

# MMWR™

MORBIDITY AND MORTALITY WEEKLY REPORT

- 345 National Melanoma/Skin Cancer Detection and Prevention Month, May 1996
- 346 Survey of Knowledge of and Awareness About Melanoma — United States, 1995
- 350 Breathe Easy Month®, May 1996
- 350 Asthma Mortality and Hospitalization Among Children and Young Adults — United States, 1980–1993
- 353 Human Rabies — California, 1995

## National Melanoma/Skin Cancer Detection and Prevention Month, May 1996

The American Academy of Dermatology (AAD) has designated May as National Melanoma/Skin Cancer Detection and Prevention Month. In 1996, an estimated 1 million cases of skin cancer will be diagnosed, of which approximately 95% will be squamous cell or basal cell carcinomas (1). Although the incidence of melanoma is lower than those of squamous cell and basal cell carcinomas, the case-fatality rate is highest for persons with melanoma. During 1973–1992, mortality from melanoma increased 34%—the third highest increase of all cancers (2).

CDC, in collaboration with the AAD, has initiated the National Skin Cancer Prevention Education Program (NSCPEP) to increase public awareness about skin cancer and to help reduce the occurrence of and deaths associated with skin cancer. Goals of this program are to develop and disseminate educational messages for children, their parents, and other caregivers; develop guidelines for school curricula; evaluate the utility and value of the ultraviolet (UV) index; and develop educational messages for health-care providers.

Additional information about this month and the NSCPEP is available from the AAD, 930 North Meacham Road, Schaumburg, IL 60173-4965, and from CDC's Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, by telephone ([770] 488-4751), by e-mail (ccdinfo@ccdod1.em.cdc.gov), or on the Internet World Wide Web (<http://www.cdc.gov/nccdphp/dcp/dcpchome.htm>).

### References

1. Miller DL, Weinstock MA. Nonmelanoma skin cancer in the United States: incidence. *J Am Acad Dermatol* 1994;30:774–8.
2. CDC. Deaths from melanoma—United States, 1973–1992. *MMWR* 1995;44:337,343–7.

## Survey of Knowledge of and Awareness About Melanoma — United States, 1995

Skin cancer is the most commonly diagnosed cancer in the United States (1). Although the incidence of melanoma is lower than those of squamous cell and basal cell carcinomas, melanoma is associated with the highest case-fatality rate of all skin cancers. In 1996, an estimated 38,300 cases of melanoma will be diagnosed, and approximately 7300 melanoma-associated deaths will occur (2). Primary and secondary prevention strategies can assist in reducing the occurrence of melanoma and deaths associated with this cancer, and information about public awareness of melanoma, including risk factors, can assist in developing intervention strategies. To assess public knowledge and awareness about melanoma, the American Academy of Dermatology (AAD) conducted a nationwide telephone survey in 1995. This report summarizes the survey findings, which indicate that a high proportion (42%) of respondents had no knowledge about melanoma, and the level of awareness about melanoma was lowest among persons aged 18–24 years.

The AAD survey was a population-based, random-digit-dialed telephone survey of the U.S. civilian, noninstitutionalized population aged  $\geq 18$  years. A total of 1001 persons participated in the survey (response rate=78%). Respondents were asked about their general knowledge and awareness of risk factors for melanoma. Data were weighted to calculate national estimates. Statistical analyses included calculation of odds ratios and 95% confidence intervals (CIs) (3). Because rates of melanoma previously have varied by race, the findings in this report are stratified, in part, by race; however, data are presented only for whites and blacks because numbers for other racial groups were too small for meaningful analysis.

Respondents were asked, "Can you tell me what melanoma is?"; 55% knew melanoma is a type of cancer, 34% knew it is a type of skin cancer, and 42% did not know about melanoma. After being informed that melanoma is a specific type of skin cancer, 95% identified at least one risk factor for melanoma, including history of sun exposure (82% [95% CI=79.9%–84.7%]), family history of melanoma (67% [95% CI=64.5%–70.3%]), and severe childhood sunburn as a risk factor for developing melanoma later in life (58% [95% CI=55.4%–61.4%]). Other risk factors identified by respondents were fair skin (63% [95% CI=60.3%–66.3%]), moles (41% [95% CI=38.3%–44.3%]), red hair and blue eyes (28% [95% CI=25.0%–30.6%]), and freckles (22% [95% CI=19.1%–24.3%]).

Awareness of melanoma (defined as knowledge that melanoma is a type of cancer or specifically a type of skin cancer) varied substantially by demographic factors (Table 1). Awareness generally was higher among respondents who were women, white, aged  $\geq 25$  years, and of higher income levels. Approximately 50% of men and 35% of women reported they did not know the term melanoma. Awareness varied substantially by age group: 38% of respondents aged 25–64 years were aware that melanoma is a type of skin cancer, compared with 16% of those aged 18–24 years.

Awareness also was directly related to levels of education and income. Approximately 50% of respondents who were college graduates were aware that melanoma is a type of skin cancer, compared with 16% of those with less than a high school education. Of the respondents with annual incomes  $< \$20,000$ , 60% reported they did

## Melanoma — Continued

**TABLE 1. Percentage distribution of awareness of melanoma\*, by selected demographic characteristics — United States, Melanoma Awareness and Self-Examination Survey, 1995†**

Characteristic	Awareness			Odds ratio <sup>§</sup>	(95% CI <sup>¶</sup> )
	Melanoma is a type of cancer	Melanoma is a type of skin cancer	Don't know		
<b>Sex</b>					
Female	23%	39%	35%	1.0	
Male	18%	29%	49%	2.3	(1.7–3.2)
<b>Race**</b>					
White	23%	38%	35%	1.0	
Black	6%	11%	75%	3.2	(2.1–5.1)
<b>Age (yrs)</b>					
18–24	11%	16%	72%	1.0	
25–44	16%	37%	42%	0.4	(0.3–0.8)
45–64	29%	39%	30%	0.5	(0.3–0.9)
≥65	29%	36%	31%	0.5	(0.3–1.0)
<b>Education</b>					
<12 years	16%	16%	63%	1.0	
High school graduate	16%	3%	58%	0.7	(0.4–1.3)
Some college	24%	36%	36%	0.4	(0.2–0.7)
College graduate	24%	52%	20%	0.2	(0.1–0.4)
<b>Income</b>					
<\$20,000	16%	18%	60%	1.0	
\$20,000–\$39,999	23%	30%	58%	0.6	(0.4–1.0)
\$40,000–\$74,999	18%	49%	31%	0.3	(0.2–0.5)
≥\$75,000	27%	41%	31%	0.4	(0.2–0.8)
<b>Region<sup>††</sup></b>					
Northeast	19%	32%	45%	1.0	
Midwest	23%	32%	43%	1.2	(0.8–1.9)
South	20%	31%	43%	0.9	(0.6–1.4)
West	20%	42%	36%	0.7	(0.5–1.2)
<b>Total</b>	<b>21%</b>	<b>34%</b>	<b>42%</b>		

\* Defined as knowledge that melanoma is a type of cancer or specifically a type of skin cancer.

† n=1001 adults aged ≥18 years in 47 states (Alaska, Arizona, Hawaii, and Missouri were excluded). Percentages may not total 100% because some respondents gave answers that are not included in this analysis.

§ Odds of knowing that melanoma is a type of skin cancer versus any other response in the specific category as compared with the reference category.

¶ Confidence interval.

\*\* Numbers for other racial groups were too small for meaningful analysis.

†† 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; and West=Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

*Melanoma — Continued*

not recognize the term melanoma; in comparison, of respondents in the highest annual income group ( $\geq$ \$75,000), 31% reported they did not recognize the term.

*Reported by: DR Miller, ScD, AC Geller, MPH, HK Koh, MD, Dept of Dermatology, Dept of Medicine, and Dept of Cancer Prevention and Control, Boston Univ, Massachusetts. American Academy of Dermatology, Evanston, Illinois. Div of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, CDC.*

**Editorial Note:** During 1973–1992, the death rate for melanoma increased 48% among men, representing the highest sex-specific increase of all cancers (4). However, the AAD survey documented that a high proportion of U.S. adults (42%) lacked knowledge and awareness about melanoma. The finding that levels of awareness were lowest among the youngest respondents (persons aged 18–24 years) is especially important because of the strong association between severe sunburn at a young age and risk for melanoma later in life. Previous studies indicate that approximately 80% of lifetime sun exposure occurs before age 18 years (5), emphasizing the importance of educating young persons, their parents, and others about behaviors necessary to reduce or minimize exposure to the sun and ultraviolet (UV) radiation. The findings in this report also indicate limitations in the ability to distinguish between risk factors for melanoma and those for other skin cancers (see box).

