

# MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

- 805 Detection of Notifiable Diseases Through Surveillance for Imported Plague — New York, 1994
- 807 Erythromycin-Resistant *Bordetella pertussis* — Yuma County, Arizona
- 810 Prevalence of Self-Reported Epilepsy — United States, 1986–1990
- 818 Prevalence of Overweight Among Adolescents — United States, 1988–91
- 821 Notices to Readers
- 822 Monthly Immunization Table

## Emerging Infectious Diseases

### **Detection of Notifiable Diseases Through Surveillance for Imported Plague — New York, September–October 1994**

Recent reports of bubonic and pneumonic plague outbreaks in India (1,2) prompted the New York City Department of Health (NYCDOH) and the New York State Department of Health (NYSDOH), in conjunction with CDC, to develop an emergency response plan to detect and manage suspected cases imported by international air travel. This report describes the surveillance system implemented by CDC on September 27 and supplemental efforts by NYC/NYSDOH to guide and inform physicians about the outbreak, and summarizes clinical findings for 11 travelers who had symptoms suggestive of plague.

#### **CDC Surveillance System**

The CDC surveillance protocol included instructions to staff of international air carriers to notify U.S. quarantine officials before landing of passengers or crew with illness suggestive of plague. All passengers arriving on direct flights from India were provided a plague alert notice that described the symptoms of plague and urged them to seek medical attention if they developed a febrile illness within 7 days of disembarkation. Once passengers were in the United States, the surveillance system relied on physicians and other hospital staff to report suspected plague cases to local health departments, which would then notify CDC.

#### **Supplemental Efforts by NYCDOH/NYSDOH**

A primary role of NYCDOH/NYSDOH, in conjunction with CDC, was to determine whether the clinical presentation of persons with suspected cases was consistent with plague and to arrange for immediate hospitalization in facilities with respiratory isolation rooms. In addition, because of the high volume of air travel from India (approximately 2000 passengers arrive daily at John F. Kennedy International Airport on flights from India), NYCDOH/NYSDOH supplemented CDC's surveillance plan by using two approaches to disseminate information to heighten awareness of plague, focusing on emergency department physicians. First, a fact sheet describing the clinical presentation of plague and emphasizing the need to assess travel history among patients with

*Plague — Continued*

suggestive symptoms was transmitted by fax or electronic mail to emergency department physicians and infection-control practitioners at 102 hospitals in New York City and to all acute-care hospitals and county health departments in the state. Second, a special plague advisory issue of *City Health Information*, NYCDOH's bulletin, was distributed to 20,000 physicians in New York City within 2 weeks of CDC's plague alert. To directly reach persons who recently may have arrived from India and were at increased risk for plague, leaflets in English and Hindi describing plague symptoms and urging ill persons to seek medical attention were distributed by NYCDOH at a heavily attended Indian cultural fair on October 8 and 9.

**Clinical Findings for Travelers**

As of October 27 (when the plague alert was terminated), 10 persons with suspected plague had been reported to NYCDOH and one to the Albany County Health Department and NYSDOH. None were confirmed as having plague. Patients ranged in age from 31 to 80 years; six were men. All 11 patients reported having recently been in India. One suspected case was recognized by an airline crew member during a flight; two by customs officials in the airport; and one by airline officials at check-in for a connecting domestic flight at a different airport. The remaining seven suspected cases were reported by hospital emergency departments. Nine of the 11 patients were admitted to a hospital isolation unit for observation while awaiting consultation with CDC and/or confirmatory laboratory testing.

Ten patients had clinical presentations that were not consistent with pneumonic plague. One patient, who developed adult respiratory distress syndrome and coma, required serologic and microbiologic testing to rule out plague. The final diagnoses for 10 of the suspected cases were viral syndrome (four patients), malaria (three), concurrent malaria and dengue (one), and typhoid and liver disease (one each); one person had no illness.

*Reported by: B Mojica, MD, R Heffernan, MPH, C Lowe, MFA, S Matthews, New York City Dept of Health; T Briggs, Albany County Health Dept, Albany; F Guido, E Wender, MD, Westchester County Health Dept, Hawthorne; S Kondracki, G Birkhead, MD, D Morse, MD, State Epidemiologist, New York State Dept of Health. Div of Quarantine, National Center for Prevention Svcs; Bacterial Zoonoses Br, Div of Vector-Borne Infectious Diseases, National Center for Infectious Diseases; Div of Field Epidemiology, Epidemiology Program Office, CDC.*

**Editorial Note:** This report illustrates the ongoing potential for importation of emerging infectious diseases into the United States and the need for prompt reporting of cases to local and state health departments for an appropriate public health response (3). The Institute of Medicine has identified international travel and commerce as a major factor associated with emerging infections (4). The protocols described in this report—highlighting the close cooperation between federal, state, and local public health officials; the medical community; and the airline industry—represent the coordinated, comprehensive prevention-oriented response needed to guard against the threat of emerging and resurgent infections. In addition, the evaluation of suspected plague cases in New York revealed limitations in recognizing cases of disease only at the point of disembarkation; in New York, approximately half of the suspected cases were brought to the NYCDOH/NYSDOH's attention by local physicians. The importance of obtaining a travel history when evaluating persons presenting with fever was underscored by the detection of cases of dengue and nationally notifiable disease conditions (i.e., malaria and typhoid) (5).

*Plague — Continued**References*

1. CDC. Human plague—India, 1994. MMWR 1994;43:689–91.
2. CDC. Update: human plague—India, 1994. MMWR 1994;43:722–3.
3. Berkelman RL, Bryan RT, Osterholm MT, LeDuc JW, Hughes JM. Infectious disease surveillance: a crumbling foundation. *Science* 1994;264:368–70.
4. Institute of Medicine. Emerging infections: microbial threats to health in the United States. Washington, DC: National Academy Press, 1992.
5. CDC. National notifiable diseases reporting—United States, 1994. MMWR 1994;43:800–1.

*Epidemiologic Notes and Reports***Erythromycin-Resistant *Bordetella pertussis* —  
Yuma County, Arizona, May–October 1994**

In 1993, a total of 6586 cases of pertussis was reported in the United States, including 70 in Arizona. On June 27, 1994, a case of *Bordetella pertussis* disease caused by a strain resistant to erythromycin was reported to the Arizona Department of Health Services (ADHS) from Yuma County (1990 population: 106,895). Susceptibility testing at CDC confirmed that the isolate was highly resistant to erythromycin with a minimum inhibitory concentration (MIC) >64 µg/mL. The MIC of erythromycin against *B. pertussis* usually ranges from 0.02 µg/mL to 0.1 µg/mL, and resistant isolates have not been previously reported (1). This report summarizes the case investigation and describes efforts to enhance surveillance for pertussis in Arizona.

**Case Report**

The erythromycin-resistant strain was isolated from a 2-month-old male infant living in Yuma County, Arizona, who had onset of cough on May 16, 1994. The illness was initially diagnosed as bronchitis, and treatment with amoxicillin was initiated on May 23. The infant had no history of previous antibiotic therapy, and the parents reported he had not received pertussis vaccine before the onset of illness. On May 26, he was hospitalized with severe paroxysmal cough, inspiratory whoop, posttussive vomiting, and episodes of cyanosis and apnea. *B. pertussis* infection was diagnosed by direct fluorescent antibody (DFA) testing; oral erythromycin estolate therapy (50 mg per kg body weight per day) was initiated on May 26 and continued for 12 days. Because of persistent paroxysmal cough and episodes of cyanosis, apnea, and bradycardia, on June 8 he was transferred to a pediatric intensive-care facility.

Both a DFA test and culture performed on nasopharyngeal secretions obtained on June 8 confirmed the persistence of pertussis organisms, and intravenous erythromycin therapy (30 mg/kg/day) was initiated. On June 13, a repeat DFA test and culture were positive, and the erythromycin dosage was increased to 40 mg/kg/day. Despite sequential oral and parenteral erythromycin therapy, nasopharyngeal cultures obtained from the infant on June 16 and 20 grew *B. pertussis*, and his condition remained unchanged. Susceptibility testing at the hospital laboratory suggested that the isolate was resistant to erythromycin but sensitive to trimethoprim-sulfamethoxazole (TMP-SMZ). On June 20, erythromycin therapy was discontinued, and therapy with TMP-SMZ was initiated; the infant's condition improved rapidly. A

*Bordetella pertussis* — Continued

nasopharyngeal culture obtained on June 25 was negative, and he was discharged from the hospital on June 29.

