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MORBIDITY AND MORTALITY WEEKLY REPORT

Tick Paralysis — Washington, 1995

Tick paralysis (tick toxicosis)—one of the eight most common tickborne diseases in the United States (*1*)—is an acute, ascending, flaccid motor paralysis that can be confused with Guillain-Barré syndrome, botulism, and myasthenia gravis. This report summarizes the results of the investigation of a case of tick paralysis in Washington.

On April 10, 1995, a 2-year-old girl who resided in Asotin County, Washington, was taken to the emergency department of a regional hospital because of a 2-day history of unsteady gait, difficulty standing, and reluctance to walk. Other than a recent history of cough, she had been healthy and had not been injured. On physical examination, she was afebrile, alert, and active but could stand only briefly before requiring assistance. Cranial nerve function was intact. However, she exhibited marked extremity and mild truncal ataxia, and deep tendon reflexes were absent. She was admitted with a tentative diagnosis of either Guillain-Barré syndrome or postinfectious polyradiculopathy.

Within several hours of hospitalization, she had onset of drooling and tachypnea. A nurse incidentally detected an engorged tick on the girl's hairline by an ear and removed the tick. Within 7 hours after tick removal, tachypnea subsided and reflexes were present but diminished. The patient recovered fully and was discharged on April 11. The tick species was not identified.

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Editorial Note: Tick paralysis occurs worldwide and is caused by the introduction of a neurotoxin elaborated into humans during attachment of and feeding by the female of several tick species. In North America, tick paralysis occurs most commonly in the Rocky Mountain and northwestern regions of the United States and in western Canada. Most cases have been reported among girls aged <10 years during April–June, when nymphs and mature wood ticks are most prevalent (*2*). Although tick paralysis is a reportable disease in Washington, surveillance is passive, and only 10 cases were reported during 1987–1995.

In the United States, this disease is associated with *Dermacentor andersoni* (Rocky Mountain wood tick), *D. variabilis* (American dog tick), *Amblyomma americanum* (Lone Star tick), *A. maculatum*, *Ixodes scapularis* (black-legged tick), and *I. pacificus*

Tick Paralysis — Continued

(western black-legged tick) (*3,4*). Onset of symptoms usually occurs after a tick has fed for several days. The pathogenesis of tick paralysis has not been fully elucidated, and pathologic and clinical effects vary depending on the tick species (*4*). However, motor neurons probably are affected by the toxin, which diminishes release of acetylcholine (*5*). In addition, experimental studies indicate that the toxin may produce a substantial decrease in maximal motor-nerve conduction velocities while simultaneously increasing the stimulating current potential necessary to elicit a response (*5*).

If unrecognized, tick paralysis can progress to respiratory failure and may be fatal in approximately 10% of cases (*6*). Prompt removal of the feeding tick usually is followed by complete recovery. Ticks can be attached to the scalp or neck and concealed by hair and can be removed using forceps or tweezers to grasp the tick as closely as possible to the point of attachment (*7*). Removal requires the application of even pressure to avoid breaking off the body and leaving the mouth parts imbedded in the host. Gloves should be worn if a tick must be removed by hand; hands should be promptly washed with soap and hot water after removal of a tick.

The risk for tick paralysis may be greatest for children in rural areas, especially in the Northwest, during the spring and may be reduced by the use of repellants on skin and permethrin-containing acaricides on clothing. Paralysis can be prevented by careful examination of potentially exposed persons for ticks and prompt removal of ticks. Health-care providers should consider tick paralysis in persons who reside or have recently visited tick-endemic areas during the spring or early summer and who present with symmetrical paralysis.

References

1. Spach DH, Liles WC, Campbell GL, Quick RE, Anderson DE, Fritsche TR. Tick-borne diseases in the United States. N Engl J Med 1993;329:936–47.
2. CDC. Tick paralysis—Wisconsin. MMWR 1981;30:217–8.
3. CDC. Tick paralysis—Georgia. MMWR 1977;26:311.
4. Gothe R, Kunze K, Hoogstraal H. The mechanisms of pathogenicity in the tick paralyses. J Med Entomol 1979;16:357–69.
5. Kocan AA. Tick paralysis. J Am Vet Med Assoc 1988;192:1498–500.
6. Schmitt N, Bowmer EJ, Gregson JD. Tick paralysis in British Columbia. Can Med Assoc J 1969;100:417–21.
7. Needham GR. Evaluation of five popular methods for tick removal. Pediatrics 1985;75:997–1002.

Update: Influenza Activity — United States and Worldwide, 1995–96 Season, and Composition of the 1996–97 Influenza Vaccine

To monitor influenza activity and to detect antigenic changes in the circulating strains of influenza viruses, CDC conducts surveillance in collaboration with the World Health Organization (WHO) and its international network of collaborating laboratories and with state and local health departments in the United States. This report summarizes surveillance for influenza in the United States and worldwide during the 1995–96 season and describes the composition of the 1996–97 influenza vaccine.

Influenza Activity — Continued

United States

Influenza activity began in November 1995 and peaked during late December 1995 and early January 1996. In many parts of the country, influenza activity declined steadily during January and February; of the 34 states that reported levels of influenza-like illness for the week ending April 13, a total of 16 states reported sporadic* levels of influenza-like illness, and 18 states reported no activity.

Of the 4132 influenza virus isolates reported to CDC from WHO collaborating laboratories in the United States from October 1, 1995, through March 30, 1996, a total of 3786 (92%) were influenza type A and 346 (8%) influenza type B. Of the 2416 type A isolates that were subtyped, 1427 (59%) were type A(H1N1), and 989 (41%) were type A(H3N2). Influenza type A(H3N2) predominated in the Mountain, New England, and Pacific regions, accounting for 70%, 56%, and 55% of subtyped influenza A isolates, respectively. Influenza type A(H1N1) predominated in the other six regions, accounting for 55%–82% of subtyped influenza A isolates. During February, although the total number of isolates decreased, the number and proportion of influenza type B isolates began to increase, and during March 1996, 50%–72% of all isolates reported were type B.

The proportion of all deaths reported by the vital statistics offices of 121 U.S. cities that were attributed to pneumonia and influenza (P&I) only slightly exceeded the epidemic threshold† during 3 of the 8 weeks from October 29 through December 23, 1995. During the 6 weeks from December 24, 1995, through February 3, 1996, the proportion of P&I deaths remained above the epidemic threshold, peaking at 8.2% of all deaths during the week ending January 20. However, since February 10, percentages of P&I deaths have been below the epidemic threshold.

Worldwide

Influenza activity occurred at moderate to severe levels during October 1995–March 1996. Epidemics associated with influenza A(H3N2) and A(H1N1) viruses were reported in countries in Europe, Asia, and North America, while influenza B viruses circulated at low levels.

School outbreaks caused by influenza A(H3N2) viruses were reported in England beginning in September and October. During November and December, epidemic activity associated primarily with A(H3N2) viruses was reported by countries throughout Europe, including Belarus, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Latvia, Netherlands, Norway, Slovakia, Spain, Sweden, and the United Kingdom. During January, influenza A(H3N2) viruses were associated with outbreaks in Beijing and with high levels of influenza-like illness in six northern provinces of China. Isolation of influenza A(H3N2) viruses also was reported in North America (Canada and the United States), Europe (Belgium, Iceland, Ireland, Italy, Poland, Portugal, the Russian Federation, and Switzerland), Asia (Guam, Hong Kong, Japan, and Singapore), and Oceania (Australia and New Zealand). For the first time since

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*Levels of activity are 1) *sporadic*—sporadically occurring influenza-like illness (ILI) or culture-confirmed influenza with no outbreaks detected; 2) *regional*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of <50% of the state's total population; and 3) *widespread*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of ≥50% of the state's total population.

†The epidemic threshold is 1.645 standard deviations above the seasonal baseline calculated using a periodic regression model applied to observed percentages since 1983. The baseline was calculated using a robust regression procedure.

