose (4). The primary objective of administering the adolescent pertussis booster is to protect adolescents and adults against pertussis. Strategies for use of Tdap in adults are under review.

1. CDC. Pertussis—United States, 1997–2000. MMWR 2002;51:73–6.
2. Guris D, Strebel PM, Bardenheier B, et al. Changing epidemiology of pertussis in the United States: increased reported incidence among adolescents and adults, 1990–1996. Clin Infect Dis 1999;28:1230–7.
3. CDC. Preventing tetanus, diphtheria, and pertussis among adolescents; use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccines; recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-3):1–45.
4. CDC. ACIP votes to recommend use of combined tetanus, diphtheria, and pertussis vaccine for adults. Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at <http://www.cdc.gov/nip/vaccine/tdap/tdap-adult-recs.pdf>.

## Plague

The number of human plague cases reported in 2004 remained low, compared with an annual average of 13 cases reported during 1980–1999. All cases were acquired from either infected fleas or contact with infected rabbits in Colorado or Wyoming. One case was fatal. In addition to a decreased number of human cases, limited epizootic activity has been reported in the southwestern United States, which is likely secondary to hot summer and dry winter conditions experienced during recent years. Continued surveillance is critical because of the potential use of plague as a bioterrorist agent.

## Rubella and Congenital Rubella Syndrome (CRS)

One of the national health goals for 2010 is to eliminate rubella and CRS in the United States (objective 14-1) (1). On October 29, 2004, a nine-person independent panel unanimously agreed that rubella is no longer endemic in the United States (2).

1. US Department of Health and Human Services. Healthy people 2010: understanding and improving health. 2nd ed. With understanding and informing health and objectives for improving health (2 vols.). Washington, DC: US Department of Health and Human Services; 2000. Available at <http://www.healthypeople.gov>.
2. CDC. Elimination of rubella and congenital rubella syndrome—United States, 1969–2004. *MMWR* 2005;54:279–82.

## Salmonellosis

During 2004, as in previous years, the majority (64%) of reported cases of salmonellosis occurred during July–October. *Salmonella* isolates are reported by serotype through the Public Health Laboratory Information System. Since 1993, the two most frequently reported isolates have been *S. enterica* serotype Typhimurium and *S. enterica* serotype Enteritidis (1). During 2004, overall incidence of *Salmonella* in FoodNet active surveillance sites was 14.5 cases per 100,000 population, representing a decrease of 8% compared with 1996–1998 (2). This decrease was attributable largely to a 41% decrease in incidence of *S. enterica* serotype Typhimurium. Incidence of *S. Enteritidis* remained unchanged, and incidence of *S. Newport* and *S. Javiana* increased 41% and 167%, respectively (2). A substantial proportion of *S. enterica* serotype Typhimurium and *S. enterica* serotype Newport isolates are resistant to multiple drugs; national surveillance of *S. enterica* serotype Typhimurium strains conducted in 2002 indicated that 40% were resistant to one or more drugs and that 34% had a five-drug resistance pattern characteristic of a single phage type, DT104 (3). During 1998–2002, the proportion of five-drug-resistant strains of *S. enterica* serotype Newport increased substantially, from 1 in 1998 to 22% in 2002 (3,4).

1. CDC. PHLIS surveillance data. *Salmonella* annual summaries. Atlanta, GA: US Department of Health and Human Services, CDC; 2002. Available at <http://www.cdc.gov/ncidod/dbmd/phlisdata/salmonella.htm>.
2. CDC. Preliminary FoodNet Data on the incidence of infection with pathogens transmitted commonly through food—selected sites, United States, 2004. *MMWR* 2005;54:352–6.
3. CDC. Human isolates final report, 2002. National Antimicrobial Resistance Monitoring System: enteric bacteria. Atlanta, GA: US Department of Health and Human Services, CDC; 2002. Available at <http://www.cdc.gov/narms>.

4. Gupta A., Fontana J, Crowe C, et al. Emergence of multi-drug resistant *Salmonella enterica* serotype Newport infections resistant to expanded-spectrum cephalosporins in the United States. *J Infect Dis* 2003;188:1707–16.

## Shigellosis

The approximately 14,000 cases of shigellosis reported to CDC in 2004 represent a substantial decrease from the reported annual totals since 1978, which have uniformly exceeded 17,000 cases. *Shigella sonnei* infections continue to account for >75% of shigellosis in the United States (1). Prolonged, multistate outbreaks of *S. sonnei* infections transmitted in child care centers, where maintenance of good hygienic conditions requires special care account for much of the problem (2,3). Shigellae also can be transmitted through contaminated foods, sexual contact, and water used for drinking or recreational purposes (1). A new serotype of *Shigella boydii* has been reported in the United States and Canada (4).

1. Gupta A, Polyak CS, Bishop RD, Sobel J, Mintz ED. Laboratory-confirmed shigellosis in the United States, 1989–2002: epidemiologic trends and patterns. *Clin Infect Dis* 2004;38:1372–7.
2. Shane A, Crump J, Tucker N, Painter J, Mintz E. Sharing *Shigella*: risk factors and costs of a multi-community outbreak of shigellosis. *Arch Pediatr Adolesc Med* 2003;157:601–3.
3. CDC. Day-care related outbreaks of rhamnose-negative *Shigella sonnei*—six states, June 2001–March 2003. *MMWR* 2004;53:60–3.
4. Sivapalasingam S, Nelson JM, Joyce K, Hoekstra M, Angulo FJ, Mintz ED. A high prevalence of antimicrobial resistance among *Shigella* isolates in the United States, 1999–2002. *Antimicrob Agents Chemother* 2006. In press.

## Syphilis, Primary and Secondary

In 2004, rates of primary and secondary syphilis increased for the fourth consecutive year to the highest level (2.7 cases per 100,000 population) reported in the United States since 1997 (1). These increases occurred only among men; however, for the first time in >10 years, the rate of primary and secondary syphilis among women did not decrease but remained essentially unchanged from 2003. Rates increased among both black and white men. CDC is collaborating with partners from throughout the United States to revise the Syphilis Elimination Plan for 2005–2010 (2).

1. CDC. Primary and secondary syphilis—United States, 2003–2004. *MMWR* 2006;55:269–73.
2. CDC. Sexually transmitted disease surveillance, 2004. Atlanta, GA: U.S. Department of Health and Human Services, CDC. Available at <http://www.cdc.gov/STD/stats/04pdf/2004surveillanceall.pdf>.

## Tetanus

Two fatal cases of tetanus were reported in 2004: a woman aged 85 years with a history of a single tetanus toxoid (TT) booster 50 years previously and a diabetic woman aged 78 years with no documented tetanus vaccinations. The majority (76%) of tetanus cases occurred among persons aged >40 years; 47% occurred among persons aged >60 years. No neonatal cases were reported.

## Tuberculosis

During 2003–2004, the tuberculosis (TB) rate per 100,000 population declined 3.2%, from 5.1 to 4.9 cases (1). This rate remains higher than the national objective of 3.5 cases per 100,000 population set for 2000 (2).

In 2004, disparities in TB rates persisted among members of racial and ethnic minority populations. In descending order, the highest rates per 100,000 population were reported among Asians (27.6), Native Hawaiians or Other Pacific Islanders (16.3), non-Hispanic blacks (11.3), Hispanics (10.1), American Indians or Alaska Natives (7.3), and non-Hispanic whites (1.3). In 2004, for the first time, Hispanics (29%) exceeded blacks (28%) as the racial or ethnic population with the largest percentage of all TB cases (1).

In 2004, foreign-born persons accounted for 54% of the national case total, and 22 states reported  $\geq 50\%$  of their cases among foreign-born persons (1). The percentage of foreign-born persons among all persons with TB has risen steadily since 1993, when foreign-born persons accounted for 29% (1) of the national case total, and five states reported  $\geq 50\%$  of their cases among foreign-born persons (3). Although the TB rate among foreign-born persons decreased during 1993–2004 (from 34.0 to 22.8 per 100,000 population), the decrease among U.S.-born persons has been greater (from 7.4 to 2.6). In 2004, the case rate was 8.8 times greater among foreign-born persons than among U.S.-born persons; since 1993, this rate ratio has increased steadily.

CDC is collaborating with public health partners in implementing TB control initiatives for recent international arrivals and residents along the border between the United States and Mexico and in strengthening TB programs in countries with a high incidence of TB disease (4). CDC has updated its comprehensive national action plan to reflect the realignment of its priorities with the 2000 Institute of Medicine report on TB (5). The updated plan ensures that priority prevention activities are undertaken with optimal collaboration and coordination among national and international public health partners (6).

1. CDC. Reported tuberculosis in the United States, 2004. Atlanta, GA: US Department of Health and Human Services, CDC; 2005.
2. CDC. Healthy people 2000 final review. Hyattsville, MD: US Department of Health and Human Services, Public Health Service, CDC; 2001. Available at <http://www.cdc.gov/nchs/products/pubs/pubd/hp2k/review/highlightshp2000.htm>.
3. CDC. Reported tuberculosis in the United States, 1993. Atlanta, GA: US Department of Health and Human Services, CDC; 1994.
4. CDC. Trends in tuberculosis—United States, 2004. MMWR 2005;54:245–9.
5. Institute of Medicine. Ending neglect: the elimination of tuberculosis in the United States. Washington, DC: National Academy Press; 2000.
6. CDC. CDC's response to ending neglect: the elimination of tuberculosis in the United States. Atlanta, GA: US Department of Health and Human Services, CDC; 2002.

## Tularemia

The number of cases reported in 2004 remained stable compared with the annual average reported during 1990–2000 (1). The majority of cases resulted from typical environmental exposures including arthropod bites or contact with infected mammals. Noteworthy were cases of laboratory-acquired pneumonic tularemia among researchers working with cultures contaminated with virulent *Francisella tularensis* and a case associated with a pet hamster bite (2). CDC requests that *F. tularensis* isolates be submitted to the CDC laboratory in Fort Collins, Colorado, for subtyping and PFGE testing.

1. CDC. Tularemia—United States, 1990–2000. MMWR 2002;51:181–4.
2. CDC. Tularemia associated with a hamster bite—Colorado, 2004. MMWR 2005;53:1202–3.

## Typhoid Fever

In 2004, the number of cases of typhoid fever in the United States reported to CDC was the second lowest total for any year since 1972. Despite recommendations that travelers to countries in which typhoid fever is endemic should be vaccinated with either of two effective vaccines available in the United States, approximately three fourths of all cases occur among persons who report international travel during the preceding month. Persons visiting friends and relatives in south Asia appear to be at particular risk, even during short visits (1). *Salmonella* Typhi strains with decreased susceptibility to ciprofloxacin are increasingly frequent in that region and might require treatment with alternative antimicrobial agents (2). Typhoid fever outbreaks in the United States usually are limited in size but can cause substantial morbidity; they are most often foodborne and warrant thorough investigation (3). A sexually transmitted outbreak of typhoid fever has been reported (4).



1. Steinberg EB, Bishop RB, Dempsey AF, et al. Typhoid fever in travelers: who should be targeted for prevention? *Clin Infect Dis* 2004;39:186–91.
2. Crump J, Barrett TJ, Nelson JT, Angulo FJ. Reevaluating fluoroquinolones breakpoints for *Salmonella enterica* serotype Typhi and for non-Typhi *Salmonellae*. *Clin Infect Dis* 2003;37:75–81.
3. Olsen SJ, Bleasdale SC, Magnano AR, et al. Outbreaks of typhoid fever in the United States, 1960–1999. *Epidemiol Infect* 2003;130:13–21.
4. Reller M, Olsen S, Kressel A, et al. Sexual transmission of typhoid fever: a multi-state outbreak among men who have sex with men. *Clin Infect Dis* 2003;37:141–4.

## Varicella

In 2004, nine varicella deaths were reported to CDC from eight states. Ages of the deceased varied (range: 14 months–79 years). Five deaths occurred among children aged 14 months–10 years, and four occurred among adults aged 22–79 years.

In 1999, the Council of State and Territorial Epidemiologists (CSTE) recommended that varicella deaths be reported to CDC to monitor the impact of routine varicella vaccination on varicella-related mortality (1). However, reporting of varicella deaths is incomplete, limiting the

usefulness of mortality data in assessing the impact of the varicella vaccination program. CDC encourages states to report varicella deaths so risk factors for varicella-related mortality can be identified and the percentage of deaths that would have been directly preventable by following current recommendations for vaccination can be determined.

In 2002, as an adjunct to mortality surveillance, varicella infection was again designated a nationally notifiable condition. CSTE has recommended that states implement state-wide individual case reporting by 2005. The objectives of varicella morbidity surveillance at state and national levels are to monitor the epidemiology of varicella by age, place, and over time, to monitor the impact of widespread and increasing immunization on the epidemiology of varicella, and to allow prompt implementation of disease control measures (2).

1. Council of State and Territorial Epidemiologists. CSTE position statement 1998-ID-10: inclusion of varicella-related deaths in the National Public Health Surveillance System (NPHSS). Available at <http://www.cste.org/ps/1998/1998-id-10.htm>.
2. Council of State and Territorial Epidemiologists. CSTE position statement 02-ID-06: varicella surveillance. Available at <http://www.cste.org/position%20statements/02-id-06.pdf>.



## PART 1

### Summaries of Notifiable Diseases in the United States, 2004

#### Abbreviations and Symbols Used in Tables

<b>U</b>	Data not available.
<b>N</b>	Not notifiable (i.e., report of disease is not required in that jurisdiction).
<b>—</b>	No reported cases.
<b>Notes:</b>	Rates <0.01 after rounding are listed as 0. Data in the <i>MMWR Summary of Notifiable Diseases — United States, 2004</i> might not match data in other CDC surveillance reports because of differences in the timing of reports, the source of the data, and case definition.

**TABLE 1. Reported cases of notifiable diseases,\* by total number of cases, rank<sup>†</sup>, and rate<sup>§</sup> — United States, 2004**

Disease	No. of cases	Rank	Rate
AIDS <sup>¶</sup>	44,108	3	15.2
Botulism			
Foodborne	16	55	0
Infant	87	47	0
Other (includes wound and unspecified)	30	51	0
Brucellosis	114	43	0
Chancroid**	30	51	0
Chlamydia**††	929,462	1	319.6
Cholera	5	62	0
Coccidioidomycosis <sup>§§</sup>	6,449	13	4.1
Cryptosporidiosis	3,577	18	1.2
Cyclosporiasis	171	39	0.1
Ehrlichiosis			
Human granulocytic	537	30	0.2
Human monocytic	338	32	0.1
Encephalitis/meningitis, arboviral			
California serogroup	112	44	0
Eastern equine	6	61	0
Powassan	1	65	S <sup>¶¶</sup>
St. Louis	12	56	0
West Nile	1,142	27	0.4
Enterohemorrhagic <i>Escherichia coli</i> (EHEC)			
EHEC O157:H7	2,544	20	0.9
EHEC non-O157	308	35	0.1
EHEC, not serogrouped	316	34	0.1
Giardiasis	20,636	8	8.3
Gonorrhea**	330,132	2	113.5
<i>Haemophilus influenzae</i> , invasive, all ages/serotypes	2,085	22	0.7
Age <5 yrs, serotype b	19	54	0
Age <5 yrs, nonserotype b	135	40	0
Age <5 yrs, unknown	177	38	0.9
Hansen disease (leprosy)	105	45	0
Hantavirus pulmonary syndrome	24	53	0
Hemolytic uremic syndrome postdiarrheal	200	37	0.1

\* No cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome-associated coronavirus; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in 2004.

† Diseases are ranked in order of the total number of incident cases reported. The disease with the highest number of cases is assigned a rank of 1. Diseases with equal case counts are assigned the same rank, and the disease with the next rank is augmented to reflect the number of diseases with an equal ranking immediately preceding it.

§ Per 100,000 population.

¶ Total number of acquired immunodeficiency syndrome (AIDS) cases reported to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), through December 31, 2005.

\*\* Totals reported to the Division of Sexually Transmitted Diseases Prevention, NCHSTP, as of May 20, 2005.

†† Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.

§§ Notifiable in <40 states.

¶¶ Rates are suppressed if fewer than five incident cases were reported.

**TABLE 1. (Continued) Reported cases of notifiable diseases,\* by total number of cases, rank,<sup>†</sup> and rate<sup>§</sup> — United States, 2004**

Disease	No. of cases	Rank	Rate
Hepatitis A, acute	5,683	16	1.9
Hepatitis B, acute	6,212	15	2.1
Hepatitis C, acute	720	29	0.3
Legionellosis	2,093	21	0.7
Listeriosis	753	28	0.3
Lyme disease	19,804	9	6.8
Malaria	1,458	24	0.5
Measles	37	49	0
Meningococcal disease	1,361	25	0.5
Mumps	258	36	0.1
Pertussis	25,827	7	8.9
Plague	3	64	S
Psittacosis	12	56	0
Q fever	70	48	0
Rabies			
Animal	6,345	14	2.2
Human	7	60	0
Rocky Mountain spotted fever	1,713	23	0.6
Rubella	10	58	0
Salmonellosis	42,197	4	14.5
Shigellosis	14,627	10	5.0
Streptococcal disease, invasive, group A	4,395	17	1.8
Streptococcal toxic-shock syndrome	132	42	0.1
<i>Streptococcus pneumoniae</i> , invasive			
Drug-resistant <sup>§§</sup>	2,590	19	1.5
Age <5 yrs <sup>§§</sup>	1,162	26	0.6
Syphilis, total, all stages	33,401	5	11.5
Congenital (age <1 yr) <sup>**</sup>	353	31	0.1
Primary and secondary <sup>**</sup>	7,980	12	2.7
Tetanus	34	50	0
Toxic-shock syndrome	95	46	0
Trichinellosis	5	62	0
Tuberculosis <sup>***</sup>	14,517	11	5.0
Tularemia	134	41	0
Typhoid fever	322	33	0.1
Vancomycin-resistant <i>Staphylococcus aureus</i>	1	65	S
Varicella (chickenpox) <sup>§§</sup>	32,931	6	18.4
Varicella deaths <sup>†††</sup>	9	59	0

\*\*\* Totals reported to the Division of TB Elimination, NCHSTP, as of April 15, 2005.

††† Death counts provided by Epidemiology and Surveillance Division, National Immunization Program.

TABLE 2. Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Total resident population (in thousands)	AIDS†	Botulism			Brucellosis	Chancroid‡
			Foodborne	Infant	Other§		
UNITED STATES	290,810	44,108**	16	87	30	114	30
NEW ENGLAND	14,205	1,484	1	1	—	—	3
Maine	1,306	60	1	—	—	—	—
N.H.	1,288	45	—	1	—	—	—
Vt.	619	17	—	—	—	—	—
Mass.	6,433	576	—	—	—	—	3
R.I.	1,076	133	—	—	—	—	—
Conn.	3,483	653	—	—	—	—	—
MID. ATLANTIC	40,193	11,136	1	18	2	6	5
Upstate N.Y.	11,104	2,017	—	1	—	1	—
N.Y. City	8,086	5,607	—	—	—	3	4
N.J.	8,638	1,849	1	1	2	1	—
Pa.	12,365	1,663	—	16	—	1	1
E.N. CENTRAL	45,838	3,625	1	2	—	15	2
Ohio	11,436	685	1	2	—	3	—
Ind.	6,196	406	—	—	—	—	—
Ill.	12,654	1,702	—	—	—	9	—
Mich.	10,080	654	—	—	—	3	2
Wis.	5,472	178	—	—	—	—	—
W.N. CENTRAL	19,568	908	—	4	—	6	—
Minn.	5,059	220	—	1	—	1	—
Iowa	2,944	64	—	1	—	—	—
Mo.	5,704	408	—	1	—	3	—
N. Dak.	634	18	—	—	—	—	—
S. Dak.	764	12	—	—	—	—	—
Nebr.	1,739	68	—	—	—	1	—
Kans.	2,724	118	—	1	—	1	—
S. ATLANTIC	54,345	12,972	1	12	2	14	6
Del.	818	163	—	—	—	—	—
Md.	5,509	1,453	—	5	—	2	—
D.C.	564	990	—	1	—	—	—
Va.	7,386	798	—	3	—	1	—
W. Va.	1,810	97	—	2	—	—	—
N.C.	8,407	1,152	—	—	—	—	1
S.C.	4,147	768	1	—	—	—	4
Ga.	8,685	1,682	—	—	—	3	—
Fla.	17,019	5,869	—	1	2	8	1
E.S. CENTRAL	17,342	1,986	—	2	—	4	1
Ky.	4,118	255	—	1	—	2	—
Tenn.	5,842	777	—	1	—	1	1
Ala.	4,501	476	—	—	—	1	—
Miss.	2,881	478	—	—	—	—	—
W.S. CENTRAL	32,853	4,721	—	3	1	39	5
Ark.	2,726	185	—	—	—	1	—
La.	4,496	1,027	—	—	—	1	2
Okla.	3,512	202	—	—	—	—	—
Tex.	22,119	3,307	—	3	1	37	3
MOUNTAIN	19,384	1,579	1	4	—	3	6
Mont.	918	8	1	—	—	—	—
Idaho	1,366	20	—	1	—	—	2
Wyo.	501	21	—	—	—	—	—
Colo.	4,551	350	—	—	—	—	—
N. Mex.	1,875	188	—	—	—	—	—
Ariz.	5,581	607	—	1	—	2	2
Utah	2,351	81	—	2	—	1	1
Nev.	2,241	304	—	—	—	—	1
PACIFIC	47,082	5,697	11	41	25	27	2
Wash.	6,131	447	1	2	5	2	—
Oreg.	3,560	282	4	1	1	—	1
Calif.	35,484	4,764	4	37	19	22	1
Alaska	649	55	2	—	—	—	—
Hawaii	1,258	149	—	1	—	3	—
Guam	163	2	—	—	—	—	—
P.R.	3,878	917	—	—	—	—	—
V.I.	109	19	—	—	—	—	1
Amer. Samoa	58	—	—	—	—	—	—
C.N.M.I.	76	2	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

\* No cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome—associated coronavirus; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in 2004.

† Total number of acquired immunodeficiency syndrome (AIDS) cases reported to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), through December 31, 2005.

§ Includes cases reported as wound and unspecified botulism.

¶ Totals reported to the Division of STD Prevention, NCHSTP, as of May 20, 2005.

\*\* No cases of AIDS in persons with unknown state of residence were reported in 2004.

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Chlamydia††	Cholera	Coccidioidomycosis	Cryptosporidiosis	Cyclosporiasis
UNITED STATES	929,462	5	6,449	3,577	171
NEW ENGLAND	31,222	—	—	171	10
Maine	2,113	—	N	22	1
N.H.	1,736	—	—	30	—
Vt.	1,137	—	N	25	N
Mass.	13,242	—	—	59	2
R.I.	3,442	—	—	4	—
Conn.	9,552	—	N	31	7
MID. ATLANTIC	114,570	1	—	576	80
Upstate N.Y.	24,719	1	N	185	17
N.Y. City	34,378	—	N	138	10
N.J.	17,448	—	—	46	4
Pa.	38,025	—	N	207	49
E.N. CENTRAL	165,467	1	15	1,020	32
Ohio	39,379	—	N	223	1
Ind.	18,440	—	N	79	—
Ill.	47,185	1	—	135	27
Mich.	41,246	—	15	155	3
Wis.	19,217	—	—	428	1
W.N. CENTRAL	56,950	—	6	425	2
Minn.	11,602	—	N	147	—
Iowa	6,956	—	—	90	—
Mo.	21,319	—	3	74	2
N. Dak.	1,810	—	N	12	N
S. Dak.	2,532	—	U	43	—
Nebr.	5,238	—	3	28	—
Kans.	7,493	—	N	31	—
S. ATLANTIC	175,016	—	—	539	27
Del.	2,954	—	N	—	—
Md.	19,952	—	—	26	4
D.C.	3,493	—	—	16	10
Va.	21,635	—	—	66	1
W. Va.	2,758	—	—	6	—
N.C.	28,967	—	N	76	1
S.C.	18,423	—	—	24	—
Ga.	34,280	—	—	177	2
Fla.	42,554	—	N	148	9
E.S. CENTRAL	61,162	—	5	150	—
Ky.	6,470	—	N	47	N
Tenn.	22,515	—	N	48	—
Ala.	13,314	—	N	25	N
Miss.	18,863	—	5	30	—
W.S. CENTRAL	110,299	—	3	138	4
Ark.	7,864	—	1	16	—
La.	21,837	—	2	7	—
Okla.	10,366	—	—	22	—
Tex.	70,232	—	N	93	4
MOUNTAIN	56,993	—	3,779	166	4
Mont.	2,608	—	N	34	—
Idaho	2,784	—	N	28	—
Wyo.	1,082	—	2	4	—
Colo.	14,151	—	—	55	3
N. Mex.	9,035	—	22	20	—
Ariz.	16,786	—	3,667	17	1
Utah	3,857	—	26	6	—
Nev.	6,690	—	62	2	—
PACIFIC	157,783	3	2,641	392	12
Wash.	17,635	—	N	63	11
Oreg.	8,690	—	—	30	—
Calif.	122,197	1	2,641	297	N
Alaska	3,954	—	—	—	1
Hawaii	5,307	2	—	2	—
Guam	748	—	—	—	—
P.R.	3,588	—	—	—	—
V.I.	303	—	—	—	—
Amer. Samoa	—	—	—	—	—
C.N.M.I.	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

†† Totals reported to the Division of STD Prevention, NCHSTP, as of May 20, 2005. Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Ehrlichiosis		Encephalitis/meningitis, arboviral <sup>§§</sup>				
	Human granulocytic	Human monocytic	California serogroup	Eastern equine	Powassan	St. Louis	West Nile
UNITED STATES	537	338	112	6	1	12	1,142
NEW ENGLAND	160	42	—	4	1	—	—
Maine	—	—	—	—	1	—	—
N.H.	1	1	—	—	—	—	—
Vt.	2	1	—	—	—	—	—
Mass.	62	19	—	4	—	—	—
R.I.	62	21	—	—	—	—	—
Conn.	33	—	—	—	—	—	—
MID. ATLANTIC	106	47	—	—	—	—	17
Upstate N.Y.	78	26	—	—	—	—	5
N.Y. City	27	20	—	—	—	—	2
N.J.	1	1	—	—	—	—	1
Pa.	N	N	—	—	—	—	9
E.N. CENTRAL	76	3	40	—	—	2	66
Ohio	—	—	26	—	—	—	11
Ind.	—	—	2	—	N	—	8
Ill.	1	3	8	—	—	—	29
Mich.	—	—	—	—	—	2	13
Wis.	75	—	4	—	—	—	5
W.N. CENTRAL	157	56	4	—	—	2	86
Minn.	138	11	2	—	—	—	13
Iowa	—	—	2	—	—	—	13
Mo.	18	45	—	—	—	—	27
N. Dak.	N	N	—	—	—	—	2
S. Dak.	—	—	—	—	—	—	6
Nebr.	1	—	—	—	—	—	7
Kans.	—	—	—	—	—	2	18
S. ATLANTIC	23	101	52	2	—	—	65
Del.	2	—	—	—	—	—	—
Md.	4	41	—	—	—	—	10
D.C.	N	N	—	—	—	—	1
Va.	2	4	2	—	—	—	4
W. Va.	—	—	30	—	—	—	—
N.C.	10	35	13	1	—	—	3
S.C.	—	6	—	1	—	—	—
Ga.	2	11	5	—	—	—	14
Fla.	3	4	2	—	—	—	33
E.S. CENTRAL	4	22	13	—	—	—	60
Ky.	—	1	—	—	N	—	1
Tenn.	2	18	13	—	—	—	13
Ala.	2	3	—	—	—	—	15
Miss.	—	—	—	—	—	—	31
W.S. CENTRAL	11	67	3	—	—	5	237
Ark.	—	29	—	—	—	—	17
La.	N	N	3	—	N	—	85
Okla.	11	38	—	—	—	1	16
Tex.	—	—	—	—	—	4	119
MOUNTAIN	—	—	—	—	—	3	322
Mont.	—	—	—	—	—	—	2
Idaho	—	—	—	—	—	—	1
Wyo.	—	—	—	—	—	—	2
Colo.	—	—	—	—	—	—	41
N. Mex.	—	—	—	—	—	—	31
Ariz.	—	—	—	—	—	3	214
Utah	—	—	—	—	—	—	6
Nev.	—	—	—	—	—	—	25
PACIFIC	—	—	—	—	—	—	289
Wash.	—	—	—	—	—	—	—
Oreg.	—	—	—	—	—	—	—
Calif.	—	—	—	—	—	—	289
Alaska	—	—	—	—	—	—	—
Hawaii	—	—	—	—	—	—	—
Guam	—	—	—	—	—	—	—
P.R.	—	—	—	—	—	—	—
V.I.	—	—	—	—	—	—	—
Amer. Samoa	—	—	—	—	—	—	—
C.N.M.I.	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

§§ Totals reported to the Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases (ArboNET Surveillance).



TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Enterohemorrhagic <i>Escherichia coli</i>					<i>Haemophilus influenzae</i> , invasive disease			
	O157:H7	Shiga toxin positive		Giardiasis	Gonorrhea <sup>†††</sup>	All ages, serotypes	Age <5 yrs		
		Non-O157	Not serogrouped				Serotype b	Nonserotype b	Unknown serotype
UNITED STATES	2,544	316	308	20,636	330,132	2,085	19	135	177
NEW ENGLAND	172	46	16	1,794	7,164	193	1	10	2
Maine	16	2	—	155	210	15	—	—	—
N.H.	24	5	—	48	133	22	—	2	1
Vt.	13	—	—	168	86	8	—	—	1
Mass.	73	14	16	787	3,057	82	1	4	—
R.I.	15	1	—	130	816	10	—	1	—
Conn.	31	24	—	506	2,862	56	—	3	—
MID. ATLANTIC	300	70	41	4,144	36,669	428	2	5	41
Upstate N.Y.	126	48	22	1,528	7,719	142	2	5	7
N.Y. City	35	—	N	1,085	11,018	87	—	—	18
N.J.	61	6	6	507	6,696	83	—	—	3
Pa.	78	16	13	1,024	11,236	116	—	—	13
E.N. CENTRAL	479	48	32	3,298	70,344	387	2	10	50
Ohio	102	9	18	807	20,467	106	1	2	16
Ind.	56	—	—	N	6,851	62	—	6	2
Ill.	107	7	8	807	20,597	135	—	—	22
Mich.	86	11	6	718	17,376	22	1	2	4
Wis.	128	21	—	966	5,053	62	—	—	6
W.N. CENTRAL	483	41	23	2,758	17,527	118	2	6	11
Minn.	110	16	5	1,393	2,957	55	1	6	1
Iowa	119	—	—	301	1,249	1	1	—	—
Mo.	98	19	7	578	9,218	43	—	—	7
N. Dak.	15	—	7	25	110	5	—	—	—
S. Dak.	33	2	—	87	304	—	—	—	—
Nebr.	65	4	—	153	1,147	6	—	—	2
Kans.	43	—	4	221	2,542	8	—	—	1
S. ATLANTIC	181	39	170	3,062	79,944	462	1	31	29
Del.	3	N	N	47	894	—	—	—	—
Md.	23	6	4	160	8,297	74	—	7	—
D.C.	1	—	—	76	2,568	3	—	—	1
Va.	41	21	—	562	8,565	56	—	—	6
W.Va.	3	1	—	63	892	24	—	5	—
N.C.	—	—	158	N	15,194	62	1	7	1
S.C.	13	—	—	130	9,171	13	—	—	1
Ga.	23	7	—	898	15,783	117	—	—	19
Fla.	74	4	8	1,126	18,580	113	—	12	1
E.S. CENTRAL	121	7	16	426	26,602	87	1	2	12
Ky.	31	1	10	N	2,758	16	—	2	1
Tenn.	42	4	6	237	8,475	55	—	—	9
Ala.	32	N	N	189	8,206	14	1	—	2
Miss.	16	2	—	N	7,163	2	—	—	—
W.S. CENTRAL	93	7	10	346	43,499	90	1	10	2
Ark.	18	—	—	123	4,137	2	—	1	—
La.	4	1	N	57	10,538	19	—	—	1
Okla.	24	1	4	166	4,453	67	—	9	—
Tex.	47	5	6	N	24,371	2	1	—	1
MOUNTAIN	244	56	—	1,582	12,356	195	5	34	22
Mont.	16	—	—	82	88	—	—	—	—
Idaho	57	17	—	212	103	5	—	—	2
Wyo.	9	7	—	27	59	1	—	1	—
Colo.	51	1	—	515	3,054	44	—	—	5
N. Mex.	10	9	—	75	1,306	41	1	10	6
Ariz.	27	1	—	175	4,065	71	1	17	3
Utah	47	20	—	365	603	19	2	3	4
Nev.	27	1	—	131	3,078	14	1	3	2
PACIFIC	471	2	—	3,226	36,027	125	4	27	8
Wash.	153	—	—	444	2,810	3	2	—	1
Oreg.	68	2	—	441	1,302	49	—	—	3
Calif.	238	N	N	2,160	30,155	58	2	27	2
Alaska	2	—	—	101	567	6	—	—	1
Hawaii	10	—	—	80	1,193	9	—	—	1
Guam	—	—	—	5	114	—	—	—	—
P.R.	5	—	—	301	267	4	—	—	2
V.I.	—	—	—	—	75	—	—	—	—
Amer. Samoa	—	—	—	—	—	—	—	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

<sup>†††</sup> Totals reported to the Division of STD Prevention, NCHSTP, as of May 20, 2005.

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Hansen disease (leprosy)	Hantavirus pulmonary syndrome	Hemolytic uremic syndrome, postdiarrheal	Hepatitis, acute viral			Legionellosis	Listeriosis
				A	B	C***		
UNITED STATES	105	24	200	5,683	6,212	720	2,093	753
NEW ENGLAND	6	—	12	806	372	18	112	56
Maine	N	—	2	17	12	—	1	8
N.H.	1	—	1	27	43	N	15	4
Vt.	N	—	—	8	6	8	6	2
Mass.	3	—	4	658	196	8	45	18
R.I.	—	—	—	24	7	—	21	6
Conn.	2	N	5	72	108	2	24	18
MID. ATLANTIC	10	—	17	805	763	88	545	176
Upstate N.Y.	N	—	9	117	92	20	125	54
N.Y. City	10	—	7	350	162	N	72	26
N.J.	—	—	1	188	216	—	98	37
Pa.	—	—	N	150	293	68	250	59
E.N. CENTRAL	3	—	22	523	588	115	490	117
Ohio	—	—	7	50	116	6	218	40
Ind.	1	—	—	60	80	14	55	18
Ill.	1	—	3	147	111	15	55	24
Mich.	1	—	5	145	240	80	136	26
Wis.	—	—	7	121	41	—	26	9
W.N. CENTRAL	—	2	38	180	294	31	76	20
Minn.	—	—	8	57	64	21	16	5
Iowa	—	—	5	50	17	—	8	3
Mo.	—	—	19	32	146	4	34	8
N. Dak.	N	—	—	2	4	5	2	—
S. Dak.	—	1	—	4	1	—	5	1
Nebr.	—	—	4	13	44	1	5	3
Kans.	—	1	2	22	18	—	6	—
S. ATLANTIC	6	—	23	989	1,525	161	420	134
Del.	—	—	—	6	53	45	15	2
Md.	1	—	N	103	158	18	83	19
D.C.	—	—	—	7	19	4	12	5
Va.	—	—	1	140	306	15	56	27
W. Va.	—	—	—	5	53	24	13	5
N.C.	—	—	10	104	182	12	40	26
S.C.	—	—	1	37	147	6	17	11
Ga.	N	—	5	321	106	17	43	15
Fla.	5	—	6	266	501	20	141	24
E.S. CENTRAL	—	—	13	162	488	92	96	25
Ky.	—	—	N	31	85	27	44	4
Tenn.	—	—	11	97	218	33	41	14
Ala.	—	N	2	10	83	5	9	5
Miss.	—	—	—	24	102	27	2	2
W.S. CENTRAL	29	1	19	754	952	123	172	51
Ark.	2	—	3	60	119	3	2	3
La.	2	N	—	50	66	4	9	3
Okla.	—	—	2	20	80	7	24	4
Tex.	25	1	14	624	687	109	137	41
MOUNTAIN	2	16	6	426	528	49	94	37
Mont.	—	—	—	7	14	2	3	1
Idaho	—	1	—	20	14	1	9	1
Wyo.	—	2	—	5	9	2	7	—
Colo.	—	3	6	50	54	14	21	13
N. Mex.	—	4	—	24	20	7	4	2
Ariz.	1	2	—	267	289	1	23	10
Utah	—	1	—	36	51	6	22	2
Nev.	1	3	—	17	77	16	5	8
PACIFIC	49	5	50	1,038	702	43	88	137
Wash.	N	2	6	69	64	U	15	13
Oreg.	2	—	5	53	110	9	8	5
Calif.	27	3	39	885	506	32	63	114
Alaska	—	—	—	4	11	—	1	—
Hawaii	20	—	—	27	11	2	1	5
Guam	2	—	—	1	12	9	—	—
P.R.	—	—	—	65	88	—	—	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	—	—	—	—	—	—	—	—
C.N.M.I.	—	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

\*\*\* Results reported vary from provisional results published previously.

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Lyme disease	Malaria	Measles		Meningococcal disease	Mumps	Pertussis	Plague
			Indigenous	Imported†††				
UNITED STATES	19,804	1,458	10	27	1,361	258	25,827	3
NEW ENGLAND	3,630	102	1	1	75	6	2,328	—
Maine	225	7	—	—	12	—	196	—
N.H.	226	5	—	—	7	1	134	—
Vt.	50	4	—	—	4	1	180	—
Mass.	1,532	53	1	1	40	4	1,698	—
R.I.	249	11	—	—	2	—	53	—
Conn.	1,348	22	—	—	10	—	67	—
MID. ATLANTIC	11,783	386	2	5	168	47	2,948	—
Upstate N.Y.	4,744	62	—	1	44	6	1,969	—
N.Y. City	356	206	1	3	29	20	196	—
N.J.	2,698	74	1	1	37	8	223	—
Pa.	3,985	44	—	—	58	13	560	—
E.N. CENTRAL	1,340	129	—	1	203	26	8,628	—
Ohio	50	30	—	—	71	11	766	—
Ind.	32	17	—	—	26	2	364	—
Ill.	87	47	—	1	36	10	1,554	—
Mich.	27	21	—	—	50	2	303	—
Wis.	1,144	14	—	—	20	1	5,641	—
W.N. CENTRAL	1,103	71	2	3	85	20	4,302	—
Minn.	1,023	30	—	—	24	4	1,368	—
Iowa	49	4	2	1	17	2	1,066	—
Mo.	25	20	—	2	20	3	595	—
N. Dak.	—	3	—	—	2	1	757	—
S. Dak.	1	1	—	—	4	—	169	—
Nebr.	2	4	—	—	4	—	97	—
Kans.	3	9	—	—	14	10	250	—
S. ATLANTIC	1,702	351	1	4	230	33	1,106	—
Del.	339	5	—	—	6	—	16	—
Md.	891	81	—	1	11	4	159	—
D.C.	16	13	—	—	5	—	13	—
Va.	216	59	—	—	24	11	400	—
W. Va.	38	2	—	—	7	2	51	—
N.C.	122	23	1	1	37	5	101	—
S.C.	22	10	—	—	18	—	206	—
Ga.	12	65	—	1	15	2	28	—
Fla.	46	93	—	1	107	9	132	—
E.S. CENTRAL	41	34	—	—	75	8	337	—
Ky.	15	5	—	—	18	—	98	—
Tenn.	20	12	—	—	23	4	173	—
Ala.	6	12	—	—	17	4	49	N
Miss.	—	5	—	—	17	—	17	—
W.S. CENTRAL	103	135	—	—	139	33	1,422	—
Ark.	—	8	—	—	20	—	95	—
La.	2	6	—	—	37	9	23	—
Okla.	3	10	—	—	10	1	120	—
Tex.	98	111	—	—	72	23	1,184	—
MOUNTAIN	26	56	—	1	68	17	2,134	3
Mont.	—	1	—	—	3	—	84	—
Idaho	6	2	—	—	7	3	66	—
Wyo.	4	1	—	—	4	1	35	—
Colo.	—	16	—	1	16	3	1,184	3
N. Mex.	1	5	—	—	9	—	158	—
Ariz.	13	17	—	—	15	7	278	—
Utah	1	8	—	—	7	2	276	—
Nev.	1	6	—	—	7	1	53	—
PACIFIC	76	194	4	12	318	68	2,622	—
Wash.	14	24	—	7	42	2	842	—
Oreg.	11	18	—	—	60	—	627	—
Calif.	48	146	3	3	203	55	1,109	—
Alaska	3	2	—	—	4	2	14	—
Hawaii	N	4	1	2	9	9	30	—
Guam	—	—	—	3	1	4	—	—
P.R.	—	—	—	—	18	7	5	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	—	—	—	—	1	—	—	—
C.N.M.I.	—	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

††† Imported cases include only those directly related to importation from other countries.

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Psittacosis	Q Fever	Rabies		Rocky Mountain spotted fever	Rubella	Salmonellosis	Shigellosis
			Animal	Human				
UNITED STATES	12	70	6,345	7	1,713	10	42,197	14,627
NEW ENGLAND	2	4	730	—	26	—	2,086	296
Maine	1	—	68	—	N	—	110	13
N.H.	—	—	31	—	—	—	144	9
Vt.	—	N	38	—	1	—	62	4
Mass.	1	4	325	—	15	—	1,169	181
R.I.	—	—	45	—	7	—	139	21
Conn.	N	—	223	—	3	—	462	68
MID. ATLANTIC	1	3	958	—	68	2	5,624	1,200
Upstate N.Y.	—	—	529	—	1	—	1,292	430
N.Y. City	1	2	14	—	23	1	1,258	418
N.J.	—	1	—	—	14	1	1,048	244
Pa.	—	N	415	—	30	—	2,026	108
E.N. CENTRAL	—	8	190	1	35	—	5,096	1,298
Ohio	—	1	77	—	11	—	1,202	170
Ind.	—	1	12	—	6	—	523	261
Ill.	—	5	51	—	14	—	1,612	402
Mich.	—	—	41	—	2	—	837	246
Wis.	—	1	9	1	2	—	922	219
W.N. CENTRAL	1	5	625	—	132	1	2,463	458
Minn.	—	2	94	—	4	—	636	67
Iowa	—	—	100	—	2	—	435	64
Mo.	1	3	59	—	106	1	628	184
N. Dak.	—	—	75	—	—	—	43	3
S. Dak.	—	—	94	—	4	—	156	13
Nebr.	—	—	104	—	16	—	173	46
Kans.	—	—	99	—	—	—	392	81
S. ATLANTIC	4	7	2,189	1	832	2	11,381	3,025
Del.	—	N	9	—	6	—	113	12
Md.	—	2	329	—	75	1	812	152
D.C.	—	—	—	—	—	—	64	41
Va.	—	—	474	—	45	—	1,196	167
W. Va.	—	N	74	—	7	—	247	12
N.C.	1	2	582	—	535	—	1,647	484
S.C.	2	1	172	—	64	—	1,085	534
Ga.	—	—	344	—	78	1	1,941	658
Fla.	1	2	205	1	22	—	4,276	965
E.S. CENTRAL	1	10	151	—	190	—	2,748	982
Ky.	—	6	23	—	3	—	361	75
Tenn.	1	4	52	—	105	—	721	533
Ala.	—	—	65	—	54	—	768	320
Miss.	—	—	11	—	28	—	898	54
W.S. CENTRAL	—	6	1,081	5	403	1	4,650	4,465
Ark.	—	—	54	1	188	—	576	83
La.	—	—	4	—	5	—	984	322
Okla.	—	1	113	1	190	—	425	724
Tex.	—	5	910	3	20	1	2,665	3,336
MOUNTAIN	1	12	221	—	23	2	2,349	853
Mont.	—	—	26	—	3	—	186	4
Idaho	—	1	8	—	4	—	159	19
Wyo.	—	4	7	—	5	—	54	6
Colo.	—	1	47	—	4	—	542	160
N. Mex.	—	1	5	—	2	—	282	139
Ariz.	—	5	117	—	4	—	701	409
Utah	1	—	8	—	1	2	234	48
Nev.	—	—	3	—	—	—	191	68
PACIFIC	2	15	200	—	4	2	5,800	2,050
Wash.	—	—	U	—	N	—	660	133
Oreg.	1	4	6	—	2	—	415	88
Calif.	1	11	183	—	2	1	4,282	1,774
Alaska	—	—	11	—	—	1	68	6
Hawaii	—	—	—	—	—	—	375	49
Guam	—	—	—	—	—	1	50	42
P.R.	—	—	61	—	—	—	535	36
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	—	—	—	—	—	—	4	9
C.N.M.I.	—	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Streptococcal disease,		<i>Streptococcus pneumoniae</i> ,		Syphilis <sup>§§§</sup>			Tetanus
	invasive, group A	Streptococcal toxic-shock syndrome	invasive		All stages <sup>¶¶¶</sup>	Congenital (age <1 yr)	Primary and secondary	
			Drug-resistant	Age <5 yrs				
UNITED STATES	4,395	132	2,590	1,162	33,401	353	7,980	34
NEW ENGLAND	289	22	190	113	826	1	193	—
Maine	15	—	4	7	7	—	2	—
N.H.	21	—	—	N	26	—	5	—
Vt.	10	3	11	3	3	—	1	—
Mass.	124	1	61	63	517	—	114	—
R.I.	28	1	26	10	104	1	26	—
Conn.	91	17	88	30	169	—	45	—
MID. ATLANTIC	741	11	162	112	5,868	31	995	3
Upstate N.Y.	255	—	72	99	760	6	106	1
N.Y. City	122	—	U	U	3,708	12	621	—
N.J.	146	2	—	13	826	13	150	—
Pa.	218	9	90	N	574	—	118	2
E.N. CENTRAL	956	66	535	233	3,122	52	904	2
Ohio	219	24	353	80	571	2	237	—
Ind.	104	10	180	58	273	4	60	1
Ill.	252	32	—	18	1,345	23	386	—
Mich.	290	—	2	25	806	23	192	—
Wis.	91	—	N	52	127	—	29	1
W.N. CENTRAL	307	5	180	107	551	5	157	—
Minn.	146	2	155	80	145	1	27	—
Iowa	—	—	—	—	36	—	5	—
Mo.	62	1	20	13	268	2	94	—
N. Dak.	15	—	—	4	—	—	—	—
S. Dak.	22	1	5	—	—	—	—	—
Nebr.	22	1	—	N	15	—	7	—
Kans.	40	—	N	10	87	2	24	—
S. ATLANTIC	869	8	1,209	307	7,870	57	2,162	11
Del.	3	—	N	N	61	1	9	—
Md.	153	N	65	48	1,002	10	380	1
D.C.	10	—	11	4	357	1	69	—
Va.	74	—	N	34	610	6	116	1
W. Va.	34	3	138	16	18	—	3	1
N.C.	125	5	N	U	747	9	192	2
S.C.	56	—	83	N	523	9	116	—
Ga.	195	N	330	136	1,588	5	549	2
Fla.	219	N	582	69	2,964	16	728	4
E.S. CENTRAL	212	11	186	63	1,993	19	401	2
Ky.	62	11	32	N	151	1	47	2
Tenn.	150	—	152	45	799	4	130	—
Ala.	N	N	N	N	639	11	165	—
Miss.	—	—	2	18	404	3	59	—
W.S. CENTRAL	368	1	91	187	6,267	89	1,231	4
Ark.	18	—	11	8	249	4	47	1
La.	4	—	80	34	1,645	18	332	1
Okla.	73	—	N	50	168	2	25	—
Tex.	273	1	N	95	4,205	65	827	2
MOUNTAIN	517	8	36	37	1,823	35	386	5
Mont.	—	—	—	—	4	—	4	—
Idaho	9	1	N	N	78	3	24	—
Wyo.	10	—	12	—	6	—	3	—
Colo.	115	2	—	37	179	2	63	3
N. Mex.	91	1	N	—	251	3	82	—
Ariz.	246	N	N	N	974	26	157	2
Utah	41	1	22	—	78	1	13	—
Nev.	5	3	2	—	253	—	40	—
PACIFIC	136	—	1	3	5,081	64	1,551	7
Wash.	—	N	N	N	336	—	150	—
Oreg.	N	—	N	N	108	—	29	1
Calif.	N	N	N	N	4,586	64	1,356	6
Alaska	—	—	—	N	15	—	8	—
Hawaii	136	—	1	3	36	—	8	—
Guam	—	—	—	—	13	—	—	—
P.R.	N	—	—	—	1,152	9	182	—
V.I.	—	—	—	—	17	—	5	—
Amer. Samoa	—	—	—	—	—	—	—	—
C.N.M.I.	—	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

§§§ Totals reported to the Division of STD Prevention, NCHSTP, as of May 20, 2005.

¶¶¶ Includes the following categories: primary, secondary, latent (including neurosyphilis, early latent, late latent, late with clinical manifestations other than neurosyphilis, and unknown latent), and congenital syphilis.

TABLE 2. (Continued) Reported cases of notifiable diseases,\* by geographic division and area — United States, 2004

Area	Toxic-shock syndrome	Trichinellosis	Tuberculosis****	Tularemia	Typhoid fever	Vancomycin-resistant <i>Staphylococcus aureus</i> †††	Varicella (chickenpox)	Varicella deaths§§§§
UNITED STATES	95	5	14,517	134	322	1	32,931	9
NEW ENGLAND	7	1	485	11	24	—	5,334	1
Maine	1	—	20	—	—	—	363	—
N.H.	4	—	24	—	—	—	—	1
Vt.	1	—	6	—	—	—	413	—
Mass.	—	—	283	11	16	—	2,656	—
R.I.	1	1	51	—	1	—	—	—
Conn.	N	—	101	—	7	—	1,902	—
MID. ATLANTIC	11	—	2,172	2	76	1	80	3
Upstate N.Y.	4	—	324	—	11	1	N	1
N.Y. City	1	—	1,039	—	31	—	—	—
N.J.	—	—	482	1	19	—	—	—
Pa.	6	—	327	1	15	—	80	2
E.N. CENTRAL	28	—	1,284	8	37	—	12,997	1
Ohio	7	—	219	1	7	—	1,663	1
Ind.	—	—	128	1	1	—	81	—
Ill.	6	—	569	5	16	—	6,279	—
Mich.	14	—	273	—	9	—	4,240	—
Wis.	1	—	95	1	4	—	734	—
W.N. CENTRAL	20	2	489	44	11	—	189	—
Minn.	11	—	199	—	6	—	N	—
Iowa	5	—	47	—	—	—	—	—
Mo.	3	—	127	28	2	—	5	—
N. Dak.	—	2	4	1	—	—	85	—
S. Dak.	—	—	11	4	—	—	99	—
Nebr.	1	—	39	2	2	—	N	—
Kans.	—	—	62	9	1	—	—	—
S. ATLANTIC	7	1	3,008	—	46	—	3,108	1
Del.	1	—	32	—	—	N	5	—
Md.	N	—	314	—	13	N	N	1
D.C.	—	—	81	—	—	—	26	—
Va.	2	1	329	—	11	—	1,240	—
W. Va.	—	—	24	—	—	—	1,309	—
N.C.	2	—	382	—	8	—	N	—
S.C.	—	—	234	—	—	—	528	—
Ga.	2	N	536	—	4	—	N	—
Fla.	N	—	1,076	—	10	—	N	—
E.S. CENTRAL	3	—	736	12	8	—	54	—
Ky.	—	N	127	5	3	N	N	—
Tenn.	2	—	279	4	5	—	N	—
Ala.	1	—	211	3	—	N	54	—
Miss.	—	—	119	—	—	—	—	—
W.S. CENTRAL	1	—	2,242	40	29	—	8,601	—
Ark.	—	—	132	20	—	—	—	—
La.	1	—	249	—	—	—	57	—
Okla.	—	—	178	19	1	—	—	—
Tex.	N	—	1,683	1	28	—	8,544	—
MOUNTAIN	13	—	603	9	8	—	2,568	2
Mont.	—	—	15	2	—	—	N	—
Idaho	3	—	11	1	—	—	—	—
Wyo.	—	—	5	1	—	—	57	—
Colo.	3	—	127	3	3	—	2,040	1
N. Mex.	—	—	42	—	—	—	U	—
Ariz.	2	—	272	—	2	—	—	1
Utah	1	—	36	2	1	—	471	—
Nev.	4	—	95	—	2	N	—	—
PACIFIC	5	1	3,498	8	83	—	—	1
Wash.	—	—	244	4	6	—	N	—
Oreg.	—	—	106	2	1	—	—	—
Calif.	5	1	2,989	2	70	N	N	1
Alaska	—	—	43	—	—	N	—	—
Hawaii	—	—	116	—	6	N	—	—
Guam	—	—	51	—	—	—	273	—
P.R.	—	—	123	—	—	—	445	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	—	—	3	—	—	—	—	—
C.N.M.I.	—	—	55	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. P.R.: Puerto Rico V.I.: U.S. Virgin Islands C.N.M.I.: Commonwealth of Northern Mariana Islands

\*\*\*\* Totals reported to the Division of TB Elimination, NCHSTP, as of April 15, 2005.

†††† New for 2004.

§§§§ Death counts provided by the Epidemiology and Surveillance Division, National Immunization Program.

TABLE 3. Reported cases and incidence\* of notifiable diseases,<sup>†</sup> by age group — United States, 2004

Disease	<1 yr		1–4 yrs		5–14 yrs		15–24 yrs		25–39 yrs		40–64 yrs		≥65 yrs		Age not stated	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate		
AIDS <sup>§</sup>	38	0.9	30	0.2	110	0.3	2,119	5.1	18,932	30.9	22,019	24.0	860	2.4	—	44,108
Botulism, foodborne	—	0	—	0	—	0	3	0	5	0	7	0	1	0	—	16
Infant	86	2.1	—	0	—	0	—	0	—	0	—	0	—	0	1	87
Other (includes wound and unspecified)	—	0	—	0	—	0	—	0	5	0	25	0	—	0	—	30
Bruceellosis	1	0	8	0.1	10	0	14	0	22	0	45	0	12	0	2	114
Chlamydia <sup>¶**</sup>	—	0	—	0	—	0	663,484	1,610.2	218,957	357.3	24,607	26.8	687	1.9	5,590	929,462
Cholera	—	0	—	0	—	0	—	0	—	0	4	0	1	0	—	5
Coccidioidomycosis <sup>††</sup>	26	2.4	41	1.0	280	2.5	693	6.3	1,341	8.2	2,726	11.8	1,256	14.4	86	6,449
Cryptosporidiosis	62	1.5	528	3.3	622	1.5	423	1.0	765	1.2	825	0.9	264	0.7	88	3,577
Cyclosporiasis	1	0	—	0	5	0	8	0	36	0.1	68	0.1	42	0.1	11	171
Ehrlichiosis	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	—
Human granulocytic	2	0.1	1	0	28	0.1	25	0.1	63	0.1	253	0.3	165	0.5	—	537
Human monocytic	—	0	2	0	18	0	25	0.1	44	0.1	168	0.2	81	0.2	—	338
Encephalitis/meningitis, arboviral	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	—
California serogroup	1	0	17	0.1	78	0.2	7	0	4	0	3	0	2	0	—	112
Eastern equine	1	0	—	0	2	0	1	0	—	0	1	0	1	0	—	6
Powassan	—	0	—	0	—	0	—	0	—	0	—	0	1	0	—	1
St. Louis	—	0	—	0	—	0	—	0	1	0	5	0	6	0	—	12
West Nile	2	0	7	0	35	0.1	56	0.1	138	0.2	478	0.5	425	1.2	1	1,142
Enterohemorrhagic <i>Escherichia coli</i> (EHEC)	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	—
EHEC O157:H7	53	1.3	538	3.4	625	1.5	405	1.0	244	0.4	412	0.4	238	0.7	29	2,544
EHEC non-O157	11	0.3	89	0.7	67	0.2	32	0.1	37	0.1	44	0.1	24	0.1	4	308
EHEC, not serogrouped	12	0.4	56	0.4	66	0.2	74	0.2	38	0.1	40	0.1	26	0.1	4	316
Giardiasis	375	11.3	4,192	31.9	3,736	10.8	1,757	5.1	4,047	7.8	5,070	6.5	1,097	3.5	362	20,636
Gonorrhea <sup>**</sup>	—	0	—	0	—	0	189,629	460.2	104,451	170.4	28,597	31.2	714	2.0	1,801	330,132
<i>Haemophilus influenzae</i> , invasive	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	—
All ages/serotypes	—	0	—	0	89	0.2	74	0.2	126	0.2	503	0.5	914	2.5	379	2,085
Age <5 yrs, serotype b	11	0.3	8	0.1	—	0	—	0	—	0	—	0	—	0	—	19
Age <5 yrs, nonserotype b	74	1.8	61	0.4	—	0	—	0	—	0	—	0	—	0	—	135
Age <5 yrs, unknown serotype	114	2.8	63	0.4	—	0	—	0	—	0	—	0	—	0	—	177
Hansen disease (leprosy)	—	0	—	0	—	0	8	0	25	0	33	0	18	0.1	21	105
Hantavirus pulmonary syndrome	—	0	—	0	—	0	4	0	7	0	6	0	5	0	2	24
Hemolytic uremic syndrome	—	0	—	0	—	0	—	0	—	0	—	0	—	0	—	—
postdiarrheal	3	0.1	107	0.7	54	0.1	12	0	—	0	10	0	8	0	6	200
Hepatitis A, acute	14	0.3	277	1.8	883	2.2	877	2.1	1,200	2.0	1,505	1.6	807	2.2	120	5,683
Hepatitis B, acute	4	0.1	6	0	32	0.1	664	1.6	2,443	4.0	2,477	2.7	329	0.9	257	6,212
Hepatitis C, acute	1	0	4	0	2	0	119	0.3	223	0.4	336	0.4	32	0.1	3	720

\* Per 100,000 population.

<sup>†</sup> No cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome—associated coronavirus; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in 2004.<sup>§</sup> Total number of acquired immunodeficiency syndrome (AIDS) cases reported to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), through December 30, 2005.<sup>¶</sup> Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.<sup>\*\*</sup> Age-related data are collected on aggregate forms different from those used for the number of reported cases. Thus, total cases reported here will differ slightly from other tables. Cases among persons aged <15 years are not shown because some might not be caused by sexual transmission; these cases are included in the totals. Totals reported to the Division of STD Prevention, NCHSTP, as of April 29, 2005.<sup>††</sup> Notifiable in <40 states.