Approximately 2 weeks before the infant's onset of illness, his 17-year-old mother had developed a spasmodic cough illness associated with posttussive vomiting. A nasopharyngeal culture specimen obtained from the mother on June 28 was negative. She had no history of recently receiving antibiotic treatment.

### Enhanced Surveillance for Pertussis

Because of the case in the 2-month-old infant, in late June, the Yuma County Department of Public Health enhanced surveillance to detect pertussis illness and to obtain *B. pertussis* isolates from county residents. State and federal public health officials visited all primary-care providers and health-care facilities in Yuma County to disseminate culture kits and instructions for obtaining appropriate culture specimens. In particular, providers were asked to obtain nasopharyngeal cultures from all Yuma County residents with an unexplained acute cough illness lasting 7 or more days. In addition, ADHS mailed letters to approximately 2500 primary-care providers in Arizona to encourage collection of nasopharyngeal cultures for diagnosis of pertussis. Health officials in two California counties near Yuma County (Imperial and San Diego counties) were alerted to the isolation of an erythromycin-resistant pertussis strain in Yuma County.

The first person with a culture-confirmed case of *B. pertussis* in Yuma County in 1994 had onset on April 9. A total of 18 confirmed cases (eight culture-confirmed and 10 epidemiologically linked to a culture-confirmed case) and 57 probable cases (defined as unexplained acute cough for 14 or more days) were identified during April 30–October 1. During the period of enhanced surveillance (late June–October 1), a total of 127 nasopharyngeal culture specimens were obtained from Yuma County residents and sent to the ADHS laboratory. In addition to the index case, *B. pertussis* was isolated from the specimens of seven persons. Of these seven isolates, one was inadvertently discarded, and the remaining six were susceptible to erythromycin. In addition, all 22 *B. pertussis* strains isolated during June–August from persons in other Arizona counties and all 13 *B. pertussis* strains isolated during January–August from patients in San Diego County were susceptible to erythromycin.

ADHS has continued enhanced surveillance and has recommended that providers in Arizona obtain nasopharyngeal culture specimens from all persons—regardless of age or vaccination status—with unexplained acute cough of 14 or more days' duration and at least one of the following symptoms: paroxysms of cough, inspiratory whoop, or posttussive vomiting. Health-care providers also have been urged to report all suspected cases to local health departments and to send *B. pertussis* culture specimens to the ADHS laboratory.

Preliminary results of studies at CDC suggest that the mechanism of *B. pertussis* resistance to erythromycin does not involve ribosomal ribonucleic acid methylation, which has been documented in streptococcal and staphylococcal resistance to erythromycin. Studies are ongoing at CDC to elucidate the mechanism of *B. pertussis* resistance to erythromycin.

*Reported by: S Lewis, MPH, Public Health Nursing Staff, Yuma County Dept of Public Health, Yuma; B Erickson, PhD, G Cage, MS, G Harter, State Public Health Laboratory; C Kioski, MPH, S Barefoot, L Carmody, MA, H Houser, L Sands, DO, State Epidemiologist, Arizona Dept of Health Svcs; M Saubolle, PhD, Good Samaritan Regional Medical Center, K Lewis, MD, S Bar-*

*Bordetella pertussis* — Continued

bour, MD, M Rudinsky, MD, Children's Hospital, Phoenix. Hospital Infections Program, and Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases; National Immunization Program, CDC.

**Editorial Note:** Erythromycin is the drug of choice for treating persons with *B. pertussis* disease and for postexposure prophylaxis of all household members and other close contacts as recommended by the Advisory Committee on Immunization Practices (2–6). For adults who are susceptible to pertussis because of a decrease in vaccine-induced immunity or for infants who are too young to be adequately vaccinated and are at risk for severe disease, erythromycin prophylaxis and treatment are the primary control measures.

Because of the limited number of isolates subjected to susceptibility testing (n=41), the proportion of resistant strains of *B. pertussis* cannot be estimated accurately for Yuma County or other areas in the region. However, the absence of additional erythromycin-resistant strains in Arizona and San Diego County, California, suggests that antimicrobial resistance is not widespread. Ongoing surveillance and collection of *B. pertussis* isolates should assist in more accurate assessment of the extent of transmission of the resistant strain in the area.

Failure of erythromycin to eradicate *B. pertussis* has been associated with poor absorption of some preparations of the antibiotic (4,7). Among the three esterified oral erythromycin formulations (estolate, ethylsuccinate, and stearate), erythromycin estolate has superior bioavailability and achieves higher concentrations in serum and respiratory secretions. TMP-SMZ is an alternative for treatment and for chemoprophylaxis, but its efficacy as a chemoprophylactic agent has not been evaluated (8).

Nasopharyngeal cultures should be obtained from persons with pertussis who do not improve with erythromycin therapy. Criteria for assessing treatment failure are 1) persistence or worsening of the typical symptoms\* of pertussis disease, 2) initiation of erythromycin therapy within 2 weeks of onset of illness, 3) completion of erythromycin therapy in the recommended dosage, and 4) verification of patient compliance with therapy. Most persons who meet these criteria will not be culture-positive for *B. pertussis*; however, isolates obtained from patients with erythromycin therapy failure should be sent to CDC (Pertussis Laboratory, Childhood Respiratory Diseases Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC, Mailstop C-02, 1600 Clifton Road, NE, Atlanta, GA 30333) for further testing. Tests to evaluate antimicrobial susceptibility of *B. pertussis* have not been standardized and are not widely available. In collaboration with ADHS, efforts to standardize *B. pertussis* susceptibility testing are ongoing at CDC.

All health-care providers in the United States are encouraged to obtain nasopharyngeal cultures from patients in whom pertussis is suspected. These include persons with unexplained acute cough of 14 or more days' duration and at least one of the following symptoms: paroxysms of cough, inspiratory whoop, or posttussive vomiting, regardless of the patient's age or vaccination status. All probable and confirmed cases of pertussis should be reported promptly to local or state health departments.

---

\*Prolonged paroxysms of cough associated with apnea, cyanosis, or bradycardia in young infants or prolonged paroxysms of cough associated with whoop and/or posttussive vomiting in older children and adults.

*Bordetella pertussis — Continued**References*

1. Hoppe JE, Haug A. Antimicrobial susceptibility of *Bordetella pertussis* (Part I). *Infection* 1988;16(suppl):126–30.
2. ACIP. Diphtheria, tetanus, and pertussis: recommendations for vaccine use and other preventive measures—recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR* 1991;40(no. RR-10).
3. American Academy of Pediatrics. Pertussis. In: Peter G, ed. 1994 Red book: report of the Committee on Infectious Diseases. 23rd ed. Elk Grove Village, Illinois: American Academy of Pediatrics, 1994:355–67.
4. Bass JW. Erythromycin for treatment and prevention of pertussis. *Pediatr Infect Dis* 1986;5:154–7.
5. Sprauer MA, Cochi SL, Zell ER, et al. Prevention of secondary transmission of pertussis in households with early use of erythromycin. *Am J Dis Child* 1992;146:177–81.
6. Steketee RW, Wassilak SGF, Adkins WN Jr, et al. Evidence for a high attack rate and efficacy of erythromycin prophylaxis in a pertussis outbreak in a facility for the developmentally disabled. *J Infect Dis* 1988;157:434–40.
7. Hoppe JE, the Erythromycin Study Group. Comparison of erythromycin estolate and erythromycin ethylsuccinate for treatment of pertussis. *Pediatr Infect Dis J* 1992;11:189–93.
8. Hoppe JE, Halm U, Hagedorn HJ, Kraminer-Hagedorn A. Comparison of erythromycin ethylsuccinate and co-trimoxazole for treatment of pertussis. *Infection* 1989;17:227–31.

*Current Trends***Prevalence of Self-Reported Epilepsy —  
United States, 1986–1990**

Epilepsy is a chronic neurologic condition characterized by abnormal electrical discharges in the brain manifested as two or more unprovoked seizures (1). Risk factors for epilepsy include vascular disease, head trauma, congenital or perinatal factors, central nervous system infections, and neoplasms; however, the etiology of epilepsy is unknown for approximately three fourths of cases (2). Epilepsy frequently causes impaired physical, psychological, and social functioning, which results in substantial disability, economic loss, and diminished quality of life (3). To examine the burden of epilepsy in the United States, the prevalence of self-reported epilepsy was estimated by using data from 1986 through 1990 from the National Health Interview Survey (NHIS) (4). This report summarizes the results of this analysis.

