CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

December 21, 2001 / Vol. 50 / No. 50

MMWR™
MORBIDITY AND MORTALITY WEEKLY REPORT

Evaluation of *Bacillus anthracis* Contamination Inside the Brentwood Mail Processing and Distribution Center — District of Columbia, October 2001

During October 19–21, 2001, four postal workers at the Brentwood Mail Processing and Distribution Center in the District of Columbia were hospitalized with inhalational anthrax; two of the workers died. The building, which was closed on October 21, was believed to have been contaminated by a letter containing *Bacillus anthracis* spores sent to the Hart Senate Office Building (HSOB) that had passed through the postal facility on October 12. A second contaminated letter addressed to another U.S. senator that was processed through the same mail sorter and sort run as the first letter was discovered on November 17. This report describes the results of CDC's evaluation of *B. anthracis* in the facility, which showed widespread contamination of the facility and suggest that wipe samples and high efficiency particulate air (HEPA) vacuum samples complement each other in assessing contamination.

A U.S. Postal Service investigation indicated that, on late October 11 or early October 12, the letter sent to one U.S. senator entered the building in a mailbag through a loading dock near the Postal Vehicle Transportation Office (Figure 1). The bag was opened and the contents separated into bar-coded trays and moved by all-purpose carrier (APC) to a large tray-sorting machine. The APC tray then went to delivery bar-code sorter (DBCS)* 17, where the letter was manually fed into the machine at 7:10 a.m. The letter was then transported by APC to the government mail section of the facility and was transported to HSOB at approximately noon on October 12. Sometime during 8 a.m.–9:40 a.m., the DBCS machine that processed the letter was opened, and compressed air at 70 lbs. per square inch was used to clean debris and dust from conveyor belts and optical reading heads.

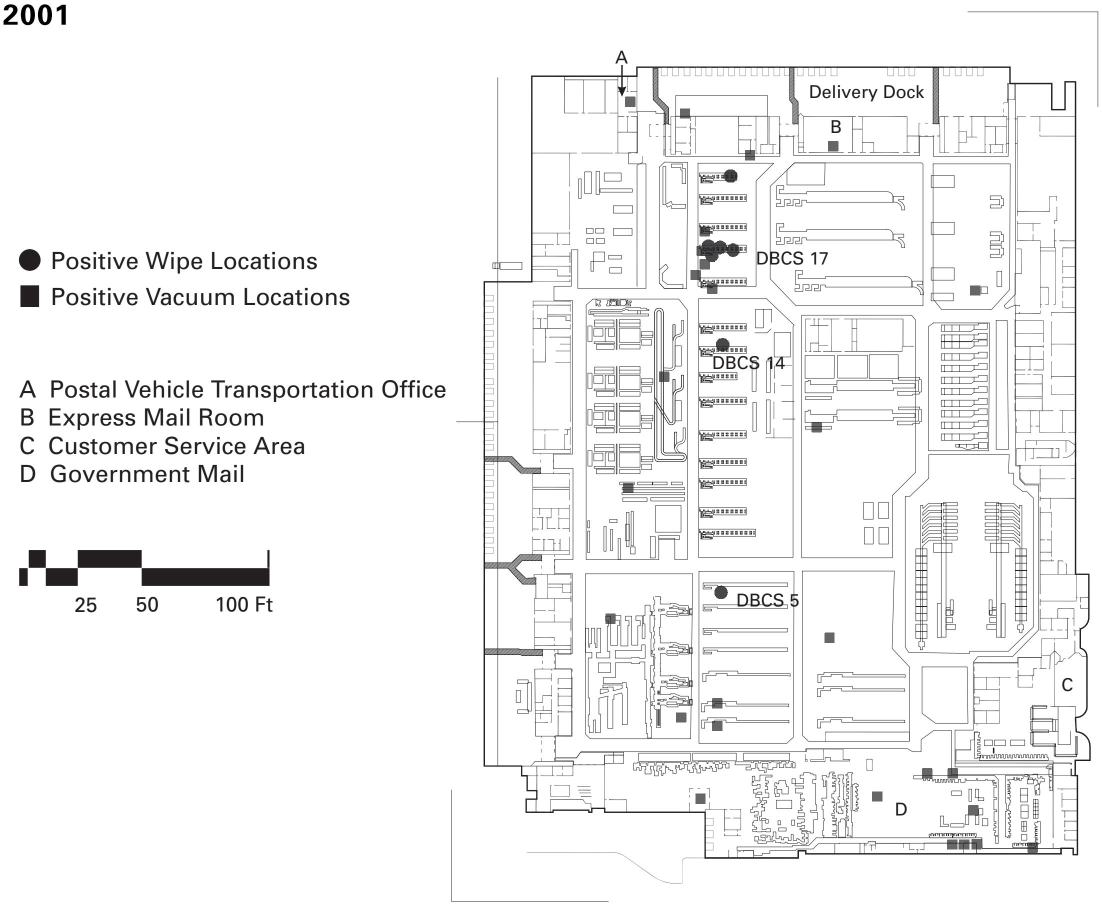
On October 18, before recognition of inhalational anthrax cases, a Postal Service contractor collected 29 swab samples from the mail sorting area of the Brentwood facility. On October 20, CDC initiated an investigation of the Brentwood facility. As part of this investigation, CDC extended the evaluation of *B. anthracis* contamination in the Brentwood facility.

On October 23, CDC investigators and Postal Service contractors selected and marked sampling locations. Sampling for *B. anthracis* spores began on October 24 using three

*The DBCS machines move mail along internal conveyor belts and rollers through a series of turns and compressions at 32 miles per hour until the mail lands in the appropriate collection bin for distribution.

Brentwood Facility — Continued

FIGURE 1. Diagram of Brentwood Mail Processing and Distribution Center and location of positive identification of *Bacillus anthracis* spores — District of Columbia, October 2001



techniques: surface wipe sampling, surface vacuum sampling, and air sampling (*1*). The evaluation focused on the path of the HSOB letter through the facility and the work locations of the known anthrax patients. To evaluate the extent of *B. anthracis* contamination, additional samples were collected throughout the facility, including the administrative areas on the second level and the customer service area at the front of the building. Wipe samples were submitted to CDC for culture and analysis. Vacuum and air samples were analyzed by a contract laboratory. Suspect culture colonies were screened using standardized Laboratory Response Network (LRN) Level A testing procedures for identification of *B. anthracis* (*2*) and were confirmed by direct fluorescent antibody staining and gamma phage lysis (*3*).

Surface Wipe Sampling

Selected surfaces (e.g., table or desk tops, sorting machines, sorting bins, control consoles of sorting machines, and ventilation ducts) were sampled using moistened sterile cotton gauze pads. Cultures from samples were reported as either positive or negative for colonies of *B. anthracis.*

Twelve days after the contaminated letter sent to HSOB passed through the facility, eight (7%) of 114 surface wipe samples were positive for isolates of *B. anthracis*. Four of the positive samples were collected on and around DBCS machine 17, which processed the contaminated letters, and one was from an air supply duct approximately 12 feet above the machine. The remaining three positive samples were from areas on distant DBCS machines. None of the wipe samples collected in the administration area or in the customer service area was positive for isolates of *B. anthracis*. All wipe samples collected in the Postal Vehicle Transportation office, express mail room, and the government mail area were negative.

Surface Vacuum Sampling

Surface vacuum samples were collected by inserting a cone-shaped filtering "sock" (dust collection trap) into the nozzle of a HEPA vacuum cleaner with a high-efficiency (0.1 μm pore size) filter. The vacuum nozzle was mechanically cleaned with an alcohol wipe between samples to dislodge spores and prevent cross-contamination. Several grams of dust were collected inside each vacuum sock (*1*) and were submitted to a contract laboratory for culture and analysis. Results were reported as number of colony forming units per gram of material collected (CFU/g); a CFU can represent a single *B. anthracis* spore or an aggregate of several spores and may not correlate directly to the number of spores present.

Of 39 vacuum dust samples, *B. anthracis* was isolated in 27 (69%). Reported *B. anthracis* concentrations in positive samples ranged from 3 CFU/g to 9.7 million CFU/g. All eight samples collected in the government mail area were positive. No wipe samples collected in this area were positive. All samples from the high-speed sorting machines and from areas near DBCS sorting machines were positive (8,700 CFU/g to 2 million CFU/g). A relatively high concentration of spores was found in the sample collected on the overnight hot mail sorting bin (13,000 CFU/g), which was near the end of DBCS machine 5 that had a positive wipe sample collected inside it but had not processed the contaminated letters addressed to the U.S. senators. Concentrations on the loading dock and in the express mail room were relatively low. Although the concentrations tended to decrease with distance from the DBCS machine that processed both letters, spores also were found in areas far from DBCS machines. The three samples collected in the second floor administration area and two samples collected in the customer service area were negative. The vacuum samples indicated wide distribution of *B. anthracis* spores, with the greatest concentrations associated with work areas along the path of the HSOB letter.

Air Sampling

Air samples were collected on open-faced 37 mm mixed cellulose ester filters (0.8 μm pore size) in polystyrene cassettes attached to sampling pumps operated at 2.0 liters per minute. The sampling pumps were placed in fixed locations throughout the facility for approximately 30 hours. Results were reported as positive or negative for isolates of *B. anthracis*.

Twelve air samples for airborne *B. anthracis* spores were collected 12 days after the contaminated letters were processed, which was 4 days after the building was closed and the ventilation system was turned off. The ventilation system was not operating during the sampling period. All air samples were negative for *B. anthracis,* indicating that no airborne spores were detectable during the sampling period.

Reported by: D Small, IT Corporation, Virginia Beach, Virginia. B Klusaritz, IT Corporation, Somerset, New Jersey. P Muller, Muller Architects, Cincinnati, Ohio. National Institute for Occupational Safety and Health; National Center for Infectious Diseases; and EIS officers, CDC.

Brentwood Facility — Continued

Editorial Note: The four inhalational anthrax cases among Brentwood facility employees indicate that aerosolization of *B. anthracis* occurred at the facility. The extent to which environmental sampling can detect potential aerosol dispersion and widespread contamination is uncertain. In the absence of positive air samples, contamination detected by wipe or vacuum sampling away from the path of the known source of contamination (i.e., the letters addressed to the two U.S. senators) could indicate either airborne dispersion from that source or contamination from a different, unrecognized source (e.g., another contaminated letter). However, even without positive air samples, two patterns of sampling results are particularly useful as evidence of possible aerosolization. Either contamination of surfaces such as air ducts and rafters, which would be unlikely to have contact with a contaminated source, or the dispersion pattern of multiple positive samples suggest the likelihood of aerosolization.

Environmental sampling results in this investigation indicated widespread contamination from the letters processed for delivery to the offices of two U.S. senators. Most vacuum sample results were positive, indicating *B. anthracis* spore contamination in areas that were negative by wipe testing, and this contamination was found throughout the mail processing area. One possible explanation for this difference may be the use of a cotton wipe material, which subsequently was found to decrease spore recoveries; CDC investigators now use rayon-tipped swabs or rayon wipes moistened with sterile water (*1*). Only the second level administrative area and the customer service area appeared to be free of spores by all methods. The air sampling results indicated that airborne spores were not detectable during the sampling period. However, these samples were not collected under normal airflow conditions when mail was being processed or when dust was blown from machinery with compressed air. The use of compressed air to clean sorting machines may have contributed to the aerosolization and dispersion of *B. anthracis* spores in the Brentwood facility. Therefore, HEPA vacuum cleaning has been substituted for blowing for cleaning sorting machines.

