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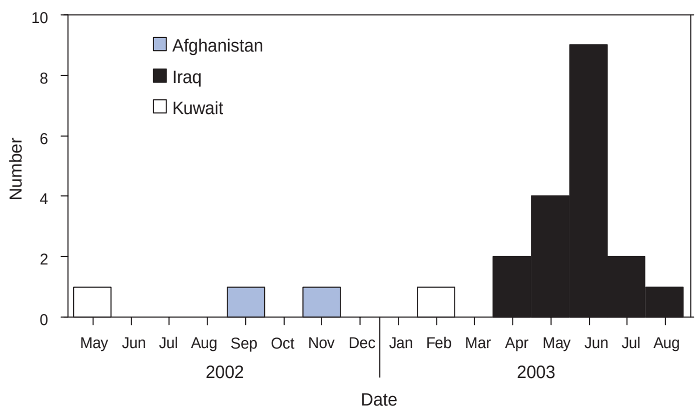
Cutaneous Leishmaniasis in U.S. Military Personnel — Southwest/Central Asia, 2002–2003

Cutaneous leishmaniasis (CL), a vector-borne parasitic disease, is a risk for persons, including military personnel, who travel to or live in areas of the tropics, subtropics, and southern Europe where the disease is endemic (*1–4*). This report provides preliminary data about 22 cases of CL in military personnel deployed during 2002–2003 to three countries in Southwest/Central Asia (Afghanistan, Iraq, and Kuwait) (Figure 1). The patients were evaluated and treated at Walter Reed Army Medical Center (WRAMC) in the District of Columbia during August 2002–September 2003. U.S. health-care providers should consider the possibility of CL in persons with chronic skin lesions who were deployed to Southwest/Central Asia or who were in other areas where leishmaniasis is endemic.

Of the 22 patients with CL that was confirmed parasitologically*, 21 (95%) were men; 19 (86%) were non-Hispanic white, two (9%) were Hispanic, and one (5%) was non-Hispanic black. The median age of the 22 patients was 29 years (range: 21–48 years). The patients represented multiple branches of the U.S. military, including the Active Force, Reserve, and National Guard components of the Army, Air Force, and Marine Corps. On the basis of the patients' histories about their deployments, the majority (18 [82%]) probably were infected in Iraq, particularly in the urban and periurban areas of An Nasiriyah and Baghdad, and two (9%) probably were infected in areas of Kuwait adjacent to Iraq. An additional two (9%) persons were infected in Afghanistan.

* Detection of leishmanial parasites in specimens obtained from skin lesions (*1,5*), either by light-microscopic examination conducted by staff of the Armed Forces Institute of Pathology (District of Columbia) of Diff Quik (Dade Diagnostics, Puerto Rico)–stained slides (i.e., thin smears of tissue scrapings from ulcerative lesions or impression smears or tissue sections of skin-biopsy specimens) or by culture (e.g., of skin-biopsy specimens) performed by staff of Walter Reed Army Institute of Research (Silver Spring, Maryland).

FIGURE 1. Number* of cases of cutaneous leishmaniasis in U.S. military personnel, by self-reported onset of skin lesions — Afghanistan, Iraq, and Kuwait, May 2002–August 2003



* N = 22 (Afghanistan two, Iraq 18, and Kuwait two).

The patients had been deployed to these areas an estimated median of 60 days (range: 21–150 days) before first noting skin lesions. Self-reported dates of lesion onset ranged from May 2002 to August 2003 (Figure 1).

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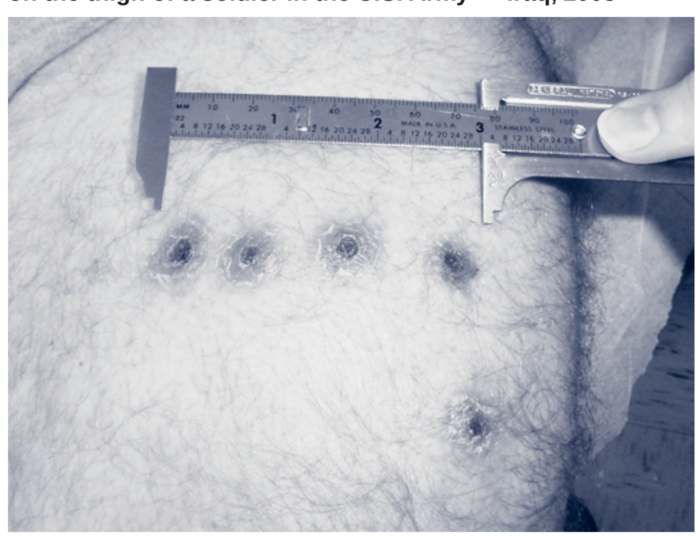
When first evaluated at WRAMC, the 22 patients had a median of three (range: one to nine) skin lesions, which ranged from 3 mm to 40 mm in diameter. Higher proportions of the lesions were located on the upper (39%) or lower (32%) extremities than on the trunk/back (16%) or face/neck (13%). Typically, the lesions were painless, had enlarged slowly, and ultimately had central ulceration, often covered with eschar and surrounded by an erythematous, indurated border (Figure 2). Regional lymph nodes (e.g., epitrochlear, axillary, and inguinal), if palpable, usually were <1 cm in diameter. None of the patients had systemic symptoms.

In 17 (77%) of the 22 cases, parasites were noted on light-microscopic examination of tissue. Of the 19 patients who had tissue cultured for parasites, 14 (74%) had positive cultures, of which 13 (93%) had sufficient organisms for species identification by isoenzyme electrophoresis. All nine of the 13 patients whose cultures had been tested as of October 20, 2003, were infected with *Leishmania major*. Additional evidence that 21 (95%) of the 22 patients had CL was obtained by testing tissue with an investigational, fluorogenic, genus-specific polymerase chain reaction (PCR) assay developed and conducted by staff of WRAMC and Walter Reed Army Institute of Research (Silver Spring, Maryland) (*6*).

Since 1978, military personnel with potential cases of leishmaniasis have been referred to WRAMC for evaluation and therapy with the pentavalent antimonial compound sodium stibogluconate (Pentostam®, The Wellcome Foundation, United Kingdom). Although treatment of cases of CL with pentavalent antimonial compounds has been considered the standard of care for over half a century (*1*), these compounds

FIGURE 2. Skin lesions caused by cutaneous leishmaniasis on the thigh of a soldier in the U.S. Army — Iraq, 2003



Photo/Walter Reed Army Medical Center

are not licensed for use in the United States. Therefore, sodium stibogluconate, the pentavalent antimonial compound used in the United States, is provided by WRAMC under Investigational New Drug (IND) protocols that the Surgeon General of the Army holds with the U.S. Food and Drug Administration (FDA). CDC has a separate IND protocol with FDA for providing this drug for civilians with leishmaniasis.

All 22 patients were treated with sodium stibogluconate (20 mg/kg of body weight/day) by intravenous infusion for 20 days (*1*). The patients' lesions responded to therapy. The patients had predictable, reversible side effects from therapy (e.g., fatigue, arthralgia, myalgia, headache, and chemical pancreatitis) (*1*).

Surveillance for infected female phlebotomine sand flies, the vectors of leishmanial parasites, has been conducted in and near urban and periurban areas of Iraq where U.S. military personnel have been stationed. Use of light traps facilitated collection of many sand flies in short periods (e.g., up to approximately 1,200 sand flies per trap in a 13-hour period overnight, when sand flies are most active). During April–September 2003, approximately 65,000 sand flies were collected, about half of which were female. Taxonomic analysis indicated that the most common species in the *Phlebotomus* genus were *P. papatasi, P. alexandri,* and *P. sergenti,* all of which can be vectors of leishmanial parasites. As of October 7, approximately 24,000 female phlebotomine sand flies, in pools of one to 15 flies, had been tested for infection by using fluorogenic PCR (*6*). The overall infection rate in the sand flies was 1.4% (326 of 23,877). The infection rates for sand flies collected in and near specific areas were as follows: 2.3% (nine of 390) for Tikrit, 1.6% (315 of 19,937) for An Nasiriyah, 0.08% (one of 1,307) for Baghdad, 0.06% (one of 1,795) for Balad, and 0% (none of 448) for Diwaniyah. Five percent (eight of 149) of PCR-positive pooled aliquots of sand flies collected from An Nasiriyah were positive by species-specific PCR for *L. infantum,* which can cause visceral and cutaneous leishmaniasis.

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Editorial Note: Leishmaniasis is a vector-borne parasitic disease endemic in parts of the tropics, subtropics, and Southern Europe. The World Health Organization estimates that 1.5 million cases of CL and 500,000 cases of visceral leishmaniasis (VL) occur each year (*1*).

Both cutaneous and visceral infection can remain asymptomatic or be associated with mild, nonspecific, and nonprogressive symptoms (*1*). Clinical manifestations, if they develop, typically are first noted weeks to months after exposure. The skin lesions of CL, which can be chronic and disfiguring, typically evolve from papules to nodules to ulcerative lesions but can persist as nodules or plaques (*1*). Host (e.g., immune status) and parasite (e.g., species and strain) characteristics affect the natural history and the ease and importance of diagnosing and treating cases of CL. Although both *L. major* and *L. tropica* are common etiologic agents of CL in Afghanistan, Iraq, and Kuwait (*1,7,8*), which species has caused a particular case of CL depends on such factors as the geographic area and ecologic setting of exposure and the species of the sand-fly vector. VL is more prevalent in Iraq (*8*) than in Afghanistan or Kuwait. Manifestations of cases of advanced VL include fever, cachexia, hepatosplenomegaly, pancytopenia, and hypergammaglobulinemia; such cases can be fatal if not treated appropriately and quickly (*1*).

No FDA-approved vaccines or prophylactic medications to prevent leishmaniasis are available (*1*). Control measures against vectors or reservoir hosts of infection might be effective in particular settings (*1,8,9*). Personal protective measures to decrease risk for infection include avoiding, if possible, areas where leishmaniasis is endemic, particularly from dusk through dawn; using permethrin-treated bed nets and clothing; minimizing the amount of exposed skin; and applying insect repellents containing 30%–35% DEET (lower percentages for children) to exposed skin.

Transmission of leishmanial parasites through blood transfusion has not been reported in the United States. However, as a precautionary measure, the Armed Services Blood Program Office of the Department of Defense (DoD) (Falls Church, Virginia) and the American Association of Blood Banks (AABB) (Bethesda, Maryland) are implementing policies to defer prospective blood donors who have been in Iraq from donating blood for 12 months after the last date they left Iraq. Additional information about these deferral policies is available from DoD at http://www-nehc.med.navy.mil/downloads/prevmed/leishmanAug03.pdf and from AABB at http://www.aabb.org.

In Operations Desert Storm and Shield during 1990–1991, among approximately 697,000 deployed military personnel, WRAMC identified 12 cases of so-called viscerotropic leishmaniasis caused by *L. tropica* (a syndrome associated with visceral infection but not necessarily the classic clinical manifestations of VL) and 20 cases of CL (*3,10*; WRAMC, unpublished data, 2003). During August 2002–September 2003, WRAMC identified 22 cases of CL among personnel participating in Operations Iraqi and Enduring Freedom. The apparent decline in numbers of cases of CL with self-reported onset of lesions during July–August 2003 (Figure 1) could reflect delays in persons seeking medical evaluation for skin lesions that might not cause concern initially. U.S. personnel in Iraq have reported being bitten by sand flies (some persons have received >100 bites in a single night), and up to 2% of female phlebotomine sand flies collected in Iraq were infected with leishmanial parasites. As of October 21, WRAMC had identified nine more cases of CL in addition to the 22 cases described in this report. WRAMC is evaluating additional potential cases of CL in deployed personnel, and the number of confirmed cases probably will continue to increase.

U.S. health-care providers should consider the possibility of CL in persons with chronic skin lesions who were deployed to Southwest/Central Asia or who were in other areas where leishmaniasis is endemic and that of VL in such persons with persistent, febrile illnesses, especially if associated with other manifestations suggestive of VL (e.g., splenomegaly and pancytopenia) (*1,4,8,10*). Information about diagnosing and treating CL and VL has been published (*1,5*). Both WRAMC and CDC provide diagnostic services and the antileishmanial compound sodium stibogluconate. For treatment of health-care beneficiaries of the military, health-care providers should contact WRAMC, telephone 202-782-6740. For treatment of civilians, providers should contact CDC's Drug Service, telephone 404-639-3670.

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Infant Health Among Puerto Ricans — Puerto Rico and U.S. Mainland, 1989–2000

Although the overall U.S. infant mortality rate (IMR) declined dramatically during the 1900s, striking racial/ethnic disparities in infant mortality remain (*1,2*). Infant health disparities associated with maternal place of birth also exist within some racial/ethnic populations (*3,4*). Eliminating disparities in infant health is crucial to achieving the 2010 national health objective of reducing the infant death rate to 4.5 per 1,000 live births (objective 16-1c) (*5*). Hispanics comprise the largest racial/ethnic minority population in the United States. Among U.S. Hispanics, considerable heterogeneity exists in infant health, with the poorest outcomes reported among Puerto Rican infants (*6*). This report compares trends during the previous decade in IMRs and major determinants of these rates such as low birthweight (LBW), preterm delivery (PTD), and selected maternal characteristics among infants born to Puerto Rican women on the U.S. mainland (50 states and the District of Columbia) with corresponding trends among infants born in Puerto Rico. The findings indicate that despite having lower prevalence of selected maternal risk factors, Puerto Rico–born infants are at greater risk for LBW, PTD, and infant death than mainland-born Puerto Rican infants. This report also highlights a persistent disparity in IMRs and an emerging disparity in LBW and PTD rates between Puerto Rico–born infants and mainland-born Puerto Rican infants. Future research should focus on identifying factors responsible for these disparities to improve infant health in Puerto Rico.