Influenza Activity — Continued

the 1991–92 influenza season, A(H1N1) viruses were associated with epidemics in several regions of the world. Epidemic activity associated with influenza A(H1N1) viruses was reported and predominated in Belgium, Canada, Japan, southern France, Switzerland, and the United States. Influenza A(H1N1) viruses were isolated in association with sporadic activity in Europe (Finland, Germany, Italy, Latvia, Netherlands, Poland, Romania, Russian Federation, Spain, Sweden, and the United Kingdom) and Asia (China, Hong Kong, Israel, and Thailand)

In comparison to type A influenza viruses, type B viruses have been isolated later in the season and less frequently worldwide. Influenza B viruses were isolated primarily in association with sporadic activity in North America (Canada and the United States), Asia (China, Hong Kong, Israel, Japan, and Singapore), Europe (Belarus, Finland, France, Germany, Greece, Hungary, Netherlands, Poland, Romania, Russian Federation, Sweden, Switzerland, and the United Kingdom), and Oceania (Australia and New Zealand).

Composition of the 1996–97 Vaccine

The Food and Drug Administration Vaccines and Related Biological Products Advisory Committee (VRBPAC) has recommended that the 1996–97 trivalent influenza vaccine for the United States contain A/Wuhan/359/95-like(H3N2), A/Texas/36/91-like (H1N1), and B/Beijing/184/93-like viruses. This recommendation was based on the antigenic analysis of recently isolated influenza viruses and the antibody responses of persons vaccinated with the 1995–96 vaccine.

Although most of the influenza type A(H3N2) viruses that have been antigenically characterized are similar to the A/Johannesburg/33/95 strain, increasing numbers of recently isolated A(H3N2) strains from Asia, Europe, and North America are more similar to the antigenic variant A/Wuhan/359/95 (Table 1). Vaccines containing the A/Johannesburg/33/94(H3N2)-like virus induced a good antibody response to the vaccine strain but induced lower and less frequent antibody responses to recent type A(H3N2) strains such as A/Wuhan/359/95 (*1*). Therefore, VRBPAC recommended changing the influenza type A(H3N2) vaccine component to an A/Wuhan/359/95-like

TABLE 1. Hemagglutination-inhibition titers of influenza A(H3N2) viruses with serum specimens from infected ferrets*

	Ferret antiserum		
Viral antigen	**A/Johannesburg/33/94**	**A/Alaska/10/95**	**A/Wuhan/359/95**
Reference antigen			
A/Johannesburg/33/94	**1280**	160	80
A/Alaska/10/95	320	**1280**	640
A/Wuhan/359/95	80	160	**640**
Recent isolates			
A/Missouri/017/96	1280	320	40
A/England/409/95	1280	320	80
A/Nanchang/933/95	160	320	1280
A/Japan/368/96	80	320	640
A/New York/09/96	160	320	1280
A/Washington/416/96	80	320	640

*A fourfold difference in hemagglutination-inhibition titers with two viruses is usually indicative of antigenic variation between viruses.

Influenza Activity — Continued

strain for the 1996–97 season. The strain that will be used by U.S. vaccine manufacturers because of its growth properties will be the antigenically equivalent A/Nanchang/933/95 virus.

Virtually all (98%) influenza A(H1N1) viruses that have been antigenically characterized are similar to the reference strains A/Taiwan/01/86 and A/Texas/36/91. Because vaccines containing the A/Texas/36/91 strain induced antibodies with similar frequency and titer to both the vaccine virus and to recent type A(H1N1) strains (*1*), VRBPAC recommended retaining an A/Texas/36/91-like strain in the 1996–97 vaccine.

Antigenically characterized influenza B viruses isolated recently in Asia, Europe, and the United States have been similar to the reference strains B/Beijing/184/93 and B/Harbin/07/94. Vaccines containing the B/Harbin/07/94 strain induced antibodies with similar frequency and titer to the vaccine virus and to recently isolated influenza B strains (*1*). Therefore, VRBPAC recommended retaining B/Harbin/07/94-like strain in the 1996–97 vaccine.

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Editorial Note: During the 1995–96 season, the impact of influenza in many parts of the United States and in some other countries in the Northern Hemisphere was more severe than during the previous season (*2*). In the United States, influenza type A(H1N1) viruses predominated for the first time since the 1986–87 season; although this subtype has not been associated with excess mortality in recent decades, the incidence of infection with type A(H1N1) has been high, especially among school-aged children. Influenza type A(H3N2) was not the predominant strain but circulated throughout the season and was associated with outbreaks among all age groups. Continued circulation of influenza type A(H3N2) and type A(H1N1) is anticipated during the 1996–97 season. Influenza B activity increased late in the 1995–96 influenza season, suggesting that type B viruses may circulate more widely next winter.

Strains to be included in the influenza vaccine usually are selected during the preceding January through March because of scheduling requirements for production, quality control, packaging, and distribution of vaccine for administration before onset of the next influenza season. Recommendations of the Advisory Committee on Immunization Practices for the use of vaccine and antiviral agents for prevention and control of influenza will be published in an *MMWR Recommendations and Reports* on May 3, 1996.

References

1. World Health Organization. Recommended composition of influenza virus vaccines for use in the 1996–1997 flu season. Wkly Epidemiol Rec 1996;71:57–61.
2. CDC. Update: influenza activity—United States and worldwide, 1994–95 season, and composition of the 1995–96 influenza vaccine. MMWR 1995;44:292–5.

Multidrug-Resistant Tuberculosis Outbreak on an HIV Ward — Madrid, Spain, 1991–1995

Beginning in 1990, outbreaks of multidrug-resistant tuberculosis (MDR-TB) have been reported in hospitals and prisons in the eastern United States (*1*). During June 1991–January 1995, MDR-TB was diagnosed in 47 patients and one health-care worker at a 120-bed, infectious disease referral hospital in urban Madrid; on April 19, 1995, the Spanish Field Epidemiology Training Program was asked to investigate this outbreak. This report summarizes the findings of this investigation, which suggested that nosocomial transmission of MDR-TB occurred on a hospital ward for patients with human immunodeficiency virus (HIV) infection.

A case of MDR-TB was defined as culture-confirmed TB that was resistant to at least rifampin and isoniazid in a patient hospitalized on the ward for HIV-infected persons during June 1991–January 1995 and with no previous history of TB treatment. Case finding was coordinated by the mycobacteriology laboratory director and an infectious disease specialist, who reviewed medical records and laboratory results for persons with suspected MDR-TB. In addition to drug-susceptibility testing, analysis of resistant strains included DNA fingerprinting with restriction fragment-length polymorphism (RFLP). Because the hospital did not have in place a ventilation system that recirculated or removed air, the acid-fast bacilli (AFB) isolation capacity (negative pressure and number of air interchanges per hour) could not be assessed on the HIV ward.