Although sampling with surface wipes has been the standard sampling method and has advantages for sampling some small surfaces, surface wipes have several limitations. Wipe samples might miss minimally contaminated surfaces or smaller, discrete contaminated areas. Also, the method of extracting *B. anthracis* from the wipe samples might yield different results than the extraction method for vacuum sock samples. Because it is not feasible to wipe-sample all surfaces within a building, vacuum samples provide an important tool for maximizing the surfaces that can be evaluated during an investigation. The vacuum sample locations at the Brentwood facility were selected to collect large quantities of dust and to cover broader surface areas than wipes. Although cross-contamination between vacuum samples is possible, precleaning of the vacuum nozzle before each sample and use of a high-efficiency filter appeared to be effective because negative vacuum samples were interspersed among heavily contaminated samples.

The results of the environmental sampling at the Brentwood facility might be used to assess the extent of contamination and are consistent with the aerosolization indicated by the cases of inhalational anthrax. They also should help guide cleanup efforts and can serve as a baseline for follow-up environmental assessments after the building has been cleaned. In addition, these results suggest that vacuum sampling is a useful complement to wipe surface samples, particularly when widespread contamination is suspected. CDC continues to assess optimal strategies and methods for sampling of contamination by *B. anthracis*. Current guidelines for collecting environmental samples are available at http://www.bt.cdc.gov/DocumentsApp/Anthrax/11132001/final42.asp.

Brentwood Facility — Continued

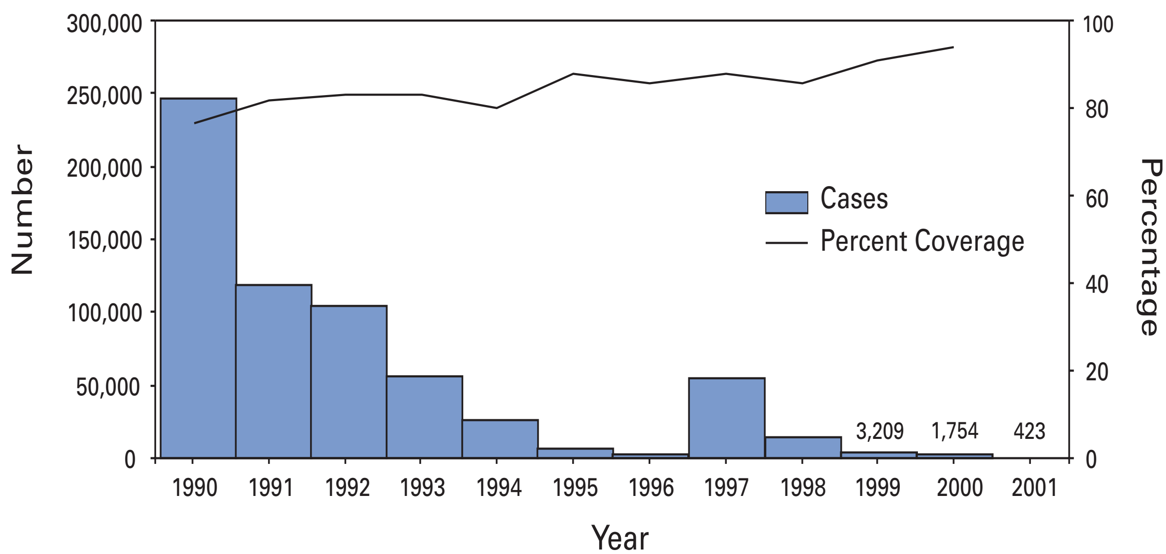
References

1. CDC. Procedures for collecting surface environmental samples for culturing *Bacillus anthracis*. Available at http://www.bt.cdc.gov/DocumentsApp/Anthrax/11132001/final42.asp. Accessed November 2001.
2. CDC, American Society for Microbiology, Association of Public Health Laboratories. Basic diagnostic testing protocols for level A laboratories for the presumptive identification of *Bacillus anthracis.* Available at http://www.asmusa.org/pcsrc/ban.asm.la.cp.102401f.pdf. Accessed October 2001.
3. Turnbull PC. Definitive identification of *Bacillus anthracis*—a review. J Appl Microbiol 1999;87:237–40.

Progress Toward Interrupting Indigenous Measles Transmission — Region of the Americas, January–November 2001

In 1994, countries in the Region of the Americas set a goal of interrupting indigenous measles transmission by the end of 2000 (*1*). During 1990–2000, measles cases declined 99.3%, from approximately 250,000 to 1,754 (Figure 1). During 2000, transmission occurred in five of 41 countries that report to the Pan American Health Organization (PAHO) (Argentina, Bolivia, Brazil, the Dominican Republic, and Haiti), and confirmed cases were reported in 16 (<1%) of 12,010 municipalities (*2–4*). During 2001, measles transmission occurred in the Dominican Republic, Haiti, and Venezuela; no outbreaks were reported in Argentina, Bolivia, or Brazil. This report summarizes measles circulation patterns and efforts to interrupt measles transmission in the Americas during 2001.

FIGURE 1. Number of reported and confirmed measles cases* and percentage of routine measles vaccination coverage among infants, by year — Region of the Americas, 1990–2001†



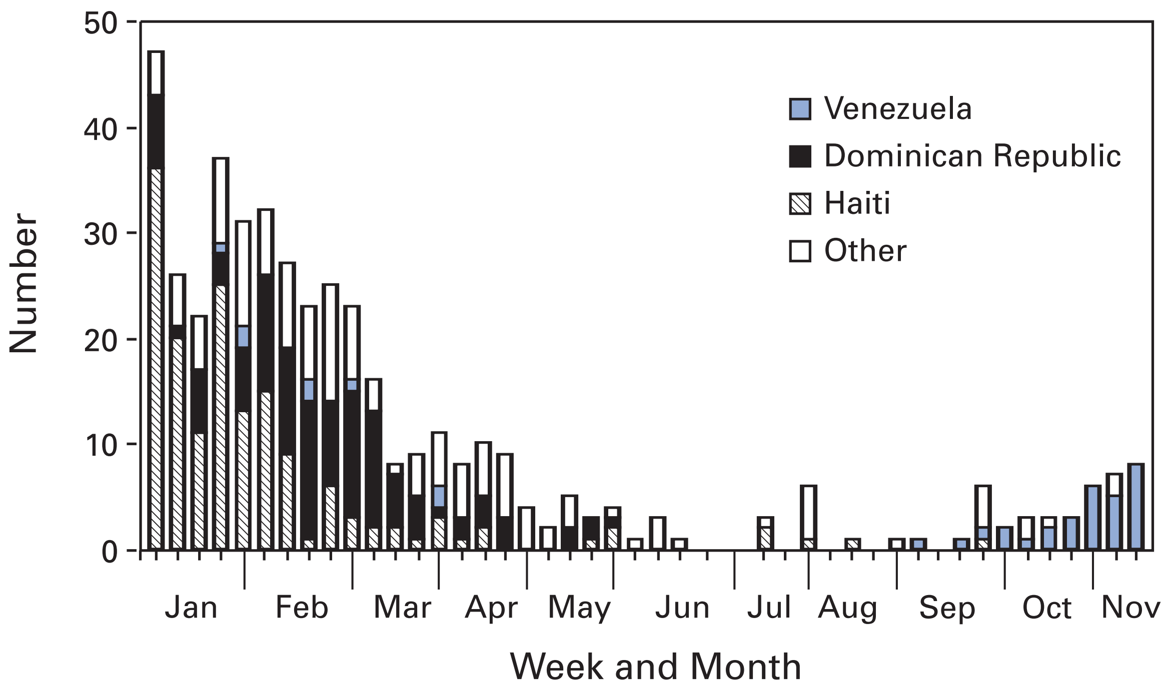
* 1990–1994=total number of reported cases; 1995–2001=total number of confirmed cases.
† As of November 26, 2001 (423 confirmed cases from nine countries).

Measles Transmission — Continued

The measles vaccination strategy recommended by PAHO includes a one-time national “catch-up” campaign for all children aged 1–14 years, routine “keep-up” vaccination for infants aged 1 year, and national “follow-up” campaigns every 3–5 years for all children aged 1–4 years, regardless of measles vaccination history (*5*). Thirty-nine (95%) of the 41 countries that report to PAHO conducted catch-up campaigns during 1989–1995 and follow-up campaigns since 1994. Routine coverage increased from 80% in 1994 to 94% in 2000 but varied by country from 75% to 99%; coverage was lowest in Colombia (75%), Haiti (80%), Belize (82%), Venezuela and Costa Rica (84%), Guyana (86%), Jamaica (88%), and the Dominican Republic (88%). Vaccination efforts also have been focused on populations at high risk for measles transmission (e.g., health-care workers, military personnel, teachers, university students, workers in the tourist industry, persons living or working in prisons and large factories, and young adults from rural areas who have moved to cities) in Argentina, Bolivia, Chile, the Dominican Republic, Haiti, Peru, Uruguay, and Venezuela (*6*).

During January–mid-November 2001, a total of 423 confirmed measles cases were reported in the Americas, the lowest number of cases for the first 46 weeks of any year since implementation of the eradication program in 1996 and a 65% decrease compared with the 1,202 cases reported during the same period in 2000 (Figure 2). The number of cases reported annually has decreased substantially since the resurgence that occurred in Argentina and Brazil during 1997 (*7*). In 1998, a total of 14,332 confirmed cases were reported from 17 (41%) of the 41 PAHO-reporting countries. In 1999, a total of 3,209 confirmed cases were reported from 11 countries, 78% fewer cases than in 1998 and 94% fewer than in 1997 (*7,8*). The 1,754 cases reported during 2000 was the lowest number since the goal to interrupt measles transmission was set in 1994 (Figure 1) (*7*).

FIGURE 2. Number of measles cases, by week and month — Region of the Americas, January–November 2001*



* As of November 17.

Measles Transmission — Continued

During 1999–2000, a total of 528 confirmed measles cases were reported in the Dominican Republic. During January–mid-November 2001, a total of 113 (27%) of the 423 confirmed cases in the region were reported from 18 provinces. The highest attack rates occurred among children aged <5 years (range: from two cases per 100,000 children aged 1–4 years to 18 cases per 100,000 children aged 6–11 months), children aged 5–9 years (one case per 100,000), and adults aged 20–29 years (two cases per 100,000). As of November 17, 2001, a total of 1,097 suspected cases of measles have been investigated; the last patient with a confirmed case of illness had symptom onset during May 2001.

In Haiti, no confirmed cases were reported during 1998–1999. In 2000, an outbreak probably caused by measles imported from the Dominican Republic began in Artibonite; 992 (57%) of 1,754 confirmed cases in the region were reported. From January 2000 to April 2001, fixed-post vaccination campaigns for all vaccines were conducted nationwide; coverage ranged from 45% to 65%. A house-to-house vaccination campaign was conducted in the most affected neighborhood of the country, Delmas, Port au Prince, interrupting transmission in that municipality. During January 1–mid-November 2001, Haiti reported 158 (37%) of the 423 confirmed cases in the region; 49% of the cases occurred among children aged <5 years. A nationwide house-to-house poliomyelitis and measles vaccination campaign began in September 2001. Active case finding is under way, including house-to-house surveillance in all municipalities and a $100 reward for identifying laboratory-confirmed cases. No confirmed measles cases have been reported since the end of September 2001 (*9*).