Linked birth/infant death files for the 50 states, the District of Columbia, and Puerto Rico for 1989–1991 and 1998–2000 were used to assess IMR trends. Natality files for 1990–2000 were used to examine trends in rates of LBW (<2,500 g),

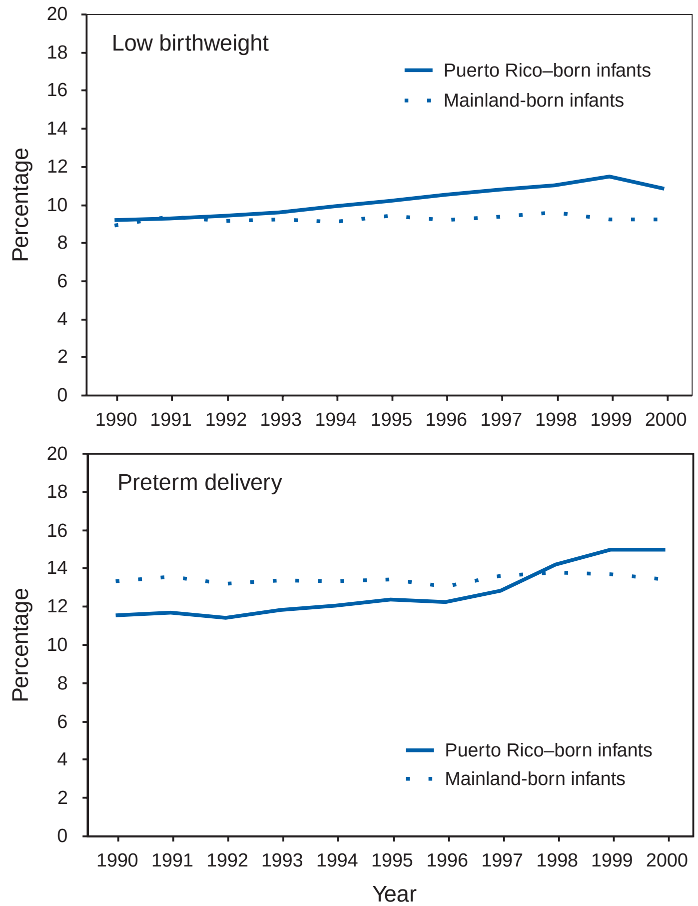
PTD (<37 weeks' gestation), and selected maternal characteristics among live-born infants. Analyses were limited to infants born to Puerto Rican women (i.e., those born in Puerto Rico, those born on the mainland to Puerto Rico–born mothers, or those born on the mainland to mothers who reported being of Puerto Rican ethnicity). Infants born in Puerto Rico to women not born either in Puerto Rico or on the mainland were excluded. Four subpopulations of Puerto Rican infants were examined initially: infants born in Puerto Rico to Puerto Rico–born mothers, infants born in Puerto Rico to mainland-born mothers, infants born on the mainland to Puerto Rico–born mothers, and infants born on the mainland to mainland-born mothers of Puerto Rican ethnicity. However, because maternal place of birth was not associated substantially with infant health outcomes, data are shown for Puerto Rico–born and mainland-born infants without regard to maternal place of birth. Chi square tests were used to compare differences in the prevalence of infant and maternal characteristics and differences in IMRs among the groups.

Low Birthweight and Preterm Delivery

In 1990, Puerto Rico–born infants were 1.03 times more likely to be of LBW than mainland-born infants, and in 2000, this disparity increased to 1.2 (Figure). From 1990 to 2000, the LBW rate for Puerto Rico–born infants increased 18.0%, from 9.2% to 10.9%; for mainland-born infants, the LBW rate increased 3.7%, from 8.9% to 9.3%. Similar differences in LBW rate increases were observed when analyses were restricted to full-term and singleton births. The increase in the LBW rate among Puerto Rico–born infants was associated predominantly with an increase in the percentage of infants with an intermediate LBW (ILBW; 1,500–2,499 g); however, a small increase also was observed in the percentage with a very low birthweight (VLBW; <1,500 g) (Table 1). In 2000, Puerto Rico–born infants were less likely than mainland-born infants to be of VLBW (ratio = 0.7) but more likely to be of ILBW (ratio = 1.3) (Table 1).

In 1990, Puerto Rico–born infants were less likely than mainland-born infants to be born preterm (ratio = 0.9) (Figure). From 1990 to 2000, the PTD rate among Puerto Rico–born infants increased 29.3% (from 11.6% to 15.0%), and that among mainland-born infants increased 0.9% (from 13.3% to 13.4%). As a result, in 2000, Puerto Rico–born infants were 1.1 times more likely than mainland-born infants to be born preterm. Similar differences in PTD rates were observed when analyses were limited to singleton births. The increase in the PTD rate among Puerto Rico–born infants was attributable primarily to an increase in the rate of moderately preterm births (32–36 weeks' gestation), although

FIGURE. Percentage of low birthweight and preterm delivery among infants born to Puerto Rican women, by infant place of birth and year — Puerto Rico and U.S. mainland*, 1990–2000



* 50 states and the District of Columbia.

the rate of very preterm births (<32 weeks' gestation) also increased slightly (Table 1).

In 2000, despite higher rates of LBW and PTD among Puerto Rico–born infants, their mothers were less likely than mothers of mainland-born infants to report selected maternal risk factors, including receiving late/no prenatal care, having <12 years of education, not being married, having plural births, and using tobacco (Table 1). The prevalence of first trimester prenatal care and the percentage of mothers aged <19 years at their infant's birth were similar for the two groups (Table 1). The prevalence of these maternal characteristics did not differ by maternal place of birth.

Infant Mortality

From 1989–1991 to 1998–2000, the combined IMR for Puerto Rico–born and mainland-born infants declined approximately 24%. The 1989–1991 IMR for Puerto

TABLE 1. Percentage* of infants born to Puerto Rican women in Puerto Rico and on the U.S. mainland†, by selected maternal characteristics, 1990 and 2000

Characteristic	Puerto Rico–born infants 1990 (N = 64,001)	Puerto Rico–born infants 2000 (N = 56,847)	Mainland-born infants 1990 (N = 59,663)	Mainland-born infants 2000 (N = 58,726)	Ratio§ 1990	Ratio§ 2000
Birthweight						
VLBW¶ (<1,500 g)	1.2	1.4	1.6	1.9	0.7	0.7
ILBW** (1,500–2,499 g)	8.0	9.4	7.3	7.3	1.1	1.3
Normal (≥2,500 g)	90.8	89.1	91.1	90.7	1.0††	1.0
Gestational age (wks)						
<32	1.6	1.9	2.5	2.5	0.6	0.7
32–36	10.0	13.1	10.8	10.9	0.9	1.2
≥37	88.4	85.0	86.7	86.6	1.0	1.0
Late/No prenatal care§§	4.6	3.2	10.5	4.5	0.4	0.7
First trimester care	71.3	78.4	63.7	78.6	1.1	1.0††
Education (<12 years)	33.4	25.5	42.5	33.2	0.8	0.8
Unmarried¶¶	36.8	49.6	55.6	59.1	0.7	0.8
Maternal age (≤19 years)	19.3	19.6	21.6	19.8	0.9	1.0††
Multiple births	1.7	1.9	2.1	2.6	0.8	0.7
Tobacco use***	2.7	1.0	13.6	10.3	0.2	0.1

* Percentages might not add to 100% because of rounding.
† 50 states and the District of Columbia.
§ Ratio comparing prevalence among Puerto Rico–born infants with that among mainland-born infants.
¶ Very low birthweight.
** Intermediate low birthweight.
†† Chi square comparison of prevalence among Puerto Rico–born infants with that among mainland-born infants was not significantly different, $p>0.05$; all other comparisons were significant, $p<0.05$.
§§ Late prenatal care was defined as care initiated during the third trimester.
¶¶ Marital status recorded on Puerto Rico birth certificates includes categories for unmarried parents living and not living together. Unmarried parents in Puerto Rico, whether living together or not, were considered unmarried.
*** Tobacco use data were not collected in five mainland states (California, Indiana, New York, Oklahoma, and South Dakota) in 1990; tobacco use data were not collected in California in 2000.

Rico–born infants was 1.3 times greater than that for mainland-born infants (13.4 versus 10.4 per 1,000 live births) and remained 1.3 times higher during 1998–2000 (10.2 versus 7.9) (Table 2). However, the absolute difference in IMR between Puerto Rico–born and mainland-born infants declined from 3.1 per 1,000 live births during 1989–1991 to 2.3 during 1998–2000. IMRs across subpopulations defined by birthweight and gestational age were higher in both periods among Puerto Rico–born infants than among mainland-born infants. Except for postneonatal and VLBW mortality rates, IMRs among Puerto Rico–born infants declined more rapidly than among mainland-born infants in all infant age, birthweight, and gestational age subpopulations from 1989–1991 to 1998–2000 (Table 2). During 1998–2000, the greatest differences in IMRs between Puerto Rico–born infants and mainland–born infants were among those in the LBW and preterm subpopulations.

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Editorial Note: Puerto Rico–born infants are at greater risk for LBW, PTD, and death than Puerto Rican infants born on the mainland. From 1989–1991 to 1998–2000, the overall infant mortality declined approximately 24% for Puerto Rican infants; however, the disparity in rates between infants born in Puerto Rico and those born on the mainland remained fairly constant. Disparities in LBW and PTD rates emerged during this period because of large increases among Puerto Rico–born infants. These disparities in infant health do not appear to be associated with the prevalence of late/no prenatal care, <12 years education, nonmarital births, plural births, or tobacco use. The higher risk for LBW, PTD, and death among infants born in Puerto Rico might reflect differences in the prevalence of other potential risk factors that are less accurately reported (e.g., alcohol consumption and maternal weight gain) or not reported at all in vital statistics (e.g., infection, stress, socioeconomic status, social support, nutrition, and quality of prenatal and perinatal care).

The decline in IMR for Puerto Rican infants during the previous decade parallels declining rates for other racial/ethnic populations in the United States (*7*). Despite this decline, the 1998–2000 IMRs for Puerto Rico–born infants

TABLE 2. Mortality rates[*] for infants born to Puerto Rican women in Puerto Rico and on the U.S. mainland[†], by selected characteristics, 1989–1991 and 1998–2000

	Puerto Rico births		Mainland births		Ratio[§]	
Characteristic	**1989–1991**	**1998–2000**	**1989–1991**	**1998–2000**	**1989–1991**	**1998–2000**
Age at death[¶]						
Neonatal	10.2	7.4	7.0	5.5	1.5	1.3
Postneonatal	3.2	2.8	3.3	2.4	1.0**	1.2
Birthweight						
VLBW[††] (<1,500 g)	498.9	397.7	319.1	251.7	1.6	1.6
ILBW[§§] (1,500–2,499 g)	37.9	21.0	19.8	13.3	1.9	1.6
Normal (2,500 g)	4.8	3.1	3.5	2.3	1.4	1.3
Gestational age (wks)						
<32	361.1	292.3	208.5	188.6	1.7	1.6
32–36	23.3	14.8	11.9	8.4	2.0	1.8
≥37	5.6	3.4	3.9	2.5	1.4	1.4
Total	**13.4**	**10.2**	**10.4**	**7.9**	**1.3**	**1.3**

* Number of live-born infants who died within the first year of life per 1,000 live births.
† 50 states and the District of Columbia.
§ Ratio comparing infant mortality rate (IMR) for Puerto Rico–born infants with that for mainland-born infants.
¶ Neonatal deaths comprise infants aged <28 days; postneonatal deaths comprise infants aged 28 days to age <1 year.
** Chi square comparison of IMR for Puerto Rico–born infants with that for mainland-born infants was not significantly different, p>0.05; all other comparisons were significant, p<0.05.
†† Very low birthweight.
§§ Intermediate low birthweight.

(10.2 per 1,000 live births) and for mainland-born infants (7.9) remain considerably higher than that for non-Hispanic U.S. mainland whites (5.8) (*7*). In addition, in 2000, the incidence of LBW and PTD among both Puerto Rico–born and mainland-born Puerto Rican infants was greater than that among infants in any other U.S. Hispanic origin group or U.S. racial/ethnic group, except non-Hispanic blacks. Therefore, a disparity in infant health exists not only between Puerto Rican infants born in Puerto Rico and Puerto Rican infants born on the mainland, but also between all Puerto Rican infants and infants from other U.S. racial/ethnic populations.

The findings in this report are subject to at least two limitations. First, although underreporting of vital events is unlikely in Puerto Rico (*6*), risk factors such as maternal tobacco use might be reported less completely in Puerto Rico than on the mainland. Second, because Hispanic origin is not recorded on birth certificates in Puerto Rico, this study was based on records for infants born either in Puerto Rico or on the mainland; mainland-born infants were defined as having Puerto Rican ethnicity if their mothers were born in Puerto Rico or reported being Puerto Rican.

This report highlights a continuing disparity in infant mortality rates and an emerging disparity in LBW and PTD rates between Puerto Rico–born infants and infants born on the mainland to Puerto Rican mothers. These differences should be considered in the planning and implementation of efforts to reduce IMRs among Puerto Ricans. The higher birthweight- and gestational age–specific IMRs in Puerto Rico contribute more to the overall higher IMR in Puerto Rico than do the differences in birthweight and gestational age distributions between Puerto Rico– and mainland-born infants (*8*). Efforts to reduce IMR in Puerto Rico should focus on reducing mortality rates among LBW and preterm infants, perhaps by examining existing perinatal services. Additional opportunities might exist for lowering the overall IMR if the underlying causes of the increases in the prevalence of LBW and PTD can be identified and prevented. Improving infant health in Puerto Ricans will most likely require interventions at the individual, provider, and health-care system levels.

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West Nile Virus Infection Among Turkey Breeder Farm Workers — Wisconsin, 2002

In 2002, Wisconsin public health officials were notified of two cases of febrile illness in workers at a commercial turkey breeder farm (farm A) in county A. The Wisconsin Division of Public Health (WDPH) initiated an investigation that found a high prevalence of West Nile virus (WNV) antibody among farm A workers and turkeys. An associated high incidence of febrile illness among farm A workers also was observed. This report summarizes the results of this investigation, which indicate possible nonmosquito transmission among birds and subsequent infection of humans at farm A. Because the mode of transmission in this outbreak is unknown, turkey handlers should take appropriate precautions, including use of DEET-containing mosquito repellents, protective clothing and gloves, respiratory protection, and proper hand hygiene. Suspected occupationally acquired WNV infections should be reported immediately to local and state health departments.