The NHIS is a nationally representative household survey of the U.S. civilian, non-institutionalized population conducted annually by CDC. Respondents were asked whether they or any household family member had epilepsy or repeated seizures, convulsions, or blackouts during the preceding 12 months. Self-reported epilepsy was categorized according to the *International Classification of Diseases, Ninth Revision, Clinical Modification*, codes 345.0–345.9. Age-specific and age-adjusted prevalences for the 12-month period preceding the interview and associated standard errors were estimated; the direct method was used to age-adjust the estimates, using the 1980 U.S. resident population as the standard (5). To increase the stability of the estimates, data were combined for 1986–1990. Confidence intervals (CIs) were based on the standard errors of the estimates, taking into account the survey design.

*Epilepsy — Continued*

During 1986–1990, approximately 1.1 million persons in the United States annually reported having epilepsy. The overall prevalence of epilepsy was 4.7 cases per 1000 persons. The prevalence was lowest (3.1) for persons aged  $\geq 65$  years and highest (5.2) for persons aged 15–64 years (Table 1). The prevalence for persons aged  $< 15$  years was 4.0. The age-adjusted prevalence was similar for women and men (5.1 and 4.2, respectively), and the age-specific pattern was consistent for both sexes. The age- and race-adjusted prevalence of epilepsy was similar among the regions of the country (4.0 in the West, 4.4 in the Northeast, 4.9 in the Midwest, and 5.0 in the South)\*.

The age-adjusted prevalence of epilepsy was higher for blacks (6.7 [95% CI=4.9–8.5]) than whites (4.5 [95% CI=3.9–5.1]).<sup>†</sup> Compared with whites, prevalence rates among blacks were especially higher for persons aged 35–44 years and 45–54 years (prevalence ratios=3.0 and 2.3, respectively) (Figure 1, page 817). This pattern was similar for both black males and black females.

*Reported by: Statistics Br, Div of Chronic Disease Control and Community Intervention, National Center for Chronic Disease Prevention and Health Promotion; National Center for Health Statistics, CDC.*

**Editorial Note:** The findings in this report indicate that epilepsy is a common neurologic condition in the United States. However, the overall age-adjusted prevalence in this report (4.7) is lower than estimates from previous studies (6.0–7.0), which

*(Continued on page 817)*

\* Northeast=Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest=Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South=Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; West=Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

<sup>†</sup>Numbers for races other than black and white were too small for meaningful analysis.

**TABLE 1. Frequency and prevalence of self-reported epilepsy, by sex and age group — United States, 1986–1990**

Sex	Age group (yrs)			Total
	0–14	15–64	$\geq 65$	
<b>Male</b>				
No.*	492	1854	132	2478
Prevalence <sup>†</sup> (95% CI <sup>§</sup> )	3.6 (2.2–5.0)	4.8 (3.8–5.8)	2.2 (0.6–3.8)	4.2 (3.4–5.0)
<b>Female</b>				
No.	566	2280	306	3152
Prevalence (95% CI)	4.4 (3.0–5.8)	5.6 (4.6–6.6)	3.7 (1.9–5.5)	5.1 (4.3–5.9)
<b>Total<sup>¶</sup></b>				
No.	1058	4134	438	5630
Prevalence (95% CI)	4.0 (3.0–5.0)	5.2 (4.4–6.0)	3.1 (1.9–4.3)	4.7 (4.1–5.3)

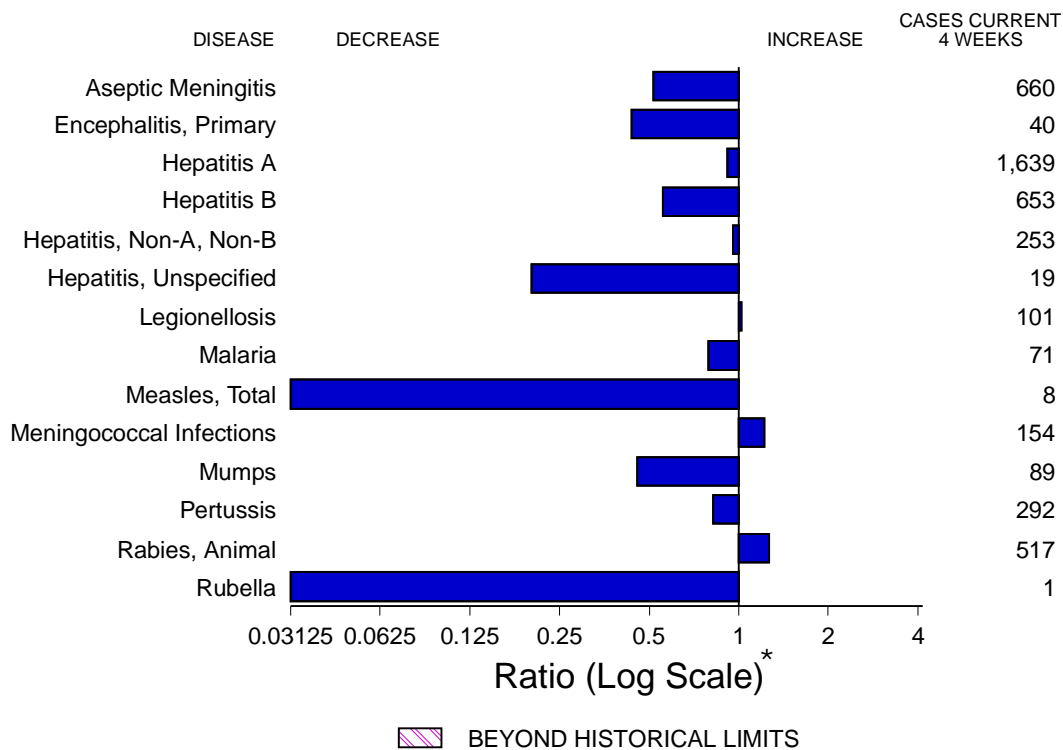
\* In thousands.

<sup>†</sup> Per 1000 civilian, noninstitutionalized persons in the United States.

<sup>§</sup> Confidence interval.

<sup>¶</sup> Age-adjusted to the 1980 U.S. population.

**FIGURE I. Notifiable disease reports, comparison of 4-week totals ending November 5, 1994, with historical data — United States**



\*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 specified notifiable diseases, United States, cumulative, week ending November 5, 1994 (44th Week)**

	Cum. 1994		Cum. 1994
AIDS*	61,173	Measles: imported	171
Anthrax	-	indigenous	685
Botulism: Foodborne	48	Plague	14
Infant	62	Poliomyelitis, Paralytic <sup>§</sup>	1
Other	7	Psittacosis	33
Brucellosis	73	Rabies, human	1
Cholera	27	Syphilis, primary & secondary	17,998
Congenital rubella syndrome	3	Syphilis, congenital, age < 1 year <sup>¶</sup>	1,123
Diphtheria	1	Tetanus	33
Encephalitis, post-infectious	95	Toxic shock syndrome	152
Gonorrhea	332,471	Trichinosis	31
<i>Haemophilus influenzae</i> (invasive disease) <sup>†</sup>	977	Tuberculosis	18,262
Hansen Disease	106	Tularemia	79
Leptospirosis	29	Typhoid fever	364
Lyme Disease	9,433	Typhus fever, tickborne (RMSF)	402

\*Updated monthly to the Division of HIV/AIDS, National Center for Infectious Diseases; last update September 27, 1994.

<sup>†</sup>Of 931 cases of known age, 256 (27%) were reported among children less than 5 years of age.

<sup>§</sup>The remaining 5 suspected cases with onset in 1994 have not yet been confirmed. In 1993, 3 of 10 suspected cases were confirmed. Two of the confirmed cases of 1993 were vaccine-associated and one was classified as imported.

<sup>¶</sup>Total reported to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services, through second quarter 1994.