In Venezuela during 2000, an outbreak of 22 confirmed cases among preschool and school-aged children occurred in Zulia, the most populous state, which borders Colombia. During January–June 2001, eight cases were classified as clinically confirmed, and during August–mid-November, 30 confirmed cases linked to an importation from Europe were confirmed (Figure 2). Of these 30 cases, 19 occurred in two municipalities in Falcon and 11 occurred in two municipalities in Zulia. Seventeen (57%) occurred among children aged <5 years, 12 (40%) among persons aged 22–45 years, and one among a child aged 8 years. Among children aged <5 years, two (12%) had received measles vaccine.

Following the recommendations of a PAHO-sponsored evaluation of Venezuela's National Immunization Program, the government is implementing a nationwide, house-to-house, follow-up measles and rubella vaccination campaign among children aged 1–4 years. The campaign started in November 2001 and will end in January 2002. In the campaign's first week, 878,000 children (39% of the target population of approximately 2.3 million) were vaccinated.

Reported by: H Izurieta, M Brana, V Dietz, L Venczel, P Carrasco, G Tambini, C Castillo-Solorzano, M Landaverde, CA de Quadros, Div of Vaccines and Immunizations, Pan American Health Organization, Washington, DC. C Pedreira, Pan American Health Organization, Santo Domingo; Z Garib, Ministry of Health, Dominican Republic. O Barrezueta, Pan American Health Organization; R Russo, G García, Ministry of Health, Caracas, Venezuela. F Laender, J Dobbins, J André, Pan American Health Organization; P Delormo, Ministry of Health, Port au Prince, Haiti. Caribbean Epidemiology Center, Trinidad and Tobago. Respiratory and Enteric Viruses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Global Measles Br, Global Immunization Div, National Immunization Program, CDC.

Editorial Note: The World Health Organization (WHO) has estimated that 777,000 children died as a result of measles during 2000. During 1997–1998, approximately 100 measles-related deaths were reported in Argentina and Brazil, most among unvaccinated infants and preschool-aged children. Vaccinating poor children against measles

Measles Transmission — Continued

substantially improves their long-term chances for survival (*10*). During 1990–2000, implementation of national vaccination and surveillance programs reduced measles incidence by 99% (*5*). Haiti and Venezuela are the last countries in the Americas where measles is endemic.

Surveillance data and results of molecular testing by PAHO's measles laboratory network demonstrate that measles can be imported to measles-free countries from countries where measles is endemic; therefore, all countries in the region must continue to implement vaccination and surveillance strategies. All countries in the Americas must maintain the highest possible population immunity (i.e., $\geq$95% among infants and children) and must strengthen surveillance to detect importations. In addition, countries must target vaccination efforts to susceptible adolescents and young adults who are at risk for exposure to measles.

In all countries of the Americas, the elimination of measles will require improving technical and managerial capabilities such as maintaining the cold chain and the local capacity to plan and conduct vaccination campaigns on a regular basis (once every 3–5 years). In countries that report adequate routine coverage, local data need to be verified to identify areas where coverage persists at low levels. Even so, ongoing transmission of measles probably would be detected in the Americas as a result of intense surveillance and active case finding at health-care centers in high-risk communities. PAHO is implementing standard supervisory instruments for monitoring vaccination coverage, investigating measles outbreaks, and validating routine surveillance. In addition, experience in the Americas has demonstrated that house-to-house vaccination is the most efficient method of vaccinating persons living in high-risk and hard-to-reach areas. During measles outbreaks in Haiti and Bolivia, door-to-door vaccination was essential in reaching target coverage levels.

The importations of measles virus in the Americas during 2001 underscore the importance of controlling measles in other regions of the world; therefore, PAHO has encouraged other WHO regions to accelerate their measles control programs. In March 2001, WHO and United Nations Children's Fund (UNICEF) announced a joint initiative to decrease by 50% the number of global measles deaths by 2005. This is an important step toward a concerted effort to accelerate global measles control.

References

1. Pan American Health Organization. Elimination of measles in the Americas. XXIV Meeting of the Pan American Sanitary Conference, Washington, DC, 1995.
2. Pan American Health Organization, Division of Vaccines and Immunization. Good surveillance is key to measles eradication. EPI Newsletter 1999;21:3–4.
3. Pan American Health Organization, Division of Vaccines and Immunization. USA interrupts measles transmission. EPI Newsletter 1998;20:1–2.
4. Pan American Health Organization, Division of Vaccines and Immunization. Measles outbreak in an isolated community in Bolivia. EPI Newsletter 2000;22:1–3.
5. de Quadros CA, Olivé JM, Hersh BS, et al. Measles elimination in the Americas—evolving strategies. JAMA 1996;275:224–9.
6. Pan American Health Organization, Division of Vaccines and Immunization. Final report: conclusions and recommendations. Washington, DC: Pan American Health Organization, 14th Meeting of the Technical Advisory Group Meeting on Vaccine-Preventable Diseases, Foz do Iguacu, Brazil 2000; document PAHO/HVP/2000-000098.
7. Pan American Health Organization. Progress toward interrupting indigenous measles transmission—Region of the Americas, January 1999–September 2000. MMWR 2000;49:986–90.

Measles Transmission — Continued

8. Hersh BS, Tambini G, Nogueira AC, Carrasco P, de Quadros CA. Review of regional measles surveillance data in the Americas, 1996–1999. Lancet 2000;355:1943–8.
9. Pan American Health Organization, Division of Vaccines and Immunization. Haiti begins all out effort to halt measles and OPV-derived polio outbreaks. EPI Newsletter 2001;22:2.
10. Koening AM, Bishai D, Khan MA. Health interventions and health equity: the example of measles vaccination in Bangladesh. Population and Development Review 2001;27:283–302.

Rubella Outbreak — Arkansas, 1999

Rubella is a viral disease that usually presents as a mild febrile rash illness in adults and children; however, 20%–50% of infected persons are asymptomatic. Rubella can have severe adverse effects on the fetuses of pregnant women who contract the disease during the first trimester of pregnancy, causing a wide range of congenital defects known as congenital rubella syndrome (CRS). The primary objective of the rubella vaccination program is to prevent intrauterine rubella infection. The primary strategies for rubella control in the United States are universal childhood vaccination, prenatal screening of pregnant women for rubella immunity, and vaccinating rubella-susceptible women postpartum. After the licensure of rubella vaccine in 1969, the incidence of rubella and CRS decreased 99% by 1997 (*1*). However, outbreaks continue to occur (*2,3*). During September 7–October 26, 1999, a total of 12 cases of rubella were confirmed in three Arkansas counties. This report describes this outbreak, which prompted reimplementation of routine rubella control and prevention measures. These included prenatal screening for rubella immunity and postnatal vaccination of rubella-susceptible women and the initiation of prevention and control activities in foreign-born populations that are less likely to be vaccinated.

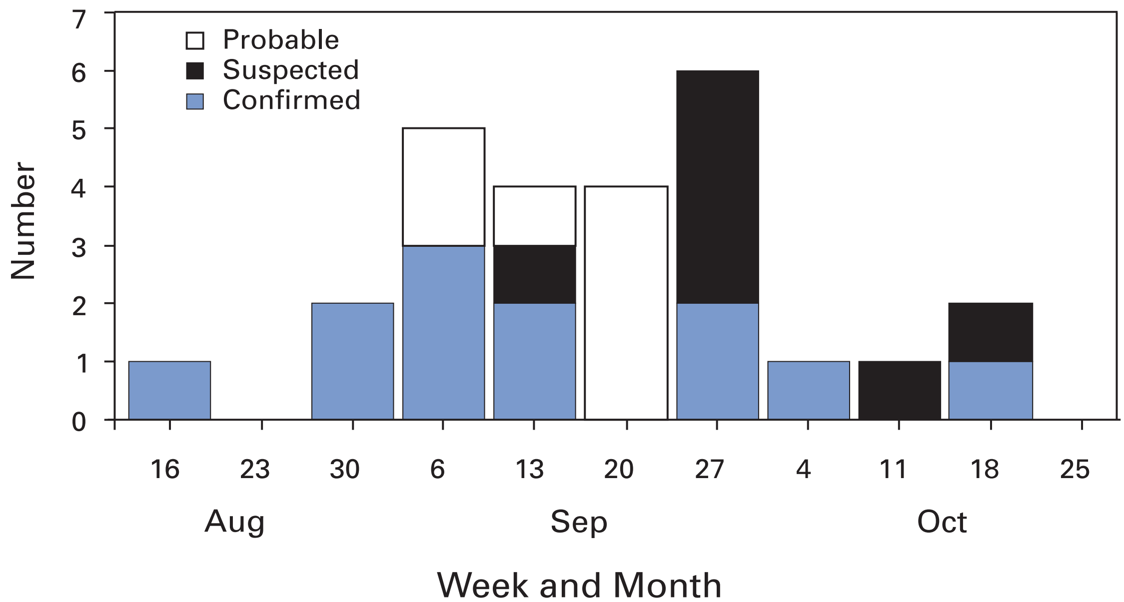
On September 7, a pregnant woman aged 23 years presented to a public health clinic in Fort Smith, Sebastian County, Arkansas, with rash and fever. The woman was from Mexico and had lived in Arkansas for 1 year before onset of illness. She later delivered a stillborn infant with pathologic findings compatible with intrauterine rubella infection. The index patient was a household contact of a Mexican aged 20 years who also was confirmed as infected with rubella by EIA testing. Both patients worked in a poultry processing plant in Fort Smith.

Outbreak investigators interviewed household and workplace contacts, suspected patients, and potentially exposed pregnant women and tested them for rubella IgG and IgM antibodies. An additional 10 cases were confirmed by laboratory testing (Figure 1) in this and two other counties. A definitive laboratory diagnosis or epidemiologic link could not be established for an additional 14 patients (seven meeting the case definition for suspected and seven for probable rubella). Among the 12 confirmed cases, the median age was 23 years (range: 18–34 years); 10 (83%) were Hispanic, nine (75%) were foreign-born, and six (50%) were women. All six female patients were pregnant, and one became infected during the first trimester of pregnancy. Ten (83%) patients worked in poultry processing plants; the index patient and seven others worked at the same plant in Fort Smith. Nine of these 10 patients were Hispanic and were foreign-born (Mexico and El Salvador).