### **Risk Factors and Prevention Measures for Melanoma and Other Skin Cancers**

#### **Risk Factors for Melanoma (6)**

- Light skin color
- Family history of melanoma
- Personal history of melanoma
- Presence of moles and freckles
- History of severe sunburn occurring early in life

#### **Risk Factors for Squamous Cell and Basal Cell Carcinomas (6)**

- Chronic exposure to the sun
- Family history of skin cancer
- Personal history of skin cancer
- Light skin color

#### **Measures to Prevent Skin Cancer**

- Reduce direct exposure to the sun, especially from 10 a.m. to 4 p.m.
- Wear a broad-brimmed hat and clothes that protect sun-exposed areas of the body
- Use sunscreen with a sun protection factor (SPF)  $\geq$ 15 as protection against ultraviolet A and ultraviolet B radiation
- Refer to the daily ultraviolet index (available in 58 cities) when planning outdoor activities.

*Melanoma — Continued*

A national health objective for the year 2000 is to increase to at least 60% the proportion of persons of all ages who limit sun exposure, use sunscreens and protective clothing when exposed to sunlight, and avoid artificial sources of UV light (e.g., tanning beds) (7). Based on the 1992 National Health Interview Survey, substantial progress must be made to meet these objectives. Survey results indicate that only 31% of U.S. adults limited their exposure to the sun, 28% routinely used sunscreen, and 28% wore protective clothing (7).

The findings from this survey are assisting CDC and the AAD in the National Skin Cancer Prevention Education Program, a collaborative effort to increase public awareness about skin cancer and to help achieve the year 2000 objectives for skin cancer prevention. Goals of this program are to develop and disseminate educational messages for children, their parents, and other caregivers; develop guidelines for school curricula; evaluate the utility and value of the UV index; and develop educational messages for health-care providers. Recommendations to prevent the development of melanoma and other skin cancers should emphasize behaviors necessary to reduce or minimize exposure to the sun and UV radiation (see box).

*References*

1. Weinstock MA, Boggars HA, Ashley M, et al. Nonmelanoma skin cancer mortality: a population-based study. *Arch Dermatol* 1991;127:1194-7.
2. Parker SL, Tong T, Bolden S, Wingo PA. Cancer statistics, 1996. Atlanta, Georgia: American Cancer Society, 1996.
3. SAS Institute, Inc. Statistical Analysis System (SAS), version 6. 3rd ed. Cary, North Carolina: SAS Institute, Inc, 1990.
4. CDC. Deaths from melanoma—United States, 1973-1992. *MMWR* 1995;44:337,343-7.
5. Stern RS, Weinstein MC, Baker SG. Risk reduction for nonmelanoma skin cancer with childhood sunscreen use. *Arch Dermatol* 1986; 122:537-645.
6. DiGiovanna JJ. Prevention of skin cancer due to sun exposure. In: DeVita VT Jr, Hellman S, Rosenberg SA. Cancer prevention. Philadelphia, Pennsylvania: JB Lippincott Publishers, August 1991:1-9.
7. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—midcourse review and 1995 revisions. Washington, DC: US Department of Health and Human Services, Public Health Service, 1995.

### **Breathe Easy Month<sup>®</sup>, May 1996**

The American Lung Association (ALA) has designated May as Breathe Easy Month<sup>®</sup> as part of its ongoing effort to educate the public about issues relating to respiratory health. Lung disease is the third leading cause of death in the United States. Each year, approximately 335,000 persons in the United States die from lung disease, including asthma, emphysema, chronic bronchitis, and lung cancer.

Clean Air Week<sup>®</sup>, May 20–27, emphasizes air pollution and its relation to lung disease. Air pollution, both indoors (e.g., environmental tobacco smoke) and outdoors (e.g., ozone), is an important contributor to respiratory illnesses such as asthma. ALA recommends reducing exposure to air pollutants and home testing for specific pollutants such as radon and carbon monoxide. In addition, air quality can be improved by supporting state and local clean air regulations and making homes and workplaces smoke-free.

During May, local ALA offices will offer programs on management of asthma and smoking cessation and will host Clean Air Challenge<sup>®</sup> cycling, running, and walking fundraising events. Additional information about Breathe Easy Month<sup>®</sup>, Clean Air Week<sup>®</sup>, and related activities is available from local ALA offices (telephone [800] 586-4872 or [212] 315-8700).

### **Asthma Mortality and Hospitalization Among Children and Young Adults — United States, 1980–1993**

Asthma is the most common chronic illness in childhood and is characterized by variable airflow obstruction with airway hyperresponsiveness. In the United States, asthma affects an estimated 14–15 million persons, including 4.8 million (6.9%) aged <18 years (1). In 1993, asthma accounted for an estimated 198,000 hospitalizations and 342 deaths among persons aged <25 years. To characterize national trends in mortality and hospitalizations attributable to asthma among children and young adults (persons aged <25 years) during 1980–1993, CDC analyzed mortality data from its multiple cause-of-death files and hospitalization data from the National Hospital Discharge Survey. This report summarizes the results of that analysis, which indicate that asthma-related mortality and hospitalization rates are increasing among persons aged <25 years.

Deaths attributed to asthma were based on the *International Classification of Diseases, Ninth Revision* (ICD-9), codes 493.0–493.9. Asthma-related hospitalizations were classified as those in which asthma was the first-listed discharge diagnosis. Data were analyzed by race because of previously reported differences in race-specific rates of death and hospitalization attributed to asthma (2). Race-specific analyses were restricted to blacks and whites because numbers for other races were too small to calculate stable estimates.

During 1980–1993, asthma accounted for 3850 deaths among persons aged 0–24 years. The annual age-specific asthma death rate increased 118% (from 1.7 to 3.7 per million population). During this period, death rates for asthma consistently were

## Asthma — Continued

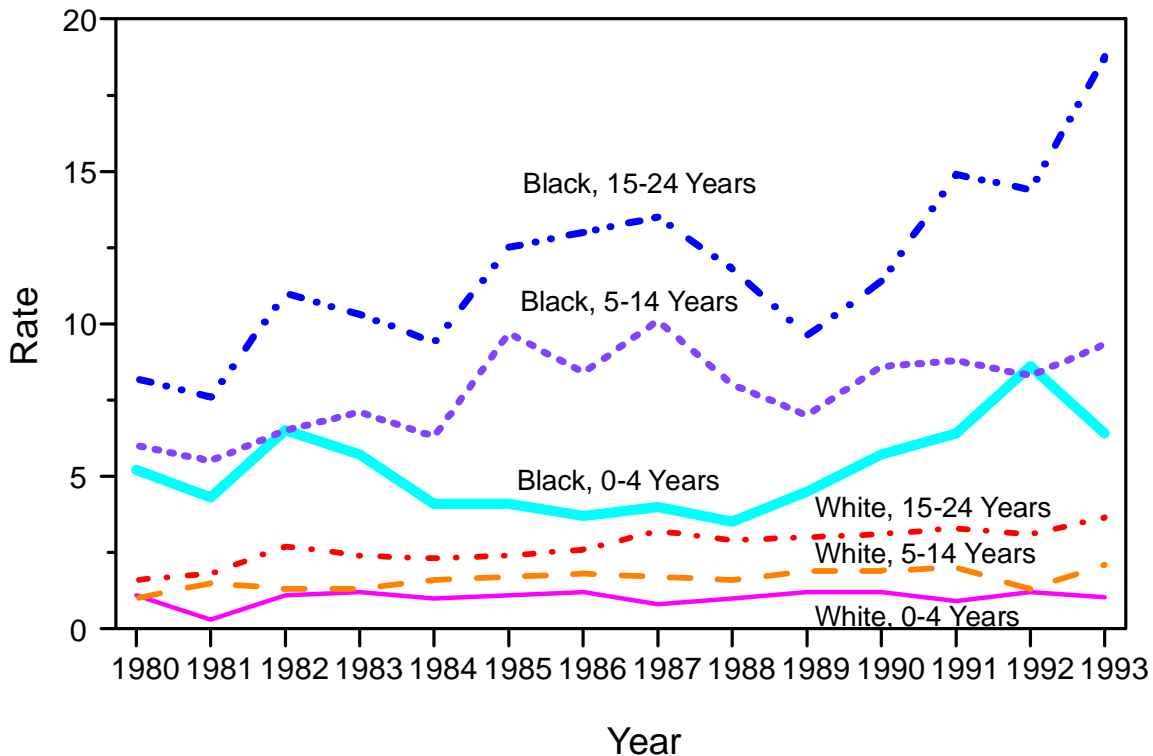
highest among blacks aged 15–24 years (Figure 1). Although the death rate among children aged 0–4 years increased slightly during 1980–1993 (from 1.8 to 1.9 per million population), the rate in 1993 had decreased from that in 1992 (2.4 per million population). In 1993, among children aged 0–4 years, blacks were six times more likely to die from asthma than whites, and boys were 1.4 times more likely than girls.