During November 2002, WDPH and the Wisconsin State Laboratory of Hygiene (WSLH) confirmed that two ill residents of county A had been infected with WNV. Before these reports, only one human WNV infection had been reported in this county. Both persons worked at farm A and had febrile illness with rash during late September–early October. These human illnesses occurred after a suspected fowl pox outbreak among farm A turkeys in September. Workers were concerned the pox outbreak might be associated with their illnesses.

Farm A is one of six turkey breeder farms in county A owned by a company that also operates nonbreeder farms and a turkey meat processing plant in county A. The five other turkey breeder farms are located within 10 miles of farm A, and multiple private residences are within a quarter mile. In February 2003, county and state public health staff, in collaboration with the company, identified workers at the six turkey breeder farms, the nonbreeder farms, and the plant, and requested their consent to participate in a serosurvey. Serum samples were collected from participating workers (N = 93) to identify persons infected recently. A questionnaire was administered to identify persons who had a febrile illness during August–October 2002. Serum samples also were collected from residents (N = 14) who lived within a quarter mile of farm A. All serum samples were tested for WNV-specific IgM antibody at WSLH (*1*). IgM-positive specimens were confirmed by plaque-reduction neutralization tests at CDC (*2*). Of 107 total participants, 10 (9%) were seropositive. Of approximately 90 workers at the six breeder farms, 57 (63%) participated; of these, 10 (18%) were infected recently with WNV (Table). None of the meat processing workers or other area residents was infected. Of 11 persons who worked exclusively at farm A, six (55%) were WNV IgM-positive, compared with two (25%) of eight who worked at both farm A and other breeder farms and two (5%) of 38 who worked only at other breeder farms. Of the 10 IgM-positive workers, six (60%) reported febrile headaches during August–October (all occurring during the last week of September), compared with seven (7%) of 97 IgM-negative persons sampled ($p = 0.0002$ by Fisher exact test). All six IgM-positive persons who reported febrile headache had worked at farm A. All six noted a skin rash, and one had meningoencephalitis and was hospitalized; no deaths occurred. Reported mosquito exposures and bites were similar for IgM-positive (nine [90%] and eight [80%] of 10, respectively) and IgM-negative workers (67 [85%] and 54 [68%] of 79, respectively). Only one (2%) of 57 breeder farm workers reported using insect repellent while working.

Farm A includes two breeder bird barns and a juvenile flock barn. The breeder barns separate uncaged females from male turkeys with a solid plywood wall. The sides of the barns housing the female turkeys are covered with 1 in. x 1 in. mesh wire fencing and plastic curtains that can be adjusted to lower the temperature during warm months.

Serum from farm A turkeys and turkeys from the nearest breeder farm were collected in late January 2003. The farm A flock sampled was the group of birds housed in the juvenile flock barn from mid-June to early December 2002, at which time this flock was moved to a breeder barn on farm A to replace a flock slaughtered in November. The flock sampled on the nearby farm was a breeder flock also in place in

TABLE. Number and percentage of persons testing positive for West Nile virus (WNV)–specific IgM antibody, by exposure group — county A, Wisconsin, 2002

Exposure group	No. WNV–specific IgM positive	No. tested	Seroprevalence (%)
Farm A workers	8	19	(42)
Farm A workers exclusively	*6*	*11*	*(55)*
Farm A workers and other breeder-farm workers	*2*	*8*	*(25)*
Other breeder-farm workers	2	38	(5)
Non–breeder-farm workers	0	13	(0)
Turkey meat processing plant workers	0	22	(0)
Turkey meat processing plant workers and non–breeder-farm workers	0	1	(0)
Farm A residents*	0	14	(0)
Total	**10**	**107**	**(9)**

* Persons who lived on or within a quarter mile of farm A but did not work with the turkeys in any way.

September. Both flocks had suspected fowl pox outbreaks during September. Serum samples were submitted to the U.S. Department of Agriculture's National Veterinary Services Laboratories for WNV-neutralizing antibody testing. Of 135 farm A female turkeys, 130 (96%) had WNV-neutralizing antibody (measured at two dilutions, 1:10 and 1:100, and considered to be positive if a given dilution neutralized ≥90% of virus growth). No WNV-neutralizing antibody was found in 135 female turkeys tested from the nearby farm or 30 male turkeys tested from either farm.

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Editorial Note: The investigation described in this report found that workers at farm A had a higher incidence of febrile illness and prevalence of WNV antibodies than workers at other breeder and nonbreeder farms, workers at a turkey meat processing facility, or persons who lived on or near the affected farm and who did not work in the turkey barns. The mode of transmission to these workers is unknown. Although the majority of human WNV infections are mosquito-borne, transmission by less typical routes might have occurred, including percutaneous (e.g., exposure of broken skin or mucosa to infected turkey feces or serous exudates from dually-infected pox lesions), fecal-oral, or respiratory (e.g., exposure to aerosolized infected turkey feces).

The WNV seroprevalence (96%) among female turkeys on farm A was high. However, experimental evidence suggests that turkeys develop insufficient levels of WNV viremia to contribute to a bird-mosquito-bird amplification cycle (*3*). Although WNV was detected in the feces of these turkeys, no oropharyngeal shedding or transmission to cage mates was observed (*3*). Nonvector-borne WNV transmission has been demonstrated experimentally among rodents and among certain bird species other than turkeys (*4,5*). Once WNV was introduced to female turkeys at farm A (presumably by mosquitoes), widespread transmission within that flock might have taken place by fecal-oral, respiratory, or another atypical (e.g., percutaneous exposure associated with pecking behavior or vaccination) route. In addition, other unique conditions at farm A, including possible co-infection with an avian pox virus, might have resulted in higher WNV viremias or infectious materials with higher WNV titers than laboratory studies have suggested.

Despite uncertainty over the mode(s) of transmission, epidemiologic evidence suggests that this outbreak was related to occupational exposure. Occupationally acquired WNV infections have been reported previously among laboratory or field workers who experienced a known percutaneous injury or aerosol exposure while working with high concentrations of WNV in cell culture or infected animal tissues (*6–9*). In this investigation, no such exposure was documented. Because the mode of transmission in this outbreak is unknown, turkey handlers should 1) take personal protective measures, including wearing protective clothing and using mosquito repellents (e.g., those containing DEET on skin and clothing and those containing permethrin on clothing), as recommended for outdoor workers; 2) wear gloves; and 3) wash hands frequently. In addition, respiratory protection has been recommended for reducing other exposures to workers in turkey barns (*10*). Respiratory protection should be selected and used in accordance with the Occupational Safety and Health Administration (OSHA) respiratory protection standard (Title 29 CFR 1910.134).

Workers should receive training that reinforces awareness of potential occupational hazards and risks and stresses the importance of timely reporting of all injuries and illnesses of suspected occupational origin. Health-care workers should inquire about a patient's outdoor exposure and occupation when a human WNV infection is suspected or identified and consider WNV as a possible etiology among turkey farm workers with febrile headache or rash, meningitis, encephalitis, or other severe neurologic illness, especially when WNV illnesses exist among co-workers or birds. Suspected occupationally acquired WNV infections should be reported immediately to local and state health departments.

The investigation of turkey breeder farm workers in county A is ongoing. In addition, further studies are needed to determine the factors involved in this outbreak, to better define the occupational risk for WNV infections, and to assess appropriate personal protective measures. On the basis of recommendations from public health staff, the company has made mosquito repellent containing 30% DEET available at farm A and other turkey breeder farms. Recommendations that were outlined previously in place at the company farms include protective clothing, frequent hand washing, and an OSHA-required respiratory protection program. Gloves and safety glasses also are available to workers.

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Public Health and Aging

Nonfatal Injuries Among Older Adults Treated in Hospital Emergency Departments — United States, 2001

Because injuries generally are considered a problem of the young, injuries among older adults (i.e., persons aged $\geq$65 years) have received little attention. However, injuries are the eighth leading cause of death among older adults in the United States (*1*). In 2001, approximately 2.7 million older adults were treated for nonfatal injuries in hospital emergency departments (EDs); the majority of these injuries were the result of falls (*1*). To characterize nonfatal injuries among older adults, CDC analyzed data from the National Electronic Injury Surveillance System-All Injury Program (NEISS-AIP). This report summarizes the results of that analysis, which indicate differences in type and mechanism of injury by sex, suggesting that prevention programs should be designed and tailored differently for men and women.

NEISS-AIP is operated by the U.S. Consumer Product Safety Commission and collects data about initial visits for all types and causes of injuries treated in U.S. EDs, drawing from a nationally representative sample of 66 hospitals selected as a stratified probability sample of hospitals in the United States. Data from these cases are weighted by the inverse of the probability of selection to produce national estimates (*2*). For this report, annualized estimates were calculated on the basis of weighted data for 36,752 nonfatal injuries among older adults treated in EDs during January–December 2001. U.S. Census Bureau population estimates for 2001 were used to calculate injury rates (*3*). A direct variance estimation procedure was used to calculate 95% confidence intervals and to account for the complex sample design (*2*). All nonfatal injuries were classified according to the mechanism of injury (e.g., fall, struck by/against, or motor vehicle crash), diagnosis, primary body part injured, disposition, location of injury, and intent. The diagnosis and intent of the injury were classified according to the most severe injury (*4*). Injuries of unknown intent were grouped with those classified as unintentional.

During 2001, an estimated 935,556 men and 1,731,640 women aged ≥65 years were treated in EDs for nonfatal injuries. The overall injury rate per 100,000 persons was higher among women (8,466 per 100,000 persons) than among men (6,404). Injury rates increased with age, to 15,272 for women aged ≥85 years and 11,547 for men aged ≥85 years. Nearly all injuries (99%) were classified as unintentional/unknown intent (Table).

Overall, falls resulted in the highest rates of injury (4,684 per 100,000 persons) and were the most common mechanism of injury, accounting for 62% of all nonfatal injury ED visits in this population. The injury rate from falls was higher among women (5,659) than men (3,319). However, the injury rates for women were lower with certain other types of injuries, such as being struck by/against (588 versus 617), occupying a motor vehicle (525 versus 540), and being cut or pierced (243 versus 488) (Table).

The greatest number of nonfatal injuries among older adults were diagnosed as fractures (26%), followed by contusions/abrasions (23%), lacerations (17%), strains/sprains (13%), and internal injuries (5%). Diagnoses varied by sex. Fractures of all parts of the body were more common among women than men (30% versus 19%), and lacerations were more common among men than women (22% versus 14%). The parts of the body affected most were the head/neck (25%) and arms/hands (22%). The majority (82%) of older adults were treated and released; 16% were hospitalized. The ratio of patients treated/released to those hospitalized was lower among women (4.7:1) than men (5.9:1), suggesting women were more often hospitalized after a nonfatal injury. The most common (47%) location for nonfatal injuries was the home (Table).

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Editorial Note: Falls remain the leading cause of both nonfatal and fatal injury among older adults aged ≥65 years in the United States (*1*). The findings in this report, which indicate that falls were the most common reason for injury-related ED visits among persons aged ≥65 years, are consistent with previous studies indicating that approximately 40% of older adults living in community settings (e.g., in private residences or minimally assisted environments) fall each year (*5*).

In this study, 82% of persons aged ≥65 years were treated and released following injury, compared with 95% of persons aged <65 years. Older adults were more than three times more likely (1,217 per 100,000 persons) to be hospitalized than persons aged <65 years (353) (*1*).

The findings in this report are subject to at least five limitations. First, NEISS-AIP provides national estimates and does not allow for estimates by region, state, or local jurisdiction. Second, injury outcomes are specific to ED visits and do not include subsequent outcomes. Third, NEISS-AIP data reflect only those injuries that were severe enough to require treatment in an ED. Fourth, in cases with multiple injuries, only data regarding the most severe injury are recorded. Finally, data for intent are classified on the basis of information contained in the medical record. Injuries for which intent cannot be determined conclusively from the ED record are grouped with unintentional injuries.

The findings in this report can form the basis for targeting prevention efforts to different populations of older adults. For example, exercise can reduce the risk for fall among older adults by 15% (*6*). Because women are more likely to sustain fall-related injuries, exercise can be an especially important preventive measure for this population. Data from NEISS-AIP can continue to be a source for monitoring trends, evaluating interventions, and characterizing nonfatal injuries among persons aged ≥65 years.

Acknowledgments

This report is based on contributions by the U.S. Consumer Product Safety Commission. K Gotsch, P Holmgreen, JL Annest, PhD, Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC.