Screening of pregnant women for rubella immunity was not part of routine prenatal care in Arkansas' public health clinics when this outbreak occurred. Because the index patient and other potential patients exposed persons in the clinic waiting room, and

Rubella Outbreak — Continued

FIGURE 1. Number of probable, suspected, and confirmed rubella cases*, by week and month of onset — Arkansas, 1999



* Suspected=Any generalized rash illness with acute onset in persons residing in the affected counties; Probable=Meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case; Confirmed=Laboratory confirmed or meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case.

because the proportion of rubella-susceptible pregnant women attending the clinic was unknown, a serosusceptibility survey was conducted at the clinic during September 23–October 29. A questionnaire was administered to and serum specimens were taken from 155 women consecutively attending the clinic and tested for rubella IgG and IgM. Of the 155 women tested, 79 (51%) were Hispanic, 64 (41%) were white, five were black (3%), three (2%) were Asian, and four (3%) were of unknown race/ethnicity. Seventy-three (47%) women were foreign-born; 72 (99%) were born in Central America and Mexico. The median age was 23 years (range: 15–43 years). Of the 155 women, 46 (32%) reported a history of rubella vaccination, 25 (17%) had not been vaccinated, 74 (51%) did not know their rubella vaccination status, and no data were available for the remaining 10 (6%). In comparison with the relatively low number of women with a self-reported history of rubella vaccination, 134 (86%) women had positive test results for rubella IgG, 14 (9%) had negative test results, and seven (5%) had equivocal or missing test results. No association was found between IgG-positivity and nationality or history of vaccination. Of the 21 women who had equivocal or negative results, 11 (52%) reported a previous delivery in the United States, and 19 (90%) missed at least one opportunity for rubella vaccination.

Reported by: P Dozier, J Bates, P Wiggins, J Wilhelm, Health Unit, Fort Smith; H Mabry, Northwest Arkansas Health Region; C Beets, J Burnett, M Foreman, L Gladden, L Himstedt, B Ledford, R Nugent, MD, K Sayyed, S Snow, MD, A Zoldessy, Arkansas Dept of Health. Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Rubella/Mumps Activity, Div of Epidemiology and Surveillance, National Immunization Program; and an EIS Officer, CDC.

Rubella Outbreak — Continued

Editorial Note: The findings in this report highlight the absence of routine, recommended prevention and control efforts in the state and the emergence of Hispanic, foreign-born persons as the main reservoirs of rubella virus in the United States. Prenatal screening followed by postpartum vaccination against rubella is essential for the control and elimination of CRS. Although recommended by the American College of Obstetricians and Gynecologists and the Advisory Committee on Immunization Practices (*4*), prenatal screening for rubella was discontinued in Arkansas public health clinics during the early 1980s because of fiscal constraints. In the absence of routine prenatal screening for rubella antibodies, the immune status of pregnant women potentially exposed to rubella virus was unknown. In the United States, prenatal screening and postpartum vaccination might prevent an estimated 50% of all CRS cases (*5*).

Based on supplementary data reported through the national notifiable diseases surveillance system in the United States, rubella primarily affects foreign-born Hispanic adults. Among rubella patients with known ethnicity in the United States, the proportion of Hispanics increased from 19% in 1992 to 79% in 1998, compared with 83% of patients in this outbreak. In the affected plant in Fort Smith, a large proportion of the workforce was Hispanic, and many of these were born and raised abroad. In Latin America, many countries have only recently introduced rubella into their routine childhood vaccination programs. For immigrants entering the United States, vaccination efforts focus on preschool-aged children and students; adults are not routinely screened or vaccinated. To eliminate rubella and CRS in the United States, further control efforts are needed to identify and vaccinate clusters of rubella-susceptible adults and to ensure nationwide prenatal rubella screening and postpartum vaccination of rubella-susceptible women.

As a result of this outbreak, the Arkansas Department of Health (ADH), in collaboration with employers, implemented additional control efforts that focused on workplace vaccination. ADH implemented a measles-mumps-rubella (MMR) vaccine screening policy at a local employment agency that supplied temporary help for the poultry processing companies. Potential employees were required to show proof of a previous MMR vaccination or receive MMR vaccine before employment. In addition, ADH recommended that employers of large numbers of foreign-born persons provide vaccine at the plant site and offered clinics to any industry that employed large numbers of foreign-born persons in Arkansas.

ADH has reimplemented routine screening for rubella immunity in all maternity and family planning clinics. Susceptible ADH maternity patients are identified routinely and offered MMR vaccine postpartum, and family planning patients are offered MMR vaccine immediately with appropriate counseling. These measures have resulted in substantial increases in rubella seropositivity rates for pregnant women in ADH clinics. Control efforts such as these in conjunction with proven routine measures are necessary to eliminate indigenous rubella and CRS in the United States.

References

1. CDC. Rubella and congenital rubella syndrome—United States, 1994–1997. MMWR 1997;46:350–4.
2. Danovaro-Holliday MC, LeBaron CW, Allensworth C, et al. A large rubella outbreak with spread from the workplace to the community. JAMA 2000;284:2733–9.
3. CDC. Rubella among Hispanic adults—Kansas 1998, and Nebraska 1999. MMWR 2000;49:225–8.
4. CDC. Measles, mumps, and rubella—vaccine use and strategies for elimination of measles, rubella, congenital rubella syndrome and control of mumps: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1998;47(no. RR-8).
5. Schluter WW, Reef SE, Redd SC, Dykewicz CA. Changing epidemiology of congenital rubella syndrome in the United States. J Infect Dis 1998;178:636–41.

Notice to Readers

Updated Recommendations on the Use of Pneumococcal Conjugate Vaccine in a Setting of Vaccine Shortage — Advisory Committee on Immunization Practices

In September 2000, CDC published an interim vaccination schedule recommended by the Advisory Committee on Immunization Practices (ACIP) to be used during a pneumococcal conjugate vaccine shortage that was anticipated to be brief (*1,2*). Because the duration of the shortage has been longer and the severity has been greater than anticipated, ACIP has revised these recommendations to health-care providers who had been advised to conserve vaccine by decreasing the number of doses administered to healthy infants rather than to leave some infants unvaccinated. For infants who receive their first dose before age 6 months, vaccination with a maximum of 3 doses is recommended; the fourth dose should be deferred. All health-care providers should reduce the number of vaccine doses used and ordered, regardless of their current supply, so that vaccine is more widely available until supplies are adequate.

Because of greater-than-expected demand, vaccine has been back ordered for the public sector throughout most of 2001. In August, the situation worsened when facility and product testing-related limitations at the manufacturer's production sites halted distribution for several weeks. Under a full vaccination schedule, approximately 1.5 million doses are needed per month; the manufacturer estimates that 90% of the doses are used for the 4-dose infant vaccination series, and 10% are used for catch-up vaccination. During September, approximately 700,000 doses were distributed (47% of the 4-dose infant schedule), and in October, approximately 600,000 doses were distributed (40%). The manufacturer anticipates the distribution of approximately 1.2 million doses per month during November 2001–March 2002 (86%) and approximately 2.0 million doses per month during April 2002–mid-2002 (142%).

Until adequate supplies are available, ACIP recommends the following:

1. Vaccine should be administered to high-risk children aged <5 years as recommended by ACIP in October 2000 (*1*), including children with sickle cell disease and other hemoglobinopathies; anatomic asplenia; chronic diseases (e.g., chronic cardiac and pulmonary disease, and diabetes); cerebrospinal fluid leak; human immunodeficiency virus infection and other immunocompromising conditions; immunosuppressive chemotherapy or long-term systemic corticosteroid use, and children who have undergone solid organ transplantation.
2. Healthy infants and children aged <24 months should receive a decreased number of pneumococcal conjugate vaccine doses on the basis of the age at which vaccination is initiated and the estimated amount of vaccine available to the health-care provider's practice (Table 1). On the basis of birth, cohort size and recent experience with vaccine supply, if health-care providers estimate a shortfall of <25% of the 4-dose infant schedule, a moderate shortage schedule is recommended. If estimates suggest a greater shortfall, the severe shortage schedule is recommended. If shortages are estimated to be more severe (>50%), health-care providers should set infant vaccination priorities based on the assessment of risk, deferring infants at lowest risk. Demographic risk factors for invasive infections include being black or American Indian (*1*); exposure risk factors include not breastfeeding and attendance at out-of-home child care (*3*).

Notices to Readers — Continued

TABLE 1. Updated recommendations for pneumococcal conjugate vaccine use among healthy children during moderate and severe shortages — Advisory Committee on Immunization Practices, 2001

Age at first vaccination	No shortage*	Moderate shortage	Severe shortage
<6 months	2, 4, 6, and 12–15 months	2, 4, and 6 months (defer 4th dose)	2 doses at 2–month interval in 1st 6 months of life (defer 3rd and 4th doses)
7–11 months	2 doses at 2–month interval; 12–15 month dose	2 doses at 2–month interval; 12–15 month dose	2 doses at 2–month interval (defer 3rd dose)
12–23 months	2 doses at 2–month interval	2 doses at 2–month interval	1 dose (defer 2nd dose)
>24 months	1 dose should be considered	No vaccination	No vaccination
Reduction in vaccine doses used†		21%	46%

* The vaccine schedule for no shortage is included as a reference. Providers should not use the no shortage schedule regardless of their vaccine supply until the national shortage is resolved.

† Assumes that approximately 85% of vaccine is administered to healthy infants beginning at age <7 months; approximately 5% is administered to high-risk infants beginning at age <7 months; and approximately 10% is administered to healthy children beginning at age 7 to 24 months. Actual vaccine savings will depend on a provider's vaccine use.

Limited data support a 2-dose schedule among infants; however, this regimen is preferable to vaccinating some children with 3 doses and not vaccinating others. Efficacy data from a randomized controlled trial prelicensure suggest that 1 or 2 doses of pneumococcal conjugate vaccine are protective during the 2-month interval before the next dose with a point estimate of 86% efficacy but a 95% confidence interval that includes zero (*4*). Immunogenicity data indicate increases in antibody titer following 2 doses for all vaccine serotypes except 6B (*5*). For all serotypes, 2 doses of conjugate vaccine probably increase antibody avidity and induce immunologic memory that is boosted by subsequent antigenic exposure. Acceptable 2-dose regimens include vaccination at ages 2 and 4 months, 2 and 6 months, or 4 and 6 months. The major advantage of regimens that begin at age 2 months is earlier provision of protection. Immunogenicity may be improved by increasing the interval between doses and vaccinating at ages 2 and 6 months or by vaccinating at ages 4 and 6 months. "Carrier priming" has been documented with the CRM_{197} *Haemophilus influenzae* type b conjugate vaccine (*6*), but the impact has not been evaluated for pneumococcal conjugate vaccine. Although immunogenicity would be greater if pneumococcal conjugate vaccination were deferred until after age 6 months (e.g., ages 7 and 9 months), this regimen would leave younger infants unprotected and would require additional vaccination visits.

3. Health-care providers should maintain a list of children for whom conjugate vaccine has been deferred so that it can be administered when the supply allows. The highest priority for vaccination among children who have been deferred is infants vaccinated with 2 doses. Infants who have received 3 doses and are eligible for a fourth dose would be a second priority group.

Notices to Readers — Continued

4. Pneumococcal polysaccharide vaccine is not licensed or recommended for children aged <2 years. Although a study indicated that administration of this vaccine at age 15–18 months may substantially boost antibody levels among children primed with 3 doses of conjugate vaccine (University of Chicago, unpublished data, 1995), this study did not use the licensed conjugate preparation. ACIP recommends additional study to evaluate the immune response to a polysaccharide vaccine booster dose among children aged 12–15 months.

Because data are limited on the long-term efficacy of a 3-dose or 2-dose vaccine regimen for young infants, health-care providers are encouraged to report invasive pneumococcal disease following pneumococcal conjugate vaccine to CDC through state health departments. If pneumococcal isolates are available from vaccinated children, CDC can perform serotyping to determine whether it is a type included in the vaccine. Additional information about this study is available at http://www.cdc.gov/nip/home-hcp.htm; other information is available at CDC's Respiratory Diseases Branch, telephone 404-639-2215; fax 404-639-3970.