**TABLE II. Cases of selected notifiable diseases, United States, weeks ending  
November 5, 1994, and November 6, 1993 (44th Week)**

UNITED STATES	61,173	6,769	556	95	332,471	340,725	19,169	9,734	3,670	358	1,342	9,433
NEW ENGLAND	2,251	261	16	4	7,307	6,403	249	266	114	15	71	2,376
Maine	71	29	3	-	80	70	23	11	-	-	5	23
N.H.	46	27	-	2	92	61	14	21	8	-	-	26
Vt.	29	33	2	-	31	22	9	-	-	-	-	13
Mass.	1,126	73	9	1	2,771	2,613	93	161	86	13	55	213
R.I.	202	99	2	1	398	362	23	8	20	2	11	427
Conn.	777	-	-	-	3,935	3,275	87	65	-	-	-	1,674
MID. ATLANTIC	18,266	759	47	17	37,239	39,746	1,427	1,221	389	9	224	5,770
Upstate N.Y.	1,722	355	27	3	8,988	8,738	459	323	191	5	55	3,503
N.Y. City	10,514	124	7	5	13,353	10,337	585	307	1	-	10	26
N.J.	4,205	-	-	-	4,164	5,032	235	301	166	-	38	1,156
Pa.	1,825	280	13	9	10,734	15,639	148	290	31	4	121	1,085
E.N. CENTRAL	4,776	1,267	142	22	63,072	72,958	1,940	958	267	8	399	109
Ohio	870	332	50	4	17,852	19,139	812	141	20	-	174	66
Ind.	479	176	11	1	7,821	7,257	335	165	10	-	103	14
Ill.	2,354	302	46	5	16,141	25,521	380	198	57	3	22	4
Mich.	780	450	31	12	15,509	15,364	258	334	177	5	71	25
Wis.	293	7	4	-	5,749	5,677	155	120	3	-	29	-
W.N. CENTRAL	1,244	358	26	7	17,830	18,839	976	546	83	10	85	237
Minn.	300	21	2	-	2,863	2,017	211	55	20	1	1	165
Iowa	88	105	1	1	1,306	1,404	56	24	11	9	29	15
Mo.	566	137	7	4	10,320	11,440	481	416	28	-	31	36
N. Dak.	22	12	3	-	18	46	5	-	-	-	4	-
S. Dak.	12	2	3	-	169	229	34	2	-	-	1	-
Nebr.	69	20	4	2	-	484	99	21	9	-	14	9
Kans.	187	61	6	-	3,154	3,219	90	28	15	-	5	12
S. ATLANTIC	14,441	1,316	134	27	92,700	85,533	1,225	2,017	554	46	312	703
Del.	213	34	1	-	1,678	1,297	16	5	1	-	26	70
Md.	2,356	222	20	4	15,491	13,832	176	366	29	16	84	275
D.C.	1,089	49	-	1	6,100	4,326	22	50	1	-	10	7
Va.	877	272	29	6	11,491	10,179	155	112	23	6	8	121
W. Va.	54	31	43	-	688	569	18	37	35	-	3	23
N.C.	931	206	40	1	24,161	21,069	119	240	52	-	25	76
S.C.	996	30	-	-	11,361	9,153	35	28	9	-	15	7
Ga.	1,688	47	1	-	1,467	4,660	24	524	172	-	95	100
Fla.	6,237	425	-	15	20,263	20,448	660	655	232	24	46	24
E.S. CENTRAL	1,606	446	34	3	39,960	38,741	530	1,011	811	2	65	38
Ky.	248	156	14	1	4,370	4,167	132	66	25	-	9	21
Tenn.	539	89	12	-	13,158	12,020	249	873	771	1	38	11
Ala.	468	154	6	1	12,880	13,653	85	72	15	1	13	6
Miss.	351	47	2	1	9,552	8,901	64	-	-	-	5	-
W.S. CENTRAL	5,837	759	46	2	41,298	38,549	2,801	1,303	515	68	38	113
Ark.	206	46	-	-	5,666	6,280	166	24	7	1	7	8
La.	995	31	7	-	10,400	10,149	135	147	151	1	13	1
Okla.	215	-	-	-	3,259	4,012	313	283	297	3	11	64
Tex.	4,421	682	39	2	21,973	18,108	2,187	849	60	63	7	40
MOUNTAIN	1,751	287	11	4	8,144	9,835	3,631	528	380	53	77	17
Mont.	19	7	-	-	76	67	19	21	12	-	14	-
Idaho	49	6	-	-	76	156	317	69	67	1	1	3
Wyo.	16	4	2	2	75	71	25	23	148	-	5	4
Colo.	658	108	2	-	2,749	3,258	493	89	59	14	18	-
N. Mex.	123	18	-	-	898	811	981	178	46	11	3	8
Ariz.	493	58	1	1	2,739	3,498	1,103	38	12	11	11	-
Utah	102	49	2	1	231	379	496	61	23	6	6	1
Nev.	291	37	4	-	1,300	1,595	197	49	13	10	19	1
PACIFIC	11,001	1,316	100	9	24,921	30,121	6,390	1,884	557	147	71	70
Wash.	730	-	-	-	2,518	3,213	306	62	62	2	8	-
Oreg.	486	-	-	-	570	991	655	74	17	1	-	-
Calif.	9,604	1,178	97	8	20,549	24,881	5,188	1,711	473	141	59	70
Alaska	34	17	3	-	746	541	186	11	-	-	-	-
Hawaii	147	121	-	1	538	495	55	26	5	3	4	-
Guam	1	16	-	-	179	84	42	6	1	12	3	-
P.R.	1,759	27	1	3	384	430	73	324	142	11	-	-
V.I.	39	-	-	-	25	79	-	1	-	-	-	-

**TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending November 5, 1994, and November 6, 1993 (44th Week)**

Reporting Area	Measles (Rubeola)						Menin- gococcal infections	Mumps		Pertussis			Rubella		
	Malaria	Indigenous		Imported*		Total									
	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993		Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	1994	Cum. 1994
UNITED STATES	895	3	685	-	171	291	2,236	22	1,192	69	2,946	5,371	-	211	173
NEW ENGLAND	70	-	14	-	14	63	114	-	19	2	317	666	-	128	2
Maine	6	-	1	-	4	1	19	-	3	-	18	15	-	-	1
N.H.	3	-	1	-	2	2	6	-	4	1	55	145	-	-	-
Vt.	3	-	2	-	1	31	2	-	-	-	40	85	-	-	-
Mass.	31	-	2	-	6	18	51	-	3	-	166	343	-	124	1
R.I.	8	-	4	-	3	2	-	-	2	1	6	7	-	2	-
Conn.	19	-	4	-	-	9	36	-	7	-	32	71	-	2	-
MID. ATLANTIC	172	1	167	-	23	27	226	2	94	9	530	809	-	9	59
Upstate N.Y.	43	1	13	-	3	7	80	1	26	-	199	295	-	6	17
N.Y. City	63	-	11	-	3	11	11	1	13	9	140	70	-	1	22
N.J.	38	U	139	U	14	9	52	U	6	U	10	78	U	2	15
Pa.	28	-	4	-	3	-	83	-	49	-	181	366	-	-	5
E.N. CENTRAL	95	-	58	-	44	31	360	6	207	12	372	1,346	-	11	8
Ohio	15	-	15	-	2	9	101	4	64	10	143	387	-	-	1
Ind.	14	-	-	-	1	1	68	-	7	-	56	128	-	-	3
Ill.	39	-	17	-	39	9	107	-	92	-	78	395	-	3	1
Mich.	25	-	23	-	2	6	50	2	40	2	45	103	-	8	2
Wis.	2	-	3	-	-	6	34	-	4	-	50	333	-	-	1
W.N. CENTRAL	41	-	126	-	44	3	156	1	62	2	185	499	-	2	1
Minn.	13	-	-	-	-	-	14	-	5	-	85	294	-	-	-
Iowa	5	-	6	-	1	-	18	1	16	-	18	35	-	-	-
Mo.	12	-	118	-	42	1	83	-	34	-	40	128	-	2	1
N. Dak.	1	-	-	-	-	-	1	-	5	-	4	5	-	-	-
S. Dak.	-	-	-	-	-	-	8	-	-	2	19	8	-	-	-
Nebr.	4	-	1	-	1	-	11	-	2	-	7	13	-	-	-
Kans.	6	-	1	-	-	2	21	-	-	-	12	16	-	-	-
S. ATLANTIC	204	1	60	-	8	28	384	8	170	28	282	558	-	11	6
Del.	3	-	-	-	-	-	5	-	-	-	3	9	-	-	-
Md.	99	-	2	-	2	4	38	4	57	2	74	118	-	-	2
D.C.	14	-	-	-	-	-	4	-	-	-	8	13	-	-	-
Va.	32	-	1	-	2	4	63	1	39	-	36	59	-	-	-
W. Va.	-	-	36	-	-	-	12	-	3	-	4	8	-	-	-
N.C.	11	-	2	-	1	-	47	1	36	20	78	151	-	-	-
S.C.	4	-	-	-	-	-	26	-	7	-	13	68	-	-	-
Ga.	20	1	3	-	-	-	66	-	8	3	25	50	-	2	-
Fla.	21	-	16	-	3	20	123	2	20	3	41	82	-	9	4
E.S. CENTRAL	31	-	28	-	-	1	134	-	20	-	119	269	-	-	-
Ky.	11	-	-	-	-	-	35	-	-	-	59	36	-	-	-
Tenn.	10	-	28	-	-	-	35	-	8	-	22	165	-	-	-
Ala.	9	-	-	-	-	1	64	-	5	-	31	58	-	-	-
Miss.	1	-	-	-	-	-	-	-	7	-	7	10	-	-	-
W.S. CENTRAL	41	-	10	-	7	10	279	2	228	-	180	138	-	13	17
Ark.	3	-	-	-	1	-	40	-	1	-	27	10	-	-	-
La.	8	-	-	-	1	1	32	-	27	-	10	12	-	-	1
Okla.	7	-	-	-	-	-	29	-	23	-	26	74	-	4	1
Tex.	23	-	10	-	5	9	178	2	177	-	117	42	-	9	15
MOUNTAIN	28	1	150	-	17	6	142	2	143	7	349	389	-	6	11
Mont.	-	U	-	U	-	-	6	U	-	U	8	9	U	-	-
Idaho	2	-	1	-	-	-	16	1	8	2	49	94	-	-	2
Wyo.	1	-	-	-	-	-	7	-	2	-	-	1	-	-	-
Colo.	13	-	16	-	3	3	29	-	3	-	122	156	-	-	2
N. Mex.	3	-	-	-	-	-	13	N	N	1	22	38	-	1	-
Ariz.	3	1	2	-	1	2	45	-	92	4	124	51	-	-	2
Utah	4	-	131	-	2	-	18	1	24	-	21	36	-	4	4
Nev.	2	-	-	-	11	1	8	-	13	-	3	4	-	1	1
PACIFIC	213	-	72	-	14	122	441	1	249	9	612	697	-	31	69
Wash.	11	-	-	-	-	-	30	-	7	2	31	66	-	-	-
Oreg.	12	-	-	-	1	4	83	N	N	-	38	67	-	2	-
Calif.	172	-	56	-	9	96	319	1	222	6	521	553	-	24	40
Alaska	2	-	16	-	-	2	2	-	3	-	2	5	-	1	1
Hawaii	16	-	-	-	4	20	7	-	17	1	20	6	-	4	28
Guam	3	U	211	U	-	3	1	U	4	U	2	-	U	1	-
P.R.	2	-	13	-	-	351	15	-	2	-	1	8	-	-	-
V.I.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	1	-	2	2	-	-	-
C.N.M.I.	1	U	26	U	-	1	-	U	2	U	-	1	U	-	-