Among children aged 5–14 years, the asthma death rate nearly doubled from 1980 to 1993 (from 1.7 to 3.2 per million population). In 1993, among children aged 5–14 years, blacks were four times more likely than whites to die from asthma, and boys were 1.3 times more likely than girls.

Among persons aged 15–24 years, the asthma death rate doubled from 1980 to 1993 (from 2.5 to 5.2 per million population). In 1993, among persons aged 15–24 years, blacks were six times more likely than whites to die from asthma, and males were 1.5 times more likely than females.

From 1980 to 1993, the annual hospitalization rate for asthma among persons aged 0–24 years increased 28% (from 16.8 to 21.4 per 10,000 population). Hospitalization rates consistently were highest among blacks. In 1993, among persons aged 0–24 years, blacks were 3.4 times more likely than whites to be hospitalized for asthma. Although the rate of hospitalization for asthma was highest and increased the most among children aged <1 year (from 35.6 to 64.7 per 10,000 population) (Figure 2), the rate in 1993 had decreased from that in 1992 (66.3 per 10,000 population). Among children aged 1–4 years, the rate of hospitalization increased during 1980–1992 (from

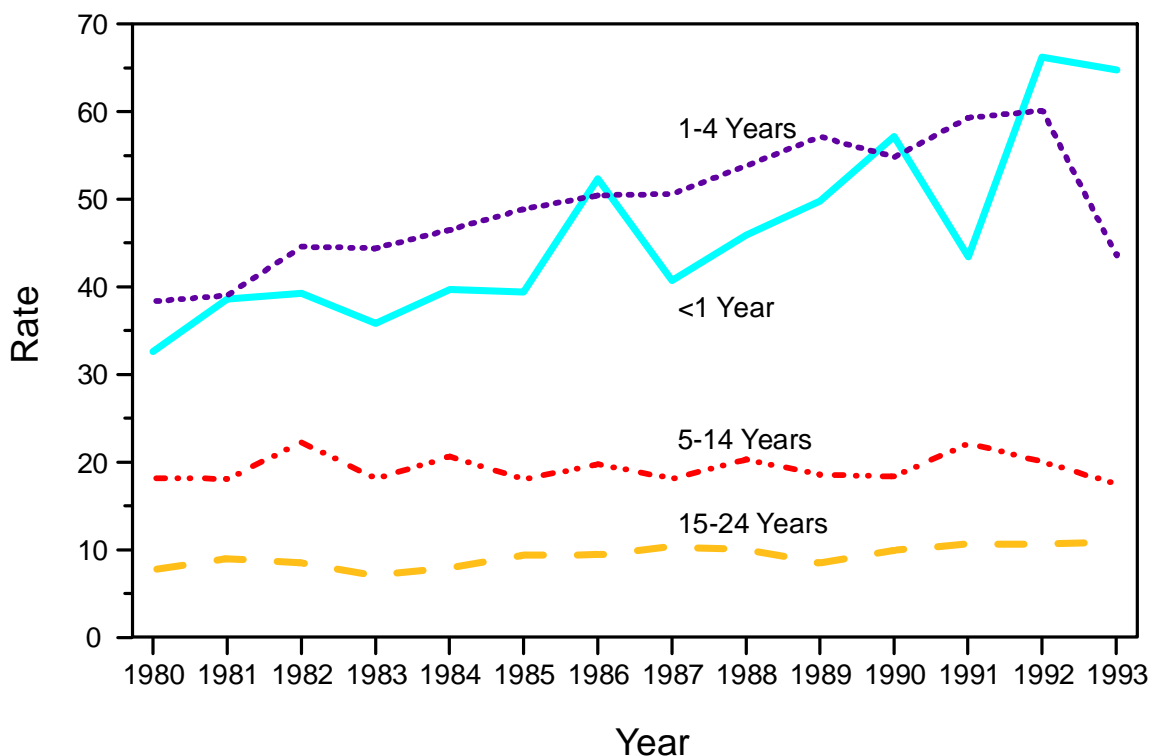
**FIGURE 1. Death rates\* for asthma, by race,† age group, and year — United States, 1980–1993**



\*Per million population.

†Race-specific analyses were restricted to blacks and whites because numbers for other races were too small to calculate stable estimates.

## Asthma — Continued

**FIGURE 2. Hospital discharge rates\* for asthma as the first-listed diagnosis among persons aged 0–24 years, by age group and year — United States, 1980–1993**

\*Per 10,000 population.

38.3 to 60.1 per 10,000 population), but decreased in 1993 (43.6 per 10,000 population) because of a decrease in the number of participating hospitals. In 1993, boys aged <5 years were 1.7 times more likely than girls to be hospitalized for asthma.

Among persons aged 5–24 years, the rates of asthma hospitalization remained relatively constant during 1980–1993. In 1993, among persons aged 5–14 years, boys were 1.3 times more likely than girls to be hospitalized for asthma, and among those aged 15–24 years, females were 2.1 times more likely than males to be hospitalized.

*Reported by: Air Pollution and Respiratory Health Br, Div of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.*

**Editorial Note:** Asthma is a multifactorial disease that has been associated with familial, infectious, allergenic, socioeconomic, psychosocial, and environmental factors. Decreases in pulmonary functions and exacerbations of asthma have been associated with ambient air pollutants (e.g., ozone, sulfur dioxide, nitrogen dioxide, acid aerosols, and particulate matter) (3), indoor pollutants (e.g., tobacco smoke), and allergens (e.g., dust mites) (4). Approximately 25% of children in the United States reside in areas that exceed the federal standard for ozone (5).

Although asthma-associated mortality has increased among persons aged <25 years, hospitalizations for asthma have increased primarily among children aged <5 years. The increase among young children may be related to changes in diagnostic practices, changes in coding and reimbursement, or increases in morbidity (6).



*Asthma — Continued*

One of the national health objectives for the year 2000 is to decrease asthma morbidity, as measured by a reduction in hospitalizations for asthma, among children aged  $\leq 14$  years to no more than 18.3 per 10,000 population (baseline: 22.9 per 10,000 persons) (objective 11.1) (7). In 1993, the hospitalization rate for children aged  $\leq 14$  years was 28.0 per 10,000 population. Hospitalizations for and mortality related to asthma can be prevented, in part, by improving surveillance, diagnostic measures, and patient management; providing patient education; targeting high-risk populations (8); and evaluating interventions in the home environment (e.g., reducing levels of house dust mites and exposure to environmental tobacco smoke) (6,8,9).

Additional information about these prevention measures or other asthma-prevention materials are available from the National Heart, Lung and Blood Institute Information Center, telephone (301) 251-1222, or the local offices of the American Lung Association, telephone (800) 586-4872 or (212) 315-8700.

*References*

1. Adams PF, Marano MA. Current estimates from the National Health Interview Survey, 1994. *Vital Health Stat* 1995;10:94.
2. CDC. Asthma—United States, 1989–1992. *MMWR* 1995;43:952–5.
3. Committee of the Environmental and Occupational Health Assembly, American Thoracic Society. Health effects of outdoor air pollution. *Am J Resp Crit Care Med* 1996;153:3–50.
4. Etzel RA. Indoor air pollution and childhood asthma: effective environmental interventions. *Environ Health Perspect* 1995;103:55–8.
5. CDC. Children at risk from ozone air pollution—United States, 1991–1993. *MMWR* 1995;44:309–12.
6. Weiss KB, Gergen PJ, Wagener DK. Breathing better or wheezing worse? The changing epidemiology of asthma morbidity and mortality. *Annu Rev Public Health* 1993;14:491–513.
7. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—midcourse review and 1995 revisions. Washington, DC: US Department of Health and Human Services, Public Health Service, 1995.
8. Buist AS, Vollmer WM. Preventing deaths from asthma. *N Engl J Med* 1994;331:1584–5.
9. Malveaux FJ, Fletcher-Vincent SA. Environmental risk factors of childhood asthma in urban centers. *Environ Health Perspect* 1995;103:59–62.