References

1. CDC. Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices. MMWR 2000; 49(no. RR-9).
2. CDC. Decreased availability of pneumococcal conjugate vaccine. MMWR 2001;50:783–4.
3. Levine OS, Farley M, Harrison LH, Lefkowitz L, McGeer A, Schwartz B. Risk factors for invasive pneumococcal disease in children: a population-based case-control study in North America. Pediatr 1999;103:E28.
4. Black S, Shinefeld H, Fireman B, et al. Efficacy, safety, and immunogenicity of heptavalent pneumococcal conjugate vaccine in children. Pediatr Infect Dis J 2000;19:187–95.
5. Rennels MB, Edwards KM, Keyserling HL, et al. Safety and immunogenicity of heptavalent pneumococcal vaccine conjugated to CRM_{197} in United States infants. Pediatrics 1998;104:604–11.
6. Granoff DM, Rathore MH, Holmes SJ, et al. Effect of immunity to the carrier protein on antibody responses to *Haemophilus influenzae* type b conjugate vaccines. Vaccine 1993;11(Suppl 1):S46–S51.

Notice to Readers

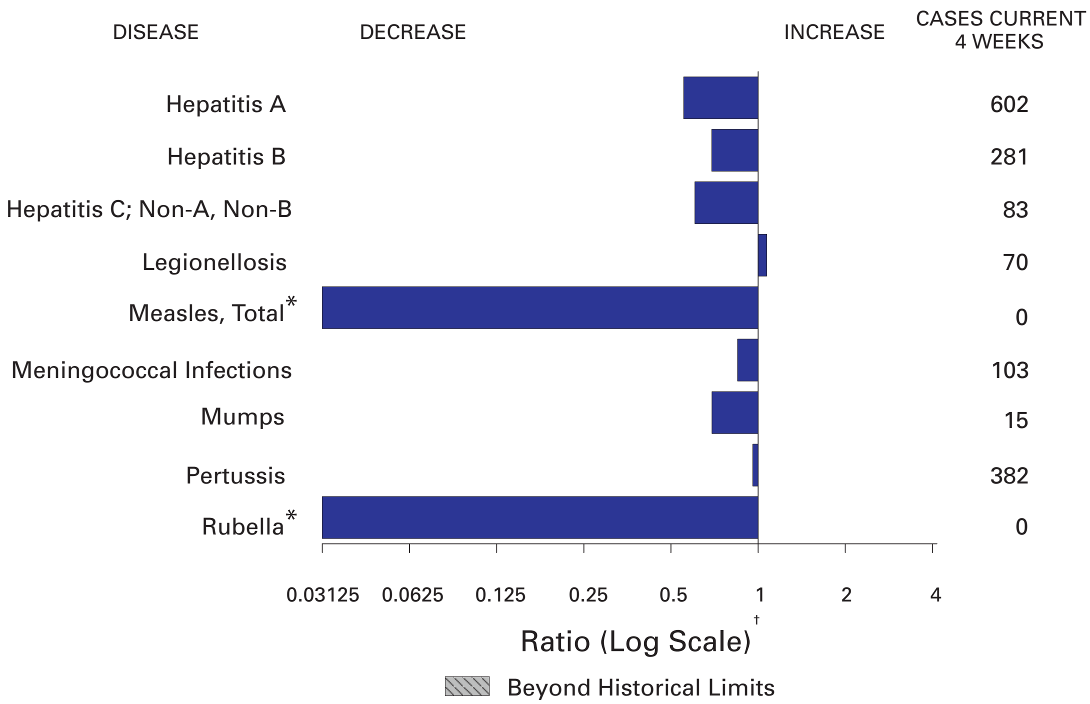
Additional Options for Preventive Treatment for Persons Exposed to Inhalational Anthrax

Many persons who were exposed to inhalational anthrax in the recent bioterrorism-related anthrax attacks have or are concluding their 60-day course of antimicrobial prophylaxis. Some persons, especially those who were exposed to high levels of anthrax spores, might want to take additional precautions. The U.S. Department of Health and Human Services (DHHS) is providing two additional options beyond the 60-day antimicrobial prophylaxis course: an extended 40-day course of antimicrobial prophylaxis and investigational postexposure treatment with anthrax vaccine.

The three preventive options for persons with risks for inhalational anthrax are 1) 60 days of antimicrobial prophylaxis, accompanied by monitoring for illness; 2) 40 additional days of antimicrobial prophylaxis (intended to provide protection against the theoretical

(Continued on page 1151)

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending December 15, 2001, with historical data



* No measles or rubella cases were reported for the current 4-week period yielding a ratio for week 50 of zero (0).

† Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending December 15, 2001 (50th Week)*

	Cum. 2001		Cum. 2001
Anthrax	15	Poliomyelitis, paralytic	-
Brucellosis†	90	Psittacosis†	26
Cholera	4	Q fever†	22
Cyclosporiasis†	124	Rabies, human	1
Diphtheria	2	Rocky Mountain spotted fever (RMSF)	591
Ehrlichiosis: human granulocytic (HGE)†	212	Rubella, congenital syndrome	2
human monocytic (HME)†	90	Streptococcal disease, invasive, group A	3,537
Encephalitis: California serogroup viral†	102	Streptococcal toxic-shock syndrome†	52
eastern equine†	8	Syphilis, congenital¶	240
St. Louis†	2	Tetanus	26
western equine†	-	Toxic-shock syndrome	120
Hansen disease (leprosy)†	86	Trichinosis	24
Hantavirus pulmonary syndrome†	6	Tularemia†	102
Hemolytic uremic syndrome, postdiarrheal†	156	Typhoid fever	291
HIV infection, pediatric†§	200	Yellow fever	-
Plague	2		

-: No reported cases.
*Incidence data for reporting year 2001 are provisional and cumulative (year-to-date).
† Not notifiable in all states.
§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP). Last updated November 27, 2001.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending December 15, 2001, and December 16, 2000 (50th Week)*

							Escherichia coli O157:H7[†]			
	AIDS		Chlamydia[§]		Cryptosporidiosis		NETSS		PHLIS	
Reporting Area	Cum. 2001[¶]	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	37,411	35,685	691,055	667,882	3,397	2,902	3,021	4,391	2,237	3,581
NEW ENGLAND	1,403	1,863	22,477	22,658	125	135	224	374	228	379
Maine	44	38	1,299	1,406	18	20	27	31	27	28
N.H.	37	30	1,306	1,077	16	23	35	38	31	38
Vt.	15	37	622	508	33	27	14	36	10	37
Mass.	704	1,128	9,675	9,738	50	35	115	165	112	174
R.I.	95	91	2,831	2,560	8	4	17	20	11	18
Conn.	508	539	6,744	7,369	-	26	16	84	37	84
MID. ATLANTIC	9,346	7,605	81,232	63,470	283	376	213	434	181	342
Upstate N.Y.	945	676	14,755	3,488	110	127	157	294	136	79
N.Y. City	5,253	3,919	28,459	25,325	105	167	14	23	11	18
N.J.	1,607	1,554	12,445	10,038	14	19	42	117	34	117
Pa.	1,541	1,456	25,573	24,619	54	63	N	N	-	128
E.N. CENTRAL	2,812	3,411	113,562	115,513	1,462	947	783	1,067	505	746
Ohio	538	533	23,915	29,754	181	258	228	266	155	224
Ind.	343	347	14,212	13,025	79	58	84	120	43	88
Ill.	1,255	1,692	31,717	32,001	420	122	159	193	135	156
Mich.	500	648	29,121	24,969	178	94	98	140	82	104
Wis.	176	191	14,597	15,764	604	415	214	348	90	174
W.N. CENTRAL	808	809	34,743	37,949	513	351	555	659	457	623
Minn.	133	160	6,851	7,868	180	123	268	202	212	231
Iowa	85	83	4,611	5,120	81	76	79	180	62	148
Mo.	405	367	12,574	12,960	45	31	61	108	94	97
N. Dak.	2	3	874	858	13	16	18	21	34	21
S. Dak.	23	7	1,752	1,770	8	15	43	56	41	59
Nebr.	68	68	2,220	3,522	182	81	60	62	-	49
Kans.	92	121	5,861	5,851	4	9	26	30	14	18
S. ATLANTIC	11,517	10,027	130,597	125,517	329	464	238	364	149	287
Del.	231	198	2,511	2,760	6	6	4	3	7	1
Md.	1,698	1,192	11,716	13,595	39	13	28	34	1	2
D.C.	782	784	3,048	3,052	12	18	-	1	U	U
Va.	911	745	17,367	15,047	26	19	50	75	42	67
W. Va.	95	57	2,251	2,075	2	3	10	15	8	13
N.C.	845	644	19,799	20,793	30	28	57	90	43	70
S.C.	645	737	10,506	9,489	7	-	22	21	11	16
Ga.	1,528	1,118	28,739	26,893	131	170	33	40	15	39
Fla.	4,782	4,552	34,660	31,813	76	207	34	85	22	79
E.S. CENTRAL	1,671	1,781	46,380	49,395	48	50	129	150	112	116
Ky.	315	185	8,125	7,802	4	7	58	40	49	32
Tenn.	540	748	14,026	14,449	14	11	43	61	48	54
Ala.	415	455	13,554	14,879	17	16	18	10	6	9
Miss.	401	393	10,675	12,265	13	16	10	39	9	21
W.S. CENTRAL	3,856	3,666	100,481	99,667	120	160	113	223	91	281
Ark.	189	170	6,695	6,140	8	15	14	56	-	38
La.	806	632	16,602	17,286	7	13	4	15	26	53
Okla.	214	322	10,074	9,050	15	17	34	19	28	17
Tex.	2,647	2,542	67,110	67,191	90	115	61	133	37	173
MOUNTAIN	1,288	1,324	40,288	36,389	235	172	288	422	171	305
Mont.	15	14	1,849	1,386	37	10	20	31	-	-
Idaho	19	20	1,882	1,814	22	23	75	73	39	41
Wyo.	4	9	801	775	7	5	7	21	1	11
Colo.	267	326	9,752	9,153	42	71	88	156	54	110
N. Mex.	137	140	5,767	5,115	29	21	16	22	11	18
Ariz.	502	410	13,886	12,094	9	10	31	56	23	44
Utah	110	133	1,870	2,182	83	28	32	49	42	71
Nev.	234	272	4,481	3,870	6	4	19	14	1	10
PACIFIC	4,710	5,199	121,295	117,324	282	247	478	698	343	502
Wash.	483	463	13,096	12,570	7	U	130	222	62	206
Oreg.	213	170	7,017	6,733	51	20	82	134	61	114
Calif.	3,898	4,444	94,947	92,143	220	227	243	296	211	165
Alaska	18	23	2,539	2,426	1	-	4	32	1	6
Hawaii	98	99	3,696	3,452	3	-	19	14	8	11
Guam	12	13	-	484	-	-	N	N	U	U
P.R.	1,113	1,242	2,404	U	-	-	1	7	U	U
V.I.	11	32	53	-	-	-	-	-	U	U
Amer. Samoa	1	-	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	129	U	-	U	-	U	U	U

N: Not notifiable. U: Unavailable. -: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting year 2001 are provisional and cumulative (year-to-date). Incidence data for reporting year 2000 are finalized and cumulative (year-to-date).

† Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

§ Chlamydia refers to genital infections caused by *C. trachomatis*.

¶ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last updated November 27, 2001.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending December 15, 2001, and December 16, 2000 (50th Week)*

	Gonorrhea		Hepatitis C; Non-A, Non-B		Legionellosis		Listeriosis	Lyme Disease	
Reporting Area	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	317,798	341,965	3,048	3,008	1,030	1,041	506	12,106	16,596
NEW ENGLAND	6,462	6,362	32	32	73	54	44	3,849	5,438
Maine	141	87	-	2	8	2	2	-	-
N.H.	176	106	-	-	12	3	4	111	63
Vt.	73	63	7	4	5	5	3	17	40
Mass.	3,041	2,674	25	20	21	17	26	826	1,155
R.I.	813	631	-	6	13	9	2	493	611
Conn.	2,218	2,801	-	-	14	18	7	2,402	3,569
MID. ATLANTIC	41,245	37,667	1,466	641	213	293	73	6,000	8,603
Upstate N.Y.	8,629	6,997	57	37	69	93	28	3,560	3,822
N.Y. City	12,182	11,232	-	-	38	47	16	10	177
N.J.	7,587	6,765	1,342	561	13	23	12	927	2,446
Pa.	12,847	12,673	67	43	93	130	17	1,503	2,158
E.N. CENTRAL	59,295	68,833	157	222	306	271	73	674	768
Ohio	13,391	18,378	9	12	147	110	16	110	60
Ind.	6,401	6,125	1	-	23	36	8	23	22
Ill.	17,677	20,016	13	21	19	33	16	22	35
Mich.	16,471	17,557	134	189	81	49	23	17	23
Wis.	5,355	6,757	-	-	36	43	10	502	628
W.N. CENTRAL	14,848	17,188	739	590	48	56	20	386	424
Minn.	2,214	3,069	12	7	9	7	3	318	322
Iowa	1,224	1,208	-	2	8	14	2	36	33
Mo.	7,763	8,494	708	568	22	25	10	26	45
N. Dak.	40	70	-	1	1	-	-	-	2
S. Dak.	279	268	-	-	3	2	-	-	-
Nebr.	713	1,416	8	4	4	4	1	4	5
Kans.	2,615	2,663	11	8	1	4	4	2	17
S. ATLANTIC	80,370	88,524	112	108	197	187	74	918	1,096
Del.	1,545	1,671	7	2	12	10	2	151	167
Md.	6,638	9,386	17	14	37	67	15	533	636
D.C.	2,727	2,590	-	3	8	6	-	16	11
Va.	10,437	9,869	-	3	28	33	13	116	146
W. Va.	699	628	9	16	N	N	5	13	34
N.C.	15,578	16,954	21	20	11	16	6	41	46
S.C.	6,943	8,101	6	3	13	6	5	5	17
Ga.	15,889	17,603	1	3	10	7	14	-	-
Fla.	19,914	21,722	51	44	78	42	14	43	39
E.S. CENTRAL	30,247	35,479	175	439	54	40	20	61	50
Ky.	3,268	3,411	9	36	11	20	5	22	13
Tenn.	9,386	11,476	62	99	28	12	8	29	28
Ala.	10,595	11,707	4	10	13	5	7	9	6
Miss.	6,998	8,885	100	294	2	3	-	1	3
W.S. CENTRAL	49,195	52,726	179	720	13	26	29	82	89
Ark.	4,162	3,601	4	9	-	-	1	1	5
La.	11,428	12,870	90	443	2	7	-	2	8
Okla.	4,587	4,082	4	10	3	5	2	-	1
Tex.	29,018	32,173	81	258	8	14	26	79	75
MOUNTAIN	9,676	10,178	57	79	58	43	38	13	13
Mont.	101	53	1	5	-	2	-	-	-
Idaho	72	89	2	3	3	5	1	5	3
Wyo.	77	51	8	2	1	-	2	1	3
Colo.	2,863	3,105	12	16	17	15	10	1	-
N. Mex.	969	1,130	12	16	3	1	7	1	-
Ariz.	3,788	4,022	9	20	23	7	9	2	-
Utah	142	231	3	1	7	12	2	1	3
Nev.	1,664	1,497	10	16	4	1	7	2	4
PACIFIC	26,460	25,008	131	177	68	71	135	123	115
Wash.	2,864	2,282	23	32	10	18	10	8	9
Oreg.	1,088	990	13	26	N	N	9	12	13
Calif.	21,533	20,921	95	117	54	52	110	101	91
Alaska	410	347	-	-	-	-	-	2	2
Hawaii	565	468	-	2	4	1	6	N	N
Guam	-	53	-	3	-	-	-	-	-
P.R.	578	499	1	1	2	1	-	N	N
V.I.	6	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	-	U	U
C.N.M.I.	14	U	-	U	-	U	-	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 are provisional and cumulative (year-to-date). Incidence data for reporting year 2000 are finalized and cumulative (year-to-date).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending December 15, 2001, and December 16, 2000 (50th Week)*

Reporting Area	Malaria		Rabies, Animal		Salmonellosis† NETSS		Salmonellosis† PHLIS	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	1,209	1,429	6,399	6,736	35,883	37,612	28,019	31,265
NEW ENGLAND	86	70	720	802	2,262	2,118	2,124	2,166
Maine	5	6	67	128	163	122	151	97
N.H.	2	1	21	21	158	140	155	144
Vt.	1	3	61	57	80	108	71	104
Mass.	38	32	268	271	1,289	1,209	1,116	1,228
R.I.	13	8	70	57	139	138	173	154
Conn.	27	20	233	268	433	401	458	439
MID. ATLANTIC	346	384	1,170	1,265	4,204	4,859	3,648	5,147
Upstate N.Y.	67	75	757	809	1,225	1,192	1,213	1,256
N.Y. City	201	225	35	18	1,054	1,167	1,357	1,258
N.J.	44	49	190	193	905	1,126	657	1,003
Pa.	34	35	188	245	1,020	1,374	421	1,630
E.N. CENTRAL	140	145	143	168	4,743	5,207	4,101	3,616
Ohio	26	21	52	52	1,320	1,506	1,165	1,431
Ind.	16	8	15	14	509	622	482	601
Ill.	35	66	24	22	1,294	1,459	1,169	281
Mich.	42	32	46	68	810	880	791	922
Wis.	21	18	6	12	810	740	494	381
W.N. CENTRAL	35	67	356	524	2,268	2,332	2,328	2,459
Minn.	6	27	46	89	651	528	665	659
Iowa	9	2	79	78	333	354	301	343
Mo.	13	20	40	50	628	698	940	845
N. Dak.	-	2	37	115	57	61	84	75
S. Dak.	-	1	56	94	146	98	118	102
Nebr.	2	8	4	2	153	223	-	139
Kans.	5	7	94	96	300	370	220	296
S. ATLANTIC	284	324	2,196	2,332	8,597	7,875	5,912	5,787
Del.	2	5	30	49	86	115	112	130
Md.	110	117	338	407	814	767	853	707
D.C.	13	16	-	-	81	63	U	U
Va.	49	50	478	554	1,269	981	1,041	913
W. Va.	1	4	137	113	139	165	140	148
N.C.	19	36	567	556	1,348	1,119	1,219	1,118
S.C.	7	2	114	155	866	739	723	564
Ga.	30	30	363	340	1,659	1,443	1,210	1,693
Fla.	53	64	169	158	2,335	2,483	614	514
E.S. CENTRAL	34	47	200	201	2,580	2,385	1,788	1,784
Ky.	12	18	27	21	359	376	230	262
Tenn.	12	12	105	103	635	658	788	798
Ala.	6	16	64	76	738	658	474	594
Miss.	4	1	4	1	848	693	296	130
W.S. CENTRAL	12	71	1,045	867	3,971	4,859	2,537	2,978
Ark.	3	3	20	20	887	711	92	573
La.	5	13	3	4	418	869	952	746
Okla.	3	9	60	57	474	382	375	298
Tex.	1	46	962	786	2,192	2,897	1,118	1,361
MOUNTAIN	62	51	231	269	2,143	2,695	1,801	2,436
Mont.	3	1	38	65	73	95	-	-
Idaho	3	4	28	9	137	128	95	114
Wyo.	-	-	20	56	55	71	52	59
Colo.	23	24	-	-	578	679	577	660
N. Mex.	3	-	14	21	275	233	235	205
Ariz.	17	9	115	99	641	754	627	744
Utah	4	6	15	10	215	476	192	473
Nev.	9	7	1	9	169	259	23	181
PACIFIC	210	270	338	308	5,115	5,282	3,780	4,892
Wash.	15	33	-	-	533	570	491	656
Oreg.	14	39	3	7	237	286	309	352
Calif.	170	188	298	270	3,936	4,140	2,622	3,613
Alaska	1	-	37	31	49	59	28	36
Hawaii	10	10	-	-	360	227	330	235
Guam	-	2	-	-	-	27	U	U
P.R.	5	5	90	78	556	680	U	U
V.I.	-	-	-	-	-	-	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	16	U	U	U

N: Not notifiable. U: Unavailable. -: No reported cases.

* Incidence data for reporting year 2001 are provisional and cumulative (year-to-date). Incidence data for reporting year 2000 are finalized and cumulative (year-to-date).

† Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending December 15, 2001, and December 16, 2000 (50th Week)*