\*For measles only, imported cases include both out-of-state and international importations.

N: Not notifiable

U: Unavailable

† International

§ Out-of-state

**TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending November 5, 1994, and November 6, 1993 (44th Week)**

Reporting Area	Syphilis (Primary & Secondary)		Toxic- Shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	17,998	22,735	152	18,262	19,177	79	364	402	6,391
NEW ENGLAND	184	326	4	419	434	1	21	15	1,647
Maine	4	5	1	23	22	-	-	-	-
N.H.	3	25	-	15	17	-	-	-	185
Vt.	-	1	1	6	5	-	-	-	125
Mass.	79	114	2	217	232	1	17	7	622
R.I.	13	14	-	37	50	-	1	-	44
Conn.	85	167	-	121	108	-	3	8	671
MID. ATLANTIC	1,178	2,001	25	3,558	4,053	1	100	17	1,660
Upstate N.Y.	160	209	13	297	594	1	11	6	1,219
N.Y. City	515	959	-	2,163	2,285	-	67	1	-
N.J.	192	268	-	654	616	-	17	4	230
Pa.	311	565	12	444	558	-	5	6	211
E.N. CENTRAL	2,387	3,705	29	1,807	1,986	8	68	45	55
Ohio	983	991	6	291	269	1	7	28	4
Ind.	215	321	2	165	192	2	7	5	13
Ill.	662	1,443	10	918	1,057	3	42	10	18
Mich.	253	504	11	382	392	1	5	2	12
Wis.	274	446	-	51	76	1	7	-	8
W.N. CENTRAL	993	1,427	23	497	426	36	1	35	182
Minn.	43	54	1	114	59	1	-	-	13
Iowa	56	60	8	53	45	-	-	1	75
Mo.	841	1,187	6	219	216	23	1	17	19
N. Dak.	-	4	1	8	6	1	-	-	9
S. Dak.	1	2	-	22	12	2	-	13	33
Nebr.	-	10	2	18	21	2	-	1	-
Kans.	52	110	5	63	67	7	-	3	33
S. ATLANTIC	5,222	5,728	8	3,415	3,816	2	46	189	1,718
Del.	24	90	-	26	40	-	1	-	41
Md.	264	319	-	284	334	1	13	20	466
D.C.	189	290	-	101	140	-	1	-	2
Va.	688	542	1	292	382	-	8	17	355
W. Va.	9	12	-	67	64	-	-	2	66
N.C.	1,443	1,636	1	407	431	-	-	76	150
S.C.	704	835	-	298	340	-	-	17	153
Ga.	1,233	953	1	637	649	1	2	54	331
Fla.	668	1,051	5	1,303	1,436	-	21	3	154
E.S. CENTRAL	3,352	3,493	5	1,161	1,386	1	2	40	160
Ky.	184	306	2	267	313	1	1	9	18
Tenn.	903	1,001	2	324	439	-	1	25	34
Ala.	563	711	1	372	423	-	-	2	108
Miss.	1,702	1,475	-	198	211	-	-	4	-
W.S. CENTRAL	3,859	4,751	1	2,536	2,223	17	15	47	589
Ark.	404	485	-	224	158	16	-	8	25
La.	1,480	2,184	-	138	215	-	3	-	63
Okla.	111	243	1	224	137	1	3	32	37
Tex.	1,864	1,839	-	1,950	1,713	-	9	7	464
MOUNTAIN	205	217	8	411	472	9	9	14	127
Mont.	4	1	-	9	13	3	-	4	17
Idaho	1	-	2	11	12	-	-	-	3
Wyo.	1	8	-	8	4	-	-	2	19
Colo.	110	69	4	21	72	1	3	4	15
N. Mex.	19	24	-	54	59	1	1	2	7
Ariz.	34	91	-	190	197	-	1	1	44
Utah	8	9	2	41	30	2	2	-	13
Nev.	28	15	-	77	85	2	2	1	9
PACIFIC	618	1,087	49	4,458	4,381	4	102	-	253
Wash.	30	53	2	221	226	-	3	-	-
Oreg.	21	37	-	90	-	2	5	-	12
Calif.	561	983	43	3,880	3,887	1	89	-	211
Alaska	4	8	-	51	52	1	-	-	30
Hawaii	2	6	4	216	216	-	5	-	-
Guam	9	3	-	142	49	-	1	-	-
P.R.	260	443	-	137	165	-	-	-	57
V.I.	25	38	-	-	2	-	-	-	-
Amer. Samoa	1	-	-	4	4	-	1	-	-
C.N.M.I.	2	7	-	32	38	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,\* week ending  
November 5, 1994 (44th Week)