## Human Rabies — California, 1995

In September and November 1995, two men in California died from infection with bat-associated variants of rabies virus. This report summarizes the investigations of these cases.

### Case 1

On September 9, 1995, a 27-year-old farm worker in San Benito County was examined in the emergency department (ED) of a local hospital because of a 1-day history of vomiting and severe headache. Computerized axial tomography of the brain and cerebrospinal fluid (CSF) analysis were within normal limits, and he was discharged with a diagnosis of cephalgia. He returned to the ED two additional times that day with complaints of headache and sore throat, for which amoxicillin was prescribed. On September 10, he was admitted to the hospital because of severe supraorbital headache and intermittent vomiting.

*Human Rabies — Continued*

Findings on admission included an oral temperature of 103.1 F (39.5 C) and mild nonexudative pharyngitis; in addition, the patient rejected oral medications because of an intermittent inability to swallow. A peripheral white blood cell (WBC) count was 14,000/mm<sup>3</sup> (normal: 5000–10,000/mm<sup>3</sup>) with 82% neutrophils, 9% lymphocytes, 5% monocytes, and 4% bands. The CSF contained 0 WBC/mm<sup>3</sup> (normal: 0–5 WBC/mm<sup>3</sup>), total protein of 68 mg/dL (normal: <40 mg/dL), and glucose of 65 mg/dL (normal: 70–110 mg/dL). A chest roentgenogram revealed right lower lobe pulmonary infiltration, and treatment for pneumonia was initiated with intravenous cefuroxime and erythromycin. On September 11, his oral temperature was 104.9 F (40.5 C), and he coughed blood-tinged mucus. He became acutely agitated and confused and required physical restraints. Because of alteration of mental status, later that day he was transferred to a tertiary-care facility.

Findings on admission included an oral temperature of 104.5 F (40.3 C), peripheral WBC count of 17,000/mm<sup>3</sup>, and CSF containing total protein of 124 mg/dL, glucose of 92 mg/dL, and 6 WBC/mm<sup>3</sup>. Nonspecific encephalitis was tentatively diagnosed, and treatment was initiated with acyclovir, ceftizoxime, vancomycin, and doxycycline. Magnetic resonance imaging and electroencephalogram results were consistent with encephalitis. However, analysis of CSF specimens were negative for herpes simplex virus (by polymerase chain reaction [PCR] assay) and bacteria (by standard culture methods). Rabies was included in the differential diagnosis on September 12; the patient became comatose on September 15 and died September 21. A limited autopsy was performed.

A CSF specimen collected September 12 and serum and nuchal skin biopsy specimens collected September 13 were sent to the Viral and Rickettsial Disease Laboratory (VRDL) of the California Department of Health Services and to CDC for rabies testing, and corneal impression specimens were sent to the VRDL. Both laboratories reported the CSF and serum specimens to be negative for rabies antibody (by rapid fluorescent focus inhibition test [RFFIT] assay at CDC and indirect immunofluorescence [IIF] assay at the VRDL). The nuchal skin biopsy was negative for rabies virus antigen by direct fluorescent antibody (DFA) testing at both laboratories (although only two hair follicles were present in the biopsy). The corneal impression specimen was inconclusive for rabies antigen (by DFA) at the VRDL. However, rabies was diagnosed by the VRDL on September 20 based on rising rabies antibody titers of <1:8 to 1:256 by IIF in serum samples collected on September 13 and September 19, respectively. An IIF titer of >1:2048 was detected in a follow-up serum specimen collected September 21, and brain tissue specimens collected at autopsy were positive for rabies virus (by both DFA and PCR assays) at the VRDL on September 25. At CDC, nucleotide sequence analysis of rabies viral nucleic acid from brain tissue implicated a variant of rabies virus associated with Mexican free-tailed bats (*Tadarida brasiliensis*).

The patient had immigrated from Mexico and had last been in Mexico during November 1994–April 1995. In California, he resided on a ranch that produced vegetables, and he worked primarily in a packing shed; a bat colony inhabited the roof area of the shed. A family member believed that a bat had landed on and was brushed off the patient's chest, but was unable to provide any specific details of the incident. The complete colony of 76 bats, including a mixture of Mexican free-tailed and pallid bat species, was collected for evaluation; all tested negative for rabies.

*Human Rabies — Continued*

Rabies postexposure prophylaxis (PEP) was administered to 12 persons (11 co-workers and one health-care professional) because of possible percutaneous or mucous membrane exposure to the patient's vomitus or saliva.

**Case 2**

On October 26, a 74-year-old resident of Butte County was evaluated in a local ED because of paresthesia and weakness in the right arm and chronic cough. He was discharged but returned to the hospital on October 30 and was admitted because of shortness of breath, confusion, vomiting, and right arm weakness. On admission, he was afebrile; other findings included right arm weakness, bilateral ptosis, severe dysarthria, ataxia, moderate confusion, and a productive cough. He declined to drink fluids and gagged and vomited when offered food. Laboratory findings on admission included a WBC count of 13,000/mm<sup>3</sup> with 88% neutrophils, 4% lymphocytes, 4% monocytes, and 4% bands; CSF containing 3000 red blood cells/mm<sup>3</sup>, 1000 WBC/mm<sup>3</sup>, and total protein of 174 mg/dL; chest radiograph with bilateral pulmonary infiltrates; and nerve conduction abnormalities of the right upper extremity consistent with axonal and demyelinating neuropathy. Admitting diagnoses included pneumonia and cerebrovascular accident.

During the first 24 hours after admission, the patient became progressively agitated, confused, and ultimately unresponsive; he was intubated and placed on mechanical ventilatory support. During November 1–9, he did not regain consciousness and was intermittently febrile (high of 102.7 F [39.3 C]). On November 9, when the patient died, the differential diagnoses included respiratory failure and Guillain-Barré syndrome.

Although rabies was not considered before death, examination of brain material at autopsy revealed intracytoplasmic inclusions consistent with rabies virus infection. On December 30, paraffin-embedded brain specimens were sent to CDC, where rabies antigen was detected by DFA staining. Nucleotide sequence analysis of the specific viral RNA found in the brain tissue identified the rabies virus variant associated with the silver-haired bat (*Lasiorycteris noctivagans*). The diagnosis was confirmed at the California VRDL on January 4 by the detection of rabies virus-specific antibody (by IIF assay; titer of 1:8) in an antemortem sample of CSF.

The patient had lived alone on a ranch in Butte County and herded his cattle to a grazing area in adjacent Lassen County during the summer. Multiple potential sources of exposure to both domestic and wild animals were present in both the grazing area and the ranch. The patient's son reported that the patient would sometimes catch bats, but he knew of no incidents of animal bite.

A total of 76 persons received rabies PEP because of possible contact with the patient's oral and respiratory secretions during his illness. The group of exposed persons included 71 health-care workers, three family members, one housekeeper, and the pathologist who performed the autopsy.

*Reported by: E Falade, MD, M Andazola-Boyd, R Shingai, San Benito County Health Dept, Hollister; B Littfin, Hazel Hawkins Memorial Hospital, Hollister; M Lundberg, MD, D Murrill, Butte County Health Dept, Oroville; R Murray, DrPH, L Dales, MD, C Glaser, MD, K Reilly, DVM, D Schnurr, PhD, M Ascher, MD, S Waterman, MD, State Epidemiologist, California Dept of Health Svcs. Viral and Rickettsial Zoonoses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.*

*Human Rabies — Continued*

**Editorial Note:** During 1995, a total of four cases of human rabies were documented in the United States, including the two cases described in this report. In all four cases, the rabies virus variant was associated with insectivorous bats; however, a definite history of bite exposure could not be identified for any of these cases. Characteristics of these cases are consistent with an emerging pattern in the epidemiology of human rabies in the United States: bat-related variants have been identified from 15 of the 28 cases of human rabies diagnosed in the United States since 1980, while contact of any sort with bats could be documented in only seven of the 15 cases (of which 10 were associated with virus from the silver-haired bat variant). These findings indicate that limited physical contact with rabid bats may be associated with rabies virus transmission. In addition, bat bites are small and less likely to be recognized than bites inflicted by many terrestrial animals.