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TABLE 1. Estimated number*, percentage†, and rate§ of nonfatal injuries among persons aged ≥65 years treated at hospital emergency departments, by age, sex, and selected injury characteristics — United States, 2001

	Men				Women				Total			
Characteristic	No.	(%)	Rate	(95% CI¶)	No.	(%)	Rate	(95% CI)	No.	(%)	Rate	(95% CI)
Age groups (yrs)												
65–74	437,829	(46.8)	5,328	(4,729–5,926)	606,915	(35.0)	6,107	(5,340–6,875)	1,044,884	(39.2)	5,755	(5,090–6,421)
75–84	342,156	(36.6)	6,784	(5,708–7,861)	652,862	(37.7)	8,789	(7,299–10,280)	995,069	(37.3)	7,979	(6,732–9,226)
≥85	155,571	(16.6)	11,547	(9,389–13,705)	471,862	(27.2)	15,272	(12,089–18,454)	627,433	(23.5)	14,141	(11,338–16,943)
Total	**935,556**	**(100.0)**	**6,404**	**(5,534–7,274)**	**1,731,640**	**(100.0)**	**8,466**	**(7,103–9,828)**	2,667,386	(100.0)	7,607	(6,489–8,725)
Mechanism												
Fall	484,908	(51.8)	3,319	(2,835–3,803)	1,157,459	(66.8)	5,659	(4,698–6,619)	1,642,533	(61.6)	4,684	(3,950–5,419)
Struck by/against	90,158	(9.6)	617	(549–685)	120,316	(6.9)	588	(500–677)	210,474	(7.9)	600	(527–673)
Motor vehicle (occupant)	78,939	(8.4)	540	(440–640)	107,384	(6.2)	525	(431–619)	186,323	(7.0)	531	(437–625)
Over exertion	60,157	(6.4)	412	(297–526)	102,710	(5.9)	502	(363–641)	162,867	(6.1)	464	(339–590)
Cut/pierce	71,257	(7.6)	488	(395–581)	49,718	(2.9)	243	(200–286)	120,974	(4.5)	345	(287–403)
Other bite/sting	22,448	(2.4)	154	(112–195)	38,069	(2.2)	186	(147–225)	60,517	(2.3)	173	(134–211)
Other transport	15,382	(1.6)	105	(81–129)	30,263	(1.7)	148	(118–178)	45,645	(1.7)	130	(106–154)
Foreign body	18,268	(2.0)	125	(100–150)	15,959	(0.9)	78	(61–96)	34,227	(1.3)	98	(80–115)
Poisoning	15,051	(1.6)	103	(54–152)	16,271	(0.9)	80	(41–118)	31,322	(1.2)	89	(50–129)
Other specified**	61,806	(6.6)	423	(350–496)	56,886	(3.3)	278	(231–325)	118,716	(4.5)	339	(286–391)
Unknown/unspecified	17,181	(1.8)	118	(99–136)	36,605	(2.1)	179	(147–211)	53,786	(2.0)	153	(131–176)
Diagnosis												
Fracture	178,231	(19.1)	1,220	(1,007–1,433)	510,388	(29.5)	2,495	(1,982–3,009)	688,735	(25.8)	1,964	(1,584–2,344)
Contusion/abrasion	203,095	(21.7)	1,390	1,207–1,573)	419,459	(24.2)	2,051	(1,740–2,361)	622,604	(23.3)	1,776	(1,528–2,024)
Laceration	201,384	(21.5)	1,378	(1,182–1,575)	242,477	(14.0)	1,185	(1,007–1,364)	443,861	(16.6)	1,266	(1,091–1,440)
Strain/sprain	116,066	(12.4)	794	(640–949)	224,715	(13.0)	1,099	(879–1,318)	340,781	(12.8)	972	(787–1,157)
Internal injury	45,349	(4.8)	310	(194–427)	74,698	(4.3)	365	(253–478)	120,072	(4.5)	342	(234–451)
Poisoning	22,129	(2.4)	151	(98–204)	20,035	(1.2)	98	(60–136)	42,164	(1.6)	120	(78–162)
Hematoma	12,566	(1.3)	86	(66–106)	27,611	(1.6)	135	(93–177)	40,177	(1.5)	115	(84–145)
Dislocation	17,142	(1.8)	117	(91–144)	21,500	(1.2)	105	(87–124)	38,643	(1.4)	110	(91–129)
Puncture	17,269	(1.8)	118	(89–147)	19,862	(1.1)	97	(74–120)	37,131	(1.4)	106	(84–128)
Foreign body	14,109	(1.5)	97	(73–120)	11,233	(0.6)	55	(39–71)	25,343	(1.0)	72	(57–88)
Aspiration	10,219	(1.1)	70	(47–93)	11,236	(0.6)	55	(39–70)	21,456	(0.8)	61	(46–77)
Avulsion	8,799	(0.9)	60	(42–78)	11,578	(0.7)	57	(34–79)	20,378	(0.8)	58	(40–76)
All burns††	7,241	(0.8)	50	(37–63)	10,772	(0.6)	53	(41–65)	18,013	(0.7)	51	(41–62)
Concussion	7,866	(0.8)	54	(35–72)	8,114	(0.5)	40	(25–54)	15,981	(0.6)	46	(32–59)
Hemorrhage	3,432	(0.4)	23	(11–36)	4,223	(0.2)	21	(10–31)	7,655	(0.3)	22	(12–32)
Other	69,232	(7.4)	474	(360–588)	112,312	(6.5)	549	(390–708)	181,543	(6.8)	518	(382–653)
Unknown	1,426	(0.2)	10	(5–15)	1,425	(0.1)	7	(4–10)	2,852	(0.1)	8	(5–11)
Primary body part												
Head/neck	261,840	(28.0)	1,792	(1,520–2,064)	411,503	(23.8)	2,012	(1,712–2,312)	673,368	(25.2)	1,920	(1,649–2,191)
Arm/hand	225,151	(24.1)	1,541	(1,307–1,775)	355,199	(20.5)	1,736	(1,483–1,990)	580,350	(21.8)	1,655	(1,421–1,890)
Leg/foot	133,954	(14.3)	917	(793–1,041)	347,478	(20.1)	1,699	(1,447–1,950)	481,432	(18.0)	1,373	(1,190–1,556)
Lower trunk	140,190	(15.0)	960	(772–1,147)	340,541	(19.7)	1,665	(1,277–2,053)	480,756	(18.0)	1,371	(1,073–1,669)
Upper trunk	120,400	(12.9)	824	(710–938)	209,978	(12.1)	1,027	(864–1,190)	330,518	(12.4)	943	(808–1,077)
Other	50,439	(5.4)	345	(262–428)	62,096	(3.6)	304	(224–383)	112,535	(4.2)	321	(244–398)
Unknown	3,582	(0.4)	25	(12–37)	4,844	(0.3)	24	(14–34)	8,427	(0.3)	24	(14–34)
Disposition												
Treated/released	780,120	(83.4)	5,340	(4,631–6,049)	1,395,648	(80.6)	6,823	(5,795–7,851)	2,175,933	(81.6)	6,206	(5,340–7,071)
Hospitalized	132,493	(14.2)	907	(672–1,142)	294,312	(17.0)	1,439	(1,038–1,839)	426,829	(16.0)	1,217	(897–1,538)
Transferred	17,226	(1.8)	118	(92–144)	30,245	(1.7)	148	(107–189)	47,470	(1.8)	135	(103–168)
Observed/unknown	5,717	(0.6)	39	(12–66)	11,435	(0.7)	56	(19–92)	17,153	(0.6)	49	(17–81)
Location												
Home	413,495	(44.2)	2,830	(2,285–3,375)	828,615	(47.9)	4,051	(3,286–4,816)	1,242,161	(46.6)	3,543	(2,879–4,206)
Other property	139,754	(14.9)	957	(751–1,162)	326,565	(18.9)	1,597	(1,101–2,092)	466,344	(17.5)	1,330	(967–1,693)
Street	101,514	(10.9)	695	(580–810)	135,456	(7.8)	662	(548–776)	236,971	(8.9)	676	(566–785)
School/sports	21,029	(2.2)	144	(46–242)	16,562	(1.0)	81	(39–123)	37,591	(1.4)	107	(43–171)
Farm	8,768	(0.9)	60	(31–89)	2,752	(0.2)	13	(8–19)	11,520	(0.4)	33	(19–47)
Unknown	250,995	(26.8)	1,718	(1,143–2,293)	421,689	(24.4)	2,062	(1,335–2,788)	672,800	(25.2)	1,919	(1,261–2,577)
Intent												
Unintentional/unknown	924,004	(98.8)	6,325	(5,453–7,197)	1,718,207	(99.2)	8,400	(7,048–9,752)	2,642,402	(99.1)	7,536	(6,422–8,650)
All assaults/legal intervention§§	9,249	(1.0)	63	(45–82)	9,837	(0.6)	48	(35–61)	19,086	(0.7)	54	(43–66)
Self-harm	2,303	(0.2)	16	(7–24)	3,595	(0.2)	18	(9–26)	5,898	(0.2)	17	(9–24)

* Includes weighted data for persons of unknown sex.
† Percentages do not total 100% because of rounding.
§ Per 100,000 population.
¶ Confidence interval.
** Includes 12 additional mechanism categories, in order of descending magnitude: other specified, fire/burn, dog bite, machinery, pedestrian, pedal cyclist, inhalation/suffocation, natural/environmental, motorcyclist, firearm gunshot, drowning/near drowning, and BB/pellet gunshot.
†† Includes burns of the following types: scalding, electrical, chemical, thermal, and not specified.
§§ Includes physical and sexual assaults. Legal intervention is defined as injuries inflicted by law enforcement personnel during official duties.

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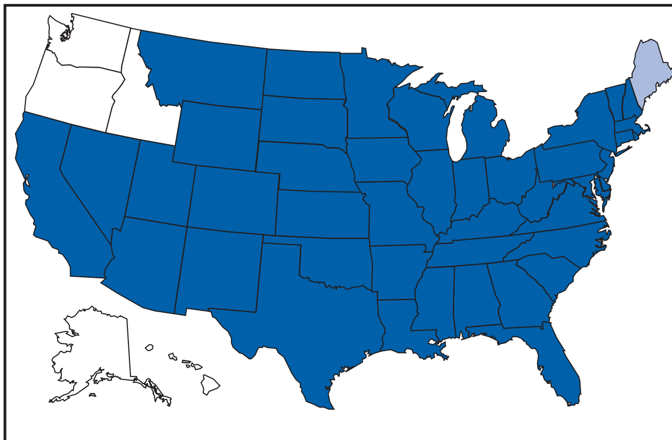
West Nile Virus Activity — United States, October 16–22, 2003

This report summarizes West Nile virus (WNV) surveillance data reported to CDC through ArboNET as of 3 a.m., Mountain Daylight Time, October 22, 2003.

During the reporting week of October 16–22, a total of 429 human cases of WNV infection were reported from 26 states (Alabama, Arizona, Arkansas, California, Georgia, Illinois, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Vermont, and Virginia), including seven fatal cases from four states (Maryland, Nebraska, New York, and Texas). During the same period, WNV infections were reported in 281 dead birds, 246 mosquito pools, 183 horses, 2 dogs, 2 squirrels, and one unidentified animal species.

During 2003, a total of 7,386 human cases of WNV infection have been reported from Colorado (n = 2,170), Nebraska (n = 1,359), South Dakota (n = 955), Texas (n = 457), North Dakota (n = 375), Wyoming (n = 320), Montana (n = 216), Pennsylvania (n = 202), New Mexico (n = 194), Minnesota (n = 136), Iowa (n = 128), Ohio (n =86), Louisiana (n = 84), Kansas (n = 78), Oklahoma (n = 59), Mississippi (n = 56), New York (n = 56), Illinois (n = 45), Maryland (n = 45), Missouri (n = 43), Florida (n = 32), Georgia (n = 31), Alabama (n = 30), Indiana (n = 30), New Jersey (n = 26), Arkansas (n = 21), North Carolina (n = 21), Tennessee (n = 19), Virginia (n = 18), Massachusetts (n = 16), Delaware (n = 13), Kentucky (n = 13), Wisconsin (n = 13), Connecticut (n = 12), Michigan (n = six), Rhode Island (n = five), District of Columbia (n = three), Arizona (n = two), California (n = two), Nevada (n = two), New Hampshire (n = two), Vermont (n = two), South Carolina (n = one), Utah (n = one), and West Virginia (n = one) (Figure). Of 7,269 (98%) cases for which demographic data were available, 3,841 (53%) occurred

FIGURE. Areas reporting West Nile virus (WNV) activity — United States, 2003*



* As of 3 a.m., Mountain Daylight Time, October 22, 2003.

among males; the median age was 47 years (range: 1 month–99 years), and the dates of illness onset ranged from March 28 to October 10. Of the 7,269 cases, 155 fatal cases were reported from Colorado (n = 44), Texas (n = 17), Nebraska (n = 16), New York (n = eight), South Dakota (n = eight), Wyoming (n = eight), Pennsylvania (n = six), Maryland (n = five), Georgia (n = four), Iowa (n = four), Minnesota (n = four), New Mexico (n = four), North Dakota (n = four), Alabama (n = three), Ohio (n = three), Indiana (n = two), Missouri (n = two), Montana (n = two), New Jersey (n = two), Delaware (n = one), Illinois (n = one), Kansas (n = one), Kentucky (n = one), Louisiana (n = one), Michigan (n = one), Mississippi (n = one), Tennessee (n = one), and Virginia (n = one). A total of 682 presumptive West Nile viremic blood donors have been reported to ArboNET. Of these, 596 (87%) were reported from the following nine western and midwestern states: Colorado, Kansas, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming. Of the 529 donors for whom data were reported completely, six subsequently had meningoencephalitis, and 76 subsequently had West Nile fever.

In addition, 10,453 dead birds with WNV infection have been reported from 42 states, the District of Columbia, and New York City; 3,270 WNV infections in horses, 16 WNV infections in dogs, 14 infections in squirrels, and 24 infections in unidentified animal species have been reported from 39 states. During 2003, WNV seroconversions have been reported in 1,246 sentinel chicken flocks from 15 states. Of the 46 seropositive sentinel horses reported, Illinois reported 35; Minnesota, seven; South Dakota, three; and West Virginia, one. In addition, seropositivity was reported from one other unidentified animal species. A total of 6,667 WNV-positive mosquito pools have been reported from 38 states, the District of Columbia, and New York City.

Additional information about WNV activity is available from CDC at http://www.cdc.gov/ncidod/dvbid/westnile/index.htm and http://westnilemaps.usgs.gov.

Notice to Readers

Guidelines for Maintaining and Managing the Vaccine Cold Chain

In February 2002, the Advisory Committee on Immunization Practices (ACIP) and American Academy of Family Physicians (AAFP) released their revised General Recommendations on Immunization (*1*), which included recommendations on the storage and handling of immunobiologics. Because of increased concern over the potential for errors with the vaccine cold chain (i.e., maintaining proper vaccine temperatures during storage and handling to preserve potency), this notice advises vaccine providers of the importance of proper cold chain management practices. This report describes proper storage units and storage temperatures, outlines appropriate temperature-monitoring practices, and recommends steps for evaluating a temperature-monitoring program. The success of efforts against vaccine-preventable diseases is attributable in part to proper storage and handling of vaccines. Exposure of vaccines to temperatures outside the recommended ranges can affect potency adversely, thereby reducing protection from vaccine-preventable diseases (*1*). Good practices to maintain proper vaccine storage and handling can ensure that the full benefit of immunization is realized.