Reporting Area	All Causes, By Age (Years)						P&I <sup>†</sup> Total	Reporting Area	All Causes, By Age (Years)						P&I <sup>†</sup> Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	664	447	118	71	12	16	53	S. ATLANTIC	1,177	692	241	143	39	59	73
Boston, Mass.	205	130	40	27	3	5	17	Atlanta, Ga.	168	98	34	28	3	5	9
Bridgeport, Conn.	54	33	6	11	2	2	7	Baltimore, Md.	104	55	28	13	4	4	12
Cambridge, Mass.	21	12	7	2	-	-	4	Charlotte, N.C.	73	48	17	2	1	3	2
Fall River, Mass.	43	38	4	1	-	-	1	Jacksonville, Fla.	128	83	24	15	4	2	12
Hartford, Conn.	66	39	10	12	1	4	2	Miami, Fla.	95	57	21	13	4	-	1
Lowell, Mass.	24	16	6	2	-	-	-	Norfolk, Va.	55	34	10	6	4	1	1
Lynn, Mass.	15	10	3	2	-	-	-	Richmond, Va.	75	35	20	14	3	3	2
New Bedford, Mass.	29	25	4	-	-	-	2	Savannah, Ga.	67	49	8	6	4	-	6
New Haven, Conn.	54	36	6	5	6	1	5	St. Petersburg, Fla.	54	39	11	2	1	1	3
Providence, R.I.	U	U	U	U	U	U	U	Tampa, Fla.	184	124	36	14	4	5	21
Somerville, Mass.	9	7	2	-	-	-	-	Washington, D.C.	168	64	32	30	7	35	4
Springfield, Mass.	38	28	7	3	-	-	3	Wilmington, Del.	6	6	-	-	-	-	-
Waterbury, Conn.	27	16	8	1	-	2	5	E.S. CENTRAL	773	512	147	64	23	27	71
Worcester, Mass.	79	57	15	5	-	2	7	Birmingham, Ala.	115	76	21	6	6	6	5
MID. ATLANTIC	2,472	1,594	501	288	52	37	130	Chattanooga, Tenn.	65	44	11	7	3	-	6
Albany, N.Y.	46	29	12	5	-	-	3	Knoxville, Tenn.	98	76	17	3	-	2	11
Allentown, Pa.	21	16	5	-	-	-	-	Lexington, Ky.	43	27	8	4	3	1	6
Buffalo, N.Y.	77	52	16	8	-	1	10	Memphis, Tenn.	186	113	40	18	5	10	19
Camden, N.J.	34	19	9	3	1	2	3	Mobile, Ala.	78	54	13	8	3	-	1
Elizabeth, N.J.	17	10	1	4	2	-	1	Montgomery, Ala.	41	30	7	2	2	-	10
Erie, Pa.‡	31	28	3	-	-	-	3	Nashville, Tenn.	147	92	30	16	1	8	13
Jersey City, N.J.	51	27	13	7	1	3	4	W.S. CENTRAL	1,374	866	266	152	54	35	82
New York City, N.Y.	1,376	857	278	192	31	18	41	Austin, Tex.	68	50	12	4	1	1	3
Newark, N.J.	U	U	U	U	U	U	U	Baton Rouge, La.	37	28	5	4	-	-	3
Paterson, N.J.	27	14	4	8	-	1	2	Corpus Christi, Tex.	U	U	U	U	U	U	U
Philadelphia, Pa.	393	248	93	39	7	6	26	Dallas, Tex.	202	121	41	23	7	10	6
Pittsburgh, Pa.§	86	60	16	5	2	3	11	El Paso, Tex.	78	55	16	5	-	1	9
Reading, Pa.	12	9	2	1	-	-	2	Ft. Worth, Tex.	115	54	27	22	10	2	3
Rochester, N.Y.	140	106	23	5	6	-	14	Houston, Tex.	284	166	68	33	11	6	20
Schenectady, N.Y.	18	13	3	1	1	-	1	Little Rock, Ark.	59	36	10	7	3	3	5
Scranton, Pa.§	27	22	3	2	-	-	-	New Orleans, La.	175	109	33	22	8	3	-
Syracuse, N.Y.	69	49	13	4	1	2	5	San Antonio, Tex.	201	142	26	18	8	7	17
Trenton, N.J.	27	19	4	3	-	1	3	Shreveport, La.	72	45	12	9	4	2	10
Utica, N.Y.	20	16	3	1	-	-	1	Tulsa, Okla.	83	60	16	5	2	-	6
Yonkers, N.Y.	U	U	U	U	U	U	U	MOUNTAIN	855	574	164	68	32	17	51
E.N. CENTRAL	2,076	1,314	376	207	122	57	92	Albuquerque, N.M.	112	75	24	6	4	3	6
Akron, Ohio	64	45	12	4	1	2	-	Colo. Springs, Colo.	45	30	9	3	2	1	5
Canton, Ohio	32	23	9	-	-	-	2	Denver, Colo.	139	77	36	19	6	1	12
Chicago, Ill.	396	160	68	85	72	11	15	Las Vegas, Nev.	152	115	26	6	2	3	1
Cincinnati, Ohio	109	72	20	10	3	4	10	Ogden, Utah	27	20	2	3	1	1	-
Cleveland, Ohio	153	95	26	17	5	10	2	Phoenix, Ariz.	134	89	22	14	5	4	11
Columbus, Ohio	153	105	28	12	6	2	3	Pueblo, Colo.	23	19	4	-	-	-	2
Dayton, Ohio	127	96	19	10	2	-	4	Salt Lake City, Utah	96	62	21	7	3	3	9
Detroit, Mich.	224	139	46	20	13	6	-	Tucson, Ariz.	127	87	20	10	9	1	5
Evansville, Ind.	39	32	5	-	1	1	1	PACIFIC	1,432	944	238	167	45	21	105
Fort Wayne, Ind.	59	43	8	4	3	1	2	Berkeley, Calif.	15	10	4	1	-	-	1
Gary, Ind.	22	12	6	2	1	1	-	Fresno, Calif.	65	40	12	8	1	4	4
Grand Rapids, Mich.	48	37	7	3	-	1	6	Glendale, Calif.	22	15	5	2	-	-	-
Indianapolis, Ind.	157	99	40	11	3	4	9	Honolulu, Hawaii	76	55	11	5	3	2	8
Madison, Wis.	60	45	9	5	1	-	15	Long Beach, Calif.	62	39	10	9	1	3	3
Milwaukee, Wis.	136	88	34	6	3	5	7	Los Angeles, Calif.	409	244	67	74	14	1	15
Peoria, Ill.	32	23	5	2	-	2	5	Pasadena, Calif.	34	25	6	-	2	1	6
Rockford, Ill.	48	32	8	5	1	2	1	Portland, Oreg.	104	75	19	4	5	1	6
South Bend, Ind.	35	26	4	1	2	2	2	Sacramento, Calif.	U	U	U	U	U	U	U
Toledo, Ohio	123	99	10	9	3	2	7	San Diego, Calif.	U	U	U	U	U	U	U
Youngstown, Ohio	59	43	12	1	2	1	1	San Francisco, Calif.	150	98	18	22	3	1	22
W.N. CENTRAL	759	534	117	55	26	14	39	San Jose, Calif.	188	129	35	10	10	4	15
Des Moines, Iowa	88	63	15	7	2	1	7	Santa Cruz, Calif.	31	27	4	-	-	-	6
Duluth, Minn.	17	13	3	-	-	1	1	Seattle, Wash.	132	83	24	19	3	3	7
Kansas City, Kans.	23	16	3	2	1	1	-	Spokane, Wash.	35	25	6	2	1	1	3
Kansas City, Mo.	98	55	14	6	6	4	4	Tacoma, Wash.	109	79	17	11	2	-	9
Lincoln, Nebr.	31	22	4	3	2	-	1	TOTAL	11,582 <sup>¶</sup>	7,477	2,168	1,215	405	283	696
Minneapolis, Minn.	165	126	24	9	5	1	15								
Omaha, Nebr.	86	66	11	6	2	1	5								
St. Louis, Mo.	133	93	22	13	4	1	3								
St. Paul, Minn.	57	40	6	6	2	3	3								
Wichita, Kans.	61	40	15	3	2	1	-								

\*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.

<sup>†</sup>Pneumonia and influenza.

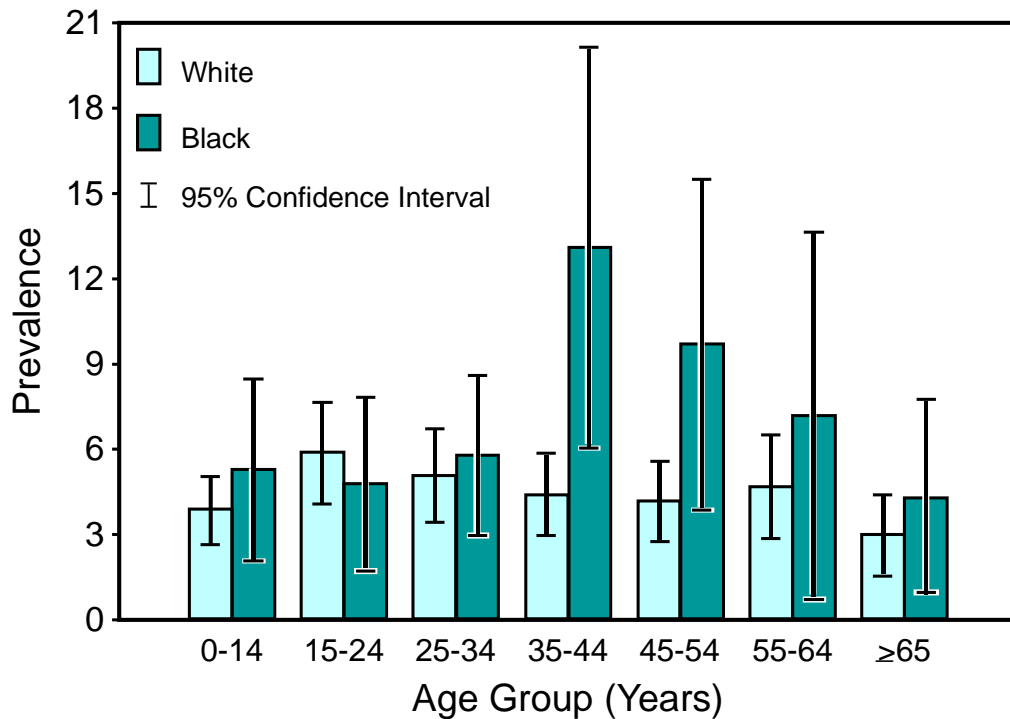
<sup>§</sup>Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

<sup>¶</sup>Total includes unknown ages.