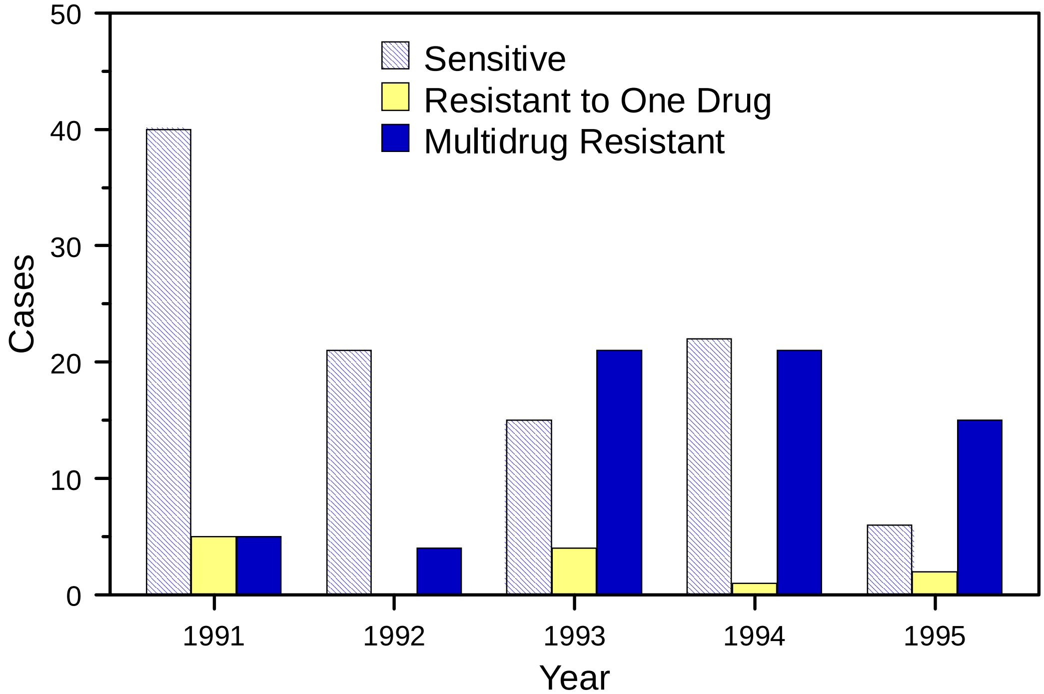
MDR-TB was identified in 47 HIV-positive patients who had been hospitalized on the HIV ward during June 1991–January 1995. The mean age of case-patients was 34 years (range: 25–54 years); 39 (81%) were male, and 32 (67%) were injecting-drug users. The one health-care worker was HIV-positive and had worked on the HIV ward during 1990–1994. A total of 47 (98%) patients, including the health-care worker, had died at the time of the investigation; the mean interval from diagnosis of MDR-TB to death was 78 days. An analysis of isolates from TB cases throughout the hospital during 1991–June 1995 identified 104 that were drug-susceptible; 12 that were resistant to one drug; and 66 that were resistant to isoniazid, streptomycin, ethambutol, and rifampin (HSER) (Figure 1). The proportion of *Mycobacterium tuberculosis* strains identified that were MDR-TB increased from 10% in 1991 to 53% in 1993 to 65% in June 1995.

Beginning in 1993, the resistance pattern identified consistently in isolates was HSER: of the 26 cases diagnosed during October 1993–June 1995, this pattern was present in 24 (92%). Of the 12 isolates available for DNA fingerprinting, the same band patterns were present in 11 (Figure 2). For comparison, TB isolates were obtained from the two patients with different antibiograms; their RFLP analyses were distinct from those of isolates from the other patients.

A case-control study was conducted to identify potential risk factors for MDR-TB among HIV-infected patients who had been hospitalized on the HIV ward during September 15, 1991–December 31, 1994, and in whom TB was diagnosed in 1994. Cases included patients with isolates with the HSER resistance pattern (n=18); controls were patients with isolates sensitive to rifampin, isoniazid, streptomycin, and ethambutol (n=17). The category "potentially infective" for TB patients was defined as the period from 2 weeks before a positive sputum smear or TB culture confirmation until sputum

Tuberculosis Outbreak — Continued

FIGURE 1. Number of cases of *Mycobacterium tuberculosis* infection in patients in an infectious diseases hospital, by drug susceptibility and year of diagnosis — Madrid, Spain, January 1991–June 1995



cultures were negative or until death. "Possibly exposed" for patients without TB was defined as hospitalization on the HIV ward concurrent with the hospitalization of a potentially infectious patient during the period until 2 weeks before TB was diagnosed in the potentially infectious patient. Case- and control-patients were similar in age, sex, HIV risk group, interval of time between HIV diagnosis and TB diagnosis, and CD4+ T-lymphocyte count at the time of TB diagnosis. However, before the hospitalization during which MDR-TB was diagnosed, 13 (72%) of the case-patients had been hospitalized on the HIV ward, compared with five (29%) control patients (odds ratio=6.2; 95% confidence interval=1.2–36.7). Of all patients with TB diagnosed in 1994 who were hospitalized on the HIV ward, 5% had MDR-TB. Case patients were more likely to have been possibly exposed to potentially infective wardmates and to have more days of exposure (13 [72%] for a median of 26 days) than control patients (seven [41%] for a median of 8 days) (for duration of exposure, chi square for linear trend=7.0; p=0.03).

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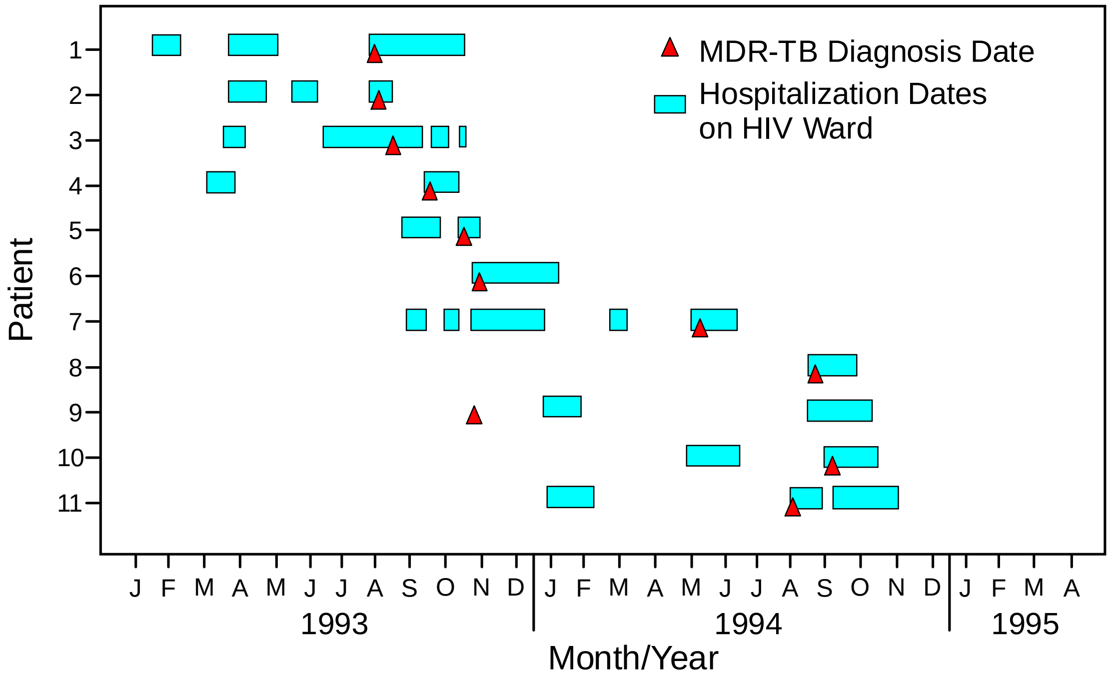
Editorial Note: The findings in this report document the first outbreak of nosocomial MDR-TB to be investigated in Spain. Characteristics of this outbreak that are similar to previously reported outbreaks include MDR-TB among patients hospitalized in an HIV-dedicated ward, a high death rate within 3 months of onset, and the role of myco-

Tuberculosis Outbreak — Continued

FIGURE 2. Dates of hospitalization on an HIV ward in an infectious diseases hospital for 11 patients with multidrug-resistant tuberculosis* (MDR-TB) that had identical DNA fingerprinting with restriction fragment-length polymorphism, by patient and month — Madrid, Spain, 1993–April 1995



*All strains were resistant to isoniazid, streptomycin, ethambutol, and rifampin.

bacteriology laboratory-based surveillance in recognizing similar resistance patterns with confirmation through RFLP fingerprinting (*2*).