Because bat rabies is enzootic in the contiguous United States (1) and reduction of bat populations is not appropriate as a strategy for controlling rabies in bats, human and domestic animal contact with bats should be minimized by the physical exclusion of bats from human dwellings (2). Bats should not be captured, handled, or kept as pets. In addition, rabies vaccination should be current for all dogs and cats.

The difference in the number of persons receiving rabies PEP as a result of exposure to the two human rabies cases described in this report (76 versus 12) illustrates variations in the interpretation and systematic application of the Advisory Committee on Immunization Practices (ACIP) guidelines concerning PEP administration (3). The number of persons requiring PEP can be minimized by 1) early consideration of rabies as a differential diagnosis in any progressive neurologic disease of unknown etiology, 2) prompt initiation of standard barrier techniques against infectious diseases in the hospital, and 3) strict adherence to ACIP guidelines.

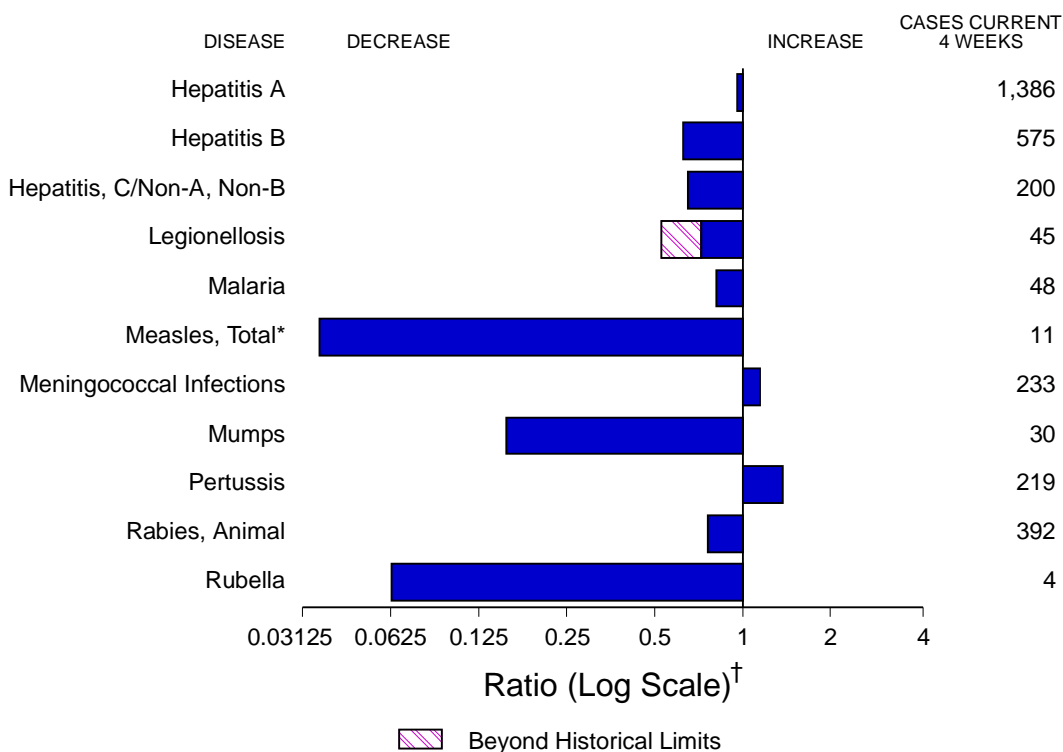
*References*

1. Krebs JW, Strine TW, Smith JS, Rupprecht CE, Childs JE. Rabies surveillance in the United States during 1994. *J Am Vet Med Assoc* 1995;207:1562-75.
2. CDC. Compendium of animal rabies control, 1995: National Association of State Public Health Veterinarians, Inc. *MMWR* 1995;44(no. RR-2).
3. ACIP. Rabies prevention—United States, 1991: recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR* 1991;40(no. RR-3).

**Addendum: Vol. 45, No. 16**

In the article "Multidrug-Resistant Tuberculosis Outbreak on an HIV Ward—Madrid, Spain, 1991–1995," on page 331, the first name in the "Reported by" section should be "JV Rullan."

**FIGURE I. Selected notifiable disease reports, comparison of 4-week totals ending April 27, 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 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 27, 1996 (17th Week)**

	Cum. 1996		Cum. 1996
Anthrax	-	HIV infection, pediatric*§	76
Brucellosis	24	Plague	-
Cholera	1	Poliomyelitis, paralytic¶	-
Congenital rubella syndrome	2	Psittacosis	8
Cryptosporidiosis*	444	Rabies, human	-
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	33
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*	9
eastern equine*	1	Syphilis, congenital**	-
St. Louis*	-	Tetanus	5
western equine*	-	Toxic-shock syndrome	45
Hansen Disease	30	Trichinosis	10
Hantavirus pulmonary syndrome*†	2	Typhoid fever	84

\*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 27, 1996, and April 29, 1995 (17th Week)**