TABLE 3. (Continued) Reported cases and incidence\* of notifiable diseases,† by age group — United States, 2004

Disease	<1 yr		1–4 yrs		5–14 yrs		15–24 yrs		25–39 yrs		40–64 yrs		≥65 yrs		Age not stated	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate		
Legionellosis	6	0.1	1	0	8	0	27	0.1	194	0.3	1,044	1.1	728	2.0	85	2,093
Listeriosis	63	1.6	4	0	6	0	31	0.1	65	0.1	202	0.2	365	1.0	17	753
Lyme disease	63	1.6	977	6.2	3,866	9.5	1,804	4.4	2,712	4.4	7,554	8.3	2,456	6.9	372	19,804
Malaria	10	0.2	59	0.4	136	0.3	270	0.7	400	0.7	496	0.5	65	0.2	22	1,458
Measles	4	0.1	19	0.1	3	0	8	0	3	0	—	0	—	0	—	37
Meningococcal disease	157	3.9	190	1.2	163	0.4	275	0.7	148	0.2	231	0.3	189	0.5	8	1,361
Mumps	1	0	43	0.3	60	0.1	37	0.1	39	0.1	69	0.1	8	0	1	258
Pertussis	3,233	80.8	2,562	16.3	8,334	20.3	4,806	11.7	2,573	4.2	3,242	3.5	422	1.2	655	25,827
Plague	—	0	—	0	—	0	—	0	—	0	2	0	1	0	—	3
Psittacosis	—	0	—	0	—	0	1	0	3	0	6	0	2	0	—	12
Q fever	1	0	1	0	1	0	3	0	9	0	43	0	12	0	—	70
Rabies, human	—	0	—	0	—	0	3	0	—	0	4	0	—	0	—	7
Rocky Mountain spotted fever	6	0.2	30	0.2	173	0.4	162	0.4	407	0.7	687	0.8	238	0.7	10	1,713
Rubella	—	0	2	0	4	0	1	0	3	0	—	0	—	0	—	10
Salmonellosis	4,411	110.2	7,825	49.6	6,184	15.1	4,126	10.0	6,028	9.8	8,638	9.4	4,228	11.8	757	42,197
Shigellosis	296	7.4	4,113	26.1	4,637	11.3	1,130	2.7	2,121	3.5	1,649	1.8	366	1.0	315	14,627
Streptococcal disease, invasive, group A	104	3.1	228	1.7	272	0.8	196	0.6	572	1.1	1,527	1.9	1,433	4.6	63	4,395
Streptococcal toxic-shock syndrome	2	0.1	4	0	3	0	9	0	15	0	61	0.1	38	0.1	—	132
<i>Streptococcus pneumoniae</i> , Drug-resistant††	124	6.8	307	4.2	120	0.6	50	0.3	207	0.7	832	1.9	932	5.0	18	2,590
Age <5 yrs††	405	15.3	757	7.3	—	0	—	0	—	0	—	0	—	0	—	1,162
Syphilis, primary and secondary**	—	0	—	0	—	0	1,368	3.3	3,878	6.3	2,661	2.9	55	0.2	2	7,960
Tetanus	—	0	—	0	2	0	2	0	4	0	12	0	14	0	—	34
Toxic-shock syndrome	1	0	2	0	20	0.1	38	0.1	9	0	21	0	4	0	—	95
Trichinellosis	—	0	—	0	2	0	—	0	1	0	2	0	—	0	—	5
Tuberculosis§§	84	2.1	472	3.0	405	1.0	1,600	3.8	3,622	5.9	5,516	5.9	2,817	7.8	1	14,517
Tularemia	—	0	8	0.1	27	0.1	10	0	27	0	38	0	22	0.1	2	134
Typhoid fever	8	0.2	38	0.2	74	0.2	50	0.1	84	0.1	57	0.1	9	0	2	322
Vancomycin-resistant <i>Staphylococcus aureus</i>	—	0	—	0	—	0	—	0	—	0	1	0	—	0	—	1

§§ Totals reported to the Division of TB Elimination, NCHSTP, as of April 15, 2005.



**TABLE 4. Reported cases and incidence\* of notifiable diseases,<sup>†</sup> by sex — United States, 2004**

Disease	Male		Female		Sex not stated No.	Total
	No.	Rate	No.	Rate		
AIDS <sup>§</sup>	32,415	22.7	11,693	7.9	—	44,108
Botulism						
Foodborne	9	0	7	0	—	16
Infant	51	2.5	36	1.8	—	87
Other (includes wound and unspecified)	24	0	6	0	—	30
Brucellosis	66	0	48	0	—	114
Chancroid <sup>¶</sup>	19	0	9	0	2	30
Chlamydia <sup>¶**</sup>	210,396	147.1	716,675	485.0	2,391	929,462
Cholera	3	0	2	0	—	5
Coccidioidomycosis <sup>††</sup>	3,751	4.9	2,675	3.4	23	6,449
Cryptosporidiosis	1,924	1.3	1,573	1.1	80	3,577
Cyclosporiasis	61	0.1	98	0.1	12	171
Ehrlichiosis						
Human granulocytic	307	0.2	225	0.2	5	537
Human monocytic	185	0.1	150	0.1	3	338
Encephalitis/meningitis, arboviral						
California serigroup	72	0.1	40	0	—	112
Eastern equine	4	0	2	0	—	6
Powassan	—	0	1	0	—	1
St. Louis	8	0	4	0	—	12
West Nile	719	0.5	414	0.3	9	1,142
Enterohemorrhagic <i>Escherichia coli</i> (EHEC)						
EHEC O157:H7	1,192	0.8	1,335	0.9	17	2,544
EHEC non-O157	146	0.1	169	0.1	1	316
EHEC, not serogrouped	116	0.1	178	0.1	14	308
Giardiasis	11,371	9.4	8,954	7.1	311	20,636
Gonorrhea <sup>¶</sup>	157,303	110	172,142	116.5	687	330,132
<i>Haemophilus influenzae</i> , invasive, all ages/serotypes	970	0.7	1,107	0.7	8	2,085
Age <5 yrs, serotype b	13	0.1	6	0.1	—	19
Age <5 yrs, nonserotype b	79	0.8	56	0.6	—	135
Age <5 yrs, unknown serotype	102	1.0	75	0.8	—	177
Hansen disease (leprosy)	56	0	28	0	21	105
Hantavirus pulmonary syndrome	13	0	9	0	2	24
Hemolytic uremic syndrome, postdiarrheal	83	0.1	111	0.1	6	200

\* Per 100,000 population.

† No cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome-associated coronavirus; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in 2004.

§ Total number of acquired immunodeficiency syndrome (AIDS) cases reported to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), through December 31, 2005.

¶ Totals reported to the Division of STD Prevention, NCHSTP, as of May 20, 2005.

\*\* Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.

†† Notifiable in &lt;40 states.

**TABLE 4. (Continued) Reported cases and incidence\* of notifiable diseases,† by sex — United States, 2004**

Disease	Male		Female		Sex not stated	Total
	No.	Rate	No.	Rate	No.	
Hepatitis A, acute	2,972	2.1	2,671	1.8	40	5,683
Hepatitis B, acute	3,846	2.7	2,308	1.6	58	6,212
Hepatitis C, acute	390	0.3	299	0.2	31	720
Legionellosis	1,304	0.9	776	0.5	13	2,093
Listeriosis	336	0.2	408	0.3	9	753
Lyme disease	10,530	7.4	8,958	6.1	316	19,804
Malaria	941	0.7	504	0.3	13	1,458
Measles	13	0	24	0	—	37
Meningococcal disease	723	0.5	634	0.4	4	1,361
Mumps	142	0.1	115	0.1	1	258
Pertussis	11,199	7.8	13,879	9.4	749	25,827
Plague	2	0	1	0	—	3
Psittacosis	7	0	5	0	—	12
Q fever	49	0	20	0	1	70
Rabies, human	4	0	3	0	—	7
Rocky Mountain spotted fever	964	0.7	738	0.5	11	1,713
Rubella	4	0	6	0	—	10
Salmonellosis	19,993	14.0	21,731	14.7	473	42,197
Shigellosis	6,956	4.9	7,499	5.1	172	14,627
Streptococcal disease, invasive, group A	2,273	1.9	2,091	1.7	31	4,395
Streptococcal toxic-shock syndrome	57	0.1	75	0.1	—	132
<i>Streptococcus pneumoniae</i> , invasive disease						
Drug-resistant††	1,323	1.6	1,256	1.4	11	2,590
Age <5 yrs††	683	10.2	475	7.4	4	1,162
Syphilis, primary and secondary¶	6,722	4.7	1,255	0.8	3	7,980
Tetanus	20	0	14	0	—	34
Toxic-shock syndrome	14	0	81	0.1	—	95
Trichinellosis	2	0	2	0	1	5
Tuberculosis§§	8,910	6.2	5,607	3.8	—	14,517
Tularemia	91	0.1	43	0	—	134
Typhoid fever	163	0.1	156	0.1	3	322
Vancomycin-resistant <i>Staphylococcus aureus</i>	—	0	1	0	—	1

§§ Totals reported to the Division of TB Elimination, NCHSTP, as of April 15, 2005.

TABLE 5. Reported cases and incidence\* of notifiable diseases,<sup>†</sup> by race — United States, 2004

Disease	American Indian or Alaska Native		Asian or Pacific Islander		Black		White		Other No.	Race not stated No.	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate			
AIDS <sup>§</sup>	238	9.8	542	4.2	21,869	59.9	16,436	8.3	116	4,907	44,108
Botulism											
Infant	—	—	5	2.7	6	0.9	37	1.2	5	34	87
Other (includes wound and unspecified)	0	0	0	0	3	0	11	0	0	16	30
Brucellosis	0	0	1	0	2	0	40	0	1	70	114
Chlamydia <sup>¶**</sup>	12,826	528.2	13,253	103.9	323,870	887.1	284,655	142.9	22,241	272,617	929,462
Coccidioidomycosis <sup>††</sup>	31	1.5	156	1.7	249	1.2	1,322	1.1	28	4,663	6,449
Cryptosporidiosis	14	0.6	42	0.3	334	0.9	2,105	1.1	96	986	3,577
Cyclosporiasis	0	0	1	0	6	0	109	0.1	6	49	171
Ehrlichiosis											
Human granulocytic	3	0.1	4	0	8	0	330	0.2	0	192	537
Human monocytic	10	0.4	0	0	11	0	240	0.1	1	76	338
Encephalitis/meningitis, arboviral											
California serogroup	3	0.1	0	0	1	0	97	0	0	11	112
West Nile	17	0.7	9	0.1	89	0.2	684	0.3	22	321	1,142
Enterohemorrhagic <i>Escherichia coli</i> (EHEC)											
EHEC O157:H7	12	0.5	43	0.3	71	0.2	1,746	0.9	54	618	2,544
EHEC non-O157	4	0.2	3	0	14	0	186	0.1	9	100	316
EHEC, not serogrouped	4	0.2	6	0.1	18	0.1	209	0.1	16	55	308
Giardiasis	88	4.0	1,343	11.4	1,640	5.4	8,340	4.9	783	8,442	20,636
Gonorrhea <sup>**</sup>	2,289	94.3	2,168	17.0	179,280	491.1	63,999	32.1	5,482	76,914	330,132
<i>Haemophilus influenzae</i> , invasive, all ages/serotypes	26	1.1	24	0.2	273	0.7	1,279	0.6	45	438	2,085
Age <5 yrs, nonserotype b	9	3.9	4	0.4	21	0.7	63	0.4	1	37	135
Age <5 yrs, unknown serotype	6	2.6	5	0.6	40	1.2	80	0.5	6	40	177
Hansen disease (leprosy)	0	0	13	0.1	16	0	8	0	3	65	105
Hemolytic uremic syndrome postdiarrheal	1	0	5	0	8	0	129	0.1	5	52	200

\* Per 100,000 population.

† No cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome-associated coronavirus; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in 2004. Disease conditions with <25 reported cases are not included in this table.

§ Total number of acquired immunodeficiency syndrome (AIDS) cases reported to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), through December 31, 2005.

¶ Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.

\*\* In addition to data collected through the National Electronic Telecommunications System for Surveillance (NETSS), certain data on ethnicity are collected on aggregate forms different from those used for reported cases. Thus, the total number of cases reported here can differ slightly from totals reported in other surveillance summaries. Totals reported to the Division of STD Prevention, NCHSTP, as of April 29, 2005.

†† Notifiable in <40 states.

TABLE 5. (Continued) Reported cases and incidence\* of notifiable diseases,<sup>†</sup> by race — United States, 2004

Disease	American Indian or Alaska Native		Asian or Pacific Islander		Black		White		Other No.	Race not stated No.	Total
	No.	Rate	No.	Rate	No.	Rate	No.	Rate			
Hepatitis A, acute	17	0.7	361	2.8	351	1.0	2,705	1.4	102	2,147	5,683
Hepatitis B, acute	33	1.4	165	1.3	1,054	2.9	2,627	1.3	137	2,196	6,212
Hepatitis C, acute	14	0.5	7	0.1	61	0.2	408	0.2	30	200	720
Legionellosis	9	0.4	12	0.1	292	0.8	1,286	0.6	44	450	2,093
Listeriosis	1	0	27	0.2	61	0.2	441	0.2	21	202	753
Lyme disease	35	1.4	89	0.7	171	0.5	9,663	4.9	1,368	8,478	19,804
Malaria	1	0	151	1.2	642	1.8	317	0.2	42	305	1,458
Measles	0	0	9	0.1	1	0	13	0	1	13	37
Meningococcal disease	6	0.2	33	0.3	155	0.4	812	0.4	31	324	1,361
Mumps	2	0.1	29	0.2	14	0	140	0.1	4	69	258
Pertussis	310	12.8	268	2.1	1,249	3.4	19,199	9.6	279	4,522	25,827
Q fever	0	0	1	0	3	0	40	0	0	26	70
Rocky Mountain spotted fever	71	3.1	8	0.1	128	0.4	1,240	0.6	6	260	1,713
Salmonellosis	259	10.7	1,048	8.2	3,680	10.1	21,669	10.9	1,445	14,096	42,197
Shigellosis	170	7.0	279	2.2	1,918	5.3	5,556	2.8	336	6,368	14,627
Streptococcal disease, invasive, group A	74	3.5	121	1.5	581	1.8	2,522	1.4	108	989	4,395
Streptococcal toxic-shock syndrome	1	0.1	3	0	13	0.1	100	0.1	6	9	132
<i>Streptococcus pneumoniae</i> , invasive disease											
Drug-resistant <sup>††</sup>	5	0.4	17	0.3	507	2.1	1,582	1.1	73	406	2,590
Age <5 yrs <sup>††</sup>	5	3.8	22	4.8	238	10.5	584	5.7	36	277	1,162
Syphilis, primary and secondary <sup>**</sup>	74	3.0	145	1.1	3,095	8.5	3,927	2.0	254	485	7,980
Tetanus	0	0	0	0	2	0	26	0	1	5	34
Toxic-shock syndrome	0	0	1	0	5	0	69	0	4	16	95
Tuberculosis <sup>§§</sup>	167	5.9	3,430	27.8	4,182	11.2	6,652	2.8	45	41	14,517
Tularemia	9	0.4	3	0	2	0	86	0	1	33	134
Typhoid fever	0	0	104	0.8	23	0.1	46	0	29	120	322

§§ Totals reported to the Division of TB Elimination, NCHSTP, as of April 15, 2005.

**TABLE 6. Reported cases and incidence\* of notifiable diseases,<sup>†</sup> by ethnicity — United States, 2004**

Disease	Hispanic		Non-Hispanic		Ethnicity not stated	Total
	No.	Rate	No.	Rate		
AIDS <sup>§</sup>	8,314	20.8	34,019	13.6	1,775	44,108
Botulism						
Infant	25	2.9	39	1.2	23	87
Other (includes wound and unspecified)	10	0	14	0	6	30
Brucellosis	62	0.2	18	0	34	114
Chlamydia <sup>¶**</sup>	126,917	318.1	485,113	193.3	317,432	929,462
Coccidioidomycosis <sup>††</sup>	834	3.6	1,245	0.9	4,370	6,449
Cryptosporidiosis	234	0.6	1,877	0.7	1,466	3,577
Cyclosporiasis	3	0	68	0	100	171
Ehrlichiosis						
Human granulocytic	4	0	252	0.1	281	537
Human monocytic	12	0	238	0.1	88	338
Encephalitis/meningitis, arboviral						
California serogroup	5	0	51	0	56	112
West Nile	166	0.4	481	0.2	495	1,142
Enterohemorrhagic <i>Escherichia coli</i> (EHEC)						
EHEC O157:H7	112	0.3	1,470	0.6	962	2,544
EHEC non-O157	17	0.1	161	0.1	138	316
EHEC, not serogrouped	8	0	173	0.8	127	308
Giardiasis	1,600	5.1	9,072	4.2	9,964	20,636
Gonorrhea <sup>**</sup>	22,009	55.2	202,879	80.9	105,244	330,132
<i>Haemophilus influenzae</i> , invasive, all ages/serotypes	140	0.4	1,119	0.4	826	2,085
Age <5 yrs, non-serotype b	33	0.8	69	0.4	33	135
Age <5 yrs, unknown serotype	17	0.4	87	0.6	73	177
Hansen disease (leprosy)	36	0.1	32	0	37	105
Hemolytic uremic syndrome, postdiarrheal	20	0.1	118	0.1	62	200

\* Per 100,000 population.

<sup>†</sup> No cases of anthrax; diphtheria; influenza-associated pediatric mortality; paralytic poliomyelitis; rubella, congenital syndrome; severe acute respiratory syndrome-associated coronavirus; smallpox; vancomycin-intermediate *Staphylococcus aureus*; western equine encephalitis; or yellow fever were reported in 2004. Disease conditions with <25 reported cases are not included in this table.

<sup>§</sup> Total number of acquired immunodeficiency syndrome (AIDS) cases reported to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), through December 31, 2005.

<sup>¶</sup> Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.

<sup>\*\*</sup> In addition to data collected through the National Electronic Telecommunications System for Surveillance (NETSS), certain data on ethnicity are collected on aggregate forms different from those used for reported cases. Thus, the total number of cases reported here can differ slightly from totals reported in other surveillance summaries. Totals reported to the Division of STD Prevention, NCHSTP, as of April 29, 2005.

<sup>††</sup> Notifiable in <40 states.

**TABLE 6. (Continued) Reported cases and incidence\* of notifiable diseases,† by ethnicity — United States, 2004**

Disease	Hispanic		Non-Hispanic		Ethnicity not stated	Total
	No.	Rate	No.	Rate		
Hepatitis A, acute	1,106	2.8	2,478	1.0	2,099	5,683
Hepatitis B, acute	400	1.0	2,777	1.1	3,035	6,212
Hepatitis C, acute	45	0.1	361	0.1	314	720
Legionellosis	60	0.2	1,084	0.4	949	2,093
Listeriosis	100	0.3	371	0.1	282	753
Lyme disease	221	0.6	5,851	2.3	13,732	19,804
Malaria	94	0.2	824	0.3	540	1,458
Measles	4	0	16	0	17	37
Meningococcal disease	169	0.4	754	0.3	438	1,361
Mumps	42	0.1	121	0	95	258
Pertussis	2,207	5.5	17,585	7.0	6,035	25,827
Q fever	6	0	40	0	24	70
Rocky Mountain spotted fever	49	0.1	1,195	0.5	469	1,713
Salmonellosis	4,243	10.6	18,915	7.5	19,039	42,197
Shigellosis	3,867	9.7	5,301	2.1	5,459	14,627
Streptococcal disease, invasive, group A	322	1.2	2,016	0.9	2,057	4,395
Streptococcal toxic-shock syndrome	10	0	63	0	59	132
<i>Streptococcus pneumoniae</i> , invasive						
Drug-resistant††	123	0.9	1,210	7.5	1,257	2,590
Age <5 yrs††	110	4.9	502	4.6	550	1,162
Syphilis, primary and secondary**	1,196	3.0	5,833	2.3	951	7,980
Tetanus	7	0	20	0	7	34
Toxic-shock syndrome	3	0	50	0	42	95
Tuberculosis§§	4,186	10.1	10,299	4.1	32	14,517
Tularemia	3	0	71	0	60	134
Typhoid fever	41	0.1	152	0.1	129	322

§§ Totals reported to the Division of TB Elimination, NCHSTP, as of April 15, 2005.

TABLE 7. Deaths from selected notifiable diseases — United States, 2002\*

Cause of death	ICD-10 <sup>†</sup> cause of death code	Deaths		
		No.	Rank <sup>§</sup>	CMR <sup>¶</sup>
AIDS**	B20–B24	14,095	1	4.9
Coccidioidomycosis	B38	84	7	0
Hemolytic uremic syndrome, postdiarrheal	D59.3	35	12	0
Hepatitis A, acute	B15	76	9	0
Hepatitis B, acute	B16	659	4	0.2
Hepatitis C, acute	B17.1	4,321	2	1.5
Legionellosis	A48.1	62	10	0
Listeriosis	A32	32	13	0
Malaria	B50–B54	12	17	0 <sup>††</sup>
Meningococcal disease	A39	161	5	0.1
Pertussis	A37	18	15	0 <sup>††</sup>
Salmonellosis	A02	21	14	0
Streptococcal disease, invasive, group A	A40.0, A49.1, B95.0	109	6	0
<i>Streptococcus pneumoniae</i> , invasive disease (age <5 yrs)	A40.3, B95.3, J13	13	16	0.1 <sup>††</sup>
Syphilis, total, all stages	A50–A53	41	11	0
Toxic-shock syndrome	A48.3	78	8	0
Tuberculosis	A15–A19	784	3	0.3
Varicella	B01	32	13	0

**SOURCE:** CDC. CDC WONDER Compressed Mortality files (<http://wonder.cdc.gov/mortSQL.html>) provided by the National Center for Health Statistics. National Vital Statistics System, 1999–2002. Underlying causes of death are classified according to ICD-10. Data for 2003–2004 are not available. Data are limited by the accuracy of information regarding the underlying cause of death indicated on death certificates and reported to the National Vital Statistics System.

\* Includes only causes of death corresponding to notifiable infectious diseases with  $\geq 10$  deaths.

<sup>†</sup> World Health Organization. *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, 1992.*

<sup>§</sup> A “1” indicates the greatest number of deaths. The 2002 total population (including males and females of all ages, races, and ethnicities) used to calculate CRMs was 288,356,713; for children aged <5 years, the total was 19,597,154.

<sup>¶</sup> Crude mortality rate per 100,000 population.

\*\* Acquired immunodeficiency syndrome.

<sup>††</sup> Indicates unreliable CMR as a result of small mortality counts.





## PART 2

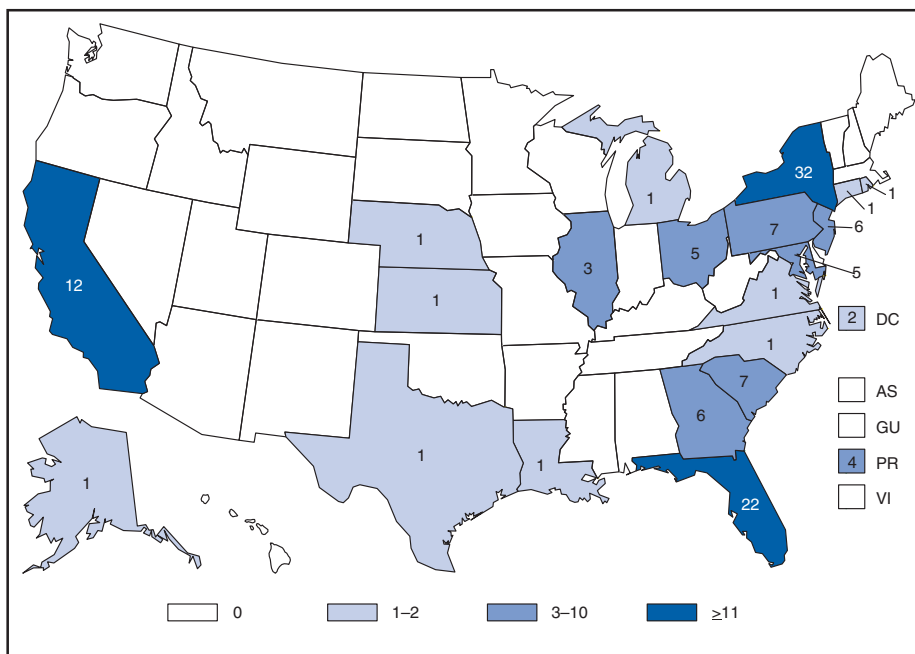
### Graphs and Maps for Selected Notifiable Diseases in the United States, 2004

#### Abbreviations and Symbols Used in Graphs and Maps

<b>U</b>	Data not available.
<b>N</b>	Not notifiable (i.e., report of disease not required in that jurisdiction).
<b>AS</b>	American Samoa
<b>CNMI</b>	Commonwealth of Northern Mariana Islands
<b>GU</b>	Guam
<b>PR</b>	Puerto Rico
<b>VI</b>	U.S. Virgin Islands



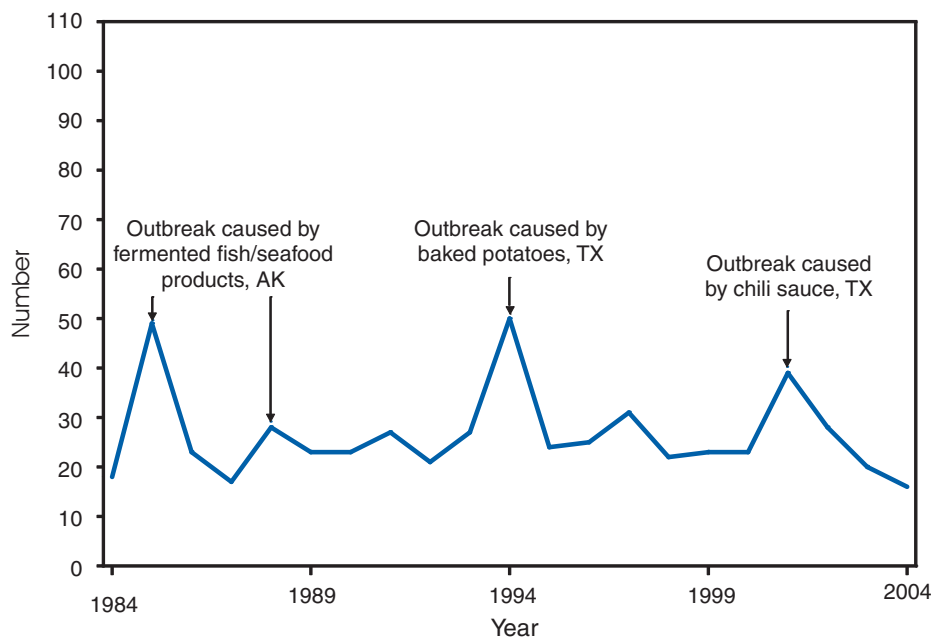
**ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS). Number of reported pediatric\* cases — United States and U.S. territories, 2004**



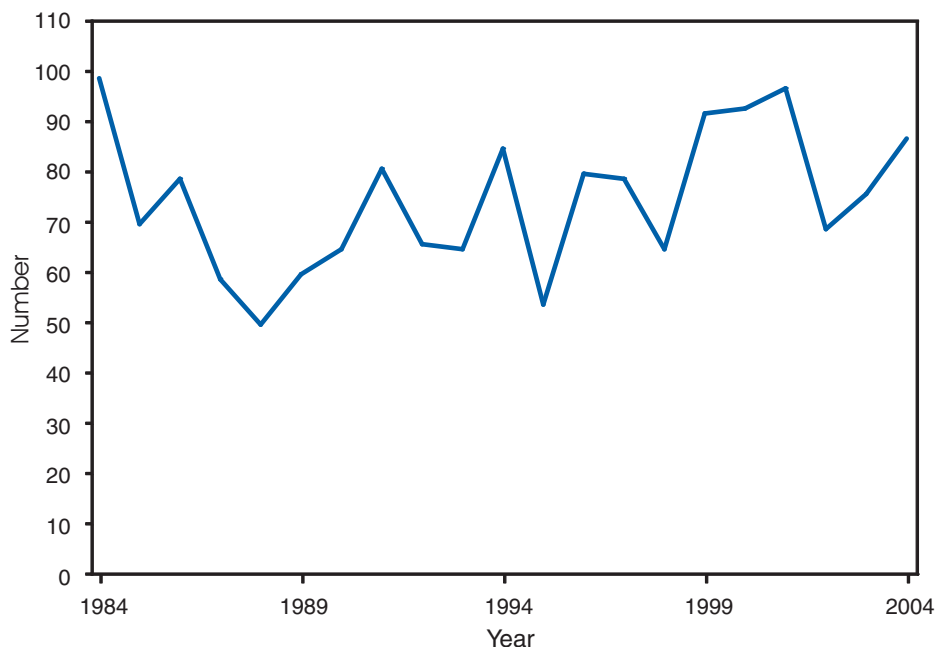
\*Children and adolescents aged <13 years.

During 2004, a total of 122 new cases were reported in the United States and U.S. territories.

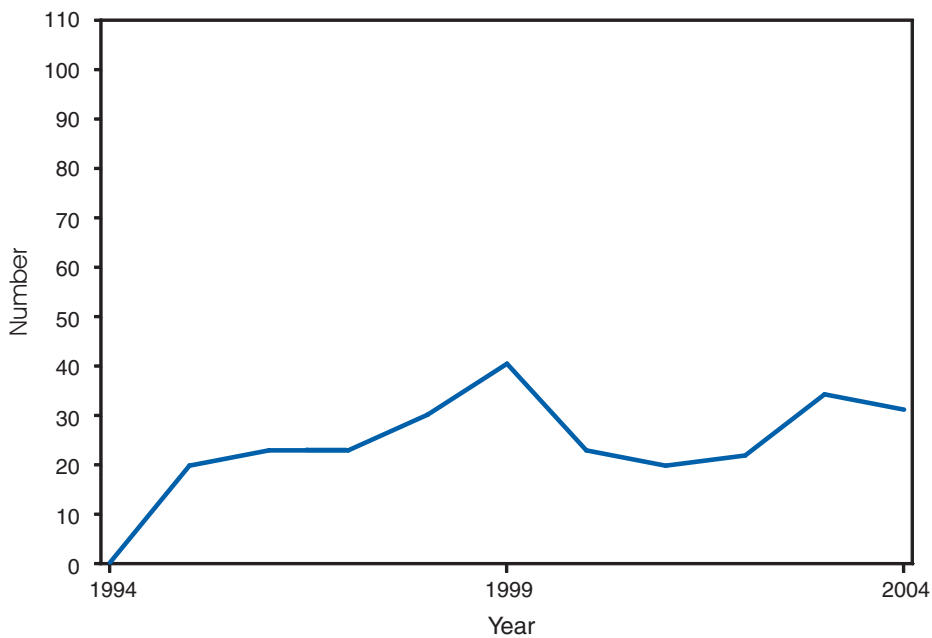
**BOTULISM, FOODBORNE. Number of reported cases, by year — United States, 1984–2004**



Home-canned foods and Alaska Native foods consisting of fermented foods of aquatic origin remain the principle sources of foodborne botulism in the United States. No substantial outbreak has occurred since 2001.