Recommended Storage Temperatures

The majority of commonly recommended vaccines require storage temperatures of 35°F–46°F (2°C–8°C) and must not be exposed to freezing temperatures. Introduction of varicella vaccine in 1995 and of live attenuated influenza vaccine (LAIV) more recently increased the complexity of vaccine storage. Both varicella vaccine and LAIV must be stored in a continuously frozen state ≤5°F (-15°C) with no freeze-thaw cycles (Table 1). In recent years, instances of improper vaccine storage have been reported. An estimated 17%–37% of providers expose vaccines to improper storage temperatures, and refrigerator temperatures are more commonly kept too cold than too warm (*2,3*).

Freezing temperatures can irreversibly reduce the potency of vaccines required to be stored at 35°F–46°F (2°C–8°C). Certain freeze-sensitive vaccines contain an aluminum adjuvant that precipitates when exposed to freezing temperatures. This results in loss of the adjuvant effect and vaccine potency (*4*). Physical changes are not always apparent after exposure to freezing temperatures and visible signs of freezing are not necessary to result in a decrease in vaccine potency.

Although the potency of the majority of vaccines can be affected adversely by storage temperatures that are too warm,

TABLE 1. Vaccine storage temperature requirements

35°F–46°F (2°C–8°C)	
Instructions	**Vaccine**
Do not freeze or expose to freezing temperatures.	Diphtheria-, tetanus-, or pertussis-containing vaccines (DT, DTaP, Td)
	Haemophilus conjugate vaccine (Hib)*
Contact state or local health department or manufacturer for guidance on vaccines exposed to temperatures above or below the recommended range.	Hepatitis A (HepA) and hepatitis B (HepB) vaccines
	Inactivated polio vaccine (IPV)
	Measles, mumps, and rubella vaccine (MMR) in the lyophilized (freeze-dried) state†
	Meningococcal polysaccharide vaccine
	Pneumococcal conjugate vaccine (PCV)
	Pneumococcal polysaccharide vaccine (PPV)
	Trivalent inactivated influenza vaccine (TIV)

≤5°F (-15°C)	
Instructions	**Vaccine**
Maintain in continuously frozen state with no freeze-thaw cycles.	Live attenuated influenza vaccine (LAIV)
	Varicella vaccine
Contact state or local health department or manufacturer for guidance on vaccines exposed to temperatures above the recommended range.	

* ActHIB® (Aventis Pasteur, Lyon, France) in the lyophilized state is not expected to be affected detrimentally by freezing temperatures, although no data are available.
† MMR in the lyophilized state is not affected detrimentally by freezing temperatures.

these effects are usually more gradual, predictable, and smaller in magnitude than losses from temperatures that are too cold. In contrast, varicella vaccine and LAIV are required to be stored in continuously frozen states and lose potency when stored above the recommended temperature range.

Vaccine Storage Requirements

Vaccine storage units must be selected carefully and used properly. A combination refrigerator/freezer unit sold for home use is acceptable for vaccine storage if the refrigerator and freezer compartments each have a separate door. However, vaccines should not be stored near the cold air outlet from the freezer to the refrigerator. Many combination units cool the refrigerator compartment by using air from the freezer compartment. In these units, the freezer thermostat controls freezer temperature while the refrigerator thermostat controls the volume of freezer temperature air entering the refrigerator. This can result in different temperature zones within the refrigerator.

Refrigerators without freezers and stand-alone freezers usually perform better at maintaining the precise temperatures required for vaccine storage, and such single-purpose units sold for home use are less expensive alternatives to medical specialty equipment. Any refrigerator or freezer used for vaccine storage must maintain the required temperature range year-round, be large enough to hold the year's largest inventory, and be dedicated to storage of biologics (i.e., food or beverages should not be stored in vaccine storage units). In addition, vaccines should be stored centrally in the refrigerator or freezer, not in the door or on the bottom of the storage unit, and sufficiently away from walls to allow air to circulate.

Temperature Monitoring

Proper temperature monitoring is key to proper cold chain management. Thermometers should be placed in a central location in the storage unit, adjacent to the vaccine. Temperatures should be read and documented twice each day, once when the office or clinic opens and once at the end of the day. Temperature logs should be kept on file for $\geq$3 years, unless state statutes or rules require a longer period. Immediate action must be taken to correct storage temperatures that are outside the recommended ranges. Mishandled vaccines should not be administered.

One person should be assigned primary responsibility for maintaining temperature logs, along with one backup person. Temperature logs should be reviewed by the backup person at least weekly. All staff members working with vaccines should be familiar with proper temperature monitoring.

Different types of thermometers can be used, including standard fluid-filled, min-max, and continuous chart recorder thermometers (Table 2). Standard fluid-filled thermometers are the simplest and least expensive products, but some models might perform poorly. Product temperature thermometers (i.e., those encased in biosafe liquids) might reflect vaccine temperature more accurately. Min-max thermometers monitor the temperature range. Continuous chart recorder thermometers monitor temperature range and duration and can be recalibrated at specified intervals. All thermometers used for monitoring vaccine storage temperatures should be calibrated and certified by an appropriate agency (e.g., National Institute of Standards and Technology). In addition, temperature indicators (e.g., Freeze Watch™ [3M, St. Paul, Minnesota] or ColdMark™ [Cold Ice, Inc., Oakland, California]) can be considered as a backup monitoring system (*5*); however, such indicators should not be used as a substitute for twice daily temperature readings and documentation.

TABLE 2. Comparison of thermometers used to monitor vaccine temperatures

Thermometer type	Advantages	Disadvantages
Standard fluid-filled	• Inexpensive and simple to use. • Thermometers encased in biosafe liquids can reflect vaccine temperatures more accurately.	• Less accurate (+/-1°C). • No information on duration of out of specification exposure. • No information on min/max temperatures. • Cannot be recalibrated. • Inexpensive models might perform poorly.
Min-max	• Inexpensive. • Monitors temperature range.	• Less accurate (+/-1°C). • No information on duration of out of specification exposure. • Cannot be recalibrated.
Continuous chart recorder	• Most accurate. • Continuous 24-hour readings of temperature range and duration. • Can be recalibrated at regular intervals.	• Most expensive. • Requires most training and maintenance.

All medical care providers who administer vaccines should evaluate their cold chain maintenance and management to ensure that 1) designated personnel and backup personnel have written duties and are trained in vaccine storage and handling; 2) accurate thermometers are placed properly in all vaccine storage units and any limitations of the storage system are fully known; 3) vaccines are placed properly within the refrigerator or freezer in which proper temperatures are maintained; 4) temperature logs are reviewed for completeness and any deviations from recommended temperature ranges; 5) any out-of-range temperatures prompt immediate action to fix the problem, with results of these actions documented; 6) any vaccines exposed to out-of-range temperatures are marked "do not use" and isolated physically; 7) when a problem is discovered, the exposed vaccine is maintained at proper temperatures while state or local health departments, or the vaccine manufacturers, are contacted for guidance; and 8) written emergency retrieval and storage procedures are in place in case of equipment failures or power outages. Around-the-clock monitoring systems might be considered to alert staff to after-hours emergencies, particularly if large vaccine inventories are maintained.

Additional information on vaccine storage and handling is available from the Immunization Action Coalition at http://www.immunize.org/izpractices/index.htm. Links to state and local health departments are available at http://www.cdc.gov/other.htm. Especially detailed guidelines from the Commonwealth of Australia on vaccine storage and handling, vaccine storage units, temperature monitoring, and stability of vaccines at different temperatures (*6*) are available at http://immunise.health.gov.au/cool.pdf.

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Notice to Readers

International Conference on Emerging Infectious Diseases

CDC's National Center for Infectious Diseases, the Council of State and Territorial Epidemiologists, the American Society for Microbiology, and the World Health Organization will cosponsor the International Conference on Emerging Infectious Diseases February 29–March 3, 2004, at the Marriott Marquis Hotel in Atlanta, Georgia. The conference will explore the most current research, surveillance, and prevention and control programs addressing all aspects of emerging infectious diseases. Attendance is limited to 2,500 participants.

The conference will include general and plenary sessions, symposia, panels of speakers, presentations on emerging infections activities, oral and poster presentations, and exhibits. The deadline for abstract submission for presentations is November 14, 2003. Information about submitting abstracts is available at http://www.iceid.org/abssub.asp. Abstracts should address new, reemerging, or drug-resistant infectious diseases that affect human health. The deadline for late-breaker abstracts is January 16, 2004.

Registration information is available at http://www.iceid.org and at http://www.cdc.gov/ncidod and by e-mail at meetinginfo@asmusa.org or at dsy1@cdc.gov.

Errata: Vol. 52, No. 40

In the article, "Cigarette Smoking Among Adults — United States, 2001," an error occurred in the table on page 955. Total prevalence for persons with 0–12 yrs (no diploma) of education was reported to be 28.4% (95% CI ±1.4). The correct prevalence for this population should have been 27.5% (95% CI ±1.4).

In the article, "Recommended Adult Immunization Schedule — United States, 2003–2004," on page 968, an incorrect volume number was given for the fourth reference. The reference should read, "4. CDC. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1997;46(No. RR-8)."

Errata: Vol. 52, No. RR-10

In the *MMWR Recommendations and Reports*, "Guidelines for Environmental Infection Control in Health-Care Facilities: Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC)," published on June 6, 2003, on page 3, an incorrect reference was listed in the first complete paragraph of the second column. The citation should read, "Garner JS, Favero MS. CDC guideline for handwashing and hospital environmental control. Infect Control 1986;7:231–43."

On page 9, in the second column, paragraph J. should read, "If epidemiologic evidence exists of ongoing transmission of fungal disease, conduct an environmental assessment to find and eliminate the source (*11,13–16,27,44,49–51,60,81*). Category IB."

On page 10, in Figure 1, the third bullet under the footnote should read as follows:

"• air volume differential >125 cfm supply versus exhaust."

On page 11, in Figure 2, the label "Neutral anteroom" should read "anteroom." Also, the first, second, and seventh bullets under the footnote should read as follows:

"• pressure differential of 2.5 Pa (0.01-in. water gauge) measured at the door between patient room and anteroom;

• air volume differential >125 cfm, depending on anteroom airflow direction (i.e., pressurized versus depressurized);

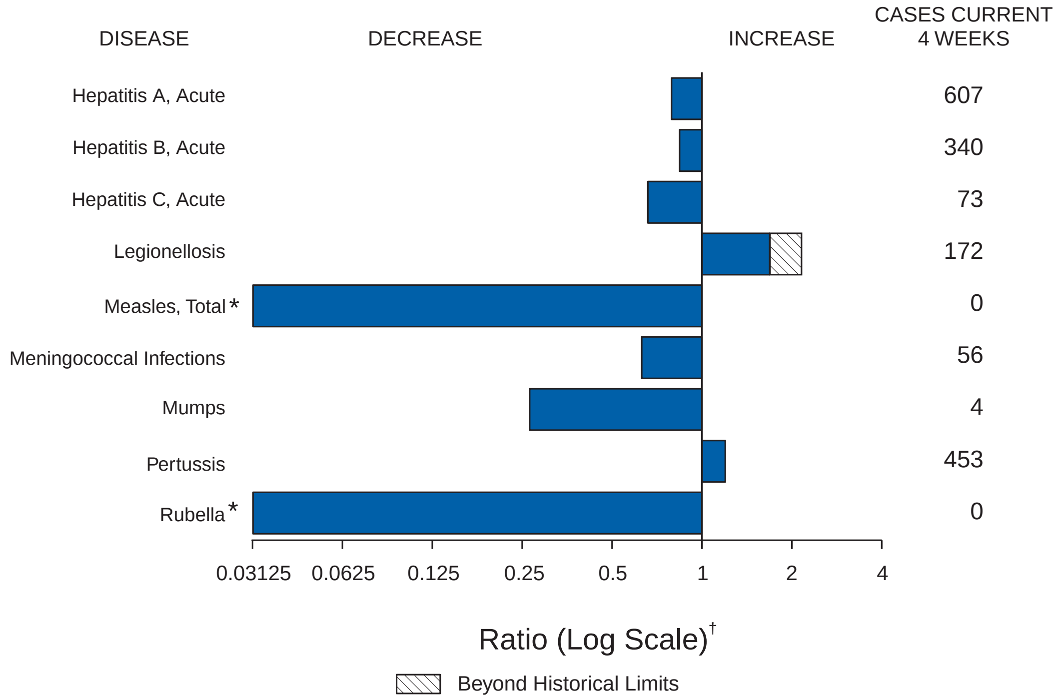
• anteroom airflow patterns (i.e., anteroom is pressurized in top and middle panels, and depressurized in bottom panel)."

On page 12, in Figure 3, the third bullet under the footnote should read as follows:

"• air volume differential >125 cfm exhaust versus supply."

On page 25, under VI. Special Pathogens, paragraph B should read, "Use standard cleaning and disinfection protocols to control environmental contamination with antibiotic-resistant, gram-positive cocci (e.g., methicillin-resistant *Staphylococcus aureus*, vancomycin-intermediate *Staphylococcus aureus*, or vancomycin-resistant *Enterococcus* [VRE]) (*318,320–322*). Category IB."