U: Unavailable.

Epilepsy — Continued

FIGURE 1. Prevalence\* of epilepsy, by age group and race† — United States, 1986–1990



\*Per 1000 civilian, noninstitutionalized persons in the United States.

†Numbers for races other than black and white were too small for meaningful analysis.

were based on rigorous case ascertainment efforts (i.e., record review or neurologic examination) in more clearly defined local populations (2,6).

Epileptic seizures can be classified by etiology or clinical manifestation. Seizures with a presumptive cause (e.g., head trauma, stroke, or neoplasm) are classified as symptomatic seizures or secondary epilepsy; repeated seizures with no presumed cause are classified as idiopathic epilepsy (7). Symptomatic seizures can be either acute or temporally remote from the triggering event and can be prevented by reducing the prevalence of the predisposing event. However, even if all known risk factors for epilepsy were removed from the population, approximately 70% of cases would still occur (2).

The findings in this report are subject to at least two limitations. First, estimates are based on self-reported data and may be subject to reporting bias. For example, because a social stigma is associated with epilepsy, persons may be reluctant to report the condition (8). Second, epilepsy manifests itself with varying seizure frequency throughout life. Persons whose seizures are controlled with medication or who have not had a recent seizure may not have reported epilepsy as a medical problem in this survey.

The higher reported prevalence of epilepsy for blacks than for whites is consistent with previous reports (6,9). Among blacks, the higher prevalences in middle-aged groups (i.e., 35–44 years and 45–54 years) may reflect differences in the epidemiology of epilepsy in middle life (e.g., trauma and cerebrovascular disease). Because most

*Epilepsy — Continued*

previous studies have reported a higher prevalence of epilepsy among males, the detection of similar prevalences for men and women in this report warrants further assessment (9).

Prompt detection and early medical intervention can greatly improve seizure control and enhance the quality of life for persons with epilepsy; however, epilepsy remains undiagnosed or inadequately treated in many persons. To address these issues, CDC is collaborating with professional and voluntary organizations to design provider and consumer education materials to improve awareness, detection, and appropriate treatment of persons with epilepsy.

November is National Epilepsy Month. For additional information about epilepsy management or referral to local resources, contact the Epilepsy Foundation of America, telephone (800) 332-1000 or (301) 459-3700.

*References*

1. Adams RD, Victor M. Principles of neurology. 4th ed. New York: McGraw-Hill, 1989.
2. Hauser WA, Kurland LT. The epidemiology of epilepsy in Rochester, Minnesota, 1935 through 1967. *Epilepsia* 1975;16:1-66.
3. Hartshorn JC, Byers VL. Impact of epilepsy on quality of life. *J Neurosci Nurs* 1992;24:24-9.
4. NCHS. Current estimates from the National Health Interview Survey: data from the national health survey, 1989. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1990; DHHS publication no. (PHS)90-1504. (Vital and health statistics; series 10, no. 176).
5. Fleiss JL. Statistical methods for rates and proportions. 2nd ed. New York: John Wiley & Sons, 1981.
6. Haerer AF, Anderson DW, Schoenberg BS. Prevalence and clinical features of epilepsy in a biracial United States population. *Epilepsia* 1986;27:66-75.
7. Commission on Classification and Terminology, International League Against Epilepsy. Proposal for revised clinical and electroencephalographic classification of epileptic seizures. *Epilepsia* 1981;22:489-501.
8. Jacoby A. Felt versus enacted stigma: a concept revisited—evidence from a study of people with epilepsy in remission. *Soc Sci Med* 1994;38:269-74.
9. Hauser WA, Hesdorffer DC. Epilepsy: frequency, causes and consequences. New York: Epilepsy Foundation of America, 1990.

*Health Objectives for the Nation***Prevalence of Overweight Among Adolescents —  
United States, 1988-91**

Among adults, overweight is associated with increased risk for death, coronary heart disease, diabetes mellitus, gallbladder disease, joint disease, and certain cancers (1), and overweight during adolescence is associated with increased risk for overweight as an adult (2). CDC's third National Health and Nutrition Examination Survey (NHANES III) provides data to monitor changes in the dietary, nutritional, and health status of the U.S. population (3) and to track progress toward achieving the year 2000 national health objectives, including those related to prevalence of overweight (4). This report presents findings from NHANES III, Phase 1 (1988-91), on the prevalence of overweight among U.S. adolescents (ages 12-19 years).

*Overweight Adolescents — Continued*

NHANES III used a stratified multistage probability design to obtain a sample of the civilian, noninstitutionalized U.S. population aged  $\geq 2$  months. The survey comprised two 3-year nationally representative phases with oversampling of children aged 2 months–5 years, persons aged  $\geq 60$  years, blacks, and persons of Mexican descent (5). Height and weight were measured as part of a standardized physical examination in a mobile examination center (3). Body mass index (BMI,  $\text{kg}/\text{m}^2$ ) was used as a measure of weight adjusted for height. For adolescents, overweight was defined in the year 2000 national health objectives (objective 2.3) using BMI cutoffs based on modified age- and sex-specific 85th percentile values of the second National Health and Nutrition Examination Survey (NHANES II) (1976–80) (4).

Of the 1849 persons aged 12–19 years selected for the survey, 1632 (88%) were interviewed; of those interviewed, 1519 (93%) underwent a standardized physical examination. Of those examined, 1490 (98%) had complete data for height and weight, resulting in an overall analytic response rate of 81% (1490/1849). Data were weighted to account for survey design and nonresponse.

During 1988–91, the prevalence of overweight for persons aged 12–19 years was 21%, an increase of 6% since NHANES II (Table 1). Sex-specific prevalence of overweight was 20% for males and 22% for females.

*Reported by: Div of Health Examination Statistics, National Center for Health Statistics, CDC.*

**Editorial Note:** One national health objective for the year 2000 is that overweight prevalence not exceed 15% among adolescents aged 12–19 years (baseline: 15% for adolescents aged 12–19 years in 1976–80) (objective 2.3) (4). The findings in this report indicate that, since NHANES II, the prevalence of overweight among adolescents has increased; a similar increase was reported for adults (6). Because both national surveys employed standardized equipment and procedures to measure height and weight, the increase during 1988–91 probably does not reflect changes in methodology.

There is no generally accepted definition of overweight for adolescents (7). The definition used for the year 2000 national health objective (i.e., the 85th percentile

**TABLE 1. Prevalence of overweight\* among adolescents — United States, National Health and Nutrition Examination Survey, 1976–1980 (NHANES II) and 1988–1991 (NHANES III)**

Sex/Survey	Sample size	Prevalence	
		%	(95% CI) <sup>†</sup>
<b>Male</b>			
NHANES II	1351	15	(12.9–16.7)
NHANES III	717	20	(15.3–24.5)
<b>Female</b>			
NHANES II	1241	15	(12.1–17.3)
NHANES III	739	22	(18.4–26.3)
<b>Total</b>			
NHANES II	2592	15	(13.1–16.4)
NHANES III	1456	21	(17.5–24.6)

\*Defined as body mass index  $\geq 23.0$  for males aged 12–14 years;  $\geq 24.3$  for males aged 15–17 years;  $\geq 25.8$  for males aged 18–19 years;  $\geq 23.4$  for females aged 12–14 years;  $\geq 24.8$  for females aged 15–17 years; and  $\geq 25.7$  for females aged 18–19 years.