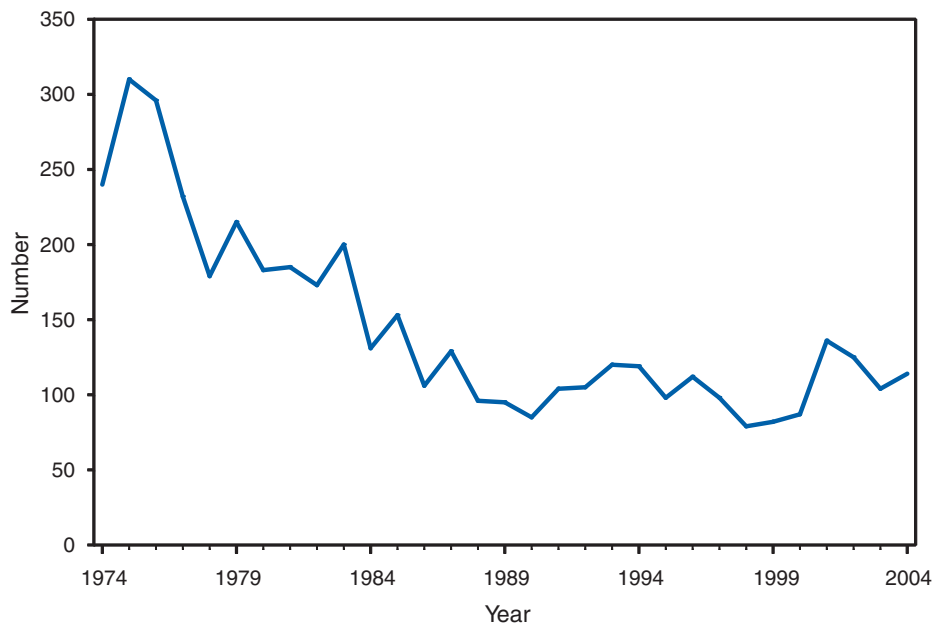
**BOTULISM, INFANT. Number of reported cases, by year — United States, 1984–2004**

Infant botulism is the most common type of botulism in the United States. Cases are sporadic, and risk factors remain substantially unknown.

**BOTULISM, OTHER (includes wound and unspecified). Number of reported cases, by year — United States, 1994–2004**

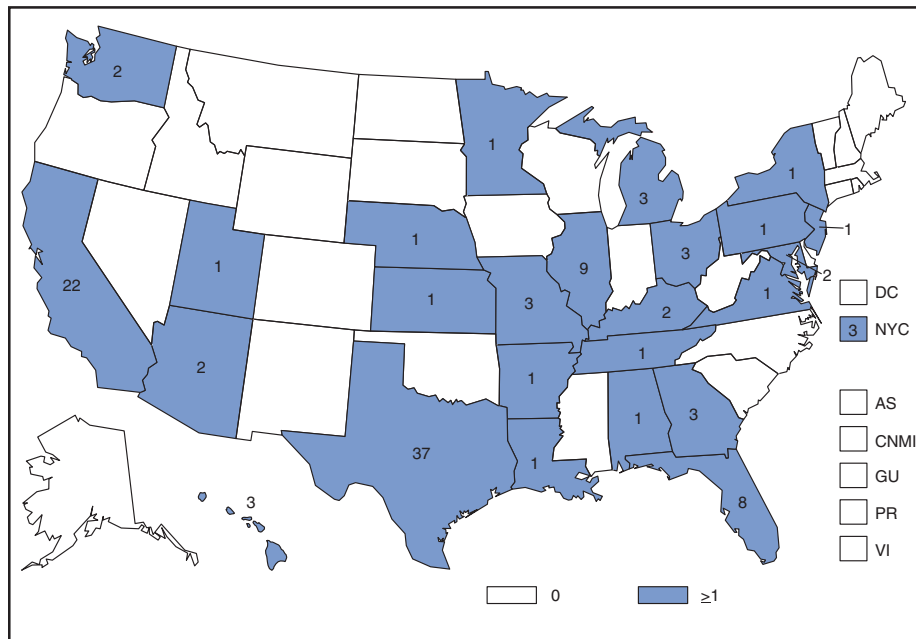
Wound botulism continues to constitute a significant proportion of botulism cases. Wound botulism cases occur almost exclusively in the western United States among injection-drug users and are associated with a particular type of heroin known as Black Tar Heroin. In 2004, four cases of severe botulism were associated with injection of a highly concentrated, unlicensed botulinum toxin for the cosmetic treatment of facial wrinkles.

**BRUCELLOSIS. Number of reported cases, by year — United States, 1974–2004**



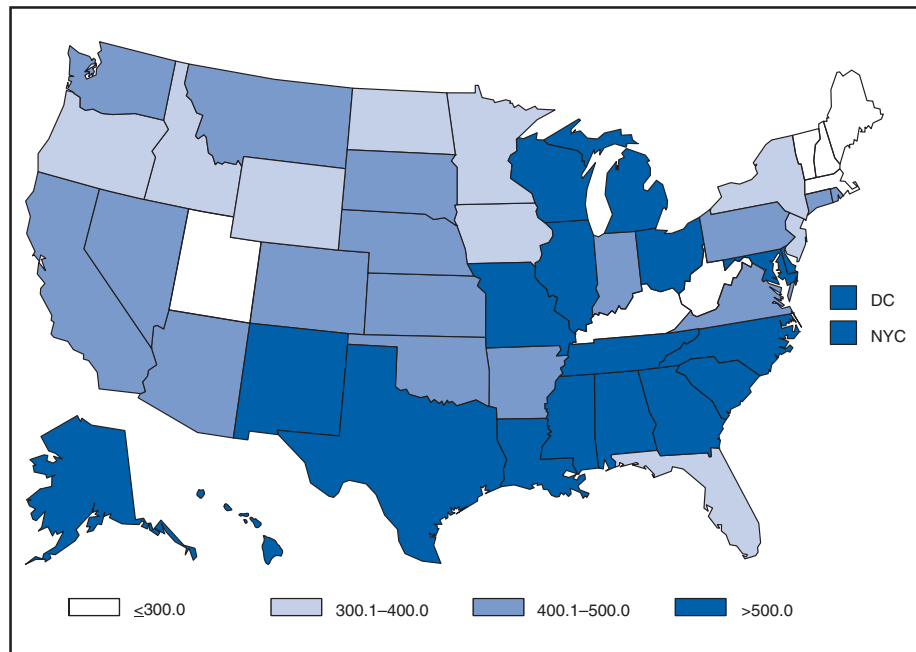
The incidence of brucellosis has remained stable in recent years, reflecting an ongoing risk for infection with *Brucella suis* acquired through contact with feral swine in the United States, and *Brucella melitensis* and *abortus* acquired through exposure to unpasteurized milk products in countries with endemic brucellosis in sheep, goats, and cattle.

**BRUCELLOSIS. Number of reported cases — United States and U.S. territories, 2004**



The majority of cases of brucellosis in the United States occur among returned travelers or immigrants from areas in which animal brucellosis is endemic, in particular South and Central America.

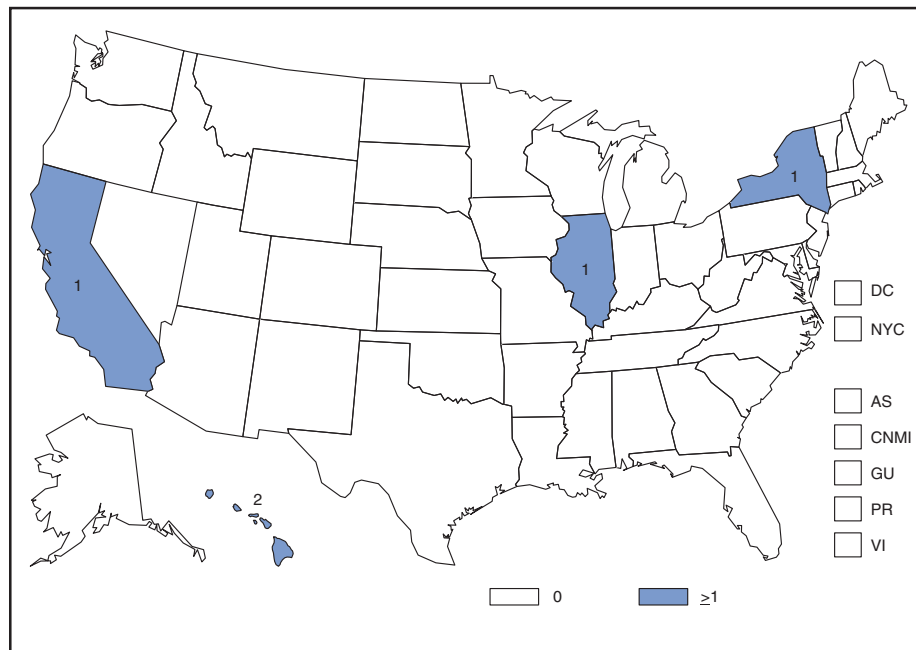
### CHLAMYDIA. Incidence\* among women — United States, 2004



\* Per 100,000 population.

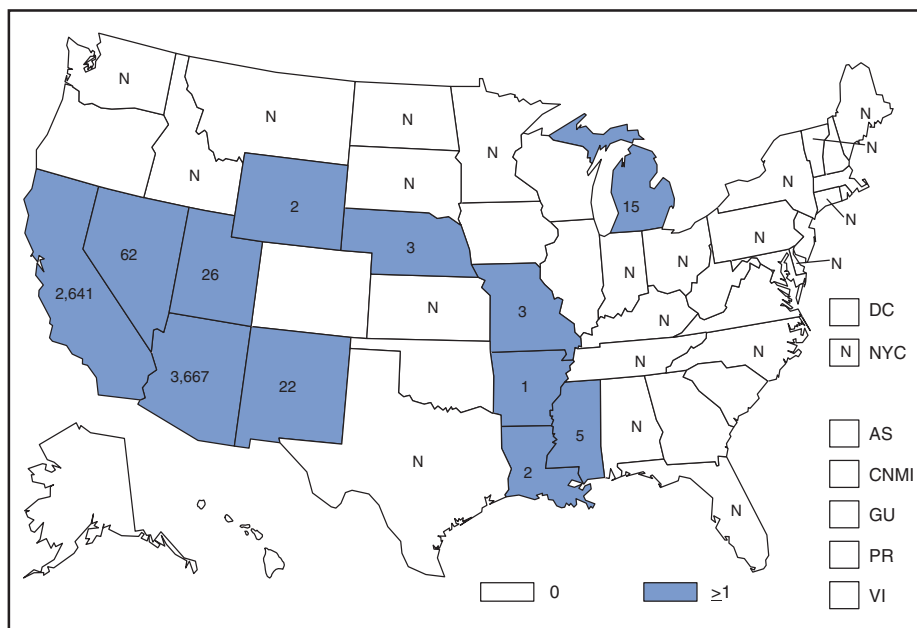
Chlamydia refers to genital infections caused by *Chlamydia trachomatis*. In 2004, the Chlamydia rate among women was 485.0 cases per 100,000 population. Rates for men are not provided because reporting for men is limited.

### CHOLERA. Number of reported cases — United States and U.S. territories, 2004



The majority of cholera infections in the United States are acquired in developing countries or through consumption of contaminated seafood. Cholera vaccine is not recommended for international travelers and is no longer available in the United States.

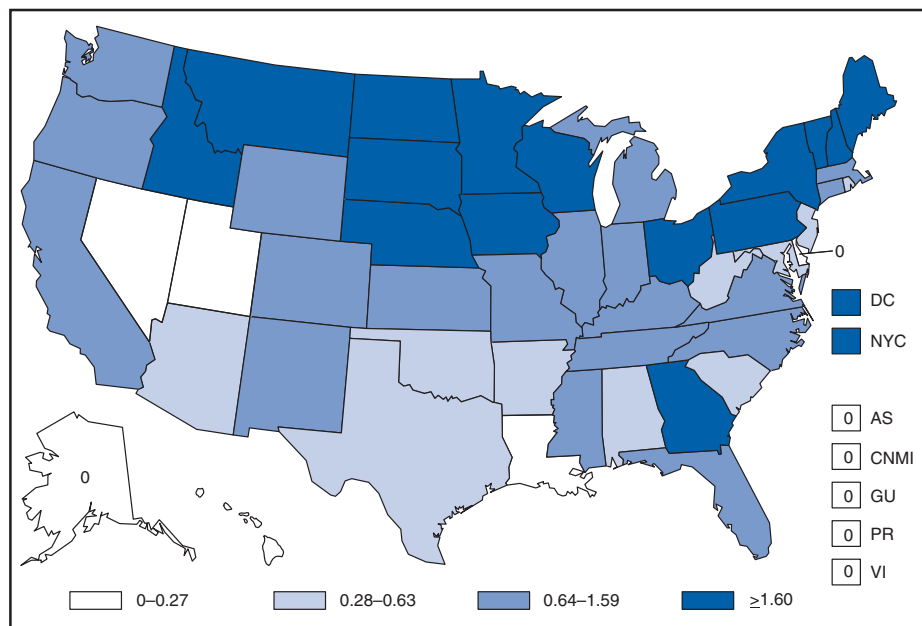
**COCCIDIOIDOMYCOSIS. Number of reported cases — United States\* and U.S. territories, 2004**



\* In the United States, coccidioidomycosis is endemic in the southwestern states. However, cases have been reported in other states, typically among travelers returning from areas in which the disease is endemic.

During 2004, the number of reported coccidioidomycosis cases increased nationwide. Cases reported from outside the endemic states of Arizona, California, Nevada, New Mexico, and Texas likely resulted from exposure during travel to an endemic area.

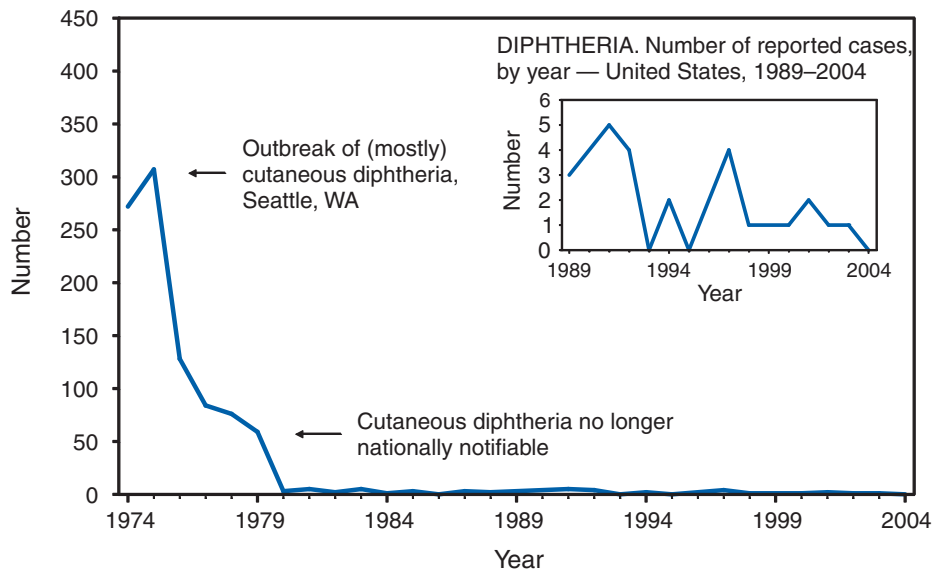
**CRYPTOSPORIDIOSIS. Incidence\* — United States and U.S. territories, 2004**



\* Per 100,000 population.

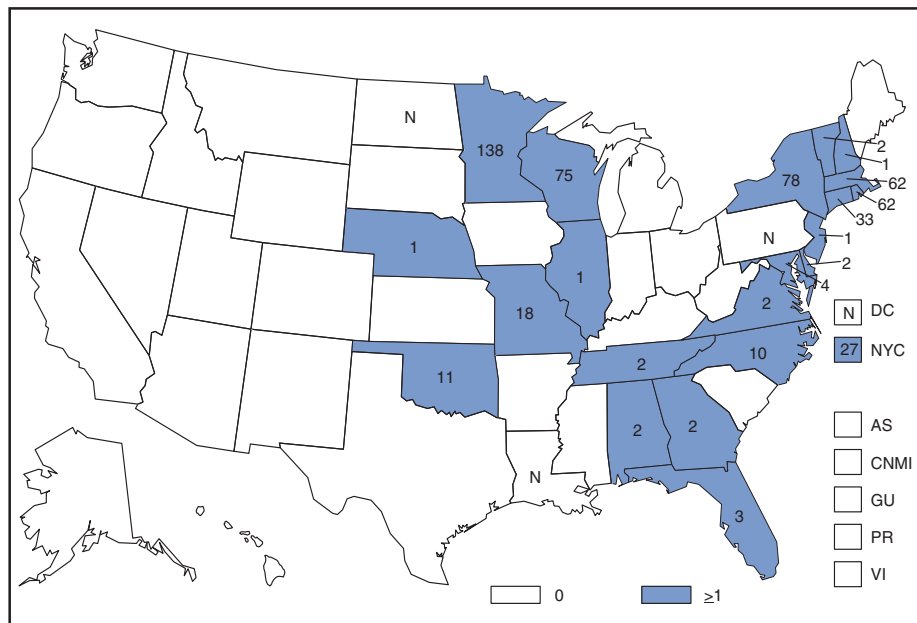
Transmission of *Cryptosporidium* continues to occur throughout the United States, with increased diagnosis or reporting occurring in northern states. However, state incidence figures should be compared with caution because individual state surveillance systems have varying capabilities to detect cases. Peak onset of cryptosporidiosis occurs annually during summer through early fall, coinciding with the summer recreational water season.

**DIPHTHERIA. Number of reported cases, by year — United States, 1974–2004**



In 2004, the national health objective for 2010 of zero cases of respiratory diphtheria was achieved. In only 3 previous years (1986, 1993, and 1995) have no cases of respiratory diphtheria been reported.

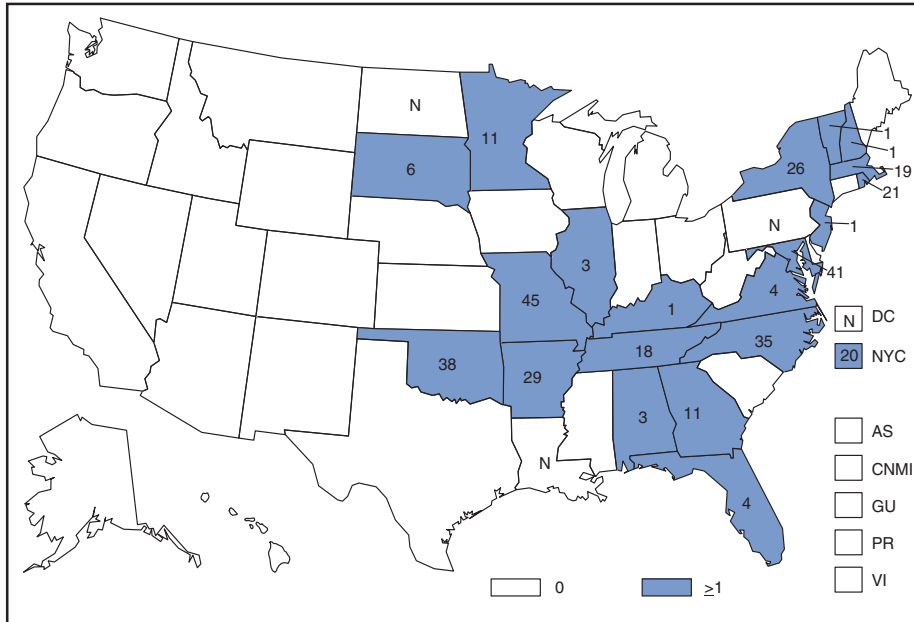
**EHRLICHIOSIS, HUMAN GRANULOCYTIC. Number of reported cases — United States and U.S. territories, 2004**



Human ehrlichiosis is an emerging tickborne disease that only became nationally notifiable in 1999 (in four states, ehrlichiosis is not a notifiable disease). Identification and reporting of human ehrlichioses are incomplete, and numbers of cases reported in this publication are not definitive for the overall distribution or the regional prevalence of disease.

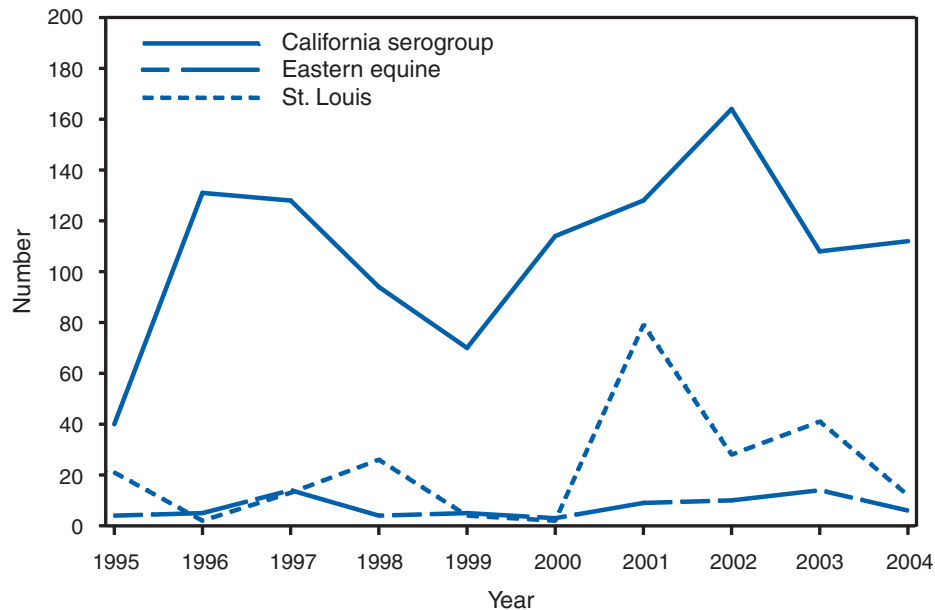


**EHRlichiosis, HUMAN MONOCYtic. Number of reported cases — United States and U.S. territories, 2004**



Human ehrlichiosis is an emerging tickborne disease that only became nationally notifiable in 1999 (in four states, ehrlichiosis is not a notifiable disease). Identification and reporting of human ehrlichioses are incomplete, and numbers of cases reported in this publication are not definitive for the overall distribution or the regional incidence of disease.

**ENCEPHALITIS/MENINGITIS, ARBOVIRAL. Number\* of reported cases, by year — United States, 1995–2004**

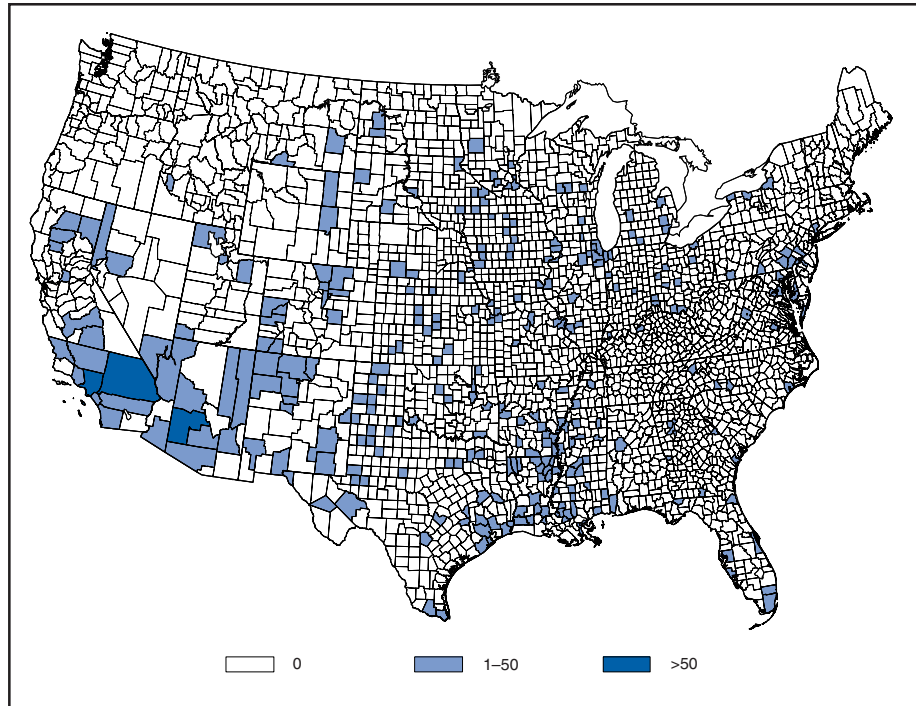


\*Data from the National Center for Infectious Diseases (ArboNet Surveillance).

Arboviral diseases are seasonal, occurring during the summer and fall, with incidence peaking in the late summer. The most common arboviruses affecting humans in the United States are West Nile virus (WNV), La Crosse virus (LACV), Eastern Equine Encephalitis virus (EEEV), and St. Louis encephalitis virus (SLEV).

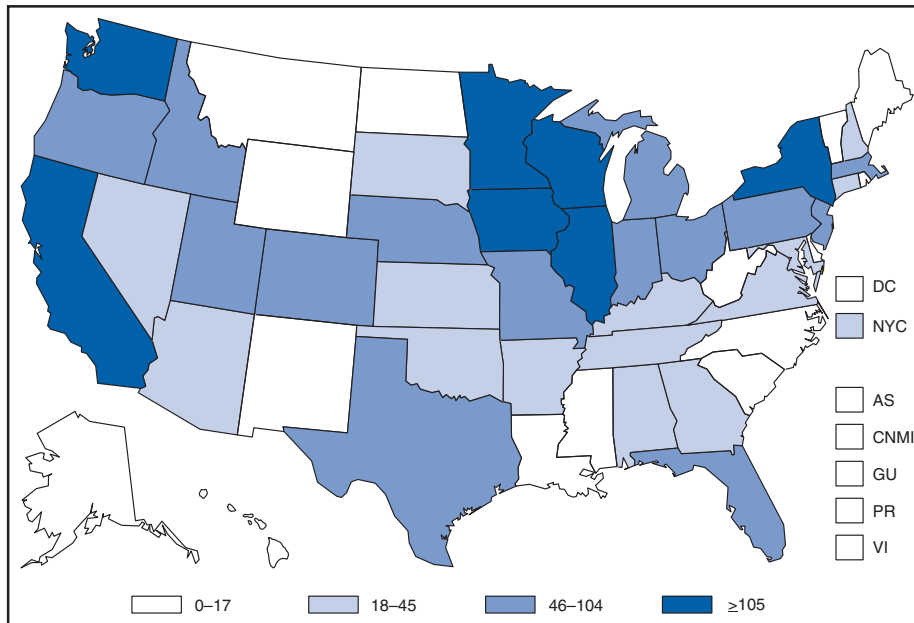
California serogroup viruses (mainly LACV in the eastern United States) cause encephalitis, especially in children. In 2004, cases were reported in 13 states (Florida, Georgia, Iowa, Illinois, Indiana, Louisiana, Minnesota, North Carolina, Ohio, Tennessee, Virginia, Wisconsin, and West Virginia). During 1964–2004, a median of 68 (range: 29–167) cases per year were reported in the United States. EEEV disease in humans is associated with high mortality rates (>20%) and severe neurologic sequelae. In 2004, cases were reported in three states (Massachusetts, North Carolina, and South Carolina). During 1964–2004, a median of four (range: 0–15) cases per year were reported in the United States. Before the introduction of West Nile virus in the United States, SLEV was the nation's leading cause of epidemic viral encephalitis. In 2004, cases were reported in five states (Arizona, Kansas, Michigan, Oklahoma, and Texas). During 1964–2004, a median of 26 (range: 2–1,967) cases per year were reported in the United States.

**ENCEPHALITIS/MENINGITIS, ARBOVIRAL, WEST NILE. Number of reported cases, by county — United States, 2004**



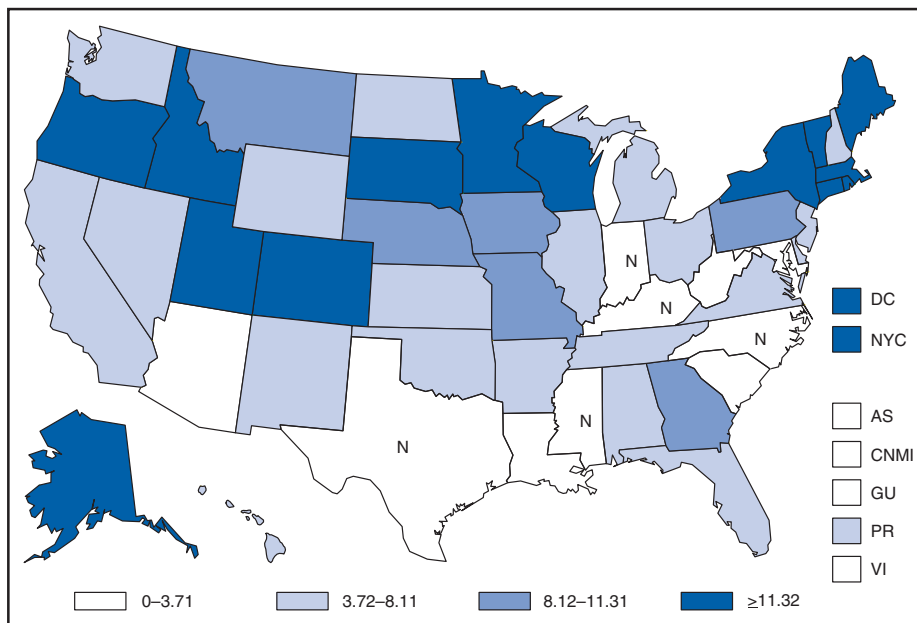
In 2004, a total of 37 states and the District of Columbia (DC) reported neuroinvasive West Nile virus (WNV) disease. Since WNV was first recognized in the United States during an encephalitis outbreak in New York City in 1999, a median of 603 (mean: 1,183; range: 19–2,946) neuroinvasive cases per year were reported in the United States.

**ESCHERICHIA COLI, ENTEROHEMORRHAGIC O157:H7. Number of reported cases — United States and U.S. territories, 2004**



*Escherichia coli* O157:H7 is the most common serotype of enterohemorrhagic *E. coli*, although many other serotypes of *E. coli* produce Shiga toxin and can cause hemorrhagic colitis. *E. coli* O157:H7 has been nationally reportable since 1994. In 2001, all enterohemorrhagic *E. coli* serotypes were made nationally notifiable, although a substantial number of laboratories do not have the capacity to isolate and identify *E. coli* serotypes other than *E. coli* O157:H7.

