CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

July 3, 1998 / Vol. 47 / No. 25

MMWR™
MORBIDITY AND MORTALITY WEEKLY REPORT

Arboviral Infections of the Central Nervous System — United States, 1996–1997

Arboviruses include mosquitoborne and tickborne agents that persist in nature in complex cycles involving birds or mammals, including humans. Arboviral infection can cause fever, headache, meningitis, encephalitis, and sometimes death. During 1996–1997, health departments in 19 states reported to CDC 286 confirmed or probable* cases (eight fatal) of arboviral encephalitis in humans (132 cases in 1996 and 154 provisionally in 1997). Surveillance programs in 18 states detected enzootic arboviral activity in mosquito or sentinel or wild bird populations, and cases of arboviral disease were recognized among horses or emus in 24 states. This report summarizes information about arboviral infection of the central nervous system in the United States during 1996–1997.

La Crosse Encephalitis

During 1996–1997, a total of 252 La Crosse encephalitis (LAC) cases (103 confirmed and 149 probable; one fatal) were reported from 12 states. Patients ranged in age from 5 months to 78 years (mean: 9 years), and 95% of cases occurred in persons aged <18 years; 153 (61%) cases occurred in