	Shigellosis†				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS					
Reporting Area	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	17,533	21,679	7,747	12,375	5,644	5,786	11,888	13,947
NEW ENGLAND	268	398	276	377	66	82	393	420
Maine	6	10	3	11	1	1	3	21
N.H.	7	6	4	8	1	2	16	19
Vt.	7	4	6	-	3	-	4	4
Mass.	198	279	185	257	41	59	230	242
R.I.	23	33	26	34	9	4	39	31
Conn.	27	66	52	67	11	16	101	103
MID. ATLANTIC	1,199	2,714	724	1,685	483	269	2,218	2,206
Upstate N.Y.	470	764	113	212	25	12	341	316
N.Y. City	348	916	362	620	269	114	1,107	1,152
N.J.	185	497	184	428	140	67	486	531
Pa.	196	537	65	425	49	76	284	207
E.N. CENTRAL	4,226	4,046	1,837	1,276	983	1,174	1,315	1,422
Ohio	2,897	405	1,182	318	77	67	269	292
Ind.	220	1,504	50	152	150	343	106	137
Ill.	524	1,161	362	156	337	405	598	666
Mich.	299	653	216	594	397	314	262	243
Wis.	286	323	27	56	22	45	80	84
W.N. CENTRAL	1,930	2,411	1,267	2,002	83	63	432	510
Minn.	444	780	440	886	28	16	215	167
Iowa	363	529	290	344	4	11	34	36
Mo.	302	651	218	460	20	28	135	188
N. Dak.	21	51	35	49	-	-	3	5
S. Dak.	628	7	246	5	1	-	13	16
Nebr.	98	147	-	117	5	2	32	23
Kans.	74	246	38	141	25	6	-	75
S. ATLANTIC	2,596	2,886	841	1,139	1,887	1,935	2,535	2,784
Del.	17	24	14	22	12	8	15	14
Md.	153	195	91	113	246	300	226	243
D.C.	53	80	U	U	41	37	51	36
Va.	516	443	268	345	105	126	246	255
W. Va.	8	22	10	17	4	3	27	31
N.C.	352	385	170	258	426	469	387	390
S.C.	247	136	123	92	222	223	189	263
Ga.	406	256	130	187	366	374	441	601
Fla.	844	1,345	35	105	465	395	953	951
E.S. CENTRAL	1,550	1,166	608	565	631	847	777	883
Ky.	705	510	327	116	43	82	109	113
Tenn.	111	339	120	369	318	512	287	333
Ala.	208	98	130	73	137	120	256	296
Miss.	526	219	31	7	133	133	125	141
W.S. CENTRAL	2,360	3,436	1,146	1,139	737	798	798	2,031
Ark.	537	212	155	60	45	103	150	173
La.	145	288	166	194	168	204	-	257
Okla.	100	123	36	44	65	114	136	141
Tex.	1,578	2,813	789	841	459	377	512	1,460
MOUNTAIN	980	1,217	708	848	225	219	485	526
Mont.	8	8	-	-	-	-	14	17
Idaho	40	44	15	25	1	1	8	10
Wyo.	3	5	5	3	1	1	3	4
Colo.	243	261	258	216	22	10	113	81
N. Mex.	120	167	79	116	17	16	25	42
Ariz.	435	534	290	340	168	185	222	236
Utah	64	78	53	82	8	1	33	46
Nev.	67	120	8	66	8	5	67	90
PACIFIC	2,424	3,405	340	3,344	549	399	2,935	3,165
Wash.	209	445	167	407	50	65	224	244
Oreg.	92	164	111	109	13	11	104	102
Calif.	2,055	2,752	-	2,792	474	321	2,418	2,588
Alaska	7	7	6	3	-	-	50	102
Hawaii	61	37	56	33	12	2	139	129
Guam	-	45	U	U	-	3	-	51
P.R.	9	33	U	U	257	161	76	152
V.I.	-	-	U	U	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	8	U	U	U	13	U	32	U

N: Not notifiable. U: Unavailable. -: No reported cases.

* Incidence data for reporting year 2001 are provisional and cumulative (year-to-date). Incidence data for reporting year 2000 are finalized and cumulative (year-to-date).

† Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending December 15, 2001, and December 16, 2000 (50th Week)*

	H. influenzae, Invasive		Hepatitis (Viral), By Type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
Reporting Area	Cum. 2001§	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	2001	Cum. 2001	2001	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	1,308	1,246	10,066	12,561	6,237	6,824	-	52	-	43	95	79
NEW ENGLAND	92	108	656	383	94	111	-	4	-	1	5	6
Maine	2	2	11	21	5	5	-	-	-	-	-	-
N.H.	7	12	17	18	15	18	-	-	-	-	-	3
Vt.	4	10	16	10	4	6	-	1	-	-	1	3
Mass.	41	42	311	133	11	15	-	2	-	1	3	-
R.I.	7	4	72	25	28	23	-	-	-	-	-	-
Conn.	31	38	229	176	31	44	-	1	-	-	1	-
MID. ATLANTIC	189	223	1,000	1,467	977	1,118	-	5	-	11	16	23
Upstate N.Y.	76	97	267	244	129	131	-	1	-	4	5	10
N.Y. City	48	59	297	498	437	543	-	3	-	1	4	12
N.J.	43	40	232	284	169	177	-	-	-	1	1	-
Pa.	22	27	204	441	242	267	-	1	-	5	6	1
E.N. CENTRAL	222	176	1,176	1,634	855	714	-	-	-	10	10	8
Ohio	74	53	255	260	91	101	-	-	-	3	3	2
Ind.	46	30	100	114	47	46	-	-	-	4	4	-
Ill.	63	59	434	683	152	111	-	-	-	3	3	3
Mich.	13	11	318	483	565	415	-	-	-	-	-	3
Wis.	26	23	69	94	-	41	-	-	-	-	-	-
W.N. CENTRAL	67	78	400	638	211	289	-	4	-	1	5	3
Minn.	41	43	41	172	31	40	-	2	-	1	3	1
Iowa	-	-	35	65	20	32	-	-	-	-	-	-
Mo.	16	23	105	251	109	142	-	2	-	-	2	-
N. Dak.	7	4	3	4	2	2	-	-	-	-	-	-
S. Dak.	-	1	3	3	1	2	-	-	-	-	-	-
Nebr.	2	3	35	35	28	44	-	-	-	-	-	-
Kans.	1	4	178	108	20	27	-	-	-	-	-	2
S. ATLANTIC	370	273	2,439	1,435	1,458	1,254	-	4	-	1	5	4
Del.	-	-	15	15	11	14	-	-	-	-	-	-
Md.	89	77	302	203	138	123	-	2	-	1	3	-
D.C.	-	-	60	35	13	34	-	-	-	-	-	-
Va.	28	39	134	154	174	162	-	1	-	-	1	2
W. Va.	16	8	27	55	25	21	-	-	-	-	-	-
N.C.	46	23	236	149	208	246	-	-	-	-	-	-
S.C.	9	7	71	86	29	23	-	-	-	-	-	-
Ga.	101	68	960	288	452	222	-	1	-	-	1	-
Fla.	81	51	634	450	408	409	-	-	-	-	-	2
E.S. CENTRAL	75	52	388	387	417	465	-	2	-	-	2	-
Ky.	2	12	123	53	43	77	U	2	U	-	2	-
Tenn.	44	24	162	141	235	219	-	-	-	-	-	-
Ala.	27	14	73	51	85	63	-	-	-	-	-	-
Miss.	2	2	30	142	54	106	-	-	-	-	-	-
W.S. CENTRAL	52	63	1,310	2,353	668	1,060	-	-	-	1	1	1
Ark.	2	2	67	131	98	95	-	-	-	-	-	1
La.	6	16	61	102	46	151	-	-	-	-	-	-
Okla.	43	43	117	247	107	150	-	-	-	-	-	-
Tex.	1	2	1,065	1,873	417	664	-	-	-	1	1	-
MOUNTAIN	140	128	729	921	468	534	-	2	-	-	2	12
Mont.	-	1	12	7	3	7	-	-	-	-	-	-
Idaho	2	4	57	37	11	8	-	1	-	-	1	-
Wyo.	-	1	7	4	3	3	-	-	-	-	-	-
Colo.	38	32	88	219	102	104	-	-	-	-	-	2
N. Mex.	25	26	37	70	129	137	-	-	-	-	-	-
Ariz.	56	47	400	440	147	198	-	1	-	-	1	-
Utah	8	11	69	62	27	27	-	-	-	-	-	3
Nev.	11	6	59	82	46	50	-	-	-	-	-	7
PACIFIC	101	145	1,968	3,343	1,089	1,279	-	31	-	18	49	22
Wash.	7	8	152	279	140	109	-	13	-	2	15	3
Oreg.	20	32	77	168	113	118	-	4	-	-	4	-
Calif.	44	35	1,722	2,870	809	1,028	-	12	-	11	23	15
Alaska	6	45	14	13	9	12	-	-	-	-	-	1
Hawaii	24	25	3	13	18	12	-	2	-	5	7	3
Guam	-	1	-	1	-	10	U	-	U	-	-	-
P.R.	1	4	132	242	188	287	-	-	-	-	-	2
V.I.	-	-	-	-	-	-	U	-	U	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	35	U	U	-	U	-	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 are provisional and cumulative (year-to-date). Incidence data for reporting year 2000 are finalized and cumulative (year-to-date).

† For imported measles, cases include only those resulting from importation from other countries.

§ Of 268 cases among children aged <5 years, serotype was reported for 124, and of those, 21 were type b.

TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending December 15, 2001, and December 16, 2000 (50th Week)*

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000
UNITED STATES	2,146	2,096	-	216	308	130	4,788	6,900	-	19	165
NEW ENGLAND	110	118	-	-	4	12	454	1,863	-	-	12
Maine	6	8	-	-	-	-	21	45	-	-	-
N.H.	14	12	-	-	-	1	39	127	-	-	2
Vt.	6	3	-	-	-	11	57	248	-	-	-
Mass.	54	68	-	-	1	-	314	1,374	-	-	8
R.I.	6	9	-	-	1	-	6	24	-	-	1
Conn.	24	18	-	-	2	-	17	45	-	-	1
MID. ATLANTIC	207	249	-	23	27	3	280	685	-	5	9
Upstate N.Y.	62	75	-	3	11	3	139	338	-	1	1
N.Y. City	40	44	-	12	7	-	49	84	-	3	8
N.J.	49	53	-	4	3	-	22	36	-	1	-
Pa.	56	77	-	4	6	-	70	227	-	-	-
E.N. CENTRAL	322	381	-	20	23	14	712	808	-	2	1
Ohio	92	92	-	1	7	1	306	318	-	-	-
Ind.	41	46	-	3	2	11	91	120	-	-	-
Ill.	72	87	-	11	6	-	80	115	-	2	1
Mich.	69	113	-	5	6	2	137	123	-	-	-
Wis.	48	43	-	-	2	-	98	132	-	-	-
W.N. CENTRAL	161	149	-	16	18	14	400	591	-	3	2
Minn.	26	21	-	5	-	9	188	361	-	-	1
Iowa	31	34	-	1	7	2	64	57	-	1	-
Mo.	53	67	-	4	5	3	102	90	-	1	-
N. Dak.	6	2	-	-	1	-	5	7	-	-	-
S. Dak.	5	6	-	-	-	-	4	7	-	-	-
Nebr.	25	7	-	1	2	-	7	27	-	-	1
Kans.	15	12	-	5	3	-	30	42	-	1	-
S. ATLANTIC	357	286	-	39	46	15	266	508	-	6	112
Del.	5	1	-	-	-	-	-	9	-	-	1
Md.	41	27	-	7	9	6	43	130	-	-	-
D.C.	-	-	-	-	-	-	1	3	-	-	-
Va.	39	42	-	8	11	8	58	112	-	-	-
W. Va.	14	13	-	-	-	-	4	1	-	-	-
N.C.	62	36	-	5	7	1	73	110	-	-	82
S.C.	34	26	-	5	11	-	34	40	-	2	27
Ga.	48	46	-	7	2	-	27	40	-	1	-
Fla.	114	95	-	7	6	-	26	63	-	3	2
E.S. CENTRAL	131	132	-	9	6	-	157	114	-	-	6
Ky.	22	26	U	3	1	U	57	58	U	-	1
Tenn.	59	56	-	1	2	-	59	33	-	-	1
Ala.	34	35	-	-	3	-	37	19	-	-	4
Miss.	16	15	-	5	-	-	4	4	-	-	-
W.S. CENTRAL	337	224	-	14	34	15	524	361	-	2	8
Ark.	20	13	-	1	3	-	45	37	-	-	1
La.	65	44	-	2	5	-	3	21	-	-	1
Okla.	31	28	-	-	-	3	30	48	-	-	-
Tex.	221	139	-	11	26	12	446	255	-	2	6
MOUNTAIN	94	98	-	13	22	56	1,339	798	-	-	2
Mont.	4	6	-	1	1	-	37	35	-	-	-
Idaho	8	7	-	1	1	-	171	64	-	-	-
Wyo.	5	1	-	1	1	-	1	4	-	-	-
Colo.	35	32	-	3	1	23	320	467	-	-	1
N. Mex.	11	11	-	2	1	1	143	90	-	-	-
Ariz.	16	29	-	1	4	32	551	91	-	-	1
Utah	8	7	-	1	7	-	76	32	-	-	-
Nev.	7	5	-	3	6	-	40	15	-	-	-
PACIFIC	427	459	-	82	128	1	656	1,172	-	1	13
Wash.	64	61	-	2	10	1	166	412	-	-	7
Oreg.	43	68	N	N	N	-	51	106	-	-	-
Calif.	304	313	-	43	87	-	395	593	-	-	6
Alaska	3	9	-	1	8	-	11	21	-	-	-
Hawaii	13	8	-	36	23	-	33	40	-	1	-
Guam	-	-	U	-	16	U	-	4	U	-	1
P.R.	5	10	-	-	-	-	2	10	-	-	-
V.I.	-	-	U	-	-	U	-	-	U	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	U	-	U	U	-	U	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 are provisional and cumulative (year-to-date). Incidence data for reporting year 2000 are finalized and cumulative (year-to-date).