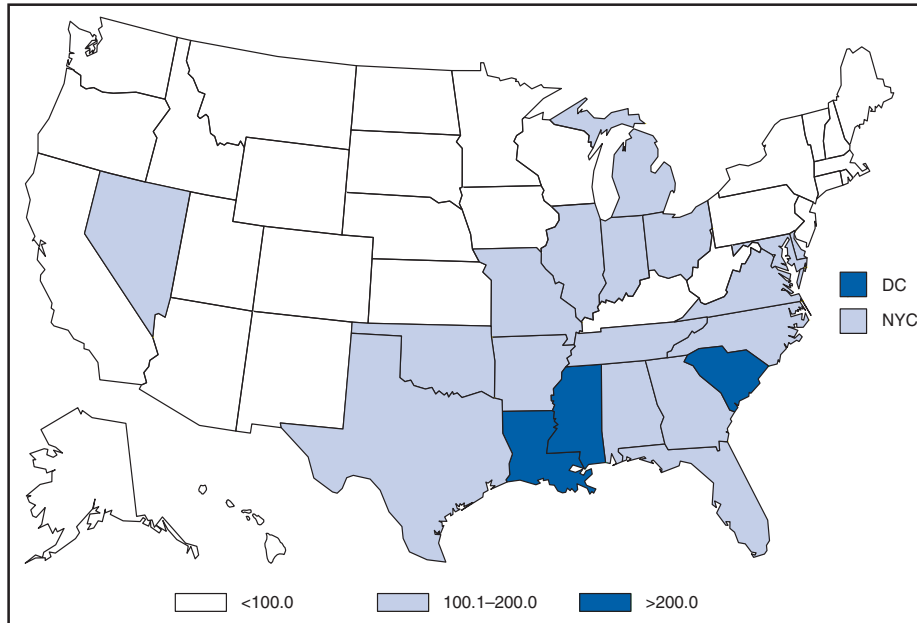
**GIARDIASIS. Incidence\* — United States and U.S. territories, 2004**



\* Per 100,000 population.

Transmission of *Giardia* continues to occur throughout the United States with increased diagnosis or reporting occurring in northern states. However, state incidence figures should be compared with caution because individual state surveillance systems have varying capabilities to detect cases. Peak onset of giardiasis occurs annually during summer through early fall, coinciding with the summer recreational water season.

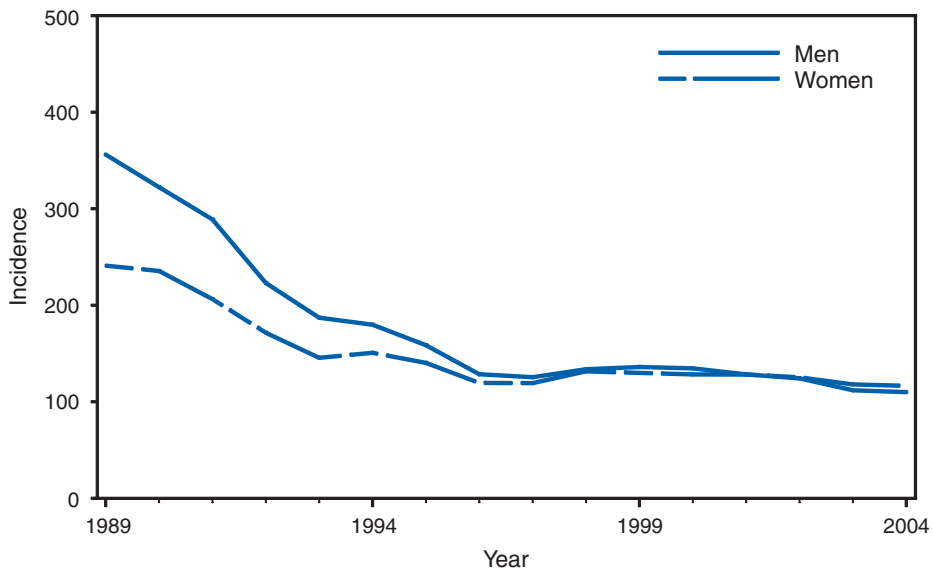
**GONORRHEA. Incidence\* — United States, 2004**



\* Per 100,000 population.

In 2004, the overall U.S. gonorrhea rate was 113.5 per 100,000 population, a slight decrease from the rate in 2003 (116.3). The national objective for 2010 is  $\leq 19$  cases per 100,000 population. Seven states (Idaho, Maine, Montana, New Hampshire, North Dakota, Vermont, and Wyoming) reported rates below the national objective.

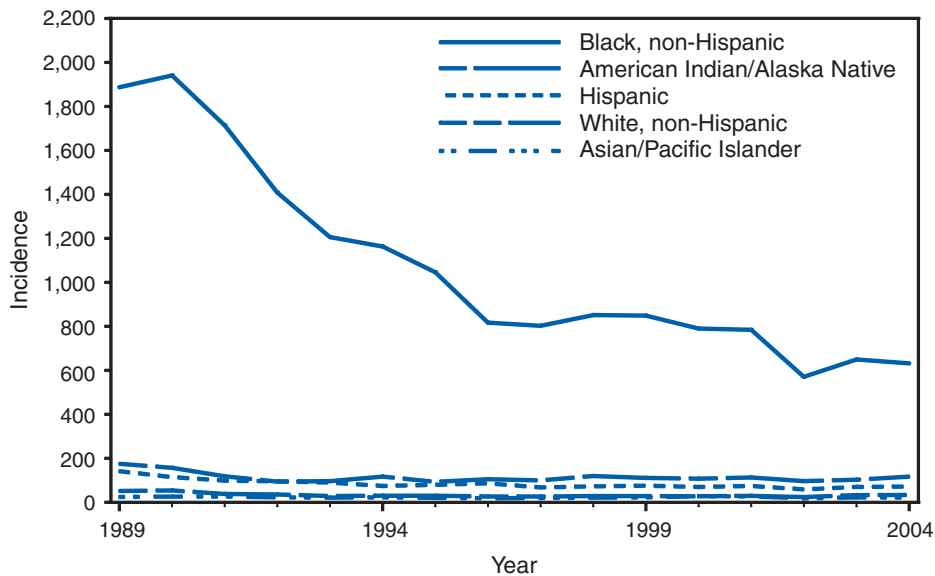
**GONORRHEA. Incidence,\* by sex — United States, 1989–2004**



\* Per 100,000 population.

The overall incidence of gonorrhea in the United States has declined since 1975. In 2004, incidence was slightly higher among women than among men.

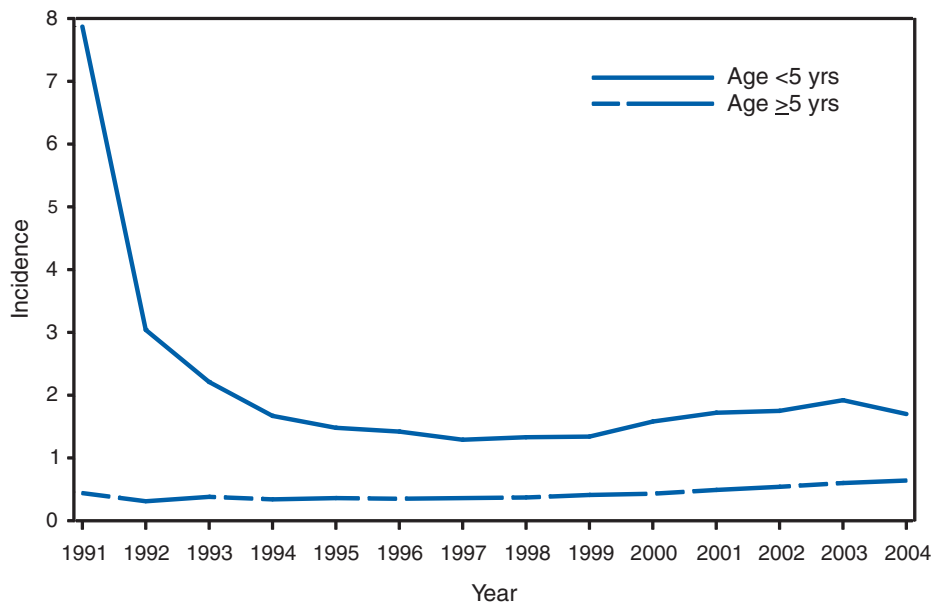
### GONORRHEA. Incidence,\* by race/ethnicity — United States, 1989–2004



\* Per 100,000 population.

Gonorrhea incidence among blacks decreased considerably in the 1990s but continues to be the highest among all racial/ethnic populations. In 2004, gonorrhea incidence among non-Hispanic blacks was approximately 19 times greater than that for non-Hispanic whites.

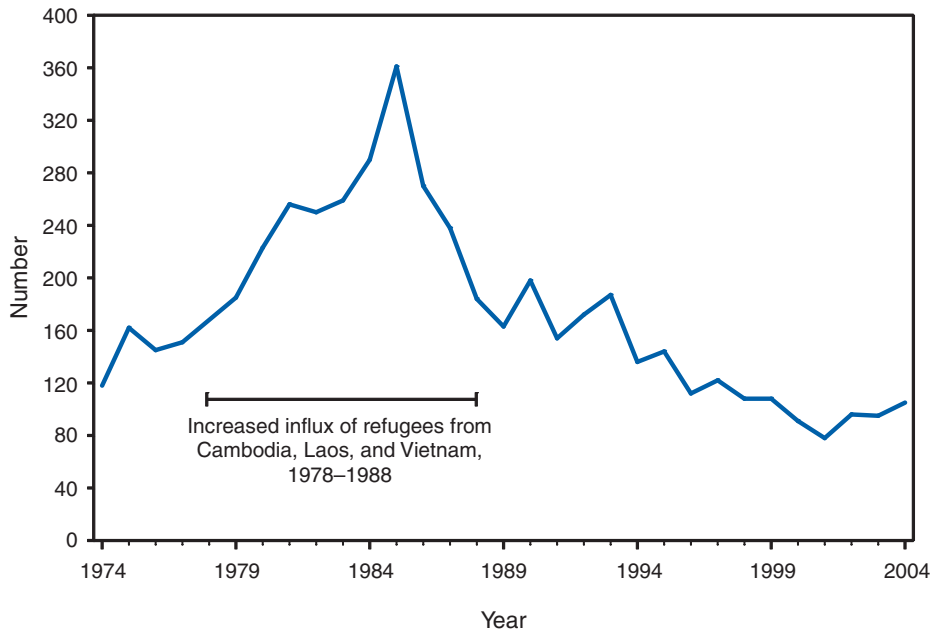
### HAEMOPHILUS INFLUENZAE, INVASIVE DISEASE. Incidence,\* by age group — United States, 1991–2004



\* Per 100,000 population.

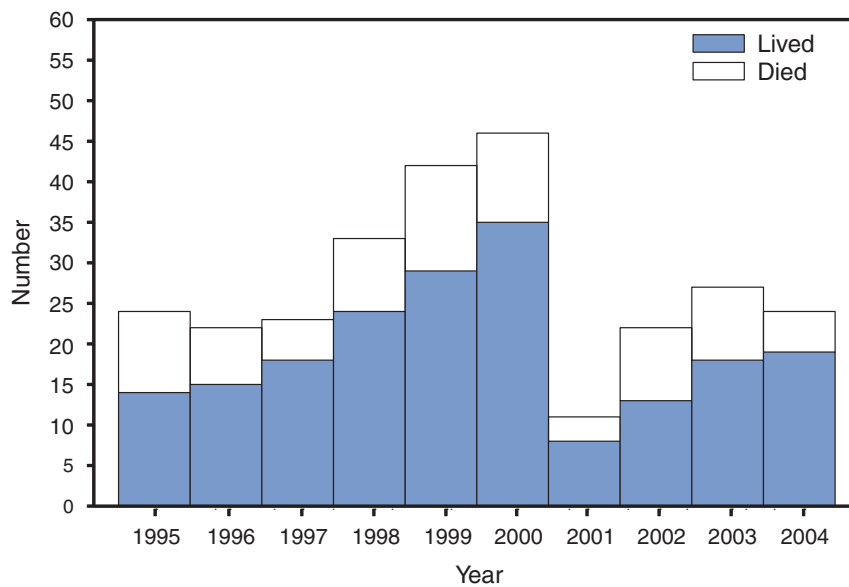
Before the introduction of conjugate *Haemophilus influenzae* serotype b (Hib) vaccines in 1987, incidence of invasive Hib disease among children aged <5 years was estimated to be 100 cases per 100,000. In 2004, the incidence of invasive *H. influenzae* disease (all serotypes and all age groups) was 0.7 cases per 100,000. Serotype information was reported for only 47% of cases; of those cases typed, 12% were Hib, and the remainders were other serotypes or nontypeable.

**HANSEN DISEASE (LEPROSY). Number of reported cases, by year — United States, 1974–2004**



The number of reported Hansen disease cases has remained stable for the previous 3 years.

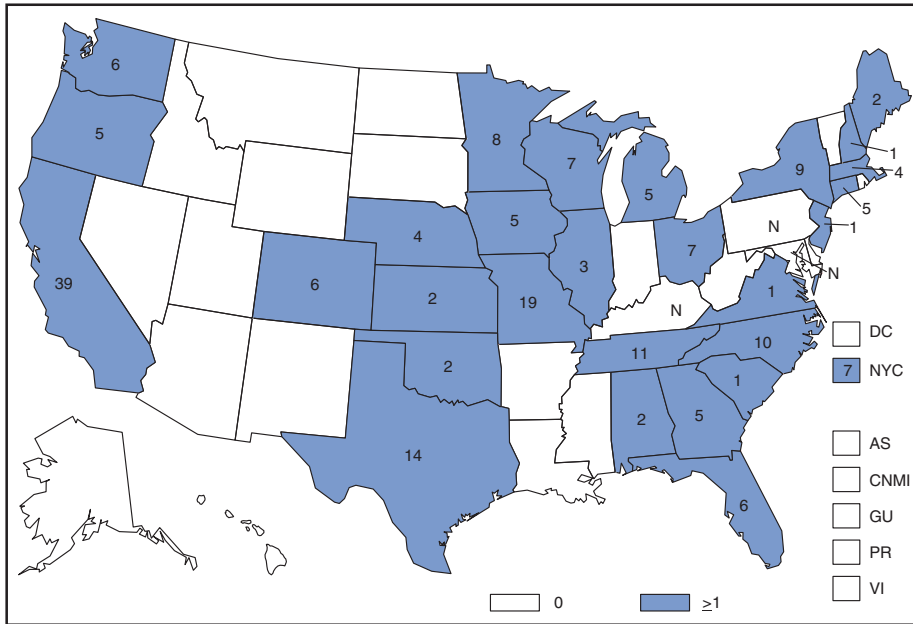
**HANTAVIRUS PULMONARY SYNDROME. Number of reported cases, by survival status\* and year — United States, 1995–2004**



\* Data from the National Center for Infectious Diseases.

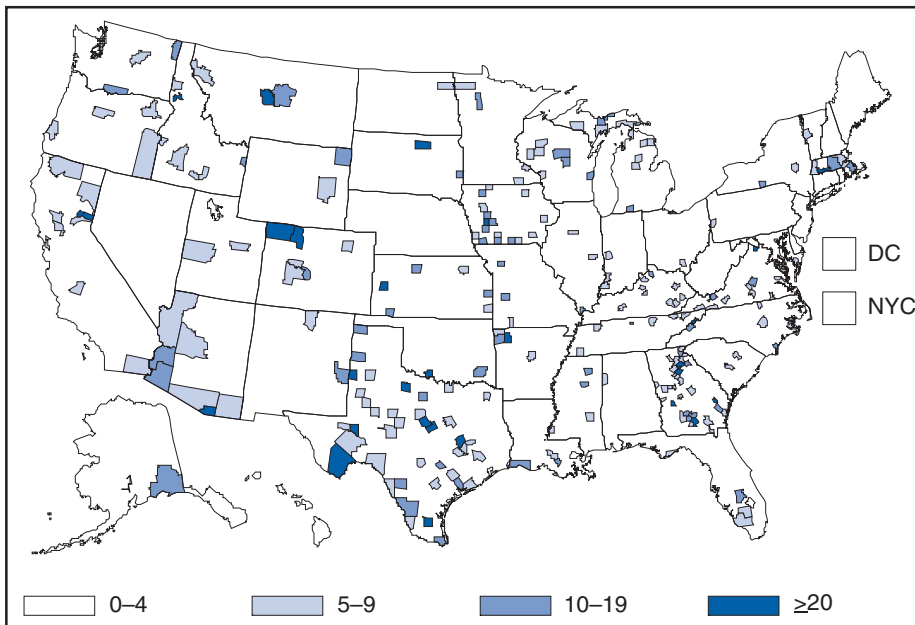
Hantaviruses are present in wild rodents throughout North America and continue to cause sporadic cases of severe illness associated with occupational or peridomestic rodent exposure.

**HEMOLYTIC UREMIC SYNDROME, POSTDIARRHEAL. Number of reported cases — United States and U.S. territories, 2004**



In the United States, the majority of cases of postdiarrheal hemolytic uremic syndrome (HUS) are attributed to infection with *E. coli* O157:H7. Infection with other serotypes of Shiga toxin-producing *E. coli* can cause HUS, as can other infectious and noninfectious etiologies. Approximately 50% of postdiarrheal HUS cases occur among children aged <5 years.

**HEPATITIS A. Incidence\* — United States and U.S. territories, 2004**

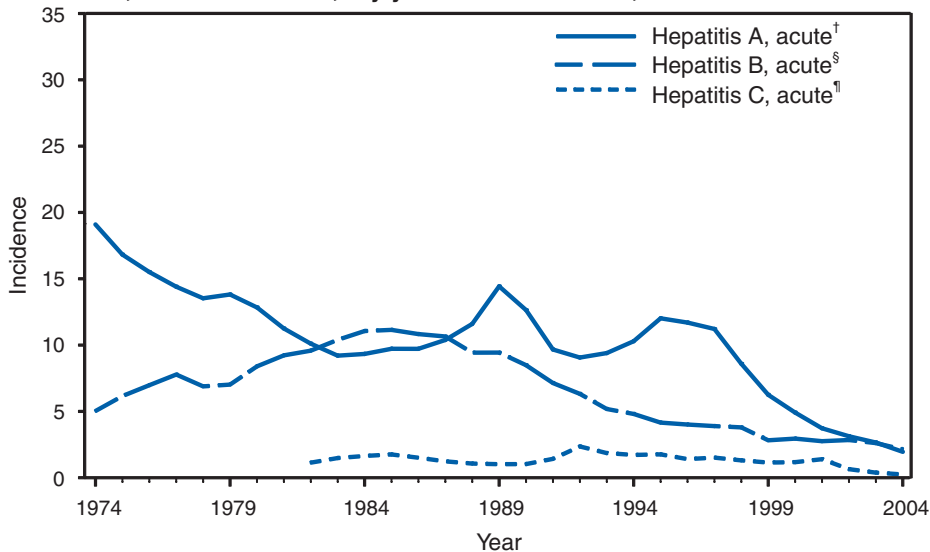


\* Per 100,000 population.

In 1999, routine hepatitis A vaccination was recommended for children living in 11 states with consistently elevated disease rates. Since then, hepatitis A rates have declined in all regions with the greatest declines occurring in the west where 10 of these states are located. Hepatitis A rates are now similar in all regions.



**HEPATITIS, VIRAL. Incidence,\* by year — United States, 1974–2004**



\* Per 100,000 population.

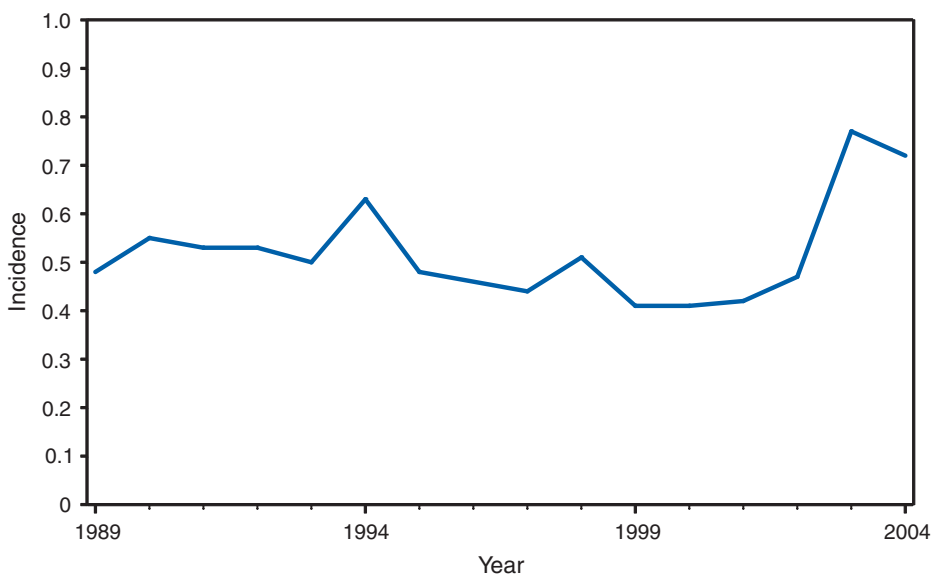
<sup>†</sup>Hepatitis A vaccine was first licensed in 1995.

<sup>§</sup>Hepatitis B vaccine was first licensed in June 1982.

<sup>¶</sup>An anti-HCV antibody test first became available in May 1990.

Hepatitis A incidence continues to decline and in 2004 was the lowest ever recorded. However, cyclic increases in hepatitis A have been observed approximately every 10 years, and thus rates could increase again. Hepatitis B incidence has declined 75% since 1990. The epidemiology of hepatitis B has remained relatively unchanged for the preceding decade and reflects ongoing transmission in adults with high-risk behaviors. The trend in reported hepatitis C after 1990 is misleading, because reported cases frequently were based only on a positive laboratory test for anti-HCV, and the majority of these cases represent chronic HCV infection. However, with changes in the acute case definition in 2000 and the establishment of separate systems for reporting chronic HCV infection, the reliability of reported acute cases has significantly improved in recent years.

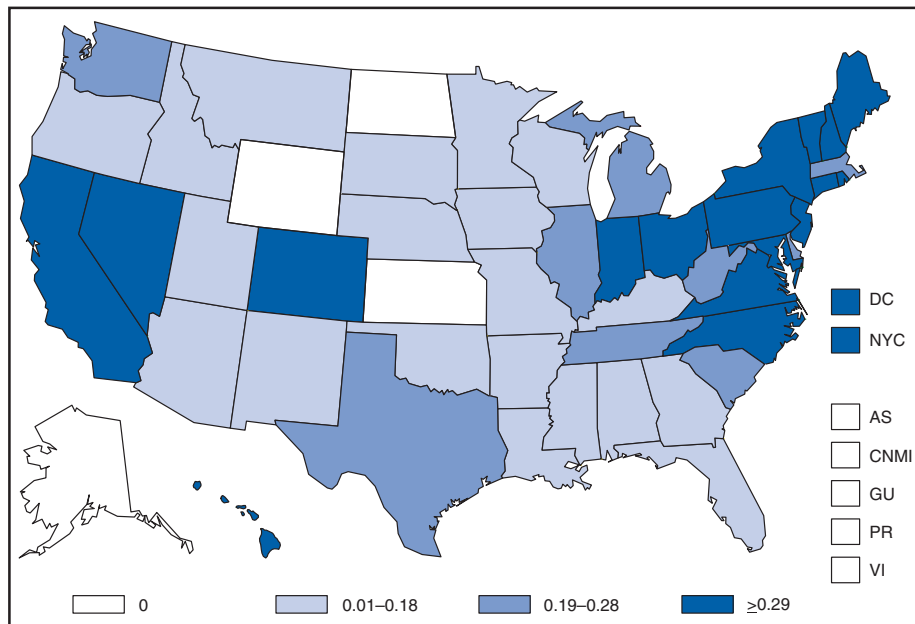
**LEGIONELLOSIS. Incidence,\* by year — United States, 1989–2004**



\* Per 100,000 population.

The increase in the incidence of Legionnaires disease that began in 2003 has been sustained in 2004. It is unclear whether this increase is attributable to a true increase in transmission, greater use of diagnostic testing, or increased reporting.

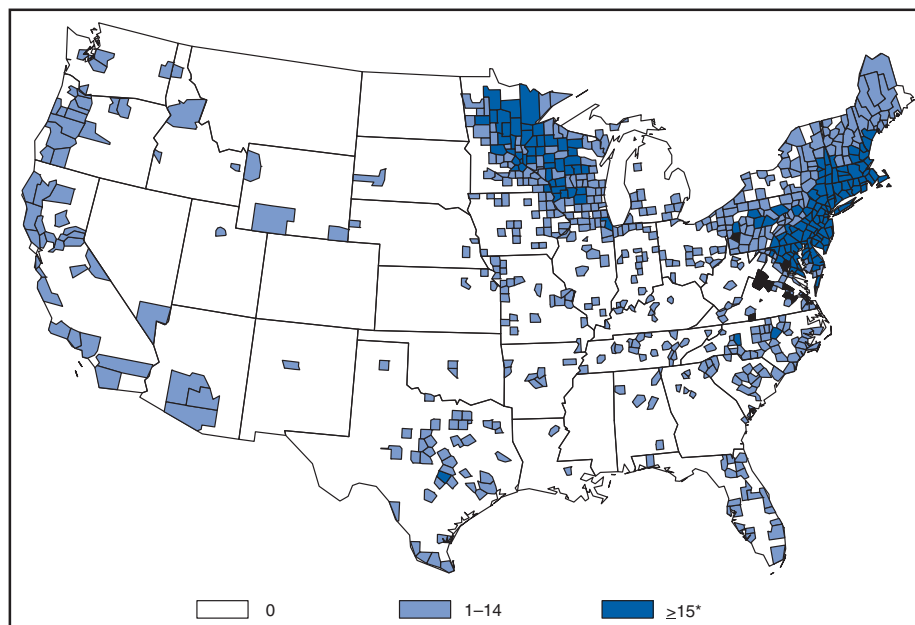
### LISTERIOSIS. Incidence\* — United States and U.S. territories, 2004



\* Per 100,000 population.

Listeriosis was made a nationally notifiable disease in 2000. Although the infection is relatively uncommon, listeriosis is a leading cause of death attributable to foodborne illness in the United States. Recent outbreaks have been linked to deli meats and unpasteurized cheese.

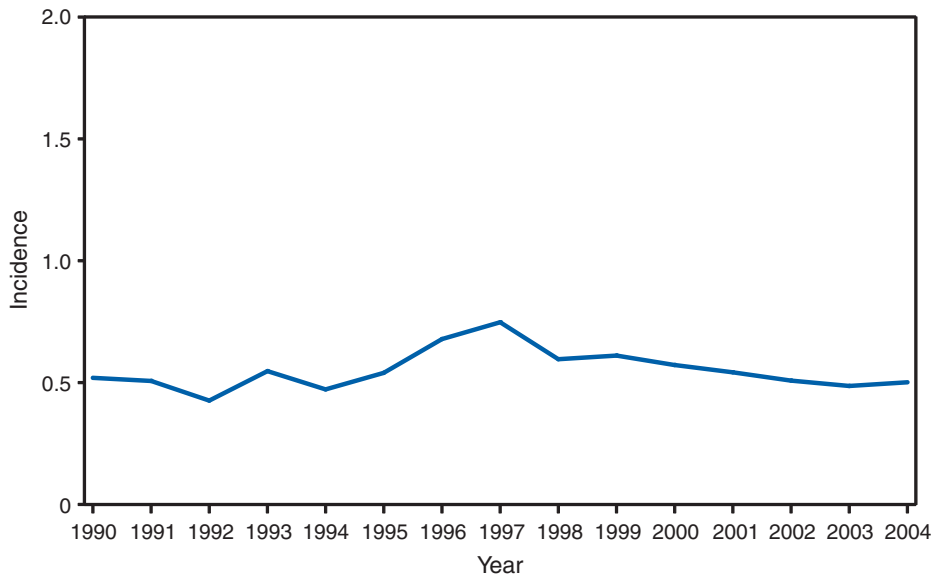
### LYME DISEASE. Number of reported cases, by county — United States, 2004



\* In 2004, a total of 173 counties in which ≥15 cases were reported accounted for 91% of reported cases.

A rash that might be diagnosed as Lyme disease can occur after bites of the Lone Star tick (*Amblyomma americanum*). These ticks, which do not transmit the Lyme disease bacterium, are common human-biting ticks in the southern and southeastern United States.

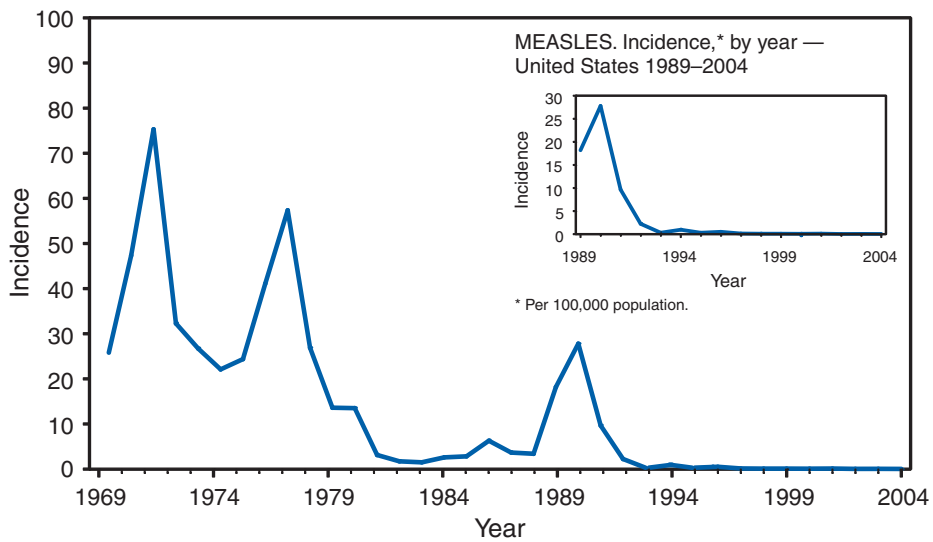
**MALARIA. Incidence,\* by year — United States, 1990–2004**



\* Per 100,000 population.

The decrease in malaria cases in recent years, particularly since 2001, might be attributed partly to decreased immigration from areas in which malaria is endemic.