Reporting Area	AIDS*		Chlamydia	Escherichia coli O157:H7		Gonorrhea		Hepatitis C/NA,NB		Legionellosis	
	Cum. 1996	Cum. 1995		Cum. 1996	NETSS†	PHLIS‡	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996
				Cum. 1996	Cum. 1996						
UNITED STATES	16,791	24,205	75,939	247	106	88,856	125,403	1,050	1,340	219	380
NEW ENGLAND	657	1,256	3,108	27	16	2,443	1,776	28	35	10	4
Maine	10	23	-	3	-	15	23	-	-	1	-
N.H.	23	43	224	1	1	41	33	1	5	-	-
Vt.	7	12	-	5	5	22	15	15	3	-	-
Mass.	392	582	2,181	11	10	729	978	9	26	4	3
R.I.	38	87	703	2	-	182	178	3	1	5	1
Conn.	187	509	-	5	-	1,454	549	-	-	N	N
MID. ATLANTIC	4,440	5,967	12,248	34	20	9,399	14,003	103	119	48	48
Upstate N.Y.	538	685	N	17	10	1,647	3,008	92	58	9	11
N.Y. City	2,443	3,062	4,121	-	-	2,608	5,155	1	1	-	1
N.J.	928	1,373	1,893	10	5	1,827	1,181	-	50	7	10
Pa.	531	847	6,234	N	5	3,317	4,659	10	10	32	26
E.N. CENTRAL	1,395	2,070	12,313	44	22	13,593	26,233	142	109	71	130
Ohio	300	476	3,100	21	8	1,716	8,137	4	4	33	53
Ind.	269	164	3,158	12	5	2,359	2,717	6	-	17	34
Ill.	518	887	-	2	2	5,602	6,788	9	36	2	14
Mich.	228	421	4,101	9	7	2,911	6,442	123	69	16	14
Wis.	80	122	1,954	N	-	1,005	2,149	-	-	3	15
W.N. CENTRAL	413	545	7,918	28	19	4,921	6,898	89	24	14	23
Minn.	84	119	-	6	12	U	951	-	1	-	-
Iowa	31	32	1,091	6	4	325	516	71	3	3	8
Mo.	175	215	4,546	5	-	2,688	4,047	13	10	1	7
N. Dak.	1	1	2	1	1	1	10	-	-	-	2
S. Dak.	5	7	450	1	-	71	69	-	1	2	-
Nebr.	32	51	388	4	-	57	346	1	6	6	4
Kans.	85	120	1,441	5	2	780	959	4	3	2	2
S. ATLANTIC	4,590	6,555	17,922	17	3	33,373	36,185	54	86	28	63
Del.	93	131	-	-	-	472	660	1	-	-	-
Md.	444	995	1,935	N	1	4,407	4,438	-	2	5	13
D.C.	225	438	N	-	-	1,416	1,893	-	-	1	3
Va.	224	448	4,085	N	1	3,018	3,566	4	2	9	3
W. Va.	24	31	-	N	-	160	223	4	20	1	3
N.C.	191	310	-	5	1	6,489	8,009	16	23	3	11
S.C.	229	316	-	1	-	3,716	3,751	12	3	1	13
Ga.	685	812	4,177	3	-	7,548	6,643	-	10	-	8
Fla.	2,475	3,074	7,725	5	-	6,147	7,002	17	26	8	9
E.S. CENTRAL	540	815	9,138	9	4	9,554	14,547	201	478	20	10
Ky.	86	81	2,235	-	-	1,316	1,508	9	11	2	3
Tenn.	201	347	3,876	N	4	3,365	4,279	170	465	9	4
Ala.	157	230	2,880	2	-	4,417	5,768	1	2	-	2
Miss.	96	157	147	3	-	456	2,992	21	-	9	1
W.S. CENTRAL	1,480	2,206	4,228	11	4	6,593	12,080	110	73	2	5
Ark.	70	86	-	5	2	908	1,580	1	1	-	1
La.	435	346	2,247	N	2	2,602	3,945	45	43	-	1
Okla.	54	100	1,981	1	-	1,255	1,533	37	21	2	3
Tex.	921	1,674	-	1	-	1,828	5,022	27	8	-	-
MOUNTAIN	469	793	5,420	30	9	2,365	2,959	188	153	7	46
Mont.	4	8	-	-	-	10	30	8	7	-	2
Idaho	7	22	529	11	4	30	45	42	20	-	1
Wyo.	2	4	237	-	-	10	17	70	62	1	2
Colo.	152	268	-	10	5	567	1,000	4	28	4	21
N. Mex.	25	71	-	2	-	306	341	29	20	-	4
Ariz.	136	201	3,737	N	-	1,210	995	25	7	1	5
Utah	64	52	254	5	-	49	72	7	4	-	2
Nev.	79	167	663	2	-	183	459	3	5	1	9
PACIFIC	2,807	3,998	3,644	47	9	6,615	10,722	135	263	19	51
Wash.	220	416	3,084	9	5	780	842	25	66	1	3
Oreg.	153	158	-	12	-	143	163	3	15	-	-
Calif.	2,394	3,283	-	21	-	5,432	9,202	64	172	18	43
Alaska	3	39	N	1	-	150	287	2	1	-	-
Hawaii	37	102	389	N	4	110	228	41	9	-	5
Guam	3	-	59	N	-	17	31	-	-	-	-
P.R.	420	853	N	N	U	90	199	16	52	-	-
V.I.	3	19	N	N	U	-	13	-	-	-	-
Amer. Samoa	-	-	N	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 27, 1996, and April 29, 1995 (17th 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	1,111	1,397	287	301	1,249	1,173	4,019	5,354	4,729	5,030	1,549	2,138
NEW ENGLAND	45	102	9	14	46	58	58	72	125	113	181	601
Maine	-	1	3	1	7	3	-	2	4	-	-	-
N.H.	1	10	1	1	1	12	1	1	3	4	23	73
Vt.	-	1	1	-	2	6	-	-	-	1	52	80
Mass.	18	13	3	3	17	17	26	25	51	56	33	234
R.I.	21	10	1	2	-	-	-	1	18	13	20	81
Conn.	5	67	-	7	19	20	31	43	49	39	53	133
MID. ATLANTIC	932	1,047	70	67	96	127	618	326	818	1,069	247	498
Upstate N.Y.	461	524	16	12	29	40	12	31	99	99	135	196
N.Y. City	151	32	32	30	14	13	523	170	410	599	-	-
N.J.	59	138	19	17	26	32	48	67	202	198	48	110
Pa.	261	353	3	8	27	42	35	58	107	173	64	192
E.N. CENTRAL	14	15	29	40	163	175	565	920	588	460	11	2
Ohio	12	5	6	1	60	45	212	320	87	89	2	1
Ind.	2	7	4	3	21	31	82	90	53	38	1	-
Ill.	-	2	7	29	46	46	173	332	390	315	-	1
Mich.	-	1	8	2	19	29	41	111	39	-	4	-
Wis.	U	U	4	5	17	24	57	67	19	18	4	-
W.N. CENTRAL	38	25	4	7	103	68	150	274	125	179	134	102
Minn.	1	-	1	3	10	13	27	15	22	32	8	5
Iowa	16	1	1	-	22	13	6	22	15	26	75	32
Mo.	2	10	1	3	45	25	110	222	54	68	9	12
N. Dak.	-	-	-	-	2	-	-	-	1	1	13	10
S. Dak.	-	-	-	-	3	3	-	-	11	8	21	22
Nebr.	-	1	-	1	10	5	3	6	6	8	2	-
Kans.	19	13	1	-	11	9	4	9	16	36	6	21
S. ATLANTIC	41	149	57	66	238	198	1,166	1,430	752	804	780	640
Del.	1	16	2	1	2	2	13	7	-	16	18	39
Md.	24	105	18	19	22	13	197	122	92	143	193	143
D.C.	-	-	2	6	4	1	53	44	39	31	2	5
Va.	-	3	7	12	20	25	164	235	43	62	184	123
W. Va.	3	7	-	-	6	3	1	1	20	29	30	32
N.C.	8	8	7	6	32	37	349	385	111	79	190	142
S.C.	2	5	3	-	28	26	159	245	40	101	15	46
Ga.	-	4	7	9	73	50	103	249	191	6	102	100
Fla.	3	1	11	13	51	41	127	142	216	337	46	10
E.S. CENTRAL	15	9	5	7	86	69	905	1,204	385	426	53	91
Ky.	2	1	-	-	13	20	50	76	74	92	16	7
Tenn.	5	5	3	2	7	20	351	280	74	139	17	39
Ala.	1	1	1	5	34	16	188	207	151	125	20	44
Miss.	7	2	1	-	32	13	316	641	86	70	-	1
W.S. CENTRAL	5	24	8	5	144	136	403	786	412	566	21	42
Ark.	3	2	-	1	20	14	89	157	20	72	3	22
La.	-	-	-	1	29	20	184	374	-	-	10	9
Okla.	2	13	-	-	12	14	56	59	30	53	8	11
Tex.	-	9	8	3	83	88	74	196	362	441	-	-
MOUNTAIN	-	1	19	21	80	97	39	90	179	135	19	33
Mont.	-	-	1	2	1	2	-	3	7	3	-	14
Idaho	-	-	-	1	10	4	1	-	3	6	-	-
Wyo.	-	-	2	-	3	5	1	-	1	1	10	9
Colo.	-	-	11	11	12	21	14	53	25	5	1	-
N. Mex.	-	-	1	3	16	21	-	1	26	22	1	-
Ariz.	-	-	1	2	24	33	20	14	76	87	5	9
Utah	-	-	2	1	8	5	-	2	10	10	-	-
Nev.	-	1	1	1	6	6	3	17	31	1	2	1
PACIFIC	21	25	86	74	293	245	115	252	1,345	1,278	103	129
Wash.	-	-	5	8	38	35	2	6	83	84	-	-
Oreg.	6	1	8	5	56	48	3	4	35	19	-	-
Calif.	14	24	69	54	192	158	110	241	1,163	1,094	95	123
Alaska	-	-	1	1	5	2	-	1	22	25	8	6
Hawaii	1	-	3	6	2	2	-	-	42	56	-	-
Guam	-	-	-	-	1	2	2	1	-	4	-	-
P.R.	-	-	-	-	3	12	57	110	20	53	10	25
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 27, 1996, and April 29, 1995 (17th Week)**