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals October 18, 2003, with historical data



* No measles or rubella cases were reported for the current 4-week period yielding a ratio for week 42 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 October 18, 2003 (42nd Week)*

	Cum. 2003	Cum. 2002		Cum. 2003	Cum. 2002
Anthrax	-	2	Hansen disease (leprosy)†	46	69
Botulism:	-	-	Hantavirus pulmonary syndrome†	15	15
foodborne	10	24	Hemolytic uremic syndrome, postdiarrheal†	118	167
infant	50	55	HIV infection, pediatric†§	174	129
other (wound & unspecified)	23	15	Measles, total	39¶	26**
Brucellosis†	64	97	Mumps	149	222
Chancroid	37	55	Plague	1	-
Cholera	1	1	Poliomyelitis, paralytic	-	-
Cyclosporiasis†	54	148	Psittacosis†	12	13
Diphtheria	-	1	Q fever†	58	47
Ehrlichiosis:	-	-	Rabies, human	2	3
human granulocytic (HGE)†	257	245	Rubella	7	16
human monocytic (HME)†	150	171	Rubella, congenital	-	1
other and unspecified	31	18	Streptococcal toxic-shock syndrome†	125	94
Encephalitis/Meningitis:	-	-	Tetanus	11	18
California serogroup viral†	62	124	Toxic-shock syndrome	105	86
eastern equine†	7	4	Trichinosis	1	13
Powassan†	-	1	Tularemia†	64	66
St. Louis†	18	19	Yellow fever	-	-
western equine†	1	-			

-: No reported cases.
* Incidence data for reporting years 2002 and 2003 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. Last update September 28, 2003.
¶ Of 39 cases reported, 31 were indigenous, and eight were imported from another country.
** Of 26 cases reported, 13 were indigenous, and 13 were imported from another country.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

Reporting area	AIDS		Chlamydia[†]		Coccidiodomycosis		Cryptosporidiosis		Encephalitis/Meningitis West Nile	
	Cum. 2003[§]	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	40,822	32,741	652,203	668,133	3,001	3,583	2,506	2,470	1,351	2,283
NEW ENGLAND	1,155	1,302	21,955	22,160	-	-	138	168	-	27
Maine	49	27	1,561	1,363	N	N	18	10	-	-
N.H.	25	30	1,037	1,265	-	-	11	26	-	-
Vt.	14	12	864	752	-	-	28	29	-	-
Mass.	478	693	9,121	8,698	-	-	54	69	-	18
R.I.	83	82	2,336	2,196	-	-	12	19	-	-
Conn.	506	458	7,036	7,886	N	N	15	15	-	9
MID. ATLANTIC	8,105	7,793	87,837	74,383	-	-	299	327	122	101
Upstate N.Y.	775	561	15,881	13,540	N	N	100	104	1	28
N.Y. City	4,384	4,724	26,041	24,409	-	-	68	125	-	28
N.J.	1,267	1,163	10,306	11,308	-	-	6	15	8	22
Pa.	1,679	1,345	35,609	25,126	N	N	125	83	113	23
E.N. CENTRAL	3,220	3,285	110,205	123,403	7	21	717	839	86	1,308
Ohio	644	658	27,448	30,792	-	-	121	110	86	238
Ind.	430	421	13,343	13,794	N	N	76	38	-	17
Ill.	1,489	1,553	32,089	39,177	-	2	64	110	-	554
Mich.	509	503	25,096	25,907	7	19	108	107	-	450
Wis.	148	150	12,229	13,733	-	-	348	474	-	49
W.N. CENTRAL	631	515	36,438	37,739	1	1	483	342	301	121
Minn.	123	114	7,978	8,437	N	N	128	169	45	16
Iowa	67	63	2,676	4,501	N	N	104	39	60	-
Mo.	304	228	13,790	12,829	-	-	36	34	26	53
N. Dak.	2	2	999	985	N	N	12	10	5	-
S. Dak.	8	4	2,121	1,753	-	-	35	27	40	14
Nebr.[¶]	45	44	3,269	3,785	1	1	18	48	45	31
Kans.	82	60	5,605	5,449	N	N	150	15	80	7
S. ATLANTIC	16,025	9,424	125,423	126,683	5	4	293	261	122	55
Del.	187	155	2,390	2,149	N	N	4	3	11	-
Md.	1,153	1,491	13,217	13,109	5	4	18	19	29	20
D.C.	812	454	2,280	2,636	-	-	13	4	-	-
Va.	705	609	13,287	14,521	-	-	37	15	10	-
W. Va.	72	71	2,056	1,983	N	N	4	2	1	1
N.C.	913	763	20,436	19,908	N	N	41	31	-	-
S.C.[¶]	715	706	13,128	12,076	-	-	7	6	1	1
Ga.	7,938	1,366	26,173	26,245	-	-	88	101	30	21
Fla.	3,530	3,809	32,456	34,056	N	N	81	80	40	12
E.S. CENTRAL	1,530	1,599	41,957	42,509	N	N	100	109	30	262
Ky.	142	252	6,592	7,183	N	N	21	6	11	41
Tenn.	661	644	16,337	13,043	N	N	34	51	9	1
Ala.	360	341	9,696	13,071	-	-	35	45	10	31
Miss.	367	362	9,332	9,212	N	N	10	7	-	189
W.S. CENTRAL	3,413	3,635	80,131	88,099	1	10	57	56	403	408
Ark.	148	205	6,101	6,020	-	-	15	7	13	10
La.	446	879	13,506	15,750	N	N	2	9	43	202
Okla.	161	166	9,365	9,102	N	N	13	15	21	-
Tex.	2,658	2,385	51,159	57,227	1	10	27	25	326	196
MOUNTAIN	1,264	1,098	35,202	41,116	2,000	2,287	115	136	283	1
Mont.	11	9	1,411	1,717	N	N	17	4	210	-
Idaho	20	26	1,991	2,013	N	N	26	26	-	1
Wyo.	6	8	793	745	1	-	4	9	68	-
Colo.	315	255	8,447	11,333	N	N	28	50	-	-
N. Mex.	101	66	5,227	6,112	5	7	10	18	2	-
Ariz.	543	433	10,225	12,013	1,952	2,233	5	14	-	-
Utah	52	52	2,678	2,327	11	11	18	11	1	-
Nev.	216	249	4,430	4,856	31	36	7	4	2	-
PACIFIC	5,478	4,090	113,055	112,041	986	1,259	304	232	4	-
Wash.	371	382	13,312	11,793	N	N	43	28	-	-
Oreg.	202	259	5,059	5,462	-	-	35	35	4	-
Calif.	4,807	3,336	88,714	88,192	986	1,259	225	167	-	-
Alaska	16	22	2,963	2,948	-	-	1	-	-	-
Hawaii	82	91	3,007	3,646	-	-	-	2	-	-
Guam	6	2	-	532	-	-	-	-	-	-
P.R.	854	913	1,475	2,031	N	N	N	N	-	-
V.I.	30	65	208	125	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	2	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 years 2002 and 2003 are provisional and cumulative (year-to-date).
† 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 update September 28, 2003.
¶ Contains data reported through National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

	Escherichia coli, Enterohemorrhagic (EHEC)									
	O157:H7		Shiga toxin positive, serogroup non-O157		Shiga toxin positive, not serogrouped		Giardiasis		Gonorrhea	
Reporting area	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	1,984	3,039	197	161	123	38	14,235	16,598	249,145	284,233
NEW ENGLAND	134	233	44	42	12	5	1,044	1,481	5,783	6,244
Maine	10	32	1	7	1	-	153	169	157	110
N.H.	12	29	2	-	-	-	22	35	76	104
Vt.	15	11	-	1	-	1	97	115	67	81
Mass.	53	108	5	19	11	4	490	805	2,422	2,639
R.I.	1	11	-	1	-	-	90	129	777	723
Conn.	43	42	36	14	-	-	192	228	2,284	2,587
MID. ATLANTIC	194	332	13	1	35	7	2,790	3,377	33,679	34,080
Upstate N.Y.	78	144	9	-	18	-	826	965	6,241	6,951
N.Y. City	5	14	-	-	-	-	913	1,208	10,295	10,193
N.J.	14	55	-	-	-	1	268	388	6,031	6,221
Pa.	97	119	4	1	17	6	783	816	11,112	10,715
E.N. CENTRAL	446	745	20	30	21	4	2,348	2,918	49,992	60,087
Ohio	94	134	15	10	20	3	737	746	15,139	17,583
Ind.	75	59	-	1	-	-	-	-	5,254	5,977
Ill.	94	167	-	6	-	-	584	830	14,536	19,733
Mich.	71	125	-	3	-	1	590	768	10,961	11,806
Wis.	112	260	5	10	1	-	437	574	4,102	4,988
W.N. CENTRAL	350	431	34	28	23	4	1,595	1,658	12,757	14,560
Minn.	117	145	18	23	1	-	600	632	2,233	2,572
Iowa	85	107	-	-	-	-	225	259	607	1,057
Mo.	72	61	11	-	1	-	406	399	6,557	7,223
N. Dak.	10	4	-	-	11	-	28	14	45	61
S. Dak.	25	35	4	2	-	-	66	63	181	209
Nebr.	17	51	1	3	-	-	95	134	1,083	1,211
Kans.	24	28	-	-	10	4	175	157	2,051	2,227
S. ATLANTIC	124	241	57	30	8	1	2,208	2,378	62,267	72,410
Del.	6	8	N	N	N	N	38	45	924	1,299
Md.	10	26	-	-	-	-	93	101	6,303	7,333
D.C.	1	-	-	-	-	-	37	33	1,854	2,143
Va.	32	59	9	9	-	-	268	243	6,231	8,445
W. Va.	4	7	-	-	-	1	35	46	689	785
N.C.	4	38	22	-	-	-	N	N	11,743	12,926
S.C.	1	5	-	-	-	-	122	114	7,162	7,653
Ga.	25	39	3	7	-	-	740	758	13,074	14,357
Fla.	41	59	23	14	8	-	875	1,038	14,287	17,469
E.S. CENTRAL	73	94	2	-	7	9	275	313	20,548	24,536
Ky.	24	29	2	-	7	9	N	N	2,944	3,067
Tenn.	30	39	-	-	-	-	139	146	6,787	7,631
Ala.	13	17	-	-	-	-	136	167	6,109	8,402
Miss.	6	9	-	-	-	-	-	-	4,708	5,436
W.S. CENTRAL	69	100	2	1	12	4	238	203	33,176	39,522
Ark.	8	10	-	-	-	-	119	140	3,145	3,773
La.	3	4	-	-	-	-	9	4	8,197	9,740
Okla.	22	20	-	-	-	-	110	57	3,845	3,896
Tex.	36	66	2	1	12	4	-	2	17,989	22,113
MOUNTAIN	266	297	22	22	5	4	1,287	1,334	7,754	8,965
Mont.	13	26	-	-	-	-	90	76	78	77
Idaho	66	41	15	12	-	-	166	99	60	73
Wyo.	2	13	-	2	-	-	20	27	34	51
Colo.	63	88	3	5	5	4	362	441	2,039	2,804
N. Mex.	12	9	3	3	-	-	38	126	860	1,216
Ariz.	28	32	N	N	N	N	210	176	2,815	2,961
Utah	60	62	-	-	-	-	286	264	269	233
Nev.	22	26	1	-	-	-	115	125	1,599	1,550
PACIFIC	328	566	3	7	-	-	2,450	2,936	23,189	23,829
Wash.	90	127	1	-	-	-	269	342	2,237	2,303
Oreg.	86	188	2	7	-	-	329	362	689	694
Calif.	141	211	-	-	-	-	1,714	2,068	19,132	19,778
Alaska	4	6	-	-	-	-	71	90	431	499
Hawaii	7	34	-	-	-	-	67	74	700	555
Guam	N	N	-	-	-	-	-	7	-	38
P.R.	-	1	-	-	-	-	36	74	156	294
V.I.	-	-	-	-	-	-	-	-	55	31
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

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

* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

Reporting area	*Haemophilus influenzae*, invasive†								Hepatitis (viral, acute), by type	
	All ages		Age <5 years						A	
	All serotypes		Serotype b		Non-serotype b		Unknown serotype			
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	1,374	1,337	16	26	77	104	157	125	5,101	7,413
NEW ENGLAND	104	88	1	-	6	8	5	2	259	261
Maine	4	1	-	-	-	-	1	-	12	8
N.H.	11	8	1	-	-	-	-	-	11	11
Vt.	8	7	-	-	-	-	-	-	6	1
Mass.	46	41	-	-	6	4	3	2	154	123
R.I.	6	10	-	-	-	-	1	-	12	30
Conn.	29	21	-	-	-	4	-	-	64	88
MID. ATLANTIC	305	248	-	2	1	14	43	21	951	948
Upstate N.Y.	113	96	-	2	1	4	11	7	109	153
N.Y. City	49	57	-	-	-	-	10	9	337	376
N.J.	54	49	-	-	-	-	7	5	111	159
Pa.	89	46	-	-	-	10	15	-	394	260
E.N. CENTRAL	197	264	4	3	8	10	31	37	533	908
Ohio	60	66	-	-	-	1	11	8	100	249
Ind.	40	36	1	1	4	7	-	-	60	40
Ill.	62	105	-	-	-	-	15	18	158	243
Mich.	21	12	3	2	4	2	1	-	175	199
Wis.	14	45	-	-	-	-	4	11	40	177
W.N. CENTRAL	99	59	1	1	7	2	14	5	151	251
Minn.	38	39	1	1	7	2	2	3	37	37
Iowa	-	1	-	-	-	-	-	-	24	58
Mo.	39	11	-	-	-	-	12	2	53	74
N. Dak.	1	4	-	-	-	-	-	-	-	1
S. Dak.	1	1	-	-	-	-	-	-	-	3
Nebr.	3	-	-	-	-	-	-	-	11	16
Kans.	17	3	-	-	-	-	-	-	26	62
S. ATLANTIC	318	301	1	5	12	15	19	23	1,338	2,037
Del.	-	-	-	-	-	-	-	-	5	13
Md.	71	74	-	2	5	3	2	1	132	265
D.C.	-	-	-	-	-	-	-	-	31	67
Va.	42	27	-	-	-	-	5	4	78	121
W. Va.	14	17	-	-	-	1	-	1	14	17
N.C.	36	30	-	-	3	3	2	-	81	192
S.C.	3	12	-	-	-	-	-	2	34	54
Ga.	56	65	-	-	-	-	5	10	590	391
Fla.	96	76	1	3	4	8	5	5	373	917
E.S. CENTRAL	69	59	1	1	1	4	10	11	188	231
Ky.	5	5	-	-	1	1	-	1	28	41
Tenn.	42	29	-	-	-	-	6	7	132	102
Ala.	20	16	1	1	-	3	3	1	14	32
Miss.	2	9	-	-	-	-	1	2	14	56
W.S. CENTRAL	62	50	1	2	8	8	5	2	298	890
Ark.	7	1	-	-	1	-	-	-	16	50
La.	12	6	-	-	-	-	5	2	51	73
Okla.	40	41	-	-	7	8	-	-	16	46
Tex.	3	2	1	2	-	-	-	-	215	721
MOUNTAIN	137	144	4	4	19	25	19	13	389	470
Mont.	-	-	-	-	-	-	-	-	8	13
Idaho	4	2	-	-	-	-	1	1	-	24
Wyo.	1	2	-	-	-	-	-	-	1	3
Colo.	33	27	-	-	-	-	7	2	59	71
N. Mex.	14	24	-	-	4	6	1	1	17	25
Ariz.	64	62	4	2	6	14	8	6	220	249
Utah	11	15	-	1	5	3	2	-	39	40
Nev.	10	12	-	1	4	2	-	3	45	45
PACIFIC	83	124	3	8	15	18	11	11	994	1,417
Wash.	11	3	-	2	7	1	3	-	50	139
Oreg.	37	46	-	-	-	-	3	3	47	52
Calif.	20	41	3	6	8	17	4	4	880	1,194
Alaska	-	1	-	-	-	-	-	1	8	9
Hawaii	15	33	-	-	-	-	1	3	9	23
Guam	-	-	-	-	-	-	-	-	-	1
P.R.	-	1	-	-	-	-	-	-	26	194
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

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

* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

† Non-serotype b: nontypeable and type other than b; Unknown serotype: type unknown or not reported. Previously, cases reported without type information were counted as non-serotype b.