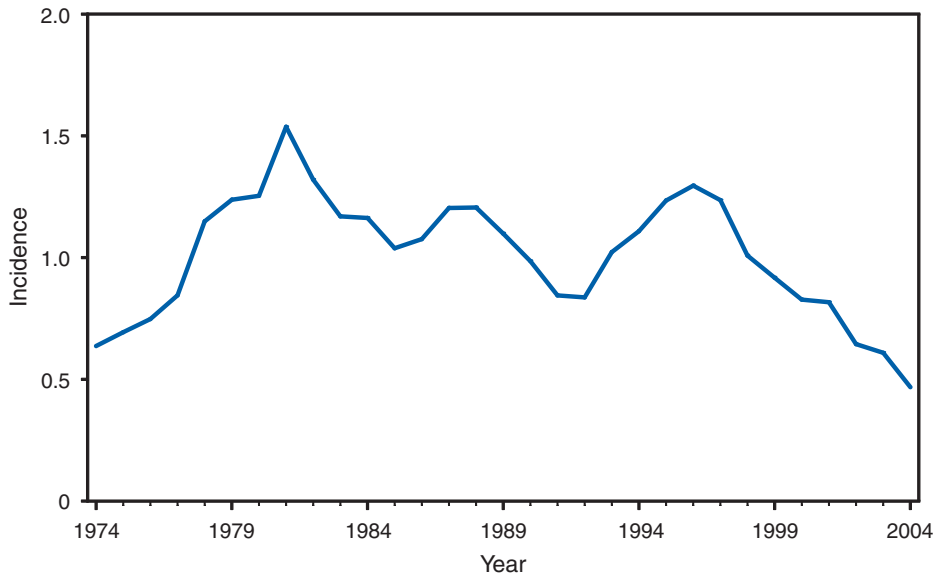
**MEASLES. Incidence, by year — United States, 1969–2004**



\* Per 100,000 population.

Measles incidence remains at less than one case per million population.

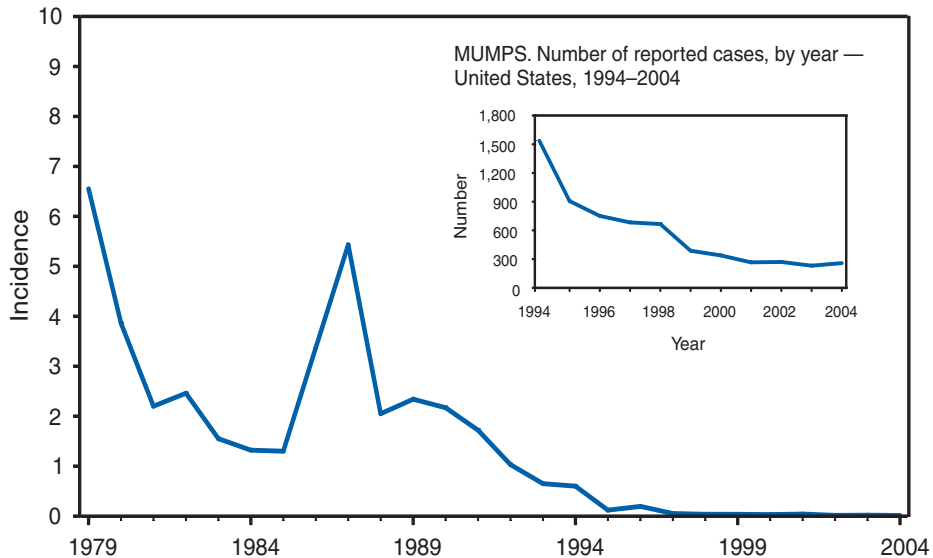
### MENINGOCOCCAL DISEASE. Incidence,\* by year — United States, 1974–2004



\* Per 100,000 population.

Surveillance data from 2004 indicate that incidence is highest among infants with a second peak during adolescence. In 2005, a tetravalent (A, C, Y, and W-135) meningococcal conjugate vaccine was licensed and recommended for adolescents and others at increased risk for disease. Over time, the new vaccine is expected to have a substantial impact on the burden of meningococcal disease in the United States.

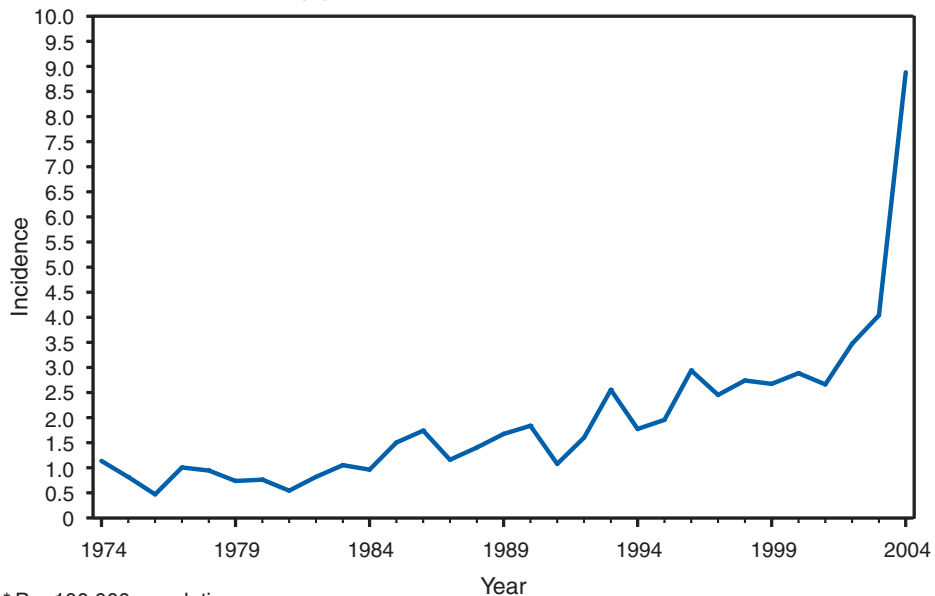
### MUMPS. Incidence,\* by year — United States, 1979–2004



\* Per 100,000 population.

In 2004, of 258 reported cases, 89 (31%) were laboratory confirmed.

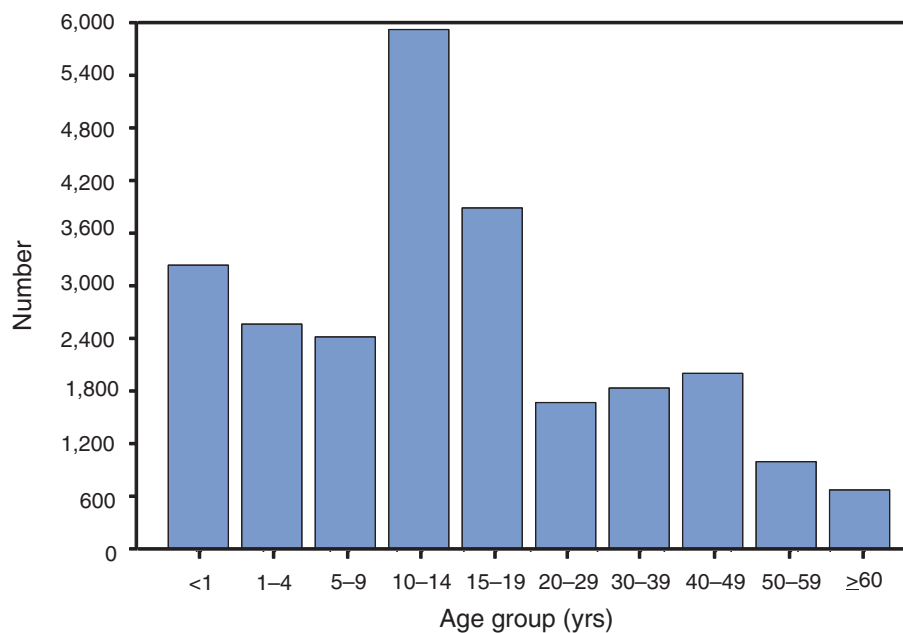
**PERTUSSIS. Incidence,\* by year — United States, 1974–2004**



\* Per 100,000 population.

Reported pertussis incidence has tripled since 2001, with more cases reported in 2004 than in any year since 1959. Increased availability of sensitive diagnostic tests and improved case recognition and reporting account for an unknown fraction of this increase.

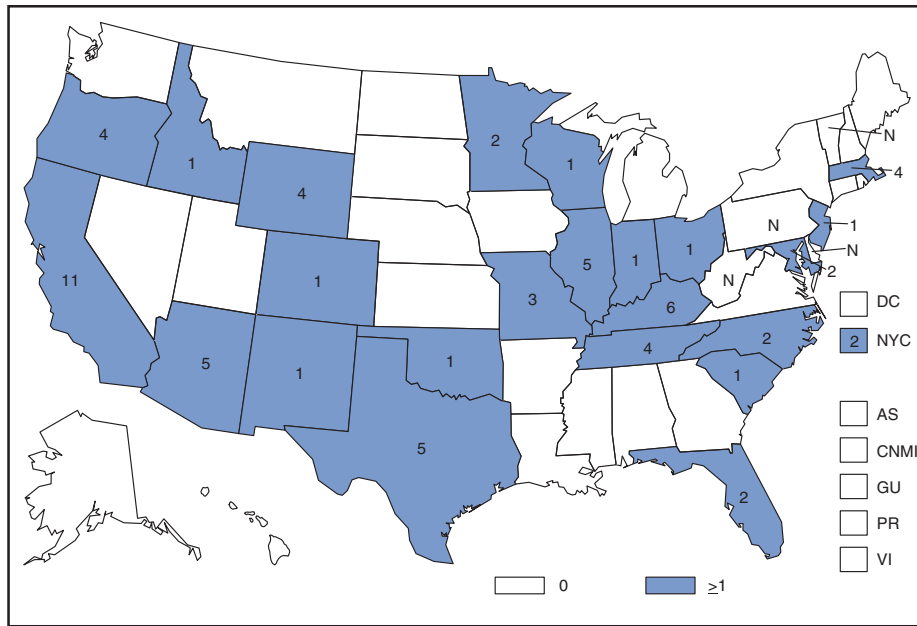
**PERTUSSIS. Number of reported cases,\* by age group — United States, 2004**



\* Of 25,827 cases, age was reported unknown for 655 cases.

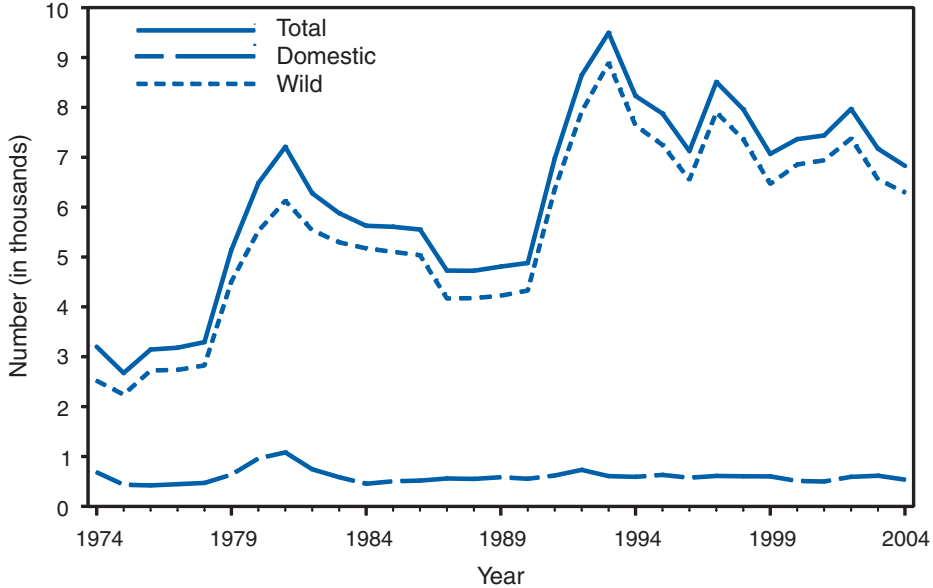
During 1990–2004, the proportion of cases reported in persons aged ≥10 years increased from 20% to 67%. In 2005, the first pertussis vaccines for persons aged ≥10 years were licensed in the United States.

**Q FEVER. Number of reported cases — United States and U.S. territories, 2004**



Q fever became nationally notifiable in 1999. Identification and reporting of Q fever is incomplete, and the number of cases reported do not represent the overall distribution or regional incidence of disease.

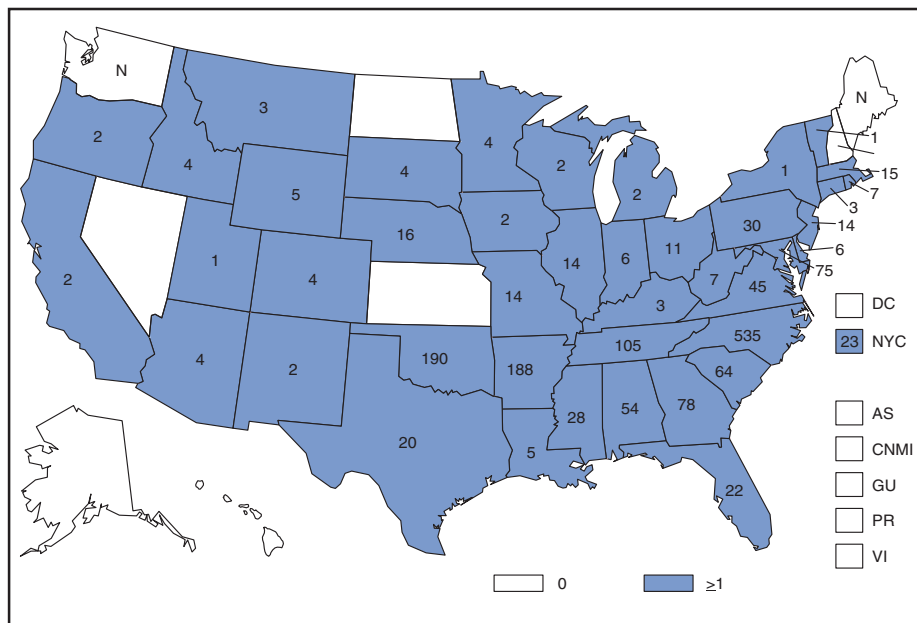
**RABIES, ANIMAL. Number of reported cases among wild and domestic animals,\* by year — United States and Puerto Rico, 1974–2004**



\* Data from the National Center for Infectious Diseases.

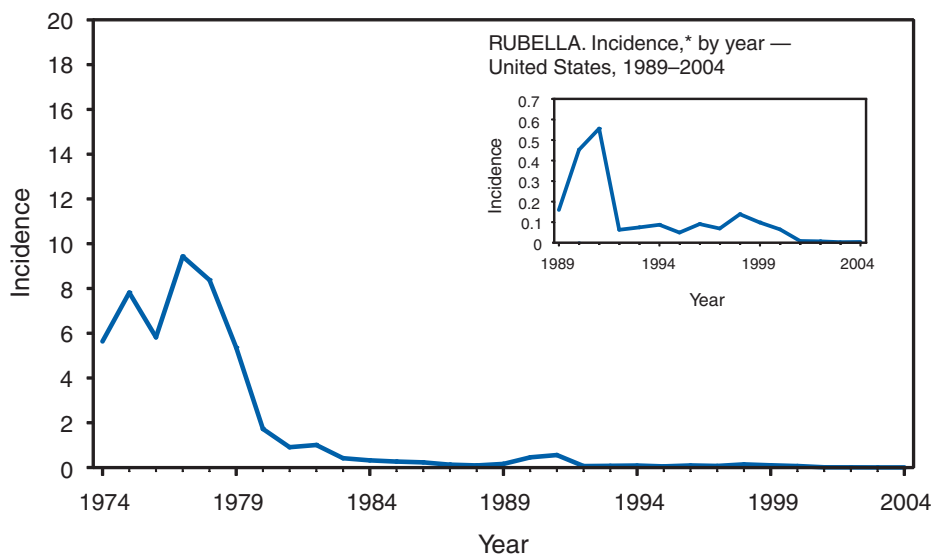
Periods of resurgence and decline of rabies incidence are primarily the result of cyclic reemergence, primarily among raccoons in the eastern United States. Wildlife populations increase and reach densities sufficient to support epizootic transmission of the disease, resulting in substantial increases in reported cases. As populations are decimated by these epizootics, numbers of reported cases decline until populations again reach levels to support epizootic transmission of disease.

**ROCKY MOUNTAIN SPOTTED FEVER. Number of reported cases — United States and U.S. territories, 2004**



Changes in the number of reported cases of Rocky Mountain spotted fever might reflect alterations to surveillance algorithms for this and other tick-borne diseases. Biological factors (e.g., changes in tick populations resulting from fluctuating environmental conditions) also might be involved.

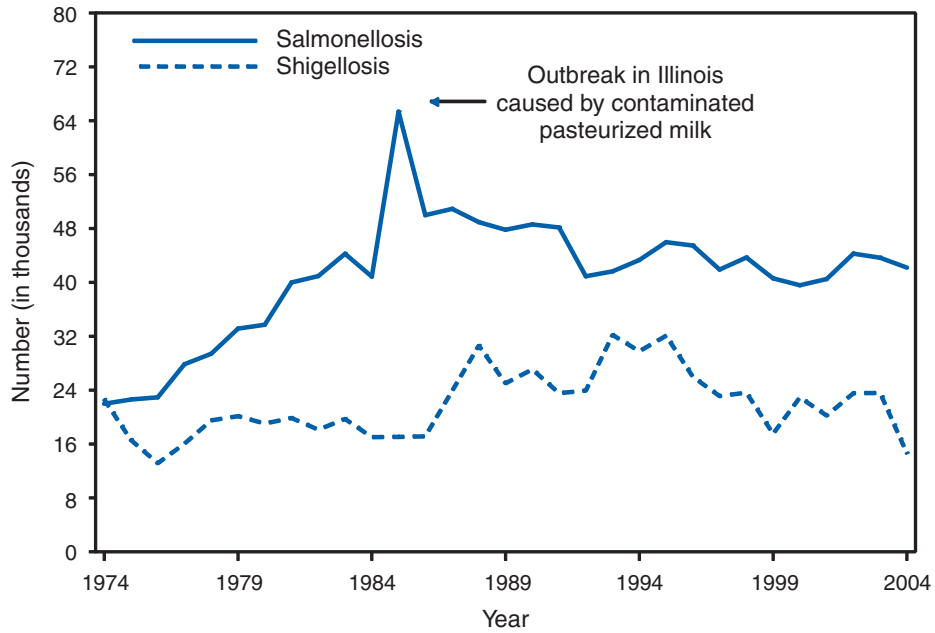
**RUBELLA. Incidence,\* by year — United States, 1974–2004**



\* Per 100,000 population.

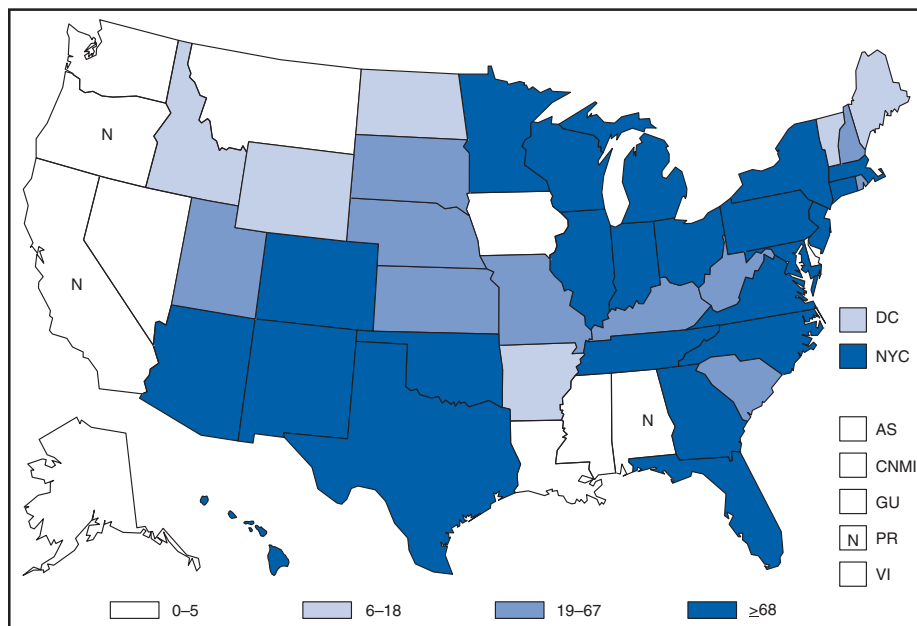
Evidence suggests that rubella is no longer endemic in the United States (CDC. Elimination of rubella and congenital rubella syndrome—United States, 1969–2004. MMWR 2005; 54:279–82).

**SALMONELLOSIS and SHIGELLOSIS. Number of reported cases, by year — United States, 1974–2004**



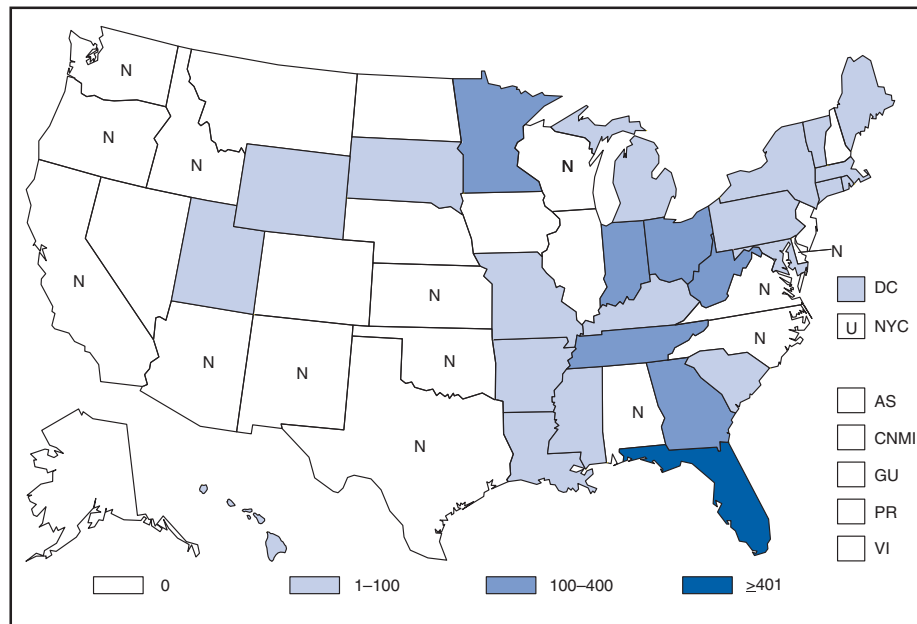
Foodborne transmission accounts for approximately 90% of salmonellosis in the United States. In summer 2004, outbreaks occurred in the northeastern United States attributable to roma tomatoes, involving multiple serotypes of *Salmonella*. The most common serotypes in the United States remain *Salmonella* Typhimurium, *S. Enteritidis*, and *S. Newport*.

**STREPTOCOCCAL DISEASE, INVASIVE, GROUP A. Number of reported cases — United States and U.S. territories, 2004**



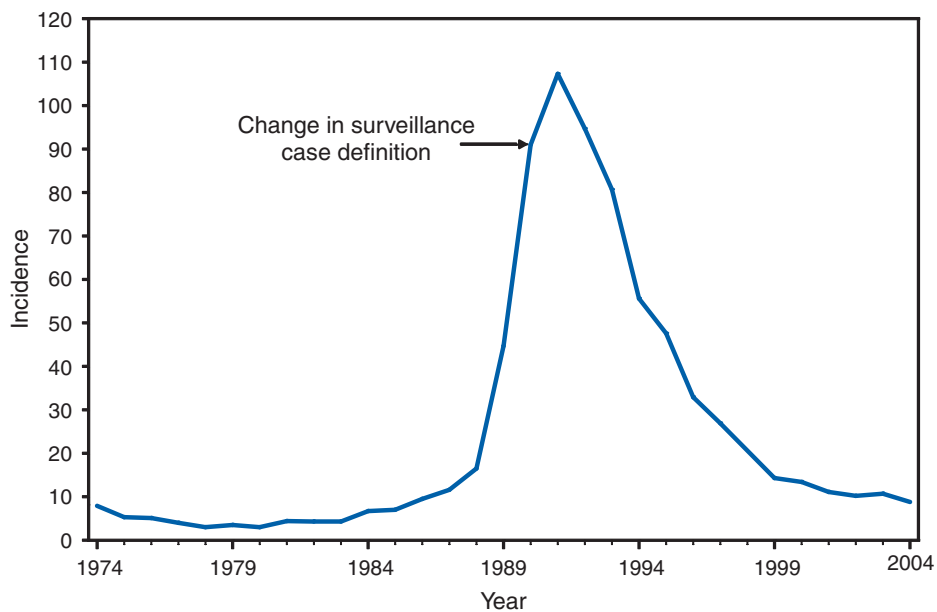


**STREPTOCOCCUS PNEUMONIAE, INVASIVE, DRUG-RESISTANT. Number of reported cases — United States and U.S. territories, 2004**



A conjugate pneumococcal vaccine for children was licensed in 2000. The vaccine targets seven pneumococcal serotypes, five of which are responsible for the majority of infections by resistant organisms in the United States. Data from Active Bacterial Core surveillance, part of CDC's Emerging Infections Program, indicate that rates of disease caused by resistant pneumococci have declined since 2000.

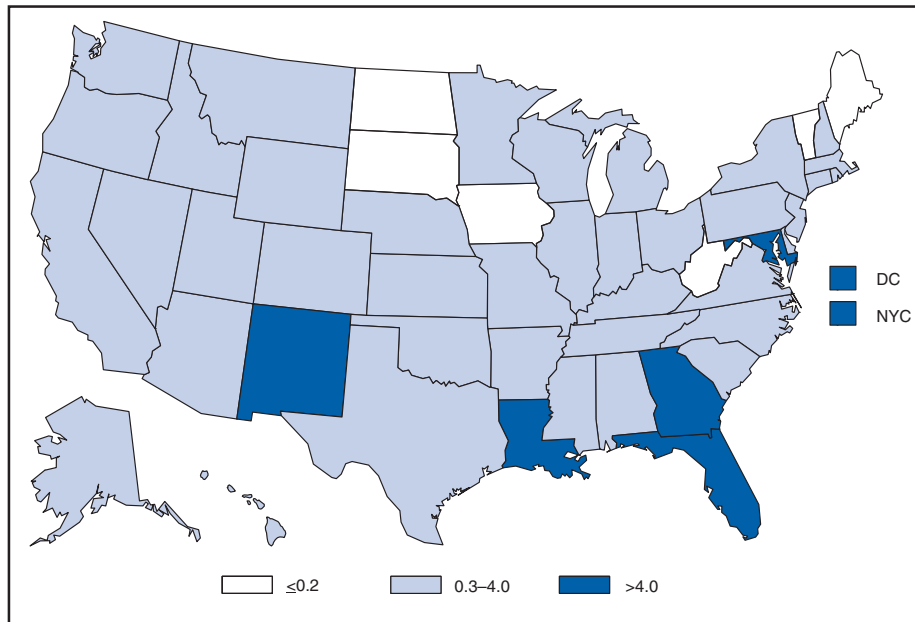
**SYPHILIS, CONGENITAL. Incidence\* among infants aged <1 year — United States, 1974–2004**



\* Per 100,000 live births.

Incidence of congenital syphilis has declined since 1991. The decline is attributed primarily to the decline in incidence of syphilis among women.

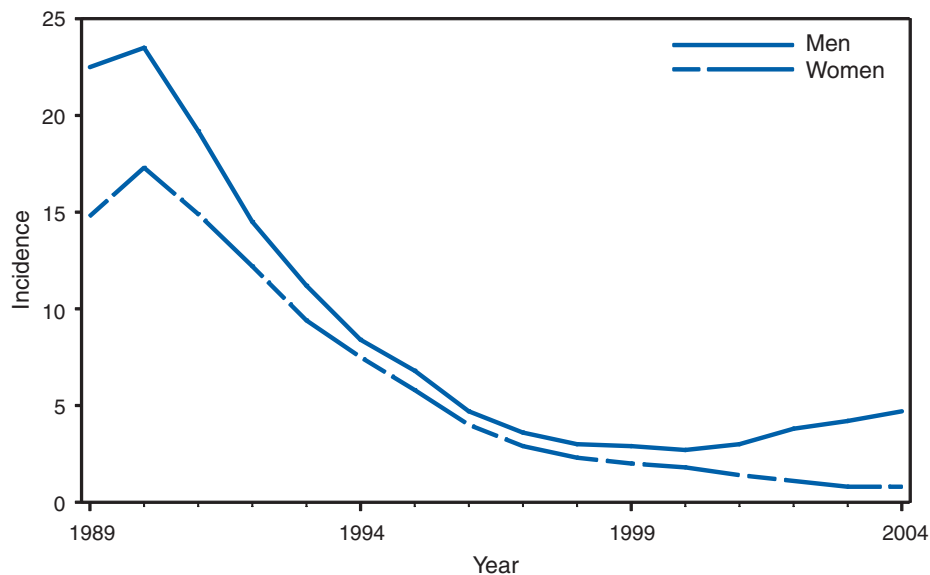
### SYPHILIS, PRIMARY AND SECONDARY. Incidence\* — United States, 2004



\* Per 100,000 population.

In 2004, the overall U.S. rate of primary and secondary syphilis was 2.7 cases per 100,000 population, which is above the national health objective for 2010 of 0.2 cases per 100,000 population per year. Six states (Iowa, Maine, North Dakota, South Dakota, Vermont, and West Virginia) reported rates at or below the national objective.