Reporting Area	<i>H. influenzae</i> , invasive		Hepatitis (viral), by type				Measles (Rubeola)			
	Cum. 1996*	Cum. 1995	A		B		Indigenous		Imported†	
			Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	1996	Cum. 1996	1996	Cum. 1996
UNITED STATES	460	460	7,907	8,217	2,602	3,025	1	79	3	8
NEW ENGLAND	12	26	91	60	48	73	-	5	-	1
Maine	2	1	9	11	2	2	-	-	-	-
N.H.	7	6	3	4	2	8	-	-	-	-
Vt.	-	1	2	3	2	1	-	1	-	-
Mass.	3	7	47	19	11	22	-	3	-	1
R.I.	-	-	3	9	4	7	-	-	-	-
Conn.	-	11	27	14	27	33	-	1	-	-
MID. ATLANTIC	68	45	527	440	411	342	-	2	1	2
Upstate N.Y.	21	14	128	103	104	97	-	-	-	-
N.Y. City	7	6	230	178	192	77	-	2	-	1
N.J.	24	8	110	74	80	111	-	-	-	-
Pa.	16	17	59	85	35	57	-	-	1	1
E.N. CENTRAL	66	84	661	1,187	271	379	-	3	2	2
Ohio	41	44	330	687	43	33	-	2	-	-
Ind.	2	12	112	55	45	85	-	-	-	-
Ill.	14	21	78	226	30	102	-	-	-	-
Mich.	4	7	109	131	138	134	-	-	2	2
Wis.	5	-	32	88	15	25	-	1	-	-
W.N. CENTRAL	19	24	630	430	166	207	-	4	-	1
Minn.	7	8	25	39	3	13	-	4	-	1
Iowa	6	1	163	21	65	15	-	-	-	-
Mo.	5	12	285	313	75	149	-	-	-	-
N. Dak.	-	-	13	9	-	2	-	-	-	-
S. Dak.	1	-	29	6	-	1	-	-	-	-
Nebr.	-	1	71	11	6	13	-	-	-	-
Kans.	-	2	44	31	17	14	-	-	-	-
S. ATLANTIC	108	126	270	346	378	423	-	2	-	-
Del.	1	-	5	5	1	3	-	1	-	-
Md.	25	36	69	69	98	93	-	1	-	-
D.C.	1	-	11	2	11	9	-	-	-	-
Va.	3	12	48	64	51	31	-	-	-	-
W. Va.	3	5	8	10	10	21	-	-	-	-
N.C.	13	18	36	42	129	106	-	-	-	-
S.C.	3	-	29	12	29	19	-	-	-	-
Ga.	56	24	2	37	5	41	-	-	-	-
Fla.	3	31	62	105	44	100	-	-	-	-
E.S. CENTRAL	8	4	692	429	270	353	-	-	-	-
Ky.	2	1	8	21	21	36	-	-	-	-
Tenn.	-	-	498	338	184	276	-	-	-	-
Ala.	5	3	80	40	20	41	-	-	-	-
Miss.	1	-	106	30	45	-	-	-	-	-
W.S. CENTRAL	14	20	1,268	825	209	302	-	-	-	1
Ark.	-	4	186	55	27	7	-	-	-	-
La.	-	1	30	27	19	53	-	-	-	-
Okla.	14	13	602	165	31	36	-	-	-	-
Tex.	-	2	450	578	132	206	-	-	-	1
MOUNTAIN	56	41	1,053	1,413	308	226	1	5	-	-
Mont.	-	-	41	20	4	7	-	-	-	-
Idaho	1	2	110	149	46	28	-	-	-	-
Wyo.	29	2	12	54	11	6	-	-	-	-
Colo.	5	6	22	174	8	45	-	1	-	-
N. Mex.	7	6	174	278	128	80	-	-	-	-
Ariz.	7	12	340	390	55	31	1	1	-	-
Utah	5	4	295	301	43	19	-	-	-	-
Nev.	2	9	59	47	13	10	-	3	-	-
PACIFIC	109	90	2,715	3,087	541	720	-	58	-	1
Wash.	1	4	183	182	34	53	-	4	-	-
Oreg.	15	11	410	626	27	39	-	-	-	-
Calif.	91	73	2,069	2,209	476	618	-	1	-	-
Alaska	-	-	29	15	2	5	-	53	-	-
Hawaii	2	2	24	55	2	5	U	-	U	1
Guam	-	-	2	2	-	-	U	-	U	-
P.R.	-	3	30	12	118	98	-	1	-	-
V.I.	-	-	-	-	-	1	U	-	U	-
Amer. Samoa	-	-	-	5	-	-	U	-	U	-
C.N.M.I.	10	-	1	11	5	3	U	-	U	-

\*Of 99 cases among children aged <5 years, serotype was reported for 23 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 27, 1996, and April 29, 1995 (17th Week)**

Reporting Area	Measles (Rubeola), cont'd.		Mumps			Pertussis			Rubella		
	Total		1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995
	Cum. 1996	Cum. 1995									
UNITED STATES	87	182	8	190	273	40	815	871	1	60	26
NEW ENGLAND	6	4	-	-	4	4	145	143	-	7	3
Maine	-	-	-	-	2	-	8	13	-	-	-
N.H.	-	-	-	-	-	-	17	8	-	-	1
Vt.	1	-	-	-	-	-	6	3	-	1	-
Mass.	4	2	-	-	1	4	111	113	-	4	2
R.I.	-	2	-	-	-	-	-	-	-	-	-
Conn.	1	-	-	-	1	-	3	6	-	2	-
MID. ATLANTIC	4	3	4	25	41	5	78	76	-	4	2
Upstate N.Y.	-	-	-	7	10	2	44	45	-	3	-
N.Y. City	3	-	-	4	6	-	13	13	-	1	1
N.J.	-	3	-	-	7	-	-	6	-	-	1
Pa.	1	-	4	14	18	3	21	12	-	-	-
E.N. CENTRAL	5	4	2	50	38	3	126	78	-	3	-
Ohio	2	-	2	21	16	1	53	32	-	-	-
Ind.	-	-	-	5	5	1	10	7	-	-	-
Ill.	-	-	-	10	-	-	46	-	-	1	-
Mich.	2	2	-	14	17	1	12	27	-	2	-
Wis.	1	2	-	-	-	-	5	12	-	-	-
W.N. CENTRAL	5	1	-	2	20	5	31	59	-	1	-
Minn.	5	-	-	-	2	5	27	22	-	-	-
Iowa	-	-	-	-	3	-	2	1	-	1	-
Mo.	-	1	-	-	12	-	1	12	-	-	-
N. Dak.	-	-	-	2	-	-	-	5	-	-	-
S. Dak.	-	-	-	-	-	-	1	6	-	-	-
Nebr.	-	-	-	-	3	-	-	3	-	-	-
Kans.	-	-	-	-	-	-	-	10	-	-	-
S. ATLANTIC	2	-	-	17	47	7	76	93	-	10	5
Del.	1	-	-	-	-	-	7	5	-	-	-
Md.	1	-	-	8	12	6	34	9	-	-	-
D.C.	-	-	-	-	-	-	-	2	-	-	-
Va.	-	-	-	3	10	-	3	7	-	-	-
W. Va.	-	-	-	-	-	-	2	-	-	-	-
N.C.	-	-	-	-	16	-	9	49	-	-	-
S.C.	-	-	-	3	3	-	4	10	-	-	-
Ga.	-	-	-	1	-	-	2	-	-	-	-
Fla.	-	-	-	2	6	1	15	11	-	10	5
E.S. CENTRAL	-	-	-	10	9	1	17	24	-	2	-
Ky.	-	-	-	-	-	-	5	1	-	-	-
Tenn.	-	-	-	1	-	-	7	4	-	-	-
Ala.	-	-	-	4	3	-	1	19	-	-	-
Miss.	-	-	-	5	6	1	4	-	N	N	N
W.S. CENTRAL	1	2	-	8	15	3	17	34	1	1	1
Ark.	-	2	-	-	3	-	2	3	-	-	-
La.	-	-	-	7	3	-	2	1	1	1	-
Okla.	-	-	-	-	-	3	4	2	-	-	-
Tex.	1	-	-	1	9	-	9	28	-	-	1
MOUNTAIN	5	56	-	17	11	-	110	216	-	1	3
Mont.	-	-	-	-	-	-	3	3	-	-	-
Idaho	-	-	-	-	2	-	41	66	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-
Colo.	1	17	-	-	-	-	17	32	-	-	-
N. Mex.	-	28	N	N	N	-	25	18	-	-	-
Ariz.	1	10	-	1	1	-	4	91	-	1	3
Utah	-	-	-	1	1	-	3	5	-	-	-
Nev.	3	1	-	15	7	-	17	1	-	-	-
PACIFIC	59	112	2	61	88	12	215	148	-	31	12
Wash.	4	14	1	7	5	5	69	21	-	1	1
Oreg.	-	1	N	N	N	-	23	11	-	-	1
Calif.	1	96	1	44	74	7	115	109	-	28	9
Alaska	53	-	-	2	8	-	-	-	-	-	-
Hawaii	1	1	U	8	1	U	8	7	U	2	1
Guam	-	-	U	1	3	U	-	-	U	-	-
P.R.	1	3	-	1	1	-	-	5	-	-	-
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 27, 1996 (17th Week)**