<sup>†</sup>Confidence interval; based on a t-statistic with 32 degrees of freedom for NHANES II and 23 degrees of freedom for NHANES III.

*Overweight Adolescents — Continued*

from NHANES II) (4) has the advantage of comparability with the definition for adults. However, because of changes in body composition with growth, weight is a less reliable measure of fatness for children and adolescents than for adults (8), and this definition may classify some adolescents as overweight who do not have excess body fat. In addition, some adolescents change overweight classification with age; most overweight adults were not overweight children (2).

The increase in the prevalence of overweight among adolescents and adults is most likely associated with dietary energy intake exceeding caloric expenditure. Energy intake through food consumption and energy expenditure through physical activity cannot be measured as precisely as height and weight in population surveys. Although high-fat and high-calorie foods are abundant and readily available in the United States, survey data suggest that dramatic increases in energy intake alone do not account for the increased prevalence of overweight among adolescents (9). Declining levels of physical activity also may account for these changes. For example, levels of participation by high school students in physical education declined from 1984 to 1990 (10); other factors possibly associated with declines in physical activity include concerns about personal safety and changing parental work habits.

Changes in diet and activity levels are necessary for the U.S. population to reduce overweight; primary prevention of overweight should begin in childhood. The findings in this report can assist in tracking progress toward achieving public health goals aimed at reducing overweight among adolescents and adults. Subsequent analyses of NHANES III will be used to elucidate differences in overweight prevalence by socioeconomic status and race/ethnicity, identify population subgroups at risk for increased prevalence of overweight, and examine the relation between overweight and other health and nutrition variables.

*References*

1. Public Health Service. The Surgeon General's report on nutrition and health, 1988. Washington, DC: US Department of Health and Human Services, Public Health Service, 1988; DHHS publication no. (PHS)88-50210.
2. Guo SS, Roche AF, Chumlea WC, Gardner JD, Siervogel RM. The predictive value of childhood body mass index values for overweight at age 35 y. *Am J Clin Nutr* 1994;59:810-9.
3. NCHS. Plan and operation of the Third National Health and Nutrition Examination Survey, 1988-94. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1994; DHHS publication no. (PHS)94-1308. (*Vital and health statistics*; series 1, no. 32).
4. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—full report, with commentary. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50212.
5. Ezzati TM, Massey JT, Waksberg J, Chu A, Maurer KR. Sample design: Third National Health and Nutrition Examination Survey. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, NCHS, 1992; DHHS publication no. (PHS)92-1387. (*Vital and health statistics*; series 2, no. 113)
6. Kuczmarski RJ, Flegal KM, Campbell SM, Johnson CL. Increasing prevalence of overweight among US adults. *JAMA* 1994;272:205-11.
7. Flegal KM. Defining obesity in children and adolescents: epidemiologic approaches. *Crit Rev Food Science Nutr* 1993;33:307-12.
8. Kuczmarski RJ. Trends in body composition for infants and children in the U.S. *Crit Rev Food Sci Nutr* 1993;33:375-87.
9. McDowell MA, Briefel RR, Alaimo K, et al. Energy and macronutrient intakes of persons ages 2 months and over in the United States: Third National Health and Nutrition Examination Survey, Phase 1, 1988-91. Hyattsville, Maryland: US Department of Health and Human Serv-



*Overweight Adolescents — Continued*

- ices, Public Health Service, CDC, NCHS, 1994; DHHS publication no. (PHS)94-1250. (Advance data no. 255)
10. Heath GW, Pratt M, Warren CW, Kann L. Physical activity patterns in American high school students: results from the 1990 Youth Risk Behavior Survey. *Arch Pediatr Adolesc Med* 1994;148:1131-6.

*Notice to Readers***Prevention 95 Conference: Outcomes and Accountability**

Prevention 95, the 12th annual national preventive medicine meeting, will be sponsored by the American College of Preventive Medicine and the Association of Teachers of Preventive Medicine in collaboration with CDC and other national health agencies in New Orleans March 30–April 2, 1995. The conference will address acquired immunodeficiency syndrome, preventive medicine education, prevention of injury and violence, clinical practice guidelines, infectious diseases, national health objectives for the year 2000, and worksite injury prevention and health promotion programs. Registration information is available from the Meetings Manager, Prevention 95, P.O. Box 65686, Washington, DC, 20035-5686; telephone (202) 789-0006.

*Notice to Readers***Draft Recommendations for Prevention of Opportunistic Infections in HIV-Infected Persons**

CDC, the National Institutes of Health, and the Infectious Diseases Society of America have prepared recommendations for prevention of opportunistic infections (OIs) in human immunodeficiency virus-infected persons. The draft document is available from CDC's Technical Information Activity, Division of HIV/AIDS, National Center for Infectious Diseases, telephone (404) 639-2076, fax (404) 639-2007. Comments must be received in writing by December 16, 1994, and should be mailed to Attention: OI Recommendations, Technical Information Activity, Division of HIV/AIDS, National Center for Infectious Diseases, CDC, Mailstop E-49, 1600 Clifton Road, NE, Atlanta, GA 30333; fax (404) 639-2007.

**Addenda: Vol. 43, No. SS-2**

In the *CDC Surveillance Summaries* entitled "Dengue Surveillance—United States, 1986–1992" dated July 22, 1994, a sentence was omitted from page 8. The following sentence should have been added to the end of the first paragraph in the introduction: "*Ae. albopictus* is the dominant mosquito on all the Hawaiian islands; *Ae. aegypti* is distributed focally on Molokai and Hawaii's Kona coast."

This distribution should have been reflected in Figure 1 (page 9).

### Monthly Immunization Table

To track progress toward achieving the goals of the Childhood Immunization Initiative (CII), CDC publishes monthly a tabular summary of the number of cases of all diseases preventable by routine childhood vaccination reported during the previous month and year-to-date (provisional data). In addition, the table compares provisional data with final data for the previous year and highlights the number of reported cases among children aged <5 years, who are the primary focus of CII. Data in the table are derived from CDC's National Notifiable Diseases Surveillance System.

#### Number of reported cases of diseases preventable by routine childhood vaccination — United States, September 1994 and 1993–1994\*

Disease	No. cases, September 1994	Total cases January–September		No. cases among children aged <5 years†	
		1993	1994	1993	1994
Congenital rubella syndrome (CRS)	1	5	3	4	2
Diphtheria	0	0	1	0	1
<i>Haemophilus influenzae</i> §	86	958	874	292	234
Hepatitis B¶	1057	9437	8794	89	91
Measles	30	269	844	102	194
Mumps	108	1244	1068	209	170
Pertussis	339	4366	2553	2598	1457
Poliomyelitis, paralytic**	0	3	1	1	1
Rubella	6	165	210	25	21
Tetanus	4	33	26	0	0

\* Data for 1993 are final and for 1994, provisional.

† For 1993 and 1994, age data were available for 90% or more cases, except for 1993 age data for CRS and 1994 age data for tetanus, which were available for 80% and 88% of cases, respectively.

§ Invasive disease; *H. influenzae* serotype is not routinely reported to the National Notifiable Diseases Surveillance System.

¶ Because most hepatitis B virus infections among infants and children aged <5 years are asymptomatic (although likely to become chronic), acute disease surveillance does not reflect the incidence of this problem in this age group or the effectiveness of hepatitis B vaccination in infants.

\*\* One case with onset in 1994 has been confirmed; this case was vaccine-associated. In 1993, three of 10 suspected cases were confirmed; two of the confirmed cases of 1993 were vaccine-associated, and one was classified as imported.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

The data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. Inquiries about the *MMWR* Series, including material to be considered for publication, should be directed to: Editor, *MMWR* Series, Mailstop C-08, Centers for Disease Control and Prevention, Atlanta, GA 30333; telephone (404) 332-4555.

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

Director, Centers for Disease Control and Prevention  
David Satcher, M.D., Ph.D.

Deputy Director, Centers for Disease Control  
and Prevention  
Claire V. Broome, M.D.

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

Editor, *MMWR* Series

Richard A. Goodman, M.D., M.P.H.

Managing Editor, *MMWR* (weekly)

Karen L. Foster, M.A.

Writers-Editors, *MMWR* (weekly)

David C. Johnson

Patricia A. McGee

Darlene D. Rumph-Person

Caran R. Wilbanks

I U.S. Government Printing Office: 1995-533-178/05038 Region IV