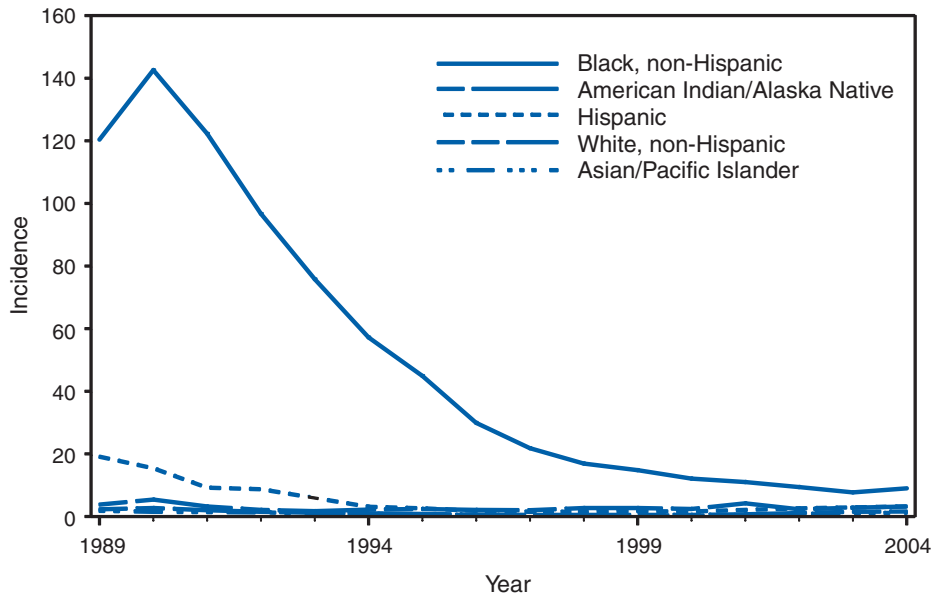
### SYPHILIS, PRIMARY AND SECONDARY: Incidence,\* by sex — United States, 1989–2004



\* Per 100,000 population.

During 2003–2004, incidence of primary and secondary syphilis in the United States increased slightly, from 2.5 to 2.7 cases per 100,000 population. Among women, incidence remained unchanged during 2003–2004 at 0.8 cases per 100,000 population, the lowest rate for women since reporting began in 1941. Among men, rates increased during 2003–2004 from 4.2 to 4.7 cases per 100,000 population.

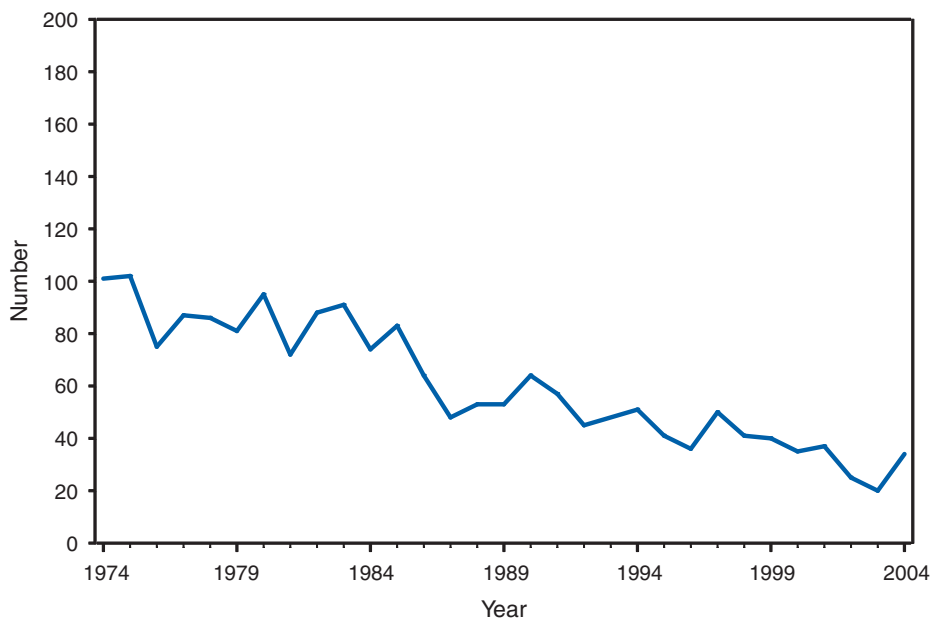
**SYPHILIS, PRIMARY AND SECONDARY. Incidence,\* by race/ethnicity — United States, 1989–2004**



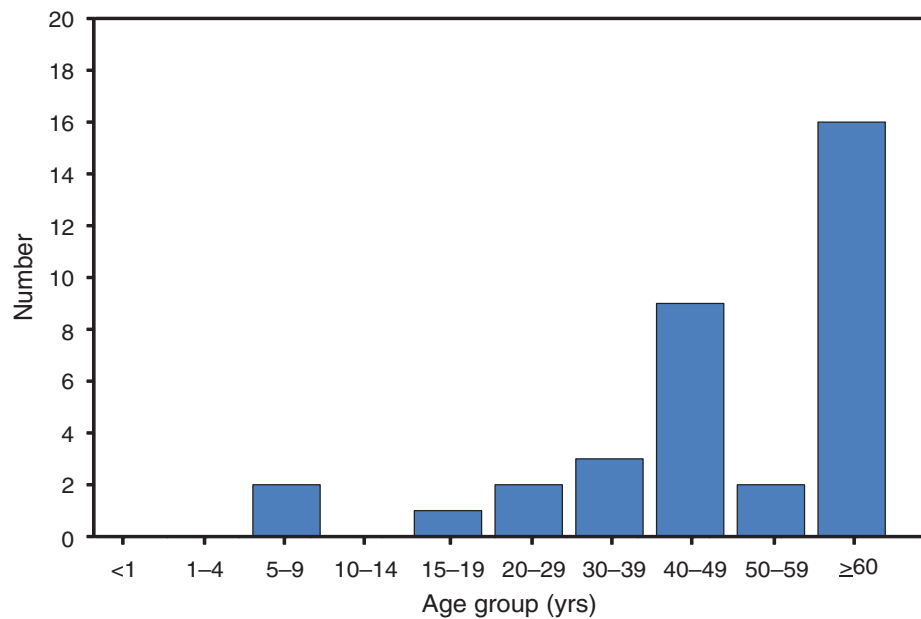
\* Per 100,000 population.

During 2003–2004, incidence of primary and secondary syphilis increased among all racial/ethnic populations: incidence for non-Hispanic blacks increased from 7.7 to 9.0 cases per 100,000 population; among Hispanics from 2.9 to 3.2 cases per 100,000 population; among American Indians/Alaska Natives from 2.8 to 3.2 cases per 100,000 population; among non-Hispanic whites from 1.5 to 1.6 cases per 100,000 population; and among Asians/Pacific Islanders from 1.0 to 1.2 cases per 100,000 population.

**TETANUS. Number of reported cases, by year — United States, 1974–2004**

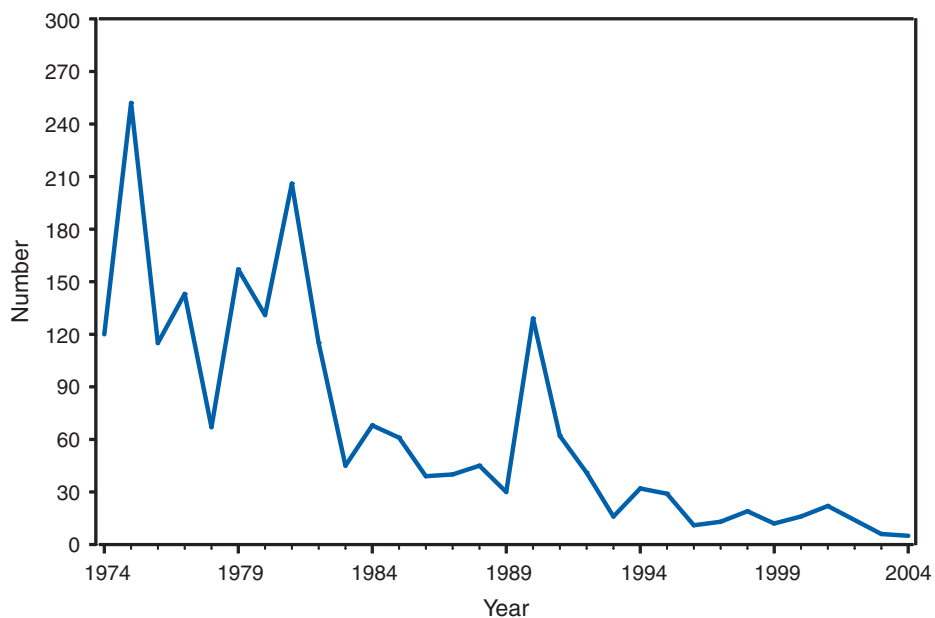


In 2004, two (6%) of 34 reported tetanus cases were fatal. Although the number of reported cases in 2004 increased compared with the numbers reported in 2003 and 2002, incidence of reported tetanus in the United States continues at historically low levels.

**TETANUS. Number of reported cases,\* by age group — United States, 2004**

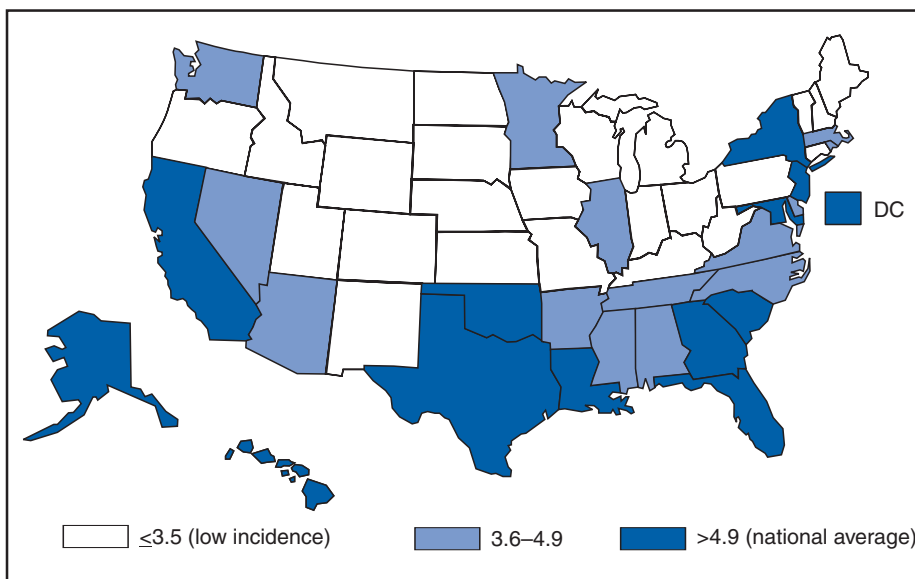
\*Of 34 cases, no cases with reported unknown age.

Tetanus continues disproportionately to affect older Americans, many of whom remain susceptible because they have never received a primary series of at least three tetanus toxin-containing vaccinations.

**TRICHINELLOSIS. Number of reported cases, by year — United States, 1974–2004**

Five cases of trichinellosis were reported from five states in 2005. All cases were isolated, and no fatalities were reported. The source of infection (bear meat) was identified in only a single case. This is the ninth consecutive year in which fewer than 25 cases were reported.

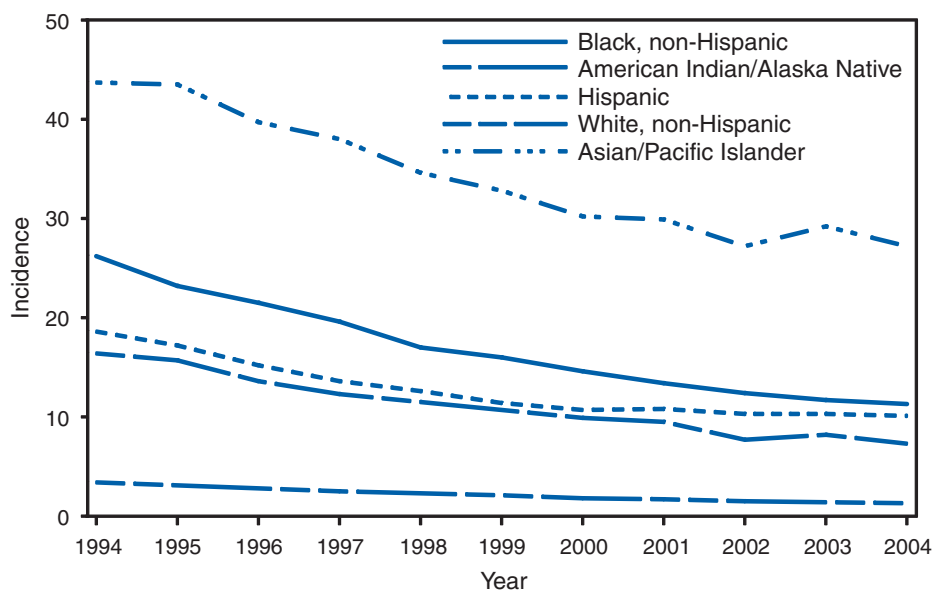
**TUBERCULOSIS. Incidence\* — United States and U.S. territories, 2004**



\* Per 100,000 population.

During 2004, a total of 12 states and DC reported tuberculosis rates above the national average (4.9 cases per 100,000 population), and 24 states met the definition for low incidence (<3.5 cases per 100,000 population).

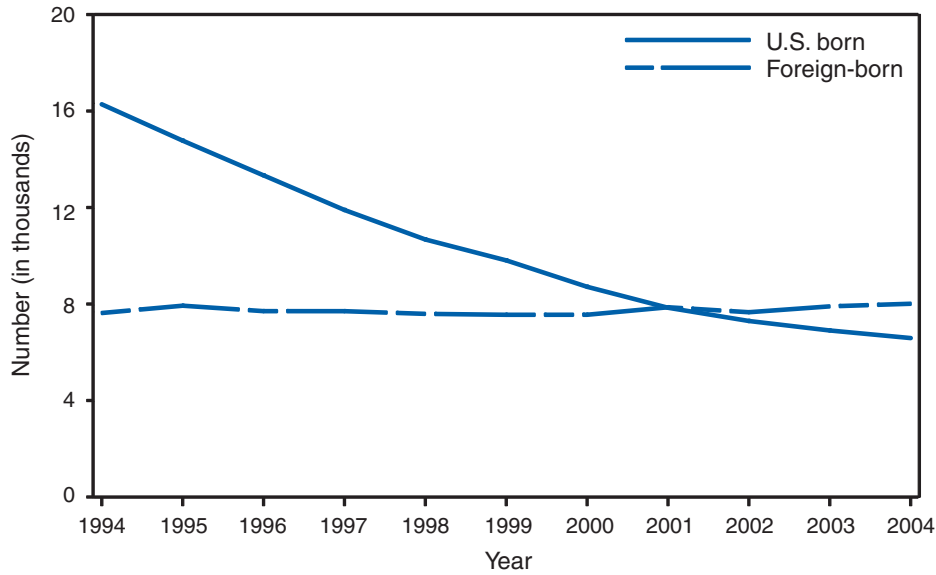
**TUBERCULOSIS. Incidence,\* by race/ethnicity — United States, 1994–2004**



\* Per 100,000 population.

Disparities in tuberculosis rates persist among racial/ethnic minority populations. In 2004, Asians and Pacific Islanders had the highest case rate (27 cases per 100,000 population), but the lowest percentage of decline during 1994–2004 (38%) among all racial/ethnic population. During 1994–2004, rates declined >45% in the other racial/ethnic populations: among non-Hispanic blacks from 26 to 11, among Hispanics from 19 to 10, among American Indians and Alaska Natives from 16 to 7, and among non-Hispanic whites from 3.4 to 1.3.

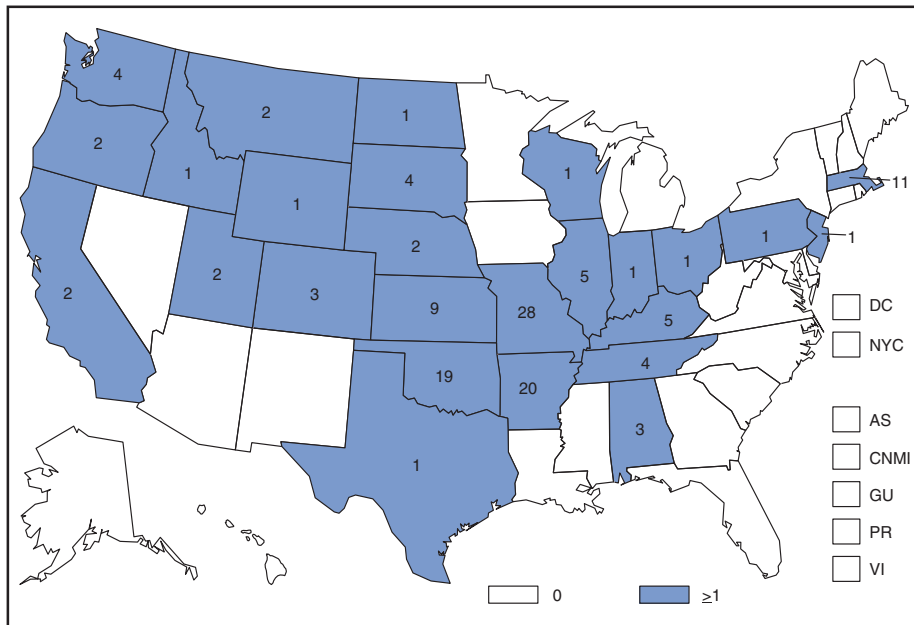
**TUBERCULOSIS. Number of reported cases among U.S.-born and foreign-born persons,\* by year — United States, 1994–2004**



\* For 27 cases, origin of patients was unknown.

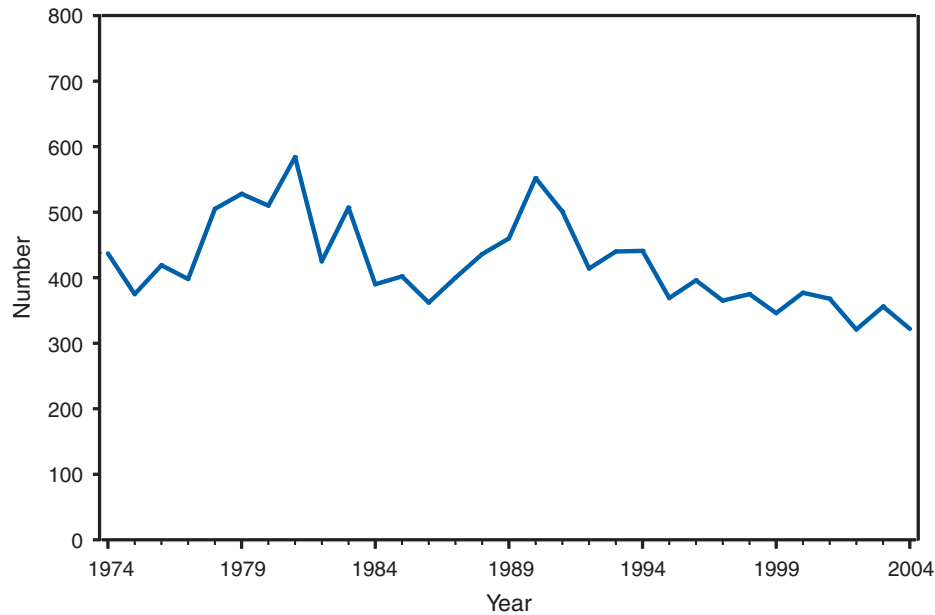
In 2004, foreign-born persons accounted for 54% of the national case total, and 22 states reported  $\geq 50\%$  of their cases among foreign-born persons, with six states having  $\geq 70\%$  of their cases among foreign-born persons. During 1994–2004, the proportion of cases among foreign-born persons increased from 32% to 54%, a trend enhanced by the decrease in tuberculosis cases among U.S.-born persons (16,171 to 6,683).

**TULAREMIA. Number of reported cases — United States and U.S. territories, 2004**



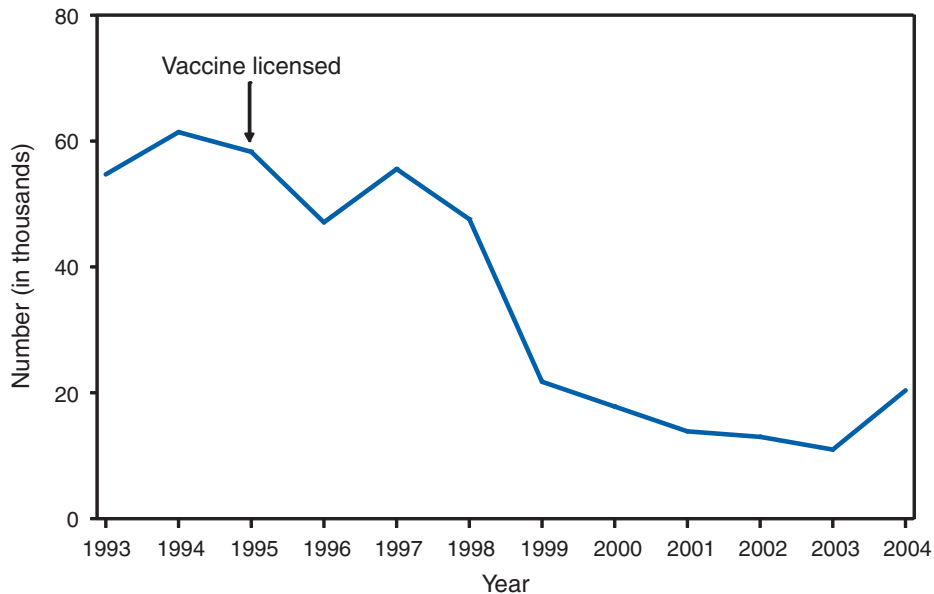
Approximately 60% of cases in 2004 were reported from Arkansas, Oklahoma, Missouri, or Martha's Vineyard, Massachusetts. CDC requests that isolates be forwarded to the CDC laboratory in Fort Collins, Colorado, for subtyping to better define the geographic distribution of *Francisella tularensis* subspecies.

**TYPHOID FEVER. Number of reported cases, by year — United States, 1974–2004**



In 2004, approximately 85% of reported cases of typhoid fever were acquired during foreign travel. Increasing antimicrobial resistance has complicated the treatment of typhoid fever.

**VARICELLA. Number of reported cases — Illinois, Michigan, Texas, and West Virginia,\* 1993–2004**



\* These four states maintained consistent and adequate surveillance by reporting cases constituting  $\geq 5\%$  of their birth cohort during 1990–1995 (SOURCE: CDC, National Immunization Program).

Illinois, Michigan, Texas, and West Virginia maintained consistent surveillance through 2004 (National Immunization Program). The number of varicella cases reported in these four states in 2004 is higher, constituting a 38% increase compared with cases reported in 2003 and a 75.9% decline compared with cases reported in the prevaccine years of 1993–1995.





## Selected Reading

### General

- Bayer R, Fairchild AL. Public health: surveillance and privacy. *Science* 2000;290:1898–9.
- CDC. Racial disparities in nationally notifiable diseases—United States, 2002. *MMWR* 2005;54:9–11.
- CDC. Progress in improving state and local disease surveillance—United States, 2000–2005. *MMWR* 2005;54:822–5.
- CDC. Case definitions for infectious conditions under public health surveillance. *MMWR* 1997;46(No. RR-10). Additional information available at <http://www.cdc.gov/epo/dphsi/casedef/index.htm>.
- CDC. Demographic differences in notifiable infectious disease morbidity—United States, 1992–1994. *MMWR* 1997;46:637–41.
- CDC. Framework for evaluating public health surveillance systems for early detection of outbreaks; recommendations from the CDC working group. *MMWR* 2004;53(No. RR-5):1–13.
- CDC. Framework for program evaluation in public health. *MMWR* 1999;48(No. RR-11).
- CDC. Historical perspectives: notifiable disease surveillance and notifiable disease statistics—United States, June 1946 and June 1996. *MMWR* 1996;45:530–6.
- CDC. Manual of procedures for the reporting of nationally notifiable diseases to CDC. Atlanta, GA: US Department of Health and Human Services, Public Health Service, CDC; 1995.
- CDC. Manual for the surveillance of vaccine-preventable diseases. Atlanta, GA: US Department of Health and Human Services, Public Health Service, CDC; 1999. Available at <http://www.cdc.gov/nip/publications/surv-manual/>.
- CDC. National Electronic Disease Surveillance System (NEDSS): a standards-based approach to connect public health and clinical medicine. *Journal of Public Health Management and Practice* 2001;7:43–50.
- CDC. Public Health Information Network (PHIN): overview. Available at <http://www.cdc.gov/phin/overview.html>.
- CDC. Reporting race and ethnicity data—National Electronic Telecommunications System for Surveillance, 1994–1997. *MMWR* 1999;48:305–12.
- CDC. Sexually transmitted disease surveillance 1998. Atlanta, GA: US Department of Health and Human Services, Public Health Service, CDC; 1999.
- CDC. Ten leading nationally notifiable infectious diseases—United States, 1995. *MMWR* 1996;45:883–4.
- CDC. Updated guidelines for evaluating public health surveillance systems: recommendations from the Guidelines Working Group. *MMWR* 2001;50(No. RR-13):1–36.
- CDC. Use of race and ethnicity in public health surveillance: summary of the CDC/ATSDR workshop. *MMWR* 1993;42(No. RR-10).
- Chang M-H, Glynn MK, Groseclose SL. Endemic, notifiable bioterrorism-related diseases, United States, 1992–1999. *Emerg Infect Dis* 2003;9:556–64.
- Chin JE, ed. Control of communicable diseases manual. 17th ed. Washington, DC: American Public Health Association; 2000.
- Doyle TJ, Glynn MK, Groseclose SL. Completeness of notifiable infectious disease reporting in the United States: an analytical literature review. *Am J Epidemiol* 2002;155:866–74.
- Effler P, Ching-Lee M, Bogard A, Jeong M-C, Nekomoto T, Jernigan D. Statewide system of electronic notifiable disease reporting from clinical laboratories: comparing automated reporting with conventional methods. *JAMA* 1999;282:1845–50.
- Freimuth V, Linnan HW, Potter P. Communicating the threat of emerging infections to the public. *Emerg Infect Dis* 2000;6:337–47.
- Government Accountability Office. Emerging infectious diseases: review of state and federal surveillance efforts. Washington, DC: Government Accountability Office. GAO-04-877; 2004. Available at <http://www.gao.gov/new.items/d04877.pdf>.
- Hopkins RS. Design and operation of state and local infectious disease surveillance systems. *J Public Health Management Practice* 2005;11:184–90.
- Jajosky RA, Groseclose SL. Evaluation of reporting timeliness of public health surveillance systems for infectious diseases. *BMC Public Health* 2004;4:29.
- Koo D, Caldwell B. The role of providers and health plans in infectious disease surveillance. *Eff Clin Pract* 1999;2:247–52. Available at <http://www.acponline.org/journals/ecp/sep0ct99/koo.htm>.
- Koo D, Wetterhall S. History and current status of the National Notifiable Diseases Surveillance System. *J Public Health Management Practice* 1996;2:4–10.

- Lin SS, Kelsey JL. Use of race and ethnicity in epidemiologic research: concepts, methodological issues, and suggestions for research. *Epidemiol Rev* 2000;22:187–202.
- Martin SM, Bean NH. Data management issues for emerging diseases and new tools for managing surveillance and laboratory data. *Emerg Infect Dis* 1995;1:124–8.
- Niskar AS, Koo D. Differences in notifiable infectious disease morbidity among adult women—United States, 1992–1994. *J Womens Health* 1998;7:451–8.
- Panackal AA, M'ikanatha NM, Tsui FC, et al. Automatic electronic laboratory-based reporting of notifiable infectious diseases at a large health system. *Emerg Infect Dis* 2002;8:685–91.
- Pinner RW, Koo D, Berkelman RL. Surveillance of infectious diseases. In: Lederberg J, Alexander M, Bloom RB, eds. *Encyclopedia of microbiology*. 2nd ed. San Diego, CA: Academic Press; 2000;4:506–25.
- Pinner RW, Jernigan DB, Sutliff SM. Electronic laboratory-based reporting for public health. *Military Medicine* 2000;165(suppl 2):20–4.
- Roush S, Birkhead G, Koo D, Cobb A, Fleming D. Mandatory reporting of diseases and conditions by health care professionals and laboratories. *JAMA* 1999;282:164–70.
- Silk, BJ, Berkelman RL. A review of strategies for enhancing the completeness of notifiable disease reporting. *J Public Health Management Practice* 2005;11:191–200.
- Teutsch SM, Churchill RE, eds. *Principles and practice of public health surveillance*. 2nd ed. New York, NY: Oxford University Press; 2000.
- Thacker SB, Choi K, Brachman PS. The surveillance of infectious diseases. *JAMA* 1983;249:1181–5.

## AIDS

- CDC. HIV/AIDS surveillance report, 2004. Atlanta, GA: US Department of Health and Human Services, CDC, Vol. 16; 2005. Available at: <http://www.cdc.gov/hiv/stats/hasrlink.htm>.
- CDC. Guidelines for national human immunodeficiency virus case surveillance, including monitoring for human immunodeficiency virus infection and acquired immunodeficiency syndrome. *MMWR* 1999;48(No. RR-13):1–31.
- Nakashima AK, Fleming PL. HIV/AIDS surveillance in the United States, 1981–2001. *J Acquir Immune Defic Syndr* 2003;32:68–85.

## Anthrax

- CDC. Use of anthrax vaccine in response to terrorism: supplemental recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2002;51:1024–6.
- CDC. Investigation of bioterrorism-related anthrax and interim guidelines for exposure management and antimicrobial therapy. *MMWR* 2001;50:909–19.
- Hugh-Jones M. 1996–97 global anthrax report. *J Appl Microbiol* 1999;87:189–91.
- Inglesby TV, O'Toole T, Henderson DA, et al. Anthrax as a biological weapon, 2002: updated recommendations for management. *JAMA* 2002;287:2236–52.
- Jernigan DB, Raghunathan PL, Bell BP, et al. Investigation of bioterrorism-related anthrax, United States, 2001: epidemiologic findings. *Emerg Infect Dis* 2002;8:1019–28.
- Martin SW, Tierney BC, Aranas A, et al. An overview of adverse events reported by participants in CDC's anthrax vaccine and antimicrobial availability program. *Pharmacoepidemiol Drug Saf* 2005;14:393–401.
- Sejvar JJ, Tenover FC, Stephens DS. Management of anthrax meningitis. *Lancet Infect Dis* 2005;5:287–95.