Measures to control this outbreak have included 1) isolating all MDR-TB patients in a separate area of the hospital and the on-site provision of all clinical and diagnostic services; 2) notifying family, community members, and wardmates of patients whose MDR-TB had been diagnosed during January–June 1995 about their exposure, scheduling follow-up evaluation, and offering isoniazid preventive therapy (although isoniazid resistance had been identified in isolates from the outbreak, this resistance was low); 3) informing all hospital staff about the outbreak, and establishing a TB screening clinic that was attended by 565 (96%) of 591 employees; 4) purchasing personal respiratory protection devices that fulfilled recommended sealage and filtering criteria (*3*) and distributing these devices to staff exposed to TB patients; and 5) developing plans to improve the capacity of the hospital's mycobacteriology laboratory and to install 11 AFB isolation rooms.

To prevent nosocomial transmission of *M. tuberculosis*, hospital staff should monitor surveillance for and rapidly diagnose, isolate, and treat persons with suspected TB and ensure timely laboratory confirmation with identification of drug-susceptibility patterns. Because immunocompromised persons, such as those on HIV wards, are at increased risk for TB, surveillance and rapid confirmation are especially important to prevent *M. tuberculosis* transmission. In addition, hospitals and other health-care fa-

Tuberculosis Outbreak — Continued

cilities should conduct regular employee TB screening clinics (graded by occupational risk category) that closely monitor tuberculin skin test conversions; such clinics can assist in surveillance for nosocomial transmission of TB.

References

1. Kent JH. The epidemiology of multidrug-resistant tuberculosis in the United States. Med Clin North Am 1993;77:1391–409.
2. CDC. Nosocomial transmission of multidrug-resistant tuberculosis among HIV-infected persons—Florida and New York, 1988–1991. MMWR 1991;40:585–91.
3. CDC. Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care facilities, 1994. MMWR 1994;43(no. RR-13).

Adult Blood Lead Epidemiology and Surveillance — United States, Fourth Quarter, 1995

CDC's National Institute for Occupational Safety and Health Adult Blood Lead Epidemiology and Surveillance program (ABLES) monitors elevated blood lead levels (BLLs) among adults in the United States (*1*). This report presents ABLES data for the fourth quarter of 1995.

During October–December 1995, the 6553 reports of BLLs ≥25 µg/dL represented a 4% decrease from the 6821 reports for the fourth quarter of 1994, which now include previously unpublished data for Maine (*2*). Compared with the fourth quarter of 1994, reports for the same period of 1995 increased 1% at the 25–39 µg/dL level; reports decreased 15% at the 40–49 µg/dL level, 27% at the 50–59 µg/dL level, and 10% at the ≥60 µg/dL level. For 1995, cumulative reports of BLLs ≥25 µg/dL decreased 10% from reports for 1994 (Table 1). The cumulative number of reports decreased at each reporting level.

TABLE 1. Number of reports of elevated blood lead levels (BLLs) among adults, number of adults with elevated BLLs, and percentage change in number of reports — 23 states,* fourth quarter, 1995

Reported BLL (µg/dL)	Fourth quarter, 1995		Cumulative reports, 1995		Cumulative reports, 1994		% Change from 1994 to 1995
	No. reports†	No. persons§	No.	(%)	No.	(%)	
25–39	5,034	3,720	18,492	(76)	19,420	(72)	– 5%
40–49	1,192	801	4,482	(18)	5,821	(22)	–23%
50–59	225	153	885	(4)	1,132	(4)	–22%
≥60	102	65	412	(2)	459	(2)	–10%
Total	**6,553**	**4,739**	**24,271**	**(100)**	**26,832**	**(100)**	**–10%**

*Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin.

†Data for Alabama and South Carolina were missing; fourth quarter 1994 data were used as an estimate.

§Individual reports are categorized according to the highest reported BLL for the person during the given quarter. Pennsylvania provides the number of reports but not the number of persons; the number of persons for Pennsylvania in this table are estimates based on the proportions from the other 22 states combined and the number of reports received from Pennsylvania. Data for Alabama and South Carolina were missing; third quarter 1994 data were used as an estimate.

Adult Blood Lead Epidemiology and Surveillance — Continued

Compared with 1994, the increase in the number of reports at the highest reporting level (≥60 µg/dL) in the second and third quarters of 1995 (*3*) did not continue into the fourth quarter; the number of BLL reports during the fourth quarter in this category declined from 114 to 102 (*2*). The percentage of all reported BLLs at the ≥60 µg/dL level was 3% in 1992 (*4*) and remained at 2% in 1993 (*2*), 1994 (*5*) and 1995 (Table 1).

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Editorial Note: Variation in national quarterly reporting totals may result from 1) changes in the number of participating states, 2) timing of receipt of laboratory BLL reports by state-based surveillance programs, 3) changes in staffing and funding of state-based surveillance programs, and 4) interstate differences in worker BLL testing by lead-using industries. Variation from these sources reduces the capability to confidently identify trends in the actual data reported.

The findings in this report document the continuing hazard of work-related lead exposures as an occupational health problem in the United States. ABLES enhances surveillance for this preventable condition by expanding the number of participating states, reducing variability in reporting, and distinguishing between new and recurring elevated BLLs among adults.

References

1. CDC. Surveillance of elevated blood lead levels among adults—United States, 1992. MMWR 1992;41:285–8.
2. CDC. Adult Blood Lead Epidemiology and Surveillance—United States, fourth quarter, 1994. MMWR 1995;44:286–7.
3. CDC. Adult Blood Lead Epidemiology and Surveillance—United States, third quarter, 1995. MMWR 1996;45:170–1.
4. CDC. Adult Blood Lead Epidemiology and Surveillance—United States, fourth quarter, 1992. MMWR 1993;42:254.
5. CDC. Adult Blood Lead Epidemiology and Surveillance—United States, 1994 and first quarter, 1995. MMWR 1995;44:515–7.

Notice to Readers

Courses on Physical Activity and Public Health

CDC, the University of South Carolina Prevention Center, and the South Carolina Department of Health and Environmental Control will cosponsor two courses for biomedical and behavioral researchers and public health professionals. The courses are designed to train health professionals to conduct community physical activity research and interventions and to promote physical activity initiatives and policies in communities. Both courses are scheduled for September 1996 at Seabrook Island, South Carolina.

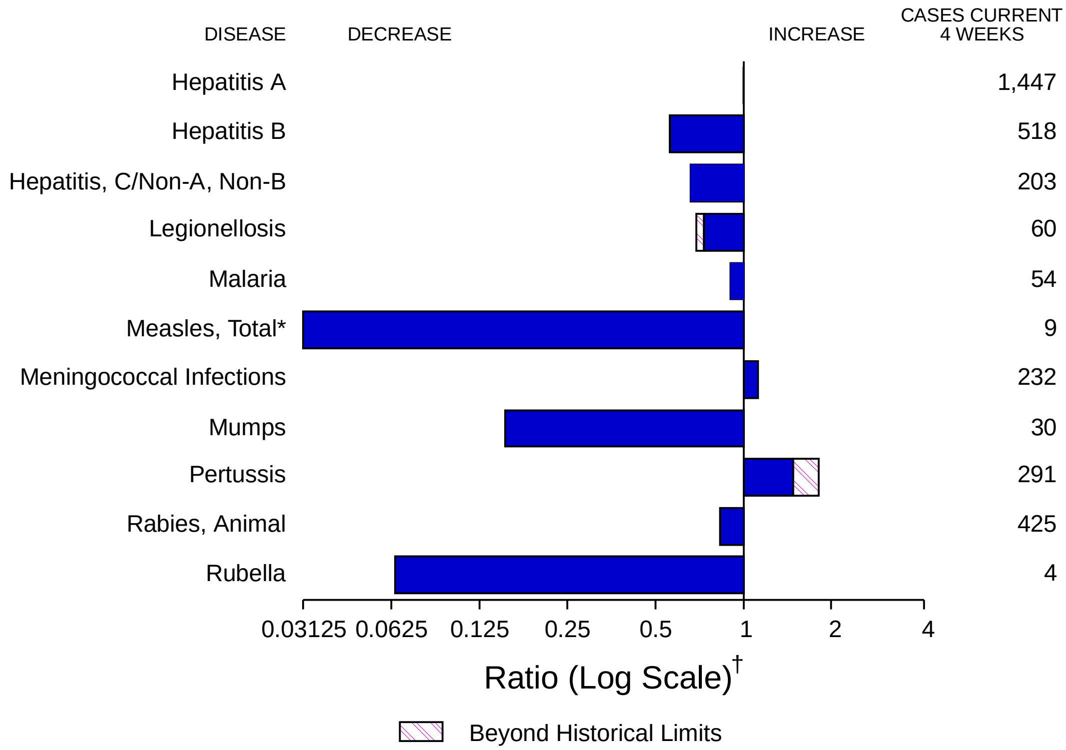
The first course, "A Postgraduate Course on Research Directions and Strategies," developed primarily for postdoctoral health professionals, is scheduled for September 18–25, 1996. The second course, "A Practitioner's Course on Community Interventions and Strategies," designed for public health practitioners, will be held September 19–23, 1996.