TABLE IV. Deaths in 122 U.S. cities,* week ending December 15, 2001 (50th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	561	381	115	41	11	13	64
Boston, Mass.	148	90	31	18	6	3	23
Bridgeport, Conn.	43	29	11	2	-	1	10
Cambridge, Mass.	19	18	1	-	-	-	1
Fall River, Mass.	U	U	U	U	U	U	U
Hartford, Conn.	43	28	10	3	1	1	1
Lowell, Mass.	26	23	2	-	-	1	2
Lynn, Mass.	17	15	1	1	-	-	3
New Bedford, Mass.	31	20	5	4	-	2	5
New Haven, Conn.	44	28	9	3	1	3	5
Providence, R.I.	69	45	16	4	2	2	2
Somerville, Mass.	2	2	-	-	-	-	-
Springfield, Mass.	38	27	9	1	1	-	3
Waterbury, Conn.	27	17	9	1	-	-	1
Worcester, Mass.	54	39	11	4	-	-	8
MID. ATLANTIC	2,268	1,538	481	170	43	33	108
Albany, N.Y.	42	31	6	1	2	2	5
Allentown, Pa.	18	15	3	-	-	-	1
Buffalo, N.Y.	75	49	19	3	1	3	7
Camden, N.J.	31	24	4	-	2	1	2
Elizabeth, N.J.	17	9	6	2	-	-	-
Erie, Pa.§	31	27	3	1	-	-	3
Jersey City, N.J.	64	43	14	6	-	1	-
New York City, N.Y.	1,288	814	308	120	30	15	48
Newark, N.J.	U	U	U	U	U	U	U
Paterson, N.J.	28	16	7	3	1	1	-
Philadelphia, Pa.	235	168	42	15	3	5	12
Pittsburgh, Pa.§	37	23	8	5	-	1	1
Reading, Pa.	18	17	1	-	-	-	2
Rochester, N.Y.	139	113	21	4	-	1	3
Schenectady, N.Y.	29	20	7	2	-	-	2
Scranton, Pa.§	42	34	7	1	-	-	-
Syracuse, N.Y.	125	98	17	5	3	2	19
Trenton, N.J.	35	25	6	2	1	1	2
Utica, N.Y.	14	12	2	-	-	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,597	1,116	305	106	35	35	116
Akron, Ohio	53	41	5	1	2	4	8
Canton, Ohio	38	26	8	2	-	2	7
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	61	48	8	3	1	1	8
Cleveland, Ohio	120	74	32	9	1	4	3
Columbus, Ohio	172	119	29	13	2	9	8
Dayton, Ohio	123	92	16	11	3	1	6
Detroit, Mich.	208	110	63	23	8	4	16
Evansville, Ind.	45	39	4	2	-	-	4
Fort Wayne, Ind.	51	39	8	2	2	-	-
Gary, Ind.	19	10	6	2	1	-	1
Grand Rapids, Mich.	35	27	4	3	-	1	3
Indianapolis, Ind.	186	116	47	12	7	4	10
Lansing, Mich.	37	27	6	4	-	-	4
Milwaukee, Wis.	115	91	16	3	2	3	7
Peoria, Ill.	60	43	11	6	-	-	11
Rockford, Ill.	45	33	7	3	2	-	5
South Bend, Ind.	66	49	10	4	3	-	8
Toledo, Ohio	94	73	18	1	-	2	5
Youngstown, Ohio	69	59	7	2	1	-	2
W.N. CENTRAL	801	575	147	52	10	17	59
Des Moines, Iowa	57	35	18	1	2	1	10
Duluth, Minn.	32	27	4	1	-	-	3
Kansas City, Kans.	30	27	1	2	-	-	4
Kansas City, Mo.	94	63	17	8	3	3	4
Lincoln, Nebr.	30	22	3	1	-	4	2
Minneapolis, Minn.	184	139	28	12	3	2	16
Omaha, Nebr.	93	61	16	10	-	6	7
St. Louis, Mo.	141	95	33	11	1	1	-
St. Paul, Minn.	65	49	12	3	1	-	6
Wichita, Kans.	75	57	15	3	-	-	7

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,189	724	286	127	26	23	72
Atlanta, Ga.	156	92	36	20	6	2	8
Baltimore, Md.	172	99	46	21	4	2	15
Charlotte, N.C.	101	63	27	7	2	2	10
Jacksonville, Fla.	142	95	30	16	-	1	9
Miami, Fla.	97	50	30	13	2	2	2
Norfolk, Va.	60	38	13	4	-	4	4
Richmond, Va.	53	33	7	8	2	3	6
Savannah, Ga.	42	27	11	4	-	-	2
St. Petersburg, Fla.	56	35	14	6	-	1	5
Tampa, Fla.	208	137	49	12	6	3	9
Washington, D.C.	102	55	23	16	4	3	2
Wilmington, Del.	U	U	U	U	U	U	U
E.S. CENTRAL	793	527	159	59	21	24	67
Birmingham, Ala.	194	124	44	14	6	3	14
Chattanooga, Tenn.	103	73	20	6	-	4	10
Knoxville, Tenn.	104	72	17	11	3	1	6
Lexington, Ky.	58	40	10	7	-	1	6
Memphis, Tenn.	223	138	46	17	10	12	16
Mobile, Ala.	86	59	18	4	2	3	3
Montgomery, Ala.	25	21	4	-	-	-	12
Nashville, Tenn.	U	U	U	U	U	U	U
W.S. CENTRAL	1,645	1,115	307	126	64	33	108
Austin, Tex.	99	67	19	7	4	2	5
Baton Rouge, La.	97	65	20	8	3	1	7
Corpus Christi, Tex.	58	40	12	2	1	3	5
Dallas, Tex.	216	150	38	15	7	6	13
El Paso, Tex.	94	65	14	10	3	2	-
Ft. Worth, Tex.	115	83	21	5	6	-	2
Houston, Tex.	376	226	69	47	28	6	21
Little Rock, Ark.	66	44	12	7	2	1	1
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	233	168	39	17	5	4	17
Shreveport, La.	141	100	30	3	4	4	15
Tulsa, Okla.	150	107	33	5	1	4	22
MOUNTAIN	947	635	197	80	15	18	72
Albuquerque, N.M.	142	97	30	13	-	2	16
Boise, Idaho	55	35	12	6	1	1	7
Colo. Springs, Colo.	69	49	14	4	-	2	2
Denver, Colo.	100	54	26	11	5	4	8
Las Vegas, Nev.	216	165	35	12	3	1	16
Ogden, Utah	35	22	9	3	-	1	1
Phoenix, Ariz.	179	102	43	22	4	6	8
Pueblo, Colo.	34	22	9	3	-	-	2
Salt Lake City, Utah	117	89	19	6	2	1	12
Tucson, Ariz.	U	U	U	U	U	U	U
PACIFIC	1,891	1,369	327	126	34	33	160
Berkeley, Calif.	16	11	2	2	-	1	2
Fresno, Calif.	116	75	24	12	5	-	9
Glendale, Calif.	33	26	5	1	-	1	1
Honolulu, Hawaii	87	72	8	4	2	1	7
Long Beach, Calif.	90	64	18	5	2	1	12
Los Angeles, Calif.	511	373	79	39	10	10	26
Pasadena, Calif.	28	25	1	-	-	2	5
Portland, Oreg.	86	61	13	5	6	1	5
Sacramento, Calif.	197	142	41	9	2	1	19
San Diego, Calif.	187	136	27	17	3	4	19
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	184	136	35	10	1	2	21
Santa Cruz, Calif.	23	20	1	1	-	1	2
Seattle, Wash.	163	109	36	12	3	3	14
Spokane, Wash.	59	43	13	2	-	1	11
Tacoma, Wash.	111	76	24	7	-	4	7
TOTAL	11,692¶	7,980	2,324	887	259	229	826

U: Unavailable. -:No reported cases.

* Mortality data in this table are reported voluntarily from 122 cities in the United States, most of which have populations of ≥100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

† Pneumonia and influenza.

§ Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶ Total includes unknown ages.

Notices to Readers — Continued

possibility that anthrax spores might cause illness up to 100 days after exposure) accompanied by monitoring for illness or adverse reactions; and 3) 40 additional days of antimicrobial prophylaxis plus 3 doses of anthrax vaccine administered over a 4-week period. Although not a use approved by the Food and Drug Administration, the vaccine might provide additional protection by inducing an immune response to *Bacillus anthracis*. As an investigational new drug, the vaccine should be administered with informed consent, and vaccinated persons may participate in a follow-up evaluation measuring the effect of the vaccine when administered after exposure.

Additional information about these options is available from DHHS at http://www.hhs.gov/news/press/2001pres/20011218.html.

Contributors to the Production of the *MMWR* (Weekly)

Weekly Notifiable Disease Morbidity Data and 122 Cities Mortality Data

Samuel L. Groseclose, D.V.M., M.P.H.
Wayne S. Brathwaite

State Support Team
Robert Fagan
Jose Aponte
Gerald Jones
David Nitschke
Scott Noldy
Jim Vaughan
Carol A. Worsham

CDC Operations Team
Carol M. Knowles
Deborah A. Adams
Willie J. Anderson
Lateka M. Dammond
Patsy A. Hall
Mechele A. Hester
Felicia J. Connor
Pearl Sharp

Informatics

T. Demetri Vacalis, Ph.D.
Michele D. Renshaw Erica R. Shaver

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 pages found at these sites.

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 on Friday of each week, send an e-mail message to *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 C-08, 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.

Director, Centers for Disease Control and Prevention
Jeffrey P. Koplan, M.D., M.P.H.

Deputy Director for Science and Public Health, Centers for Disease Control and Prevention
David W. Fleming, M.D.

Director, Epidemiology Program Office
Stephen B. Thacker, M.D., M.Sc.

Editor, *MMWR* Series
John W. Ward, M.D.

Acting Managing Editor, *MMWR* (Weekly)
Teresa F. Rutledge

Writers-Editors, *MMWR* (Weekly)
Jill Crane
David C. Johnson

Desktop Publishing
Lynda G. Cupell
Morie M. Higgins

☆U.S. Government Printing Office: 2002-733-100/49033 Region IV