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

	Hepatitis (viral, acute), by type									
	B		C		Legionellosis		Listeriosis		Lyme disease	
Reporting area	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	4,944	5,915	1,340	1,507	1,586	947	493	517	14,062	17,655
NEW ENGLAND	202	237	4	18	75	92	38	56	2,496	5,422
Maine	1	8	-	-	2	2	6	5	181	49
N.H.	11	18	-	-	6	4	3	4	95	218
Vt.	2	5	4	12	5	35	-	3	38	31
Mass.	168	125	-	6	29	38	13	32	664	1,723
R.I.	12	24	-	-	13	2	-	1	466	306
Conn.	8	57	U	U	20	11	16	11	1,052	3,095
MID. ATLANTIC	763	1,260	131	88	452	268	96	157	9,375	9,325
Upstate N.Y.	100	96	38	38	131	74	29	51	3,867	4,122
N.Y. City	258	631	-	-	41	55	14	33	5	56
N.J.	181	256	-	4	41	30	12	33	1,551	2,090
Pa.	224	277	93	46	239	109	41	40	3,952	3,057
E.N. CENTRAL	339	544	134	93	312	235	58	67	709	1,181
Ohio	112	73	8	1	184	92	20	19	64	53
Ind.	28	38	7	-	22	16	6	7	18	19
Ill.	1	118	14	18	3	23	7	16	33	46
Mich.	167	272	105	70	90	69	18	17	7	26
Wis.	31	43	-	4	13	35	7	8	587	1,037
W.N. CENTRAL	260	182	193	613	55	48	17	13	314	226
Minn.	29	23	7	2	3	11	9	1	218	138
Iowa	9	15	1	1	9	11	-	1	44	37
Mo.	180	94	184	598	27	13	5	7	41	38
N. Dak.	2	4	-	-	1	-	-	1	-	-
S. Dak.	2	2	-	1	2	2	-	1	1	1
Nebr.	21	23	1	11	4	11	3	1	2	6
Kans.	17	21	-	-	9	-	-	1	8	6
S. ATLANTIC	1,526	1,401	136	165	440	163	107	66	949	1,189
Del.	5	13	-	-	24	7	N	N	159	164
Md.	105	104	14	9	111	36	22	15	529	658
D.C.	9	17	-	-	14	5	-	-	6	20
Va.	145	162	7	10	82	20	8	7	76	134
W. Va.	25	18	2	3	16	-	6	-	20	16
N.C.	133	193	11	22	35	11	16	6	91	116
S.C.	140	101	24	4	7	6	4	8	8	20
Ga.	428	364	3	61	25	16	26	10	12	2
Fla.	536	429	75	56	126	62	25	20	48	59
E.S. CENTRAL	338	300	74	111	83	29	25	16	50	61
Ky.	52	48	11	4	36	11	6	2	11	21
Tenn.	160	114	19	23	31	11	6	9	15	20
Ala.	47	63	6	6	13	7	11	4	5	11
Miss.	79	75	38	78	3	-	2	1	19	9
W.S. CENTRAL	303	793	530	281	47	26	29	28	59	130
Ark.	39	99	3	10	2	-	1	-	-	3
La.	100	111	97	84	1	4	2	2	6	4
Okla.	35	61	2	5	7	3	3	7	-	-
Tex.	129	522	428	182	37	19	23	19	53	123
MOUNTAIN	503	514	44	46	56	37	29	27	17	15
Mont.	14	9	1	1	4	3	2	-	-	-
Idaho	-	6	-	-	3	1	2	2	3	4
Wyo.	28	17	-	5	2	2	-	-	2	1
Colo.	69	66	13	6	12	7	10	6	4	1
N. Mex.	29	143	-	2	2	2	2	3	1	1
Ariz.	237	183	7	4	9	7	9	12	1	3
Utah	53	39	-	4	18	11	-	3	3	4
Nev.	73	51	23	24	6	4	4	1	3	1
PACIFIC	710	684	94	92	66	49	94	87	93	106
Wash.	58	59	14	17	8	3	5	8	3	10
Oreg.	89	111	11	11	N	N	4	9	15	12
Calif.	536	499	66	63	58	45	80	62	72	81
Alaska	9	7	1	-	-	-	-	-	3	3
Hawaii	18	8	2	1	-	1	5	8	N	N
Guam	-	1	-	-	-	-	-	-	-	-
P.R.	41	152	-	-	-	-	-	2	N	N
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

Reporting area	Malaria		Meningococcal disease		Pertussis		Rabies, animal		Rocky Mountain spotted fever	
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	883	1,182	1,319	1,482	5,687	6,668	4,781	6,351	673	889
NEW ENGLAND	37	67	60	80	659	616	474	769	-	6
Maine	3	5	6	4	12	12	57	53	-	-
N.H.	4	7	3	11	60	18	13	39	-	-
Vt.	2	4	2	4	60	117	30	86	-	-
Mass.	9	28	37	43	504	429	176	241	-	3
R.I.	2	5	2	5	16	13	53	68	-	3
Conn.	17	18	10	13	7	27	145	282	-	-
MID. ATLANTIC	216	320	147	179	607	393	818	1,051	33	50
Upstate N.Y.	48	36	36	41	363	266	349	597	2	-
N.Y. City	102	205	28	32	-	17	6	10	11	9
N.J.	33	39	19	27	42	-	62	157	10	16
Pa.	33	40	64	79	202	110	401	287	10	25
E.N. CENTRAL	76	146	184	222	478	770	146	156	14	28
Ohio	17	19	51	68	209	365	50	36	8	10
Ind.	2	12	39	29	56	103	26	31	1	3
Ill.	24	60	41	46	-	127	23	31	-	12
Mich.	23	43	36	37	89	47	40	44	5	3
Wis.	10	12	17	42	124	128	7	14	-	-
W.N. CENTRAL	42	55	126	123	336	616	499	401	61	103
Minn.	21	16	25	30	132	319	30	35	1	-
Iowa	5	4	23	19	85	109	95	65	2	3
Mo.	5	14	58	42	73	120	50	48	48	95
N. Dak.	1	1	1	-	4	5	46	32	-	-
S. Dak.	2	2	1	2	3	6	67	79	4	1
Nebr.	-	5	7	23	5	8	58	-	3	4
Kans.	8	13	11	7	34	49	153	142	3	-
S. ATLANTIC	253	281	232	244	514	368	2,158	2,223	419	401
Del.	3	4	8	7	1	3	43	24	1	1
Md.	60	97	24	8	67	58	246	335	95	35
D.C.	13	18	-	-	2	2	-	-	1	-
Va.	32	29	23	37	86	124	434	490	26	32
W. Va.	4	3	5	4	16	31	74	156	5	2
N.C.	20	20	30	30	109	38	660	597	207	238
S.C.	3	7	20	26	102	41	206	121	31	63
Ga.	48	47	30	27	30	25	334	346	44	19
Fla.	70	56	92	105	101	46	161	154	9	11
E.S. CENTRAL	18	19	70	82	120	222	155	202	86	114
Ky.	7	7	16	13	41	87	33	24	1	5
Tenn.	5	3	20	33	58	94	95	108	56	71
Ala.	3	4	15	19	15	32	26	66	12	12
Miss.	3	5	19	17	6	9	1	4	17	26
W.S. CENTRAL	51	65	166	183	477	1,459	194	999	48	170
Ark.	4	2	12	23	30	483	25	3	-	96
La.	4	4	32	38	6	7	-	-	-	-
Okla.	4	8	14	19	14	35	169	104	42	61
Tex.	39	51	108	103	427	934	-	892	6	13
MOUNTAIN	41	42	63	79	791	803	155	284	10	14
Mont.	-	2	4	2	5	5	20	16	1	1
Idaho	1	-	6	3	68	62	15	36	2	-
Wyo.	1	-	2	-	123	10	6	18	2	5
Colo.	21	22	20	23	270	313	38	59	2	2
N. Mex.	1	3	7	4	54	171	5	10	-	1
Ariz.	12	7	15	23	126	109	54	125	1	-
Utah	4	5	1	4	112	89	14	12	2	-
Nev.	1	3	8	20	33	44	3	8	-	5
PACIFIC	149	187	271	290	1,705	1,421	182	266	2	3
Wash.	21	22	26	54	566	380	-	-	-	-
Oreg.	10	9	49	42	389	168	6	14	-	2
Calif.	111	147	183	183	735	841	169	226	2	1
Alaska	1	2	3	4	4	4	7	26	-	-
Hawaii	6	7	10	7	11	28	-	-	-	-
Guam	-	-	-	1	-	2	-	-	-	-
P.R.	1	1	2	7	-	2	62	74	N	N
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

Reporting area	Salmonellosis		Shigellosis		Streptococcal disease, invasive, group A		*Streptococcus pneumoniae*, invasive: Drug resistant, all ages		*Streptococcus pneumoniae*, invasive: Age <5 years	
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	32,522	34,885	17,641	16,328	4,430	3,825	1,715	2,009	343	273
NEW ENGLAND	1,731	1,857	255	280	338	280	40	94	7	3
Maine	108	117	6	8	23	20	-	-	-	-
N.H.	100	116	5	11	21	32	-	-	N	N
Vt.	62	68	7	1	18	9	6	5	4	2
Mass.	1,019	1,056	166	174	163	94	N	N	N	N
R.I.	106	135	14	16	11	15	10	12	3	1
Conn.	336	365	57	70	102	110	24	77	U	U
MID. ATLANTIC	3,647	4,683	1,816	1,431	784	607	101	91	78	65
Upstate N.Y.	933	1,231	363	232	315	245	56	76	60	54
N.Y. City	1,030	1,184	320	404	105	136	U	U	U	U
N.J.	426	902	228	511	131	131	N	N	N	N
Pa.	1,258	1,366	905	284	233	95	45	15	18	11
E.N. CENTRAL	4,389	4,702	1,420	1,801	922	820	366	181	140	106
Ohio	1,143	1,144	263	536	264	179	236	44	79	10
Ind.	484	469	132	91	95	46	130	135	38	49
Ill.	1,386	1,565	704	865	182	235	-	2	-	-
Mich.	655	755	216	151	314	259	N	N	N	N
Wis.	721	769	105	158	67	101	N	N	23	47
W.N. CENTRAL	2,131	2,149	676	873	287	206	137	404	46	46
Minn.	472	459	89	183	143	103	-	284	40	42
Iowa	319	416	63	103	N	N	N	N	N	N
Mo.	846	708	328	150	63	41	11	5	2	1
N. Dak.	30	24	3	16	13	-	3	1	4	3
S. Dak.	100	101	16	151	19	12	1	1	-	-
Nebr.	123	145	98	190	23	18	-	25	N	N
Kans.	241	296	79	80	26	32	122	88	N	N
S. ATLANTIC	8,587	8,883	6,072	5,256	769	635	876	918	17	28
Del.	84	77	152	198	6	2	1	3	N	N
Md.	699	773	522	931	226	99	-	-	-	21
D.C.	37	66	62	51	13	7	2	-	7	3
Va.	861	956	375	788	92	68	N	N	N	N
W. Va.	109	111	-	9	31	18	58	37	10	4
N.C.	1,105	1,195	837	335	93	110	N	N	U	U
S.C.	622	661	399	99	35	35	123	161	N	N
Ga.	1,591	1,625	1,396	1,278	100	118	204	230	N	N
Fla.	3,479	3,419	2,329	1,567	173	178	488	487	N	N
E.S. CENTRAL	2,143	2,622	721	1,151	171	93	117	116	-	-
Ky.	333	300	111	131	40	19	15	14	N	N
Tenn.	620	649	262	88	131	74	102	102	N	N
Ala.	406	668	198	617	-	-	-	-	N	N
Miss.	784	1,005	150	315	-	-	-	-	-	-
W.S. CENTRAL	3,929	3,826	3,672	2,514	274	254	53	160	50	21
Ark.	638	878	86	162	5	6	8	6	-	-
La.	420	645	226	395	1	1	45	154	8	6
Okla.	400	419	703	477	74	39	N	N	29	3
Tex.	2,471	1,884	2,657	1,480	194	208	N	N	13	12
MOUNTAIN	1,808	1,804	969	709	378	456	22	45	5	4
Mont.	90	77	2	3	2	-	-	-	-	-
Idaho	149	117	26	12	18	9	N	N	N	N
Wyo.	71	60	6	8	2	7	5	13	-	-
Colo.	404	496	235	155	115	99	-	-	-	-
N. Mex.	207	251	190	163	94	92	17	32	-	-
Ariz.	544	469	409	300	136	221	-	-	N	N
Utah	187	150	43	24	9	28	-	-	5	4
Nev.	156	184	58	44	2	-	-	-	-	-
PACIFIC	4,157	4,359	2,040	2,313	507	474	3	-	-	-
Wash.	445	430	131	136	53	46	-	-	N	N
Oreg.	352	296	194	86	N	N	N	N	N	N
Calif.	3,137	3,357	1,670	2,033	358	359	N	N	N	N
Alaska	59	54	8	5	-	-	-	-	N	N
Hawaii	164	222	37	53	96	69	3	-	-	-
Guam	-	38	-	30	-	-	-	4	-	-
P.R.	183	428	3	28	N	N	N	N	N	N
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