The deadline for applications is May 15, 1996. Participation in each course is limited. Additional information and application forms are available from Sara Corwin, School of Public Health, Department of Exercise Science, University of South Carolina, Columbia, SC 29208; telephone (803) 777-7291; fax (803) 777-8422.

Erratum: Vol. 45, No. 12

In the report, "Recall of Philip Morris Cigarettes, May 1995–March 1996," on page 254, the year of the Cigarette Labeling and Advertising Act is incorrect; the year should be *1965* instead of 1996.

FIGURE I. Selected notifiable disease reports, comparison of 4-week totals ending April 20, 1996, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline. (Ratio [log scale] for week 16 measles [total] is 0.031228.)
†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 — cases of selected notifiable diseases, United States, cumulative, week ending April 20, 1996 (16th Week)

	Cum. 1996		Cum. 1996
Anthrax	-	HIV infection, pediatric*§	76
Brucellosis	21	Plague	-
Cholera	1	Poliomyelitis, paralytic¶	-
Congenital rubella syndrome	2	Psittacosis	6
Cryptosporidiosis*	423	Rabies, human	-
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	26
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*	9
eastern equine*	1	Syphilis, congenital**	-
St. Louis*	-	Tetanus	5
western equine*	-	Toxic-shock syndrome	41
Hansen Disease	30	Trichinosis	8
Hantavirus pulmonary syndrome*†	2	Typhoid fever	79

*Not notifiable in all states.
† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§ Updated monthly to the Division of HIV/AIDS Prevention, National Center for Prevention Services (NCPS), last update March 26, 1996.
¶ No suspected cases of polio reported for 1996.
**Updated quarterly from reports to the Division of STD Prevention, NCPS. First quarter 1996 is not yet available.
-: no reported cases

TABLE II. Cases of selected notifiable diseases, United States, weeks ending April 20, 1996, and April 22, 1995 (16th Week)

Reporting Area	AIDS*		Chlamydia	*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB		Legionellosis	
				NETSS†	PHLIS§						
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	16,791	23,010	70,142	231	102	83,770	111,738	1,002	1,236	212	355
NEW ENGLAND	657	1,249	2,890	26	16	2,346	1,725	27	31	9	4
Maine	10	23	-	3	-	13	20	-	-	1	-
N.H.	23	37	218	1	1	39	32	1	4	-	-
Vt.	7	12	-	5	5	19	15	15	3	-	-
Mass.	392	581	2,015	11	10	679	937	8	23	3	3
R.I.	38	87	657	2	-	173	174	3	1	5	1
Conn.	187	509	-	4	-	1,423	547	-	-	N	N
MID. ATLANTIC	4,440	5,914	9,919	34	20	8,287	13,267	101	113	47	47
Upstate N.Y.	538	641	N	17	10	1,606	2,783	91	53	9	11
N.Y. City	2,443	3,053	2,288	-	-	1,785	4,857	1	1	-	1
N.J.	928	1,373	1,633	10	5	1,722	1,181	-	49	7	10
Pa.	531	847	5,998	N	5	3,174	4,446	9	10	31	25
E.N. CENTRAL	1,395	1,858	11,807	36	22	12,948	18,624	135	99	70	126
Ohio	300	436	2,955	19	8	1,581	7,642	4	4	34	50
Ind.	269	164	2,943	11	5	2,209	2,550	4	-	18	33
Ill.	518	735	-	2	2	5,301	6,400	9	36	2	14
Mich.	228	421	4,101	4	7	2,911	-	118	59	15	14
Wis.	80	102	1,808	N	-	946	2,032	-	-	1	15
W.N. CENTRAL	413	529	7,635	24	16	4,772	6,277	110	24	13	22
Minn.	84	118	-	3	10	U	881	-	1	-	-
Iowa	31	32	1,091	5	3	325	468	71	3	3	8
Mo.	175	215	4,369	5	-	2,572	3,692	34	10	1	7
N. Dak.	1	1	2	1	1	1	10	-	-	-	2
S. Dak.	5	7	421	1	-	66	65	-	1	2	-
Nebr.	32	43	388	4	-	57	324	1	6	6	3
Kans.	85	113	1,364	5	2	752	837	4	3	1	2
S. ATLANTIC	4,590	6,055	16,866	15	2	31,439	34,897	51	82	27	57
Del.	93	114	-	-	-	439	636	1	-	-	-
Md.	444	987	1,825	N	1	4,121	4,344	-	2	5	12
D.C.	225	407	N	-	-	1,339	1,788	-	-	1	3
Va.	224	441	3,688	N	1	3,006	3,553	4	2	9	3
W. Va.	24	31	-	N	-	99	223	4	20	1	3
N.C.	191	309	-	4	-	5,622	7,707	14	22	3	10
S.C.	229	315	-	1	-	3,526	3,637	11	2	1	11
Ga.	685	729	4,078	3	-	7,447	6,399	-	10	-	8
Fla.	2,475	2,722	7,275	4	-	5,840	6,610	17	24	7	7
E.S. CENTRAL	540	689	8,570	9	4	9,025	13,895	173	465	19	9
Ky.	86	63	2,150	-	-	1,252	1,463	7	11	2	2
Tenn.	201	310	3,519	N	4	3,076	3,842	165	452	9	4
Ala.	157	159	2,754	2	-	4,241	5,598	1	2	-	2
Miss.	96	157	147	3	-	456	2,992	-	-	8	1
W.S. CENTRAL	1,480	2,030	3,945	11	4	6,278	10,662	96	55	1	5
Ark.	70	86	-	5	2	853	1,357	1	-	-	1
La.	435	327	2,076	N	2	2,428	3,709	33	26	-	1
Okla.	54	100	1,869	1	-	1,169	1,425	35	21	1	3
Tex.	921	1,517	-	1	-	1,828	4,171	27	8	-	-
MOUNTAIN	469	774	5,137	30	9	2,277	2,761	176	141	7	42
Mont.	4	8	-	-	-	10	30	8	7	-	2
Idaho	7	17	507	11	4	29	41	41	18	-	1
Wyo.	2	4	213	-	-	10	17	63	56	1	1
Colo.	152	268	-	10	5	567	941	4	27	4	19
N. Mex.	25	69	-	2	-	285	326	27	18	-	3
Ariz.	136	200	3,500	N	-	1,144	910	23	6	1	5
Utah	64	52	254	5	-	49	62	7	4	-	2
Nev.	79	156	663	2	-	183	434	3	5	1	9
PACIFIC	2,807	3,912	3,373	46	9	6,398	9,630	133	226	19	43
Wash.	220	357	2,826	8	5	723	793	24	66	1	3
Oreg.	153	132	-	12	-	143	163	3	15	-	-
Calif.	2,394	3,282	-	21	-	5,281	8,183	63	136	18	35
Alaska	3	39	N	1	-	141	281	2	1	-	-
Hawaii	37	102	389	N	4	110	210	41	8	-	5
Guam	3	-	59	N	-	17	29	-	-	-	-
P.R.	420	853	N	N	U	59	167	17	52	-	-
V.I.	3	19	N	N	U	-	11	-	-	-	-
Amer. Samoa	-	-	-	N	U	-	8	-	-	-	-
C.N.M.I.	-	-	N	N	U	11	7	-	-	-	-