Reporting Area	All Causes, By Age (Years)						P&J† Total	Reporting Area	All Causes, By Age (Years)						P&J† Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	590	406	119	41	17	7	34	S. ATLANTIC	1,312	825	250	156	30	51	80
Boston, Mass.	139	78	36	14	6	5	3	Atlanta, Ga.	167	109	29	22	3	4	6
Bridgeport, Conn.	36	26	7	-	3	-	1	Baltimore, Md.	256	142	53	34	8	19	32
Cambridge, Mass.	19	11	6	2	-	-	3	Charlotte, N.C.	99	59	20	16	1	3	10
Fall River, Mass.	24	19	5	-	-	-	-	Jacksonville, Fla.	132	87	25	10	4	6	6
Hartford, Conn.	54	27	15	9	3	-	3	Miami, Fla.	108	69	20	11	5	3	1
Lowell, Mass.	26	20	2	3	1	-	3	Norfolk, Va.	39	22	8	7	-	2	3
Lynn, Mass.	16	14	1	-	1	-	2	Richmond, Va.	77	48	16	8	1	4	-
New Bedford, Mass.	27	22	5	-	-	-	1	Savannah, Ga.	46	28	13	5	-	-	4
New Haven, Conn.	43	26	10	5	1	1	2	St. Petersburg, Fla.	54	44	7	3	-	-	3
Providence, R.I.	60	49	8	2	1	-	3	Tampa, Fla.	173	125	27	12	4	5	12
Somerville, Mass.	5	4	1	-	-	-	1	Washington, D.C.	146	83	32	23	3	5	3
Springfield, Mass.	36	30	6	-	-	-	3	Wilmington, Del.	15	9	-	5	1	-	-
Waterbury, Conn.	34	26	5	3	-	-	1	E.S. CENTRAL	765	489	165	64	27	17	57
Worcester, Mass.	71	54	12	3	1	1	8	Birmingham, Ala.	126	86	23	9	2	3	7
MID. ATLANTIC	2,425	1,616	444	252	62	51	109	Chattanooga, Tenn.	83	47	27	7	1	1	6
Albany, N.Y.	49	43	4	1	-	1	4	Knoxville, Tenn.	72	52	12	3	2	3	8
Allentown, Pa.	24	22	1	1	-	-	-	Lexington, Ky.	65	42	12	7	4	-	4
Buffalo, N.Y.	81	59	13	6	2	1	2	Memphis, Tenn.	173	102	38	18	11	4	13
Camden, N.J.	33	17	10	4	2	-	1	Mobile, Ala.	61	41	11	6	2	1	5
Elizabeth, N.J.	19	18	1	-	-	-	-	Montgomery, Ala.	50	34	10	4	2	-	2
Erie, Pa.‡	48	38	8	2	-	-	2	Nashville, Tenn.	135	85	32	10	3	5	12
Jersey City, N.J.	36	22	7	3	-	4	-	W.S. CENTRAL	1,564	996	339	147	49	31	125
New York City, N.Y.	1,243	814	229	148	32	20	41	Austin, Tex.	76	54	14	4	-	3	6
Newark, N.J.	58	21	15	13	7	2	4	Baton Rouge, La.	36	26	6	3	1	-	-
Paterson, N.J.	21	8	7	3	-	3	-	Corpus Christi, Tex.	78	61	11	4	-	2	7
Philadelphia, Pa.	398	243	90	42	14	9	23	Dallas, Tex.	201	114	50	27	7	3	7
Pittsburgh, Pa.‡	54	41	4	4	1	4	3	El Paso, Tex.	113	70	28	6	3	5	14
Reading, Pa.	17	16	1	-	-	-	2	Ft. Worth, Tex.	97	62	21	6	6	2	6
Rochester, N.Y.	129	94	22	6	2	5	13	Houston, Tex.	405	236	98	56	12	3	43
Schenectady, N.Y.	28	22	3	2	1	-	3	Little Rock, Ark.	68	48	15	2	2	1	12
Scranton, Pa.‡	29	21	6	1	-	1	-	New Orleans, La.	97	55	23	11	7	1	-
Syracuse, N.Y.	91	67	13	10	1	-	8	San Antonio, Tex.	204	129	43	16	8	8	7
Trenton, N.J.	26	16	5	4	-	1	1	Shreveport, La.	70	43	15	10	2	-	9
Utica, N.Y.	19	16	2	1	-	-	1	Tulsa, Okla.	119	98	15	2	1	3	14
Yonkers, N.Y.	22	18	3	1	-	-	1	MOUNTAIN	859	568	162	78	28	22	58
E.N. CENTRAL	2,280	1,577	408	176	49	66	136	Albuquerque, N.M.	83	54	14	10	2	3	2
Akron, Ohio	44	29	5	7	1	2	-	Colo. Springs, Colo.	52	38	8	4	-	2	2
Canton, Ohio	40	34	2	4	-	-	6	Denver, Colo.	106	61	24	11	4	6	12
Chicago, Ill.	459	280	84	55	10	27	24	Las Vegas, Nev.	144	76	39	19	8	1	9
Cincinnati, Ohio	136	108	17	6	3	2	13	Ogden, Utah	18	13	3	1	1	-	-
Cleveland, Ohio	147	104	28	9	4	2	5	Phoenix, Ariz.	177	110	39	15	7	6	15
Columbus, Ohio	206	138	39	21	5	3	14	Pueblo, Colo.	34	27	3	4	-	-	5
Dayton, Ohio	151	117	25	6	2	1	13	Salt Lake City, Utah	100	78	13	4	2	3	8
Detroit, Mich.	205	121	48	18	8	10	5	Tucson, Ariz.	145	111	19	10	4	1	5
Evansville, Ind.	53	43	8	1	1	-	-	PACIFIC	2,072	1,428	366	176	42	57	153
Fort Wayne, Ind.	67	52	7	6	2	-	5	Berkeley, Calif.	17	9	4	2	-	2	-
Gary, Ind.	16	9	4	2	-	-	-	Fresno, Calif.	75	48	15	6	3	3	3
Grand Rapids, Mich.	78	56	16	2	1	3	3	Glendale, Calif.	45	36	8	1	-	-	1
Indianapolis, Ind.	207	133	49	12	4	9	14	Honolulu, Hawaii	75	51	15	4	2	3	5
Madison, Wis.	38	29	3	4	1	1	3	Long Beach, Calif.	78	55	15	5	1	2	9
Milwaukee, Wis.	112	83	23	5	1	-	9	Los Angeles, Calif.	859	593	150	82	20	14	38
Peoria, Ill.	52	41	7	1	1	2	3	Pasadena, Calif.	10	9	1	-	-	-	1
Rockford, Ill.	46	36	6	2	-	2	6	Portland, Ore.	127	91	20	12	3	1	11
South Bend, Ind.	46	35	5	5	1	-	3	Sacramento, Calif.	U	U	U	U	U	U	U
Toledo, Ohio	110	79	21	7	2	1	9	San Diego, Calif.	130	75	27	13	4	8	18
Youngstown, Ohio	67	50	11	3	2	1	1	San Francisco, Calif.	142	93	29	16	2	2	17
W.N. CENTRAL	786	580	114	38	19	30	42	San Jose, Calif.	204	151	33	17	1	2	33
Des Moines, Iowa	71	52	9	4	2	4	4	Santa Cruz, Calif.	36	27	7	1	1	-	5
Duluth, Minn.	43	35	6	2	-	-	6	Seattle, Wash.	127	86	21	13	4	3	4
Kansas City, Kans.	20	14	3	2	-	1	1	Spokane, Wash.	52	43	7	-	-	2	3
Kansas City, Mo.	110	71	18	5	4	7	6	Tacoma, Wash.	95	61	14	4	1	15	5
Lincoln, Nebr.	28	22	4	-	-	2	3	TOTAL	12,653 <sup>§</sup>	8,485	2,367	1,128	323	332	794
Minneapolis, Minn.	184	143	24	8	6	3	8								
Omaha, Nebr.	85	66	11	2	2	4	5								
St. Louis, Mo.	107	78	14	8	1	6	-								
St. Paul, Minn.	51	41	5	3	1	1	5								
Wichita, Kans.	87	58	20	4	3	2	4								

\*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

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

**Weekly Notifiable Disease Morbidity Data and 121 Cities Mortality Data**

Denise Koo, M.D., M.P.H.

Deborah A. Adams

Timothy M. Copeland

Patsy A. Hall

Carol M. Knowles

Sarah H. Landis

Myra A. Montalbano

**Graphics Support**

Sandra L. Ford

Beverly J. Holland

**Desktop Publishing**

Jolene W. Altman

Morie M. Higgins

Peter M. Jenkins

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

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to: Editor, *MMWR* Series, Mailstop C-08, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone (404) 332-4555.

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

Director, Centers for Disease Control  
and Prevention  
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  
Darlene D. Rumph-Person  
Caran R. Wilbanks

☆ U.S. Government Printing Office: 1996-733-175/27059 Region IV