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

* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending October 18, 2003, and October 19, 2002 (42nd Week)*

Reporting area	Syphilis: Primary & secondary Cum. 2003	Syphilis: Primary & secondary Cum. 2002	Syphilis: Congenital Cum. 2003	Syphilis: Congenital Cum. 2002	Tuberculosis Cum. 2003	Tuberculosis Cum. 2002	Typhoid fever Cum. 2003	Typhoid fever Cum. 2002	Varicella (Chickenpox) Cum. 2003
UNITED STATES	5,310	5,393	288	342	8,930	10,270	246	266	9,959
NEW ENGLAND	158	119	1	-	249	329	22	13	1,368
Maine	7	2	1	-	5	20	-	-	642
N.H.	14	6	-	-	7	10	2	-	-
Vt.	-	1	-	-	7	4	-	-	577
Mass.	105	81	-	-	169	172	11	7	146
R.I.	16	6	-	-	28	43	2	-	3
Conn.	16	23	-	-	33	80	7	6	-
MID. ATLANTIC	672	578	48	54	1,694	1,757	42	69	30
Upstate N.Y.	35	26	9	2	227	254	10	7	N
N.Y. City	379	338	28	23	918	848	16	37	-
N.J.	128	128	11	28	317	400	13	17	-
Pa.	130	86	-	1	232	255	3	8	30
E.N. CENTRAL	703	998	58	52	890	1,036	17	30	4,302
Ohio	173	129	3	3	162	171	2	6	1,004
Ind.	40	49	10	2	103	99	4	2	-
Ill.	268	387	17	34	424	493	1	14	-
Mich.	211	413	28	13	161	219	10	4	2,663
Wis.	11	20	-	-	40	54	-	4	635
W.N. CENTRAL	107	99	4	2	378	429	4	9	39
Minn.	34	48	-	1	154	186	-	3	N
Iowa	4	2	-	-	17	24	2	-	N
Mo.	39	27	4	1	99	110	1	2	-
N. Dak.	2	-	-	-	-	4	-	-	39
S. Dak.	2	-	-	-	16	10	-	-	-
Nebr.	4	5	-	-	10	22	1	4	-
Kans.	22	17	-	-	82	73	-	-	-
S. ATLANTIC	1,407	1,369	54	77	1,829	2,174	43	34	1,747
Del.	6	10	-	-	23	13	-	-	23
Md.	239	158	9	15	191	230	8	7	-
D.C.	42	47	-	1	-	-	-	-	25
Va.	64	57	1	1	207	219	12	4	470
W. Va.	2	2	-	-	19	27	-	-	1,024
N.C.	128	237	16	18	244	283	7	1	N
S.C.	82	110	4	9	138	140	-	-	205
Ga.	346	298	6	13	291	426	7	5	-
Fla.	498	450	18	20	716	836	9	17	N
E.S. CENTRAL	252	398	10	25	507	620	4	4	1
Ky.	30	78	1	3	96	105	-	4	N
Tenn.	111	146	3	7	169	244	2	-	N
Ala.	92	135	4	9	175	171	2	-	-
Miss.	19	39	2	6	67	100	-	-	1
W.S. CENTRAL	739	674	53	72	1,221	1,534	25	26	2,006
Ark.	41	30	-	7	71	106	-	-	-
La.	122	125	-	-	-	-	-	-	11
Okla.	54	51	1	2	117	136	1	-	N
Tex.	522	468	52	63	1,033	1,292	24	26	1,995
MOUNTAIN	233	250	21	13	307	317	5	9	466
Mont.	-	-	-	-	5	6	-	-	N
Idaho	10	1	-	-	8	12	-	-	N
Wyo.	-	-	-	-	3	3	-	-	41
Colo.	20	53	3	2	62	71	3	4	-
N. Mex.	40	28	-	-	6	30	-	1	2
Ariz.	150	153	18	11	171	157	2	-	4
Utah	3	5	-	-	30	24	-	2	419
Nev.	10	10	-	-	22	14	-	2	-
PACIFIC	1,039	908	39	47	1,855	2,074	84	72	-
Wash.	64	50	-	1	198	193	3	4	-
Oreg.	32	17	-	-	88	94	4	2	-
Calif.	941	833	39	45	1,469	1,629	76	62	-
Alaska	-	-	-	-	46	39	-	-	-
Hawaii	2	8	-	1	54	119	1	4	-
Guam	-	6	-	-	-	59	-	-	-
P.R.	156	222	1	21	75	86	-	-	288
V.I.	1	1	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE III. Deaths in 122 U.S. cities,* week ending October 18, 2003 (42nd Week)

Reporting Area	All causes, by age (years) All Ages	≥65	45-64	25-44	1-24	<1	P&I† Total
NEW ENGLAND	527	381	96	32	8	10	58
Boston, Mass.	129	88	25	9	2	5	17
Bridgeport, Conn.	45	35	7	3	-	-	8
Cambridge, Mass.	21	17	2	2	-	-	-
Fall River, Mass.	23	20	1	1	-	1	-
Hartford, Conn.	52	29	13	7	2	1	4
Lowell, Mass.	24	13	9	1	-	1	2
Lynn, Mass.	11	9	-	2	-	-	-
New Bedford, Mass.	29	27	1	-	1	-	-
New Haven, Conn.	U	U	U	U	U	U	U
Providence, R.I.	52	41	8	2	-	1	8
Somerville, Mass.	4	4	-	-	-	-	-
Springfield, Mass.	34	20	12	-	2	-	5
Waterbury, Conn.	34	22	8	3	1	-	2
Worcester, Mass.	69	56	10	2	-	1	12
MID. ATLANTIC	2,033	1,439	392	132	34	35	113
Albany, N.Y.	50	41	4	4	-	1	4
Allentown, Pa.	22	20	-	1	1	-	2
Buffalo, N.Y.	112	91	16	3	2	-	6
Camden, N.J.	40	29	4	3	-	4	4
Elizabeth, N.J.	17	13	3	-	-	1	2
Erie, Pa.	39	31	7	1	-	-	-
Jersey City, N.J.	48	32	10	6	-	-	-
New York City, N.Y.	915	621	195	70	10	18	42
Newark, N.J.	37	17	10	7	2	1	3
Paterson, N.J.	22	13	9	-	-	-	1
Philadelphia, Pa.	349	243	71	17	13	5	17
Pittsburgh, Pa.§	30	23	6	1	-	-	4
Reading, Pa.	24	19	3	-	1	1	3
Rochester, N.Y.	137	99	25	10	2	1	9
Schenectady, N.Y.	21	20	-	-	1	-	1
Scranton, Pa.	23	21	1	-	1	-	2
Syracuse, N.Y.	89	67	12	7	1	2	8
Trenton, N.J.	15	10	4	1	-	-	-
Utica, N.Y.	20	14	6	-	-	-	2
Yonkers, N.Y.	23	15	6	1	-	1	3
E.N. CENTRAL	1,816	1,205	398	136	37	40	108
Akron, Ohio	58	41	9	4	2	2	3
Canton, Ohio	35	22	9	4	-	-	3
Chicago, Ill.	335	205	73	39	8	10	24
Cincinnati, Ohio	75	46	23	1	1	4	12
Cleveland, Ohio	115	78	25	9	1	2	8
Columbus, Ohio	171	114	37	13	4	3	7
Dayton, Ohio	111	79	23	7	2	-	8
Detroit, Mich.	173	94	53	17	6	3	8
Evansville, Ind.	44	32	8	3	1	-	1
Fort Wayne, Ind.	63	43	18	-	-	2	2
Gary, Ind.	14	7	2	5	-	-	-
Grand Rapids, Mich.	47	27	13	4	1	2	2
Indianapolis, Ind.	188	113	48	14	5	8	12
Lansing, Mich.	39	28	8	3	-	-	-
Milwaukee, Wis.	85	69	9	3	2	2	7
Peoria, Ill.	50	37	11	2	-	-	1
Rockford, Ill.	43	33	9	1	-	-	3
South Bend, Ind.	40	34	4	2	-	-	3
Toledo, Ohio	84	65	9	4	4	2	3
Youngstown, Ohio	46	38	7	1	-	-	1
W.N. CENTRAL	542	353	132	34	10	13	41
Des Moines, Iowa	55	36	14	1	1	3	5
Duluth, Minn.	33	22	8	2	-	1	3
Kansas City, Kans.	53	35	13	5	-	-	5
Kansas City, Mo.	89	52	27	5	1	4	6
Lincoln, Nebr.	48	38	7	-	1	2	3
Minneapolis, Minn.	53	35	9	5	3	1	4
Omaha, Nebr.	68	46	18	-	3	1	9
St. Louis, Mo.	U	U	U	U	U	U	U
St. Paul, Minn.	48	35	7	6	-	-	4
Wichita, Kans.	95	54	29	10	1	1	2

Reporting Area	All causes, by age (years) All Ages	≥65	45-64	25-44	1-24	<1	P&I† Total
S. ATLANTIC	1,231	742	322	100	47	20	58
Atlanta, Ga.	146	67	44	22	6	7	1
Baltimore, Md.	193	106	51	22	11	3	16
Charlotte, N.C.	115	69	33	6	6	1	9
Jacksonville, Fla.	151	103	39	7	2	-	9
Miami, Fla.	80	52	15	10	2	1	2
Norfolk, Va.	59	39	10	3	5	2	-
Richmond, Va.	62	39	14	3	3	3	5
Savannah, Ga.	51	38	11	1	1	-	3
St. Petersburg, Fla.	81	63	15	3	-	-	3
Tampa, Fla.	168	105	51	10	2	-	7
Washington, D.C.	100	44	33	11	9	3	1
Wilmington, Del.	25	17	6	2	-	-	2
E.S. CENTRAL	681	445	151	48	19	18	32
Birmingham, Ala.	9	8	1	-	-	-	9
Chattanooga, Tenn.	77	59	14	1	2	1	2
Knoxville, Tenn.	107	61	30	9	3	4	-
Lexington, Ky.	47	35	8	4	-	-	1
Memphis, Tenn.	149	86	33	21	3	6	5
Mobile, Ala.	93	65	21	3	1	3	2
Montgomery, Ala.	37	26	7	1	3	-	2
Nashville, Tenn.	162	105	37	9	7	4	11
W.S. CENTRAL	1,334	867	283	113	42	29	86
Austin, Tex.	94	64	13	11	3	3	7
Baton Rouge, La.	17	7	7	1	2	-	-
Corpus Christi, Tex.	54	37	13	2	2	-	2
Dallas, Tex.	166	100	33	20	8	5	12
El Paso, Tex.	72	48	11	7	6	-	2
Ft. Worth, Tex.	112	72	19	8	3	10	7
Houston, Tex.	340	197	92	34	8	9	26
Little Rock, Ark.	57	41	9	5	1	1	2
New Orleans, La.	31	14	10	7	-	-	-
San Antonio, Tex.	238	174	46	12	6	-	17
Shreveport, La.	39	32	2	3	1	1	3
Tulsa, Okla.	114	81	28	3	2	-	8
MOUNTAIN	898	580	151	64	20	13	58
Albuquerque, N.M.	110	80	12	11	4	3	10
Boise, Idaho	27	23	2	1	-	1	2
Colo. Springs, Colo.	60	40	12	7	1	-	6
Denver, Colo.	104	67	19	10	4	4	7
Las Vegas, Nev.	226	157	46	18	4	1	11
Ogden, Utah	24	17	6	-	-	1	3
Phoenix, Ariz.	71	-	-	-	1	-	2
Pueblo, Colo.	39	26	7	6	-	-	2
Salt Lake City, Utah	112	80	24	5	1	2	10
Tucson, Ariz.	125	90	23	6	5	1	5
PACIFIC	1,292	879	263	92	28	30	98
Berkeley, Calif.	20	11	7	1	1	-	-
Fresno, Calif.	48	38	6	2	1	1	7
Glendale, Calif.	9	7	2	-	-	-	1
Honolulu, Hawaii	83	64	11	3	2	3	9
Long Beach, Calif.	46	21	17	8	-	-	9
Los Angeles, Calif.	228	150	46	22	5	5	20
Pasadena, Calif.	U	U	U	U	U	U	U
Portland, Oreg.	77	51	14	8	1	3	4
Sacramento, Calif.	185	128	35	11	7	4	8
San Diego, Calif.	147	108	25	8	5	1	9
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	148	99	35	7	1	6	11
Santa Cruz, Calif.	29	22	5	2	-	-	3
Seattle, Wash.	130	77	34	10	3	6	6
Spokane, Wash.	44	29	11	3	-	1	5
Tacoma, Wash.	98	74	15	7	2	-	6
TOTAL	10,354¶	6,891	2,188	751	245	208	652

U: Unavailable. -:No reported cases.

* Mortality data in this table are voluntarily reported 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.

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