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

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for Prevention Services, last update March 26, 1996.
†National Electronic Telecommunications System for Surveillance.
§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending April 20, 1996, and April 22, 1995 (16th Week)

Reporting Area	Lyme Disease		Malaria		Meningococcal Disease		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	1,018	1,334	271	285	1,170	1,105	3,326	4,851	4,361	4,696	1,437	2,021
NEW ENGLAND	45	90	8	13	40	56	56	65	116	106	165	565
Maine	-	1	2	1	6	3	-	2	4	-	-	-
N.H.	1	9	1	1	1	12	1	1	3	4	23	72
Vt.	-	1	1	-	2	6	-	-	-	1	48	76
Mass.	18	11	3	2	15	17	24	21	45	51	31	221
R.I.	21	10	1	2	-	-	-	1	18	12	19	75
Conn.	5	58	-	7	16	18	31	40	46	38	44	121
MID. ATLANTIC	851	1,017	69	62	93	116	114	296	750	992	227	480
Upstate N.Y.	386	512	15	11	28	39	12	26	90	95	120	193
N.Y. City	151	31	32	27	14	12	34	160	376	554	-	-
N.J.	59	134	19	17	26	31	36	57	177	176	46	101
Pa.	255	340	3	7	25	34	32	53	107	167	61	186
E.N. CENTRAL	11	14	27	40	152	159	541	756	558	408	11	2
Ohio	9	5	5	1	54	39	209	295	85	83	2	1
Ind.	2	6	3	3	17	30	77	77	50	27	1	-
Ill.	-	2	7	29	46	41	159	321	368	282	-	1
Mich.	-	1	8	2	18	27	41	-	39	-	4	-
Wis.	U	U	4	5	17	22	55	63	16	16	4	-
W.N. CENTRAL	37	24	4	7	97	67	144	260	119	170	126	92
Minn.	1	-	1	3	10	13	27	15	21	32	8	5
Iowa	16	1	1	-	21	11	6	21	15	25	69	30
Mo.	2	10	1	3	41	25	108	210	52	62	9	12
N. Dak.	-	-	-	-	2	-	-	-	1	1	11	9
S. Dak.	-	-	-	-	3	3	-	-	9	8	21	18
Nebr.	-	-	-	1	9	6	3	5	6	8	2	-
Kans.	18	13	1	-	11	9	-	9	15	34	6	18
S. ATLANTIC	37	135	49	62	221	189	1,066	1,324	611	727	732	602
Del.	1	13	2	1	2	2	12	7	-	16	17	38
Md.	24	94	16	18	21	13	184	117	85	135	184	134
D.C.	-	-	2	6	4	1	47	42	36	29	2	4
Va.	-	3	7	11	17	24	144	209	43	29	170	116
W. Va.	3	7	-	-	6	3	1	1	19	29	24	29
N.C.	6	8	7	6	29	33	325	354	100	79	178	133
S.C.	1	5	3	-	26	25	149	220	40	88	14	45
Ga.	-	4	7	9	71	49	97	237	165	2	99	93
Fla.	2	1	5	11	45	39	107	137	123	320	44	10
E.S. CENTRAL	14	9	5	5	84	68	869	1,127	350	406	50	89
Ky.	2	1	-	-	13	20	48	73	66	83	15	7
Tenn.	5	5	3	2	7	20	329	262	74	133	17	38
Ala.	-	1	1	3	33	15	176	195	133	120	18	43
Miss.	7	2	1	-	31	13	316	597	77	70	-	1
W.S. CENTRAL	4	23	8	5	129	123	394	741	412	556	20	41
Ark.	3	2	-	1	18	13	87	155	20	69	3	22
La.	-	-	-	1	25	14	180	355	-	-	10	9
Okla.	1	12	-	-	9	13	53	56	30	46	7	10
Tex.	-	9	8	3	77	83	74	175	362	441	-	-
MOUNTAIN	-	1	18	20	76	93	38	86	155	134	17	28
Mont.	-	-	1	2	1	2	-	3	-	3	-	13
Idaho	-	-	-	1	10	4	1	-	3	5	-	-
Wyo.	-	-	2	-	3	4	1	-	1	1	10	5
Colo.	-	-	10	10	11	21	14	53	21	5	-	-
N. Mex.	-	-	1	3	14	21	-	1	20	22	1	-
Ariz.	-	-	1	2	23	31	19	11	75	87	4	9
Utah	-	-	2	1	8	5	-	2	10	10	-	-
Nev.	-	1	1	1	6	5	3	16	25	1	2	1
PACIFIC	19	21	83	71	278	234	104	196	1,290	1,197	89	122
Wash.	-	-	5	7	35	34	1	6	83	72	-	-
Oreg.	5	1	7	5	51	43	3	4	35	19	-	-
Calif.	13	20	68	52	185	154	100	185	1,108	1,028	81	116
Alaska	-	-	-	1	5	1	-	1	22	25	8	6
Hawaii	1	-	3	6	2	2	-	-	42	53	-	-
Guam	-	-	-	-	1	2	2	1	-	4	-	-
P.R.	-	-	-	-	4	10	56	106	20	53	16	21
V.I.	-	-	-	-	-	-	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	2	-	-
C.N.M.I.	-	-	-	-	-	-	1	-	-	11	-	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE III. Cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 20, 1996, and April 22, 1995 (16th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (viral), by type				Measles (Rubeola)			
			A		B		Indigenous		Imported†	
	Cum. 1996*	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	1996	Cum. 1996	1996	Cum. 1996
UNITED STATES	432	419	7,459	7,669	2,359	2,758	3	77	1	5
NEW ENGLAND	9	22	86	55	48	68	-	5	-	1
Maine	-	1	9	10	2	2	-	-	-	-
N.H.	7	3	3	4	2	8	-	-	-	-
Vt.	-	1	1	3	2	1	-	1	-	-
Mass.	2	6	46	18	11	20	-	3	-	1
R.I.	-	-	3	9	4	7	-	-	-	-
Conn.	-	11	24	11	27	30	-	1	-	-
MID. ATLANTIC	67	43	511	411	402	319	-	2	-	1
Upstate N.Y.	20	14	118	95	97	94	-	-	-	-
N.Y. City	7	5	230	166	192	69	-	2	-	1
N.J.	24	8	110	71	80	103	-	-	-	-
Pa.	16	16	53	79	33	53	-	-	-	-
E.N. CENTRAL	64	77	618	1,132	252	356	-	2	1	1
Ohio	40	38	302	650	39	31	-	2	-	-
Ind.	2	12	105	52	42	78	-	-	-	-
Ill.	14	20	78	220	30	101	-	-	-	-
Mich.	3	7	102	126	129	122	-	-	1	1
Wis.	5	-	31	84	12	24	U	-	U	-
W.N. CENTRAL	19	23	595	387	144	201	3	5	-	-
Minn.	7	8	23	39	3	13	3	5	-	-
Iowa	6	1	156	17	65	14	-	-	-	-
Mo.	5	11	269	271	54	141	-	-	-	-
N. Dak.	-	-	9	9	-	2	-	-	-	-
S. Dak.	1	-	29	6	-	1	-	-	-	-
Nebr.	-	1	66	16	5	16	-	-	-	-
Kans.	-	2	43	29	17	14	-	-	-	-
S. ATLANTIC	105	106	256	330	354	389	-	2	-	-
Del.	1	-	5	5	1	3	-	1	-	-
Md.	24	35	60	65	94	86	-	1	-	-
D.C.	-	-	9	2	11	8	-	-	-	-
Va.	3	12	47	59	46	31	-	-	-	-
W. Va.	3	5	6	10	9	21	-	-	-	-
N.C.	13	17	36	41	116	97	-	-	-	-
S.C.	3	-	29	10	28	10	-	-	-	-
Ga.	56	23	2	37	5	39	-	-	-	-
Fla.	2	14	62	101	44	94	-	-	-	-
E.S. CENTRAL	7	4	643	419	212	308	-	-	-	-
Ky.	2	1	8	20	21	31	-	-	-	-
Tenn.	-	-	457	333	174	236	-	-	-	-
Ala.	4	3	79	39	17	41	-	-	-	-
Miss.	1	-	99	27	-	-	-	-	-	-
W.S. CENTRAL	12	19	1,190	707	190	245	-	-	-	1
Ark.	-	4	178	49	19	6	-	-	-	-
La.	-	1	20	19	13	25	-	-	-	-
Okla.	12	12	543	155	26	35	-	-	-	-
Tex.	-	2	449	484	132	179	-	-	-	1
MOUNTAIN	47	41	995	1,331	265	205	-	4	-	-
Mont.	-	-	41	20	3	7	-	-	-	-
Idaho	1	2	109	143	35	26	-	-	-	-
Wyo.	22	2	10	46	8	3	-	-	-	-
Colo.	4	6	22	165	8	40	-	1	-	-
N. Mex.	7	6	154	263	111	77	-	-	-	-
Ariz.	6	12	314	351	46	27	-	-	-	-
Utah	5	4	289	300	43	16	-	-	-	-
Nev.	2	9	56	43	11	9	-	3	-	-
PACIFIC	102	84	2,565	2,897	492	667	-	57	-	1
Wash.	1	4	159	166	28	53	-	4	-	-
Oreg.	12	9	379	605	27	38	-	-	-	-
Calif.	87	69	1,974	2,062	433	567	-	1	-	-
Alaska	-	-	29	15	2	4	-	52	-	-
Hawaii	2	2	24	49	2	5	-	-	-	1
Guam	-	-	2	2	-	-	U	-	U	-
P.R.	-	3	31	11	106	89	-	1	-	-
V.I.	-	-	-	-	-	1	U	-	U	-
Amer. Samoa	-	-	-	5	-	-	U	-	U	-
C.N.M.I.	10	-	1	11	5	1	U	-	U	-