## Botulism

- Sobel J, Tucker N, MacLaughlin J, Maslanka S. Foodborne botulism in the United States, 1999–2000. *Emerg Infect Dis* 2004;10:1606–12. Available at <http://www.cdc.gov/ncidod/EID/vol10no9/03-0745.htm>.
- CDC. Botulism in the United States, 1899–1996: handbook for epidemiologists, clinicians and laboratory workers. Atlanta, GA: US Department of Health and Services, CDC; 1998.
- Shapiro R, Hatheway C, Swerdlow DL. Botulism in the United States: a clinical and epidemiologic review. *Ann Intern Med* 1998;129:221–8.

## Brucellosis

- CDC. Brucellosis: (*Brucella melitensis*, *abortus*, *suis*, and *canis*). Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at [http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis\\_g.htm](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis_g.htm).
- CDC. Brucellosis case definition. Atlanta, GA: US Department of Health and Human Services, CDC; 2001. Available at <http://www.bt.cdc.gov/Agent/Brucellosis/CaseDef.asp>.
- CDC. Human exposure to *Brucella abortus* strain RB51—Kansas, 1997. *MMWR* 1998;47:172–5.

Stevens, MG, Olsen SC, Palmer MV, Cheville NF. US Department of Agriculture, Agricultural Research Service National Animal Disease Center, Iowa State University. *Brucella abortus* strain RB51: a new brucellosis vaccine for cattle. *Compendium* 1997;19:766–74.

Yagupsky P, Baron EJ. Laboratory exposures to *Brucellae* and implications for bioterrorism. *Emerg Infect Dis* 2005;11:1180–5.

Chomel BB, DeBess EE, Mangiamele DM, et al. Changing trends in the epidemiology of human brucellosis in California from 1973 to 1992: a shift toward foodborne transmission. *J Infect Dis* 1994;170:1216–23.

### Chancroid

DiCarlo RP, Armentor BS, Martin DH. Chancroid epidemiology in New Orleans men. *J Infect Dis* 1995;172:446–52.

Mertz, KJ, Weiss JB, Webb RM, et al. An investigation of genital ulcers in Jackson, Mississippi, with use of a multiplex polymerase chain reaction assay: high prevalence of chancroid and human immunodeficiency virus infection. *J Infect Dis* 1998;178:1060–6.

Mertz KJ, Trees D, Levine WC, et al. Etiology of genital ulcers and prevalence of human immunodeficiency virus coinfection in 10 US cities. The Genital Ulcer Disease Surveillance Group. *J Infect Dis* 1998;178:1795–8.

### *Chlamydia trachomatis*, Genital Infection

CDC. Sexually transmitted disease surveillance 2002 supplement: Chlamydia Prevalence Monitoring Project, annual report 2002. Atlanta, GA: US Department of Health and Human Services, CDC; 2003. Available at <http://www.cdc.gov/std/chlamydia/chlamydia-stats-all-years.htm>.

Gaydos CA, Howell MR, Pare B, et al. *Chlamydia trachomatis* infections in female military recruits. *N Engl J Med* 1998;339:739–44.

Mertz KJ, McQuillian GM, Levine WC, et al. A pilot study of chlamydial infection in a national household survey. *Sex Transm Dis* 1998;25:225–8.

Miller WC, Ford CA, Handcock MS, et al. Prevalence of chlamydial and gonococcal infections among young adults in the United States. *JAMA* 2004;291:2229–36.

### Cholera

Steinberg EB, Greene KD, Bopp CA, Cameron DN, Wells JG, Mintz ED. Cholera in the United States, 1995–2000: trends at the end of the millennium. *J Infect Dis* 2001;184:799–802.

World Health Organization. Cholera, 2004. *Wkly Epidemiol Rec* 2005;80:261–8.

Mintz ED, Tauxe RV, Levine MM. The global resurgence of cholera. In: Noah ND, O'Mahony M, eds. *Communicable disease epidemiology and control*. Chichester, UK: John Wiley & Sons; 1998:63–104.

CDC. Cholera epidemic associated with raw vegetables—Lusaka, Zambia, 2003–2004. *MMWR* 2004;53:783–6.

### Coccidioidomycosis

Park BJ, Sigel K, Vaz V et al., An epidemic of coccidioidomycosis in Arizona associated with climatic changes, 1998–2001. *J Infect Dis* 2005;191:1981–7.

### Cryptosporidiosis

Hlavsa MC, Watson JC, Beach MJ. Cryptosporidiosis surveillance—United States 1999–2002. In: *CDC Surveillance summaries*, January 28, 2008. *MMWR* 2005;54(No. SS-1):1–8.

Yoder JS, Blackburn BG, Craun GF, et al. Surveillance for waterborne-disease outbreaks associated with recreational water—United States, 2001–2002. In: *Surveillance Summaries*, October 22, 2004. *MMWR* 2004;53(No. SS-8):1–21.

Roy SL, DeLong SM, Stenzel SA, et al. Risk factors for sporadic cryptosporidiosis among immunocompetent persons in the United States from 1999 to 2001. *J Clin Microbiol* 2004;42:2944–51.

CDC. DPDx Diagnostic procedures—stool specimens—detection of parasite antigens. Atlanta, GA: US Department of Health and Human Services, CDC; 2004. Available at <http://www.dpd.cdc.gov/DPDx/html/DiagnosticProcedures.htm>.

### Cyclosporiasis

CDC. Outbreak of cyclosporiasis associated with snow peas—Pennsylvania, 2004. *MMWR* 2004;53:876–8.

Ho AY, Lopez AS, Eberhard MG, et al. Outbreak of cyclosporiasis associated with imported raspberries, Philadelphia, Pennsylvania, 2000. *Emerg Infect Dis* 2002;8:783–8.

Herwaldt BL. *Cyclospora cayetanensis*: a review, focusing on the outbreaks of cyclosporiasis in the 1990s. *Clin Infect Dis* 2000;31:1040–57.

## Diphtheria

Dewinter LM, Bernard KA, Romney MG. Human clinical isolates of *Corynebacterium diphtheriae* and *Corynebacterium ulcerans* collected in Canada from 1999 to 2003 but not fitting reporting criteria for cases of diphtheria. *Clin Microbiol* 2005;43:3447–9.

## Ehrlichiosis (Human Granulocytic and Human Monocytic)

Demma LJ, Holman RC, McQuiston JH, Krebs JW, Swerdlow DL. Epidemiology of human ehrlichiosis and anaplasmosis in the United States, 2001–2002. *Am J Trop Med Hyg* 2005;73:400–9.

Paddock CD, Childs JE. *Ehrlichia chaffeensis*: a prototypical emerging pathogen [Review]. *J Clin Microbiol* 2003;16:37–64.

Ijdo JW, Meek JI, Cartter ML, et al. The emergence of another tick-borne infection in the 12-town area around Lyme, Connecticut: human granulocytic ehrlichiosis. *J Infect Dis* 2000;181:1388–93.

McQuiston JH, Paddock CD, Holman RC, Childs JE. The human ehrlichioses in the United States [Review]. *Emerg Infect Dis* 1999;5:635–42.

Childs JE, Sumner JW, Nicholson WL, Massung RF, Standaert SM, Paddock CD. Outcome of diagnostic tests using samples from patients with culture-proven human monocytic ehrlichiosis: implications for surveillance. *J Clin Microbiol* 1999;37:2997–3000.

## Encephalitis, Arboviral (California Serogroup Viral, Eastern Equine, St. Louis, West Nile, Western Equine)

CDC. Revision of guidelines for surveillance, prevention, and control of West Nile virus infection. *MMWR* 2003;52:797.

CDC. Arboviral infections of the central nervous system—United States, 1996–1997. *MMWR* 1998;47:517–22.

Campbell GL, Marfin AM, Lanciotti RS, Gubler DJ. West Nile virus. *Lancet Infect Dis* 2002;2:519–29.

Nash D, Mostashari F, Fine A, et al. The outbreak of West Nile virus infection in the New York City area. *N Engl J Med* 2001;344:1807–14.

## Giardiasis

Hlavsa MC, Watson JC, Beach MJ. Giardiasis surveillance—United States, 1998–2002. In: *CDC Surveillance Summaries*, January 28, 2008. *MMWR* 2005;54 (No. SS-1):9–16.

Blackburn BG, Craun GF, Yoder JS et al. Surveillance for waterborne-disease outbreaks associated with drinking water—United States, 2001–2002. In: *Surveillance Summaries*, October 22, 2004. *MMWR* 2004;53 (No. SS-8):23–45.

Stuart JM, Orr HJ, Warburton FG, Jeyakanth S, Pugh C, Morris I, et al. Risk factors for sporadic giardiasis: A case-control study in Southwestern England. *Emerg Infect Dis* 2003;9:229–33.

CDC. DPDx diagnostic procedures—stool specimens—detection of parasite antigens. Atlanta, GA: US Department of Health and Human Services, CDC; 2004. Available at <http://www.dpd.cdc.gov/DPDx/HTML/DiagnosticProcedures.htm>.

## Gonorrhea

CDC. Increases in fluoroquinolone-resistant *Neisseria gonorrhoeae* among men who have sex with men—United States, 2003, and revised recommendations for gonorrhea treatment, 2004. *MMWR* 2004;53:335–8.

CDC. Sexually transmitted diseases treatment guidelines, 2002. *MMWR* 2002;51 (No. RR-6).

CDC. Sexually transmitted diseases surveillance 2002 supplement: Gonococcal Isolate Surveillance Project (GISP) annual report 2002. Atlanta, GA: US Department of Health and Human Services, CDC; 2003.

Fox KK, del Rio C, Holmes KK, et al. Gonorrhea in the HIV era: a reversal in trends among men who have sex with men. *Am J Public Health* 2001;91:959–64.

## *Haemophilus influenzae*, Invasive Disease

CDC. Progress toward elimination of *Haemophilus influenzae* type b disease among infants and children—United States, 1998–2000. *MMWR* 2002;51:234–7.

Fry AM, Lurie P, Gidley M, Schmink S, Lingappa J, Rosenstein NE. *Haemophilus influenzae* type b (Hib) disease among Amish children in Pennsylvania: reasons for persistent disease. *Pediatrics* 2001;108:1–6.

## Hansen Disease (Leprosy)

- Britton WJ, Lockwood NJ. Leprosy. *Lancet* 2004;363:1209–19.
- Hartzell JD, Zapor M, Peng S, Straight T. Leprosy: a case series and review. *South Med J* 2004;97:1252–6.
- Hastings R, Ed. *Leprosy*. 2nd Ed. New York, NY: Churchill Livingstone; 1994.
- Joyce MP, Scollard DM. Leprosy (Hansen's disease). In: Rakel RE, Bope ET, Eds. *Conn's Current Therapy 2004: Latest approved methods of treatment for the practicing physician*. 56th ed. Philadelphia, PA: Saunders; 2004:100–5.
- Ooi WW, Moschella SL. Update on leprosy in immigrants in the United States: Status in the Year 2000. *Clin Infect Dis* 2001;32:930–7.
- Bruce S, Schroeder TL, Ellner K, Rubin H, Williams T, Wolf JE Jr. Armadillo exposure and Hansen's disease: an epidemiologic survey in southern Texas. *J Am Acad Dermatol* 43(2 Pt1):223–8.

## Hepatitis A

- Armstrong GL, Bell BP. Hepatitis A virus infections in the United States: model-based estimates and implications for childhood immunization. *Pediatrics* 2002;109:839–45.
- CDC. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(No. RR-12).
- Bell BP, Shapiro CN, Alter MJ, et al. The diverse patterns of hepatitis A epidemiology in the United States—implications for vaccination strategies. *J Infect Dis* 1998;178:1579–84.
- Wasley A, Samandari T, Bell BP. Incidence of hepatitis A in the United States in the era of vaccination. *JAMA* 2005;294:194–201.
- Shapiro CN, Coleman PJ, McQuillan GM, Alter MJ, Margolis HS. Epidemiology of hepatitis A: seroepidemiology and risk groups in the USA. *Vaccine* 1992;10(suppl 1):S59–62.

## Hepatitis B

- Armstrong GL, Mast EE, Wojczynski M, Margolis HS. Childhood hepatitis B virus infections in the United States before hepatitis B immunization. *Pediatrics* 2001;108:1123–8.

- CDC. Hepatitis B virus: a comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination: recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR* 1991;40(No. RR-13):1–19.
- Goldstein ST, Alter MJ, Williams IT, et al. Incidence and risk factors for acute hepatitis B in the United States, 1982–1998: implications for vaccination programs. *J Infect Dis* 2002;185:713–9.
- McQuillan GM, Coleman PJ, Kruszon-Moran D, Moyer LA, Lambert SB, Margolis HS. Prevalence of hepatitis B virus infection in the United States: The National Health and Nutrition Examination Surveys, 1976 through 1994. *Am J Public Health* 1999;89:14–8.
- Margolis HS, Alter MJ, Hadler SC. Hepatitis B: evolving epidemiology and implications for control [Review]. *Semin Liver Dis* 1991;11:84–92.

## Hepatitis C

- Alter MJ, Kruszon-Moran D, Nainan OV, et al. The prevalence of hepatitis C virus infection in the United States, 1988 through 1994. *N Engl J Med* 1999;341:556–62.
- Armstrong GA, Alter MJ, McQuillan GM, Margolis HS. The past incidence of hepatitis C virus infection: implications for the future burden of chronic liver disease in the United States. *Hepatology* 2000;31:777–82.
- CDC. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. *MMWR* 1998;47(No. RR-19).

## Influenza-Associated Pediatric Mortality

- CDC. Mid-year addition of influenza-associated pediatric mortality to the list of nationally notifiable diseases, 2004. *MMWR* 2004;53:951–2.
- Council of State and Territorial Epidemiologists. Influenza-associated pediatric mortality; 2004. Atlanta, GA: Council of State and Territorial Epidemiologists; 2004. Available at <http://www.cste.org/PositionStatementsResolutions2.htm>.

## Legionellosis

- Cowgill KD, Lucas CE, Benson RF, et al. Recurrence of legionnaires disease at a hotel in the United States Virgin Islands over a 20-year period. *Clin Infect Dis* 2005;40:1205–7.
- Fields BS, Benson RF, Besser RE. Legionella and Legionnaires' disease: 25 years of investigation. *Clin Microbiol Rev* 2002;15:506–26.

European Working Group on Legionella Infections. European guidelines for control and prevention of travel associated Legionnaires' disease. London, UK: United Kingdom Health Protection Agency; 2005.

Joseph CA. Legionnaires' disease in Europe 2000–2002. *Epidemiol Infect* 2004;132:417–24.

Marston BJ, Lipman HB, Breiman RF. Surveillance for Legionnaires' disease: risk factors for morbidity and mortality. *Arch Intern Med* 1994;154:2417–22.

### **Lyme Disease**

Stafford KC III. Tick management handbook: an integrated guide for homeowners, pest control operators, and public health officials for the prevention of tick-associated disease. New Haven, CT: Connecticut Agricultural Experiment Station; 2004. Available at <http://www.cdc.gov/ncidod/dvbid/lyme/resources/handbook.pdf>.

Hayes EB and Piesman J. How can we prevent Lyme disease? *N Engl J Med* 2003;348:2424–30.

Aguero-Rosenfeld ME, Wang G, Schwartz I, Wormser GP. Diagnosis of Lyme borreliosis. *Clin Microbiol Rev* 2005;18:484–509.

Medical Letter. Treatment of Lyme disease. *Med Lett Drugs Ther* 2005;47:41–3.

CDC. Caution regarding testing for Lyme disease. *MMWR* 2005;54:125.

### **Malaria**

CDC. Malaria surveillance—United States, 2003. In: *Surveillance Summaries*, June 3, 2005. *MMWR* 2005;54(No. SS-2):25–39.

CDC. Transmission of malaria in resort areas—Dominican Republic, 2004. *MMWR* 2005;53:1195–8.

CDC. Congenital malaria—Nassau County, New York, 2004. *MMWR* 2005;54:383–4.

Magill, AJ. The prevention of malaria. *Primary Care* 2002;29:815–42.

### **Measles**

Papania M, Hinman A, Katz S, Orenstein W, McCauley M, eds. Progress toward measles elimination—absence of measles as an endemic disease in the United States. *J Infect Dis* 2004;189(Suppl 1):S1–257.

CDC. National, state, and urban area vaccination levels among children aged 19–35 months—United States, 2002. *MMWR* 2003;52:728–32.

Rota PA, Liffick SL, Rota JS, et al. Molecular epidemiology of measles viruses in the United States, 1997–2001. *Emerg Infect Dis* 2002;8:902–8.

De Serres G, Gay NJ, Farrington CP. Epidemiology of transmissible diseases after elimination. *Am J Epidemiol* 2000;151:1039–48.

### **Meningococcal Disease**

CDC. Prevention and control of meningococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2005;54(No. RR-7):1–21.

Rosenstein NE, Perkins BA, Stephens DS, et al. Meningococcal disease. *N Engl J Med* 2001;344:1378–88.

Rosenstein NE, Perkins BA, Stephens DS, et al. The changing epidemiology of meningococcal disease in the United States, 1992–1996. *J Infect Dis* 1999;180:1894–901.

### **Pertussis**

Bisgard KM, Rhodes P, Connelly BL, et al. Pertussis vaccine effectiveness among children 6 to 59 months of age in the United States, 1998–2001. *Pediatrics* 2005;116:e285–94.

Bisgard KM, Pascual FB, Ehresmann KR, et al. Infant pertussis: who was the source? *Pediatr Infect Dis J* 2004;23:985–9.

CDC. Preventing tetanus, diphtheria, and pertussis among adolescents; use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccines; recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2006;55(No. RR-3):1–45.

CDC. Recommended antimicrobial agents for the treatment and postexposure prophylaxis of pertussis: 2005 CDC guidelines. *MMWR* 2005;54 (No. RR-14):1–16.

CDC. Pertussis—United States, 2001–2003. *MMWR* 2005;54:1283–6.

Lee GM, Lebaron C, Murphy TV, Lett S, Schauer S, Lieu TA. Pertussis in adolescents and adults: should we vaccinate? *Pediatrics* 2005;115:1675–84.

### **Plague**

CDC. Imported plague—New York City, 2002. *MMWR* 2003;53:725–8.

Enscore RE, Biggerstaff BJ, Brown TL, et al. Modeling relationships between climate and the frequency of human plague cases in the southwestern United States, 1960–1997. *Am J Trop Med Hyg* 2002;66:186–96.

Inglesby TV, Dennis DT, Henderson DA, et al. Plague as a biological weapon: medical and public health management. Working Group on Civilian Biodefense [Review]. *JAMA* 2000;283:2281–90.

Dennis DT, Gage KL, Gratz N, Poland JD, Tikhomirov E. Plague manual: epidemiology, distribution, surveillance and control. Geneva, Switzerland: World Health Organization; 1999.

### Q Fever

McQuiston JH, Nargund VN, Miller JD, Priestly R, Shaw EI, Thompson HA. Prevalence of antibodies to *Coxiella burnetii* among veterinary school dairy herds in the United States, 2003. *Vector-Borne and Zoonotic Dis* 2005;90-1.

McQuiston JH, Childs JE. Q fever in humans and animals in the United States [Review]. *Vector Borne and Zoonotic Dis* 2002;179-191.

CDC. Q Fever—California, Georgia, Pennsylvania, and Tennessee, 2000–2001. *MMWR* 2002;41:924-7.

Raoult D, Tissot-Dupont H, Foucault C, et al. Q fever 1985–1998. Clinical and epidemiologic features of 1,383 infections [Review]. *Medicine* 2000;79:109-25.

Bernard KW, Parham GL, Winkler WG, Helmick CG. Q fever control measures: recommendations for research facilities using sheep. *Infection Control* 1982;3:461-5.

### Rabies, Animal and Human

Willoughby RE Jr, Tieves KS, Hoffman GM, et al. Survival after treatment of rabies with induction of coma. *N Engl J Med* 2005;352:2508-14.

Srinivasan A, Burton EC, Kuehnert MJ, et al. Transmission of rabies virus from an organ donor to four transplant recipients. *N Engl J Med* 2005;352:1103-11.

CDC. Compendium of animal rabies prevention and control, 2005: National Association of State and Territorial Public Health Veterinarians, Inc. *MMWR* 2005;54 (No. RR-3).

CDC. Human rabies prevention—United States, 1999: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(No. RR-1).

Krebs JW, Mandel EJ, Swerdlow DL, Rupprecht CE. Rabies surveillance in the United States during 2003. *J Am Vet Med Assoc* 2004;227:1912-25.

Noah DL, Drenzek CL, Smith JS, et al. Epidemiology of human rabies in the United States, 1980 to 1996 [Review]. *Ann Intern Med* 1998;128:922-30.

### Rocky Mountain Spotted Fever

Demma LJ, Traeger MS, Nicholson WL, et al. Rocky Mountain spotted fever from an unexpected tick reservoir in Arizona. *N Engl J Med* 2005;353:587-94.

CDC. Fatal cases of Rocky Mountain spotted fever in family clusters—three states, 2003. *MMWR* 2004;53:407-10.

Treadwell TA, Holman RC, Clarke MA et al. Rocky Mountain spotted fever in the United States, 1993–1996. *Am J Trop Med Hyg* 2000;63:21-6.

Thorner AR, Walker, DH, Petri WA. Rocky Mountain spotted fever [Review]. *Clin Infect Dis* 1998;27:1353-60.

Dalton MJ, Clarke MJ, Holman RC, et al. National surveillance for Rocky Mountain spotted fever, 1981–1992: epidemiologic summary and evaluation of risk factors for fatal outcome. *Am J Trop Med Hyg* 1995;52:405-13.

### Rubella

CDC. Control and prevention of rubella: evaluation and management of suspected outbreaks, rubella in pregnant women, and surveillance for congenital rubella syndrome. *MMWR* 2001;50(No. RR-12).

Danovaro-Holliday MC, Gordon E, Woernle C, et al. Identifying risk factors for rubella susceptibility in a population at risk in the United States. *Am J Public Health* 2003;93:289-91.

Reef SE, Frey TK, Theall K, et al. The changing epidemiology of rubella in the 1990s: on the verge of elimination and new challenges for control and prevention. *JAMA* 2002;287:464-72.

Reef S, Plotkin S, Cordero J, et al. Preparing for congenital rubella syndrome elimination: summary of the Workshop on Congenital Rubella Elimination in the United States. *Clin Infect Dis* 2000;31:85-95.

### Shigellosis

Gupta A, Polyak CS, Bishop RD, Sobel J, Mintz ED. Laboratory-confirmed shigellosis in the United States, 1989–2002: epidemiologic trends and patterns. *Clin Infect Dis* 2004;38:1372-7.

Kalluri P, Cummings K, Abbott S, et al. Epidemiological features of a newly described serotype of *Shigella boydii*. *Epidemiol Infect* 2004;132:579-83.

Shane A, Crump J, Tucker N, Painter J, Mintz E. Sharing *Shigella*: risk factors and costs of a multi-community outbreak of shigellosis. *Arch Pediatr Adolesc Med* 2003;157:601-3.

CDC. Day-care related outbreaks of rhamnase-negative *Shigella sonnei*—six states, June 2001–March 2003. *MMWR* 2004;53:60-3.

### Streptococcal Disease, Invasive, Group A

The Prevention of Invasive Group A Streptococcal Infections Workshop Participants. Prevention of invasive group A streptococcal disease among household contacts of case patients and among postpartum and postsurgical patients: recommendations from the Centers for Disease Control and Prevention. *Clin Infect Dis* 2002;35:950–9.

CDC. Active Bacterial Core Surveillance report. Emerging Infections Program Network. Group A streptococcus, 2003—provisional. Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at <http://www.cdc.gov/ncidod/dbmd/abcs/survreports/gas04prelim.pdf>.

O'Brien KL, Beall B, Barrett NL, et al. Epidemiology of invasive group A streptococcus disease in the United States, 1995–1999. *Clin Infect Dis* 2002;35:268–76.

Factor SH, Levine OS, Schwartz B, et al. Invasive group A streptococcal disease: risk factors for adults. *Emerg Infect Dis* 2003;9:970–7.

CDC. Investigating clusters of group A streptococcal disease. Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at [http://www2.cdc.gov/ncidod/dbmd/abcs/calc/calc\\_new/new\\_page.htm](http://www2.cdc.gov/ncidod/dbmd/abcs/calc/calc_new/new_page.htm).

### Streptococcus pneumoniae, Invasive, Drug-Resistant

CDC. Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2000;49(No. RR-9):1–38.

Flannery B, Schrag S, Bennett NM, et al. Impact of childhood vaccination on racial disparities in invasive *Streptococcus pneumoniae* infections in the United States, 1998–2002. *JAMA* 2004;291:2197–2203.

Whitney CG, Farley MM, Hadler J, et al. Increasing prevalence of multidrug-resistant *Streptococcus pneumoniae* in the United States. *N Engl J Med* 2000;343:1917–24.

Whitney CG, Farley MM, Hadler J, et al. Decline in invasive pneumococcal disease following the introduction of protein-polysaccharide conjugate vaccine. *N Engl J Med* 2003;348:1737–46.

### Syphilis, Congenital

CDC. Congenital syphilis—United States, 2002. *MMWR* 2004;53:716–9.

### Syphilis, Primary and Secondary

CDC. The national plan to eliminate syphilis from the United States. Atlanta, GA: US Department of Health and Human Services, CDC; 1999.

CDC. Trends in primary and secondary syphilis and HIV infections in men who have sex with men—San Francisco and Los Angeles, California, 1998–2002. *MMWR* 2004;53:575–8.

CDC. Primary and secondary syphilis—United States, 2002. *MMWR* 2003;52:1117–20.

CDC. Sexually transmitted disease surveillance supplement 2002: syphilis surveillance report. Atlanta, GA: US Department of Health and Human Services, CDC; 2004.

### Tetanus

Pascual FB, McGinley EL, Zanardi LR, Cortese MM, Murphy TV. Tetanus surveillance—United States, 1998–2000. In: Surveillance Summaries, June 20, 2003. *MMWR* 2003;52(No. SS-3):1–8.

CDC. Tetanus—Puerto Rico, 2002. *MMWR* 2002;51:613–5.

McQuillan GM, Kruszon-Moran D, Deforest A, Chu SY, Wharton M. Serologic immunity to diphtheria and tetanus in the United States. *Ann Intern Med* 2002;136:660–6.

### Trichinellosis

CDC. Trichinellosis associated with bear meat—New York and Tennessee, 2003. *MMWR* 2004;53:606–10.

Roy SL, Lopez AS, Schantz PM. Trichinellosis surveillance—United States, 1997–2001. In: CDC surveillance summaries, July 25, 2003. *MMWR* 2003;52(No. SS-6):1–8.

Moorhead A, Grunenwald PE, Dietz VJ, Schantz PM. Trichinellosis in the United States, 1991–1996: declining but not gone. *Am J Trop Med Hyg* 1999;60:66–9.

CDC. Outbreak of trichinellosis associated with eating cougar jerky—Idaho, 1995. *MMWR* 1996;45:205–6.

### Tuberculosis

CDC. Reported tuberculosis in the United States, 2003. Atlanta, GA: US Department of Health and Human Services, CDC; 2004. Available at <http://www.cdc.gov/nchstp/tb>.

CDC. Trends in tuberculosis—United States, 2004. *MMWR* 2005;54:245–9.

Saraiya M, Cookson ST, Tribble P, et al. Tuberculosis screening among foreign-born persons applying for permanent US residence. *Am J Public Health* 2002;92:826–9.

Talbot EA, Moore M, McCray E, Binkin NJ. Tuberculosis among foreign-born persons in the United States, 1993–1998. *JAMA* 2000;284:2894–900.



**Tularemia**

- CDC. Outbreak of tularemia among commercially distributed prairie dogs, 2002. *MMWR* 2002;51:688,699.
- CDC. Tularemia—United States, 1990–2000. *MMWR* 2002;51:182–4.
- Dennis DT, Inglesby TV, Henderson DA, et al. Tularemia as a biological weapon: medical and public health management. *JAMA* 2001;285:2763–73.
- Feldman KA, Ensore RE, Lathrop SL, et al. Outbreak of primary pneumonic tularemia on Martha's Vineyard. *N Engl J Med* 2001;345:1219–26.
- Petersen JM, Schriefer ME. Tularemia: emergence/re-emergence. *Vet Res* 2005;36:455–67.

**Typhoid Fever**

- Steinberg EB, Bishop RB, Dempsey AF, et al. Typhoid fever in travelers: who should be targeted for prevention? *Clin Infect Dis* 2004;39:186–91.
- Crump JA, Luby SP, Mintz ED. The global burden of typhoid fever. *Bull WHO* 2004;84:346–53.

- Olsen SJ, Bleasdale SC, Magnano AR, et al. Outbreaks of typhoid fever in the United States, 1960–1999. *Epidemiol Infect* 2003;130:13–21.
- Reller M, Olsen S, Kressel A. Sexual transmission of typhoid fever: a multi-state outbreak among men who have sex with men. *Clin Infect Dis* 2003;37:141–4.

**Varicella**

- CDC. Varicella-related deaths—United States, January 2003–June 2004. *MMWR* 2005;54:272–4.
- CDC. Outbreak of varicella among vaccinated children—Michigan, 2003. *MMWR* 2004;53:389–92.
- CDC. Prevention of varicella: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1996;45(No. RR-11):1–36.
- CDC. Prevention of varicella: updated recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999;48(No. RR-6):1–15.
- Seward JF, Zhang JX, Maupin TJ, Mascola L, Jumaan AO. Contagiousness of varicella in vaccinated cases: a household contact study. *JAMA*. 2004;292:704–8.





The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format and on a paid subscription basis for paper copy. To receive an electronic copy each week, send an e-mail message to [listserv@listserv.cdc.gov](mailto:listserv@listserv.cdc.gov). The body content should read *SUBscribe mmwr-toc*. Electronic copy also is available from CDC's World-Wide Web server at <http://www.cdc.gov/mmwr> or from CDC's file transfer protocol server at <ftp://ftp.cdc.gov/pub/publications/mmwr>. To subscribe for paper copy, contact Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone 202-512-1800.

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to Editor, *MMWR* Series, Mailstop E-90, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone 888-232-3228.

All material in the *MMWR* Series is in the public domain and may be used and reprinted without permission; citation as to source, however, is appreciated.

All *MMWR* references are available on the Internet at <http://www.cdc.gov/mmwr>. Use the search function to find specific articles.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of these sites. URL addresses listed in *MMWR* were current as of the date of publication.