*Of 94 cases among children aged <5 years, serotype was reported for 22 and of those, 4 were type B.

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

N: Not notifiable U: Unavailable -: no reported cases

TABLE III. (Cont'd.) Cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 20, 1996, and April 22, 1995 (16th Week)

Reporting Area	Measles (Rubeola), cont'd. Total		Mumps			Pertussis			Rubella		
	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995
UNITED STATES	82	176	12	180	250	70	776	804	1	56	25
NEW ENGLAND	6	3	-	-	3	7	142	116	-	5	2
Maine	-	-	-	-	2	-	8	12	-	-	-
N.H.	-	-	-	-	-	-	17	6	-	-	1
Vt.	1	-	-	-	-	-	6	3	-	-	-
Mass.	4	1	-	-	-	7	108	89	-	3	1
R.I.	-	2	-	-	-	-	-	-	-	-	-
Conn.	1	-	-	-	1	-	3	6	-	2	-
MID. ATLANTIC	3	2	1	21	39	3	76	74	1	4	2
Upstate N.Y.	-	-	1	7	9	3	45	44	1	3	-
N.Y. City	3	-	-	4	6	-	13	12	-	1	1
N.J.	-	2	-	-	6	-	-	6	-	-	1
Pa.	-	-	-	10	18	-	18	12	-	-	-
E.N. CENTRAL	3	2	5	48	33	3	120	77	-	3	-
Ohio	2	-	2	19	15	1	52	32	-	-	-
Ind.	-	-	-	5	5	-	9	7	-	-	-
Ill.	-	-	1	10	-	1	46	-	-	1	-
Mich.	1	1	2	14	13	1	11	26	-	2	-
Wis.	-	1	U	-	-	U	2	12	U	-	-
W.N. CENTRAL	5	1	-	2	19	1	27	60	-	1	-
Minn.	5	-	-	-	2	1	23	22	-	-	-
Iowa	-	-	-	-	3	-	2	1	-	1	-
Mo.	-	1	-	-	11	-	1	13	-	-	-
N. Dak.	-	-	-	2	-	-	-	5	-	-	-
S. Dak.	-	-	-	-	-	-	1	6	-	-	-
Nebr.	-	-	-	-	3	-	-	3	-	-	-
Kans.	-	-	-	-	-	-	-	10	-	-	-
S. ATLANTIC	2	-	-	17	41	3	68	85	-	10	5
Del.	1	-	-	-	-	-	7	5	-	-	-
Md.	1	-	-	8	10	1	28	8	-	-	-
D.C.	-	-	-	-	-	-	-	2	-	-	-
Va.	-	-	-	3	9	-	3	7	-	-	-
W. Va.	-	-	-	-	-	-	2	-	-	-	-
N.C.	-	-	-	-	16	-	9	49	-	-	-
S.C.	-	-	-	3	3	1	4	10	-	-	-
Ga.	-	-	-	1	-	-	2	-	-	-	-
Fla.	-	-	-	2	3	1	13	4	-	10	5
E.S. CENTRAL	-	-	2	10	8	-	16	20	-	2	-
Ky.	-	-	-	-	-	-	5	1	-	-	-
Tenn.	-	-	-	1	-	-	7	4	-	-	-
Ala.	-	-	-	4	3	-	1	15	-	-	-
Miss.	-	-	2	5	5	-	3	-	N	N	N
W.S. CENTRAL	1	2	1	8	11	5	14	34	-	-	1
Ark.	-	2	-	-	2	-	2	3	-	-	-
La.	-	-	-	7	2	-	2	1	-	-	-
Okla.	-	-	-	-	-	-	1	2	-	-	-
Tex.	1	-	1	1	7	5	9	28	-	-	1
MOUNTAIN	4	56	-	17	11	4	110	203	-	1	3
Mont.	-	-	-	-	-	-	3	3	-	-	-
Idaho	-	-	-	-	2	-	41	60	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-
Colo.	1	17	-	-	-	-	17	32	-	-	-
N. Mex.	-	28	N	N	N	3	25	18	-	-	-
Ariz.	-	10	-	1	1	-	4	87	-	1	3
Utah	-	-	-	1	1	1	3	2	-	-	-
Nev.	3	1	-	15	7	-	17	1	-	-	-
PACIFIC	58	110	3	57	85	44	203	135	-	30	12
Wash.	4	14	1	6	4	22	64	21	-	1	1
Oreg.	-	1	N	N	N	1	23	11	-	-	1
Calif.	1	94	2	41	72	21	108	99	-	27	9
Alaska	52	-	-	2	8	-	-	-	-	-	-
Hawaii	1	1	-	8	1	-	8	4	-	2	1
Guam	-	-	U	1	3	U	-	-	U	-	-
P.R.	1	3	-	1	1	-	-	4	-	-	-
V.I.	-	-	U	-	1	U	-	-	U	-	-
Amer. Samoa	-	-	U	-	-	U	-	-	U	-	-
C.N.M.I.	-	-	U	-	-	U	-	-	U	-	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 121 U.S. cities,* week ending April 20, 1996 (16th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	665	484	99	54	12	14	55
Boston, Mass.	211	138	34	28	8	3	17
Bridgeport, Conn.	37	31	3	3	-	-	3
Cambridge, Mass.	27	22	4	-	-	-	-
Fall River, Mass.	24	21	3	-	-	-	1
Hartford, Conn.	65	40	15	7	2	1	4
Lowell, Mass.	29	27	2	-	-	-	5
Lynn, Mass.	11	5	6	-	-	-	1
New Bedford, Mass.	26	23	1	2	-	-	2
New Haven, Conn.	45	36	6	2	-	1	7
Providence, R.I.	59	40	12	1	1	4	3
Somerville, Mass.	6	5	1	-	-	-	-
Springfield, Mass.	47	33	6	3	-	5	4
Waterbury, Conn.	24	18	2	4	-	-	1
Worcester, Mass.	54	45	4	4	1	-	7
MID. ATLANTIC	2,446	1,624	485	240	50	47	133
Albany, N.Y.	57	44	5	6	1	1	5
Allentown, Pa.	19	14	5	-	-	-	-
Buffalo, N.Y.	92	66	14	10	1	1	3
Camden, N.J.	22	10	6	4	-	2	-
Elizabeth, N.J.	18	11	3	4	-	-	-
Erie, Pa.§	35	30	4	-	-	1	3
Jersey City, N.J.	39	29	4	4	-	2	3
New York City, N.Y.	1,317	835	276	152	29	25	54
Newark, N.J.	69	31	16	14	5	3	4
Paterson, N.J.	28	16	6	3	-	3	-
Philadelphia, Pa.	300	189	78	21	7	5	23
Pittsburgh, Pa.§	103	73	21	4	3	2	7
Reading, Pa.	19	15	2	2	-	-	5
Rochester, N.Y.	128	104	18	4	1	1	9
Schenectady, N.Y.	30	27	1	2	-	-	3
Scranton, Pa.§	16	13	2	-	-	1	1
Syracuse, N.Y.	78	55	15	6	2	-	7
Trenton, N.J.	31	22	6	3	-	-	4
Utica, N.Y.	16	15	1	-	-	-	-
Yonkers, N.Y.	29	25	2	1	1	-	2
E.N. CENTRAL	2,092	1,372	435	164	52	68	126
Akron, Ohio	71	50	16	2	1	2	-
Canton, Ohio	34	22	9	1	1	1	2
Chicago, Ill.	455	251	109	62	19	13	34
Cincinnati, Ohio	103	73	16	9	2	3	7
Cleveland, Ohio	145	96	28	8	4	9	3
Columbus, Ohio	165	109	38	10	3	5	11
Dayton, Ohio	126	91	23	8	1	3	7
Detroit, Mich.	235	144	50	22	6	13	9
Evansville, Ind.	45	33	8	2	-	2	2
Fort Wayne, Ind.	54	39	10	3	2	-	3
Gary, Ind.	17	10	4	-	3	-	-
Grand Rapids, Mich.	67	49	8	3	1	6	7
Indianapolis, Ind.	113	66	28	14	3	2	9
Madison, Wis.	U	U	U	U	U	U	U
Milwaukee, Wis.	136	103	24	5	-	4	-
Peoria, Ill.	34	23	6	1	1	3	4
Rockford, Ill.	35	17	14	3	1	-	5
South Bend, Ind.	53	42	9	1	-	1	8
Toledo, Ohio	128	97	20	6	4	1	13
Youngstown, Ohio	76	57	15	4	-	-	2
W.N. CENTRAL	993	729	144	71	21	19	47
Des Moines, Iowa	U	U	U	U	U	U	U
Duluth, Minn.	40	35	3	1	1	-	3
Kansas City, Kans.	74	52	8	9	3	2	1
Kansas City, Mo.	114	74	17	10	4	-	8
Lincoln, Nebr.	47	33	10	2	1	1	2
Minneapolis, Minn.	210	158	35	11	3	3	13
Omaha, Nebr.	111	76	20	7	2	6	8
St. Louis, Mo.	144	117	13	10	1	3	2
St. Paul, Minn.	70	59	6	4	1	-	5
Wichita, Kans.	183	125	32	17	5	4	5
S. ATLANTIC	1,359	845	292	145	51	26	73
Atlanta, Ga.	192	107	33	35	11	6	11
Baltimore, Md.	258	160	56	33	9	-	27
Charlotte, N.C.	84	57	21	3	3	-	5
Jacksonville, Fla.	149	96	31	16	3	3	2
Miami, Fla.	131	59	45	18	8	1	2
Norfolk, Va.	50	34	9	5	2	-	1
Richmond, Va.	74	53	12	4	3	2	2
Savannah, Ga.	49	29	11	4	1	4	5
St. Petersburg, Fla.	54	42	8	1	1	2	1
Tampa, Fla.	187	133	32	13	4	5	12
Washington, D.C.	121	65	34	13	6	3	5
Wilmington, Del.	10	10	-	-	-	-	-
E.S. CENTRAL	906	592	187	91	19	16	72
Birmingham, Ala.	127	89	16	17	-	4	5
Chattanooga, Tenn.	77	54	16	7	-	-	11
Knoxville, Tenn.	86	53	23	5	4	1	12
Lexington, Ky.	95	64	17	7	3	4	10
Memphis, Tenn.	185	120	35	23	6	1	16
Mobile, Ala.	160	101	45	13	1	-	11
Montgomery, Ala.	37	27	2	4	2	2	2
Nashville, Tenn.	139	84	33	15	3	4	5
W.S. CENTRAL	1,461	949	291	135	53	32	82
Austin, Tex.	77	54	14	3	3	3	6
Baton Rouge, La.	34	20	8	4	1	1	-
Corpus Christi, Tex.	43	29	8	2	2	2	3
Dallas, Tex.	195	129	39	17	8	2	8
El Paso, Tex.	81	61	14	1	2	2	2
Ft. Worth, Tex.	111	82	18	7	4	-	8
Houston, Tex.	357	209	77	51	13	7	24
Little Rock, Ark.	80	47	18	9	1	5	5
New Orleans, La.	143	87	34	15	6	1	-
San Antonio, Tex.	182	124	34	13	4	7	14
Shreveport, La.	61	45	7	5	4	-	7
Tulsa, Okla.	97	62	20	8	5	2	5
MOUNTAIN	927	625	166	77	33	24	80
Albuquerque, N.M.	106	74	12	9	7	4	4
Colo. Springs, Colo.	57	33	16	8	-	-	3
Denver, Colo.	122	83	21	8	5	5	14
Las Vegas, Nev.	202	133	42	15	7	5	14
Ogden, Utah	25	22	1	-	1	1	2
Phoenix, Ariz.	181	112	40	12	8	7	16
Pueblo, Colo.	18	11	5	1	1	-	3
Salt Lake City, Utah	101	74	12	11	4	-	13
Tucson, Ariz.	115	83	17	13	-	2	11
PACIFIC	2,218	1,533	392	203	46	44	150
Berkeley, Calif.	22	16	3	2	-	1	-
Fresno, Calif.	106	80	17	5	1	3	9
Glendale, Calif.	53	47	2	3	1	-	1
Honolulu, Hawaii	78	59	17	1	-	1	8
Long Beach, Calif.	88	62	14	9	1	2	14
Los Angeles, Calif.	814	543	147	85	23	16	29
Pasadena, Calif.	34	26	5	1	-	2	4
Portland, Oreg.	154	111	23	12	4	4	9
Sacramento, Calif.	173	123	25	16	7	2	12
San Diego, Calif.	163	110	26	19	2	6	15
San Francisco, Calif.	148	93	29	26	-	-	16
San Jose, Calif.	193	130	47	10	3	3	18
Santa Cruz, Calif.	27	21	4	2	-	-	5
Seattle, Wash.	118	79	24	9	4	2	3
Spokane, Wash.	47	33	9	3	-	2	7
Tacoma, Wash.	U	U	U	U	U	U	U
TOTAL	13,067¶	8,753	2,491	1,180	337	290	818

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. 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 these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

U: Unavailable -: no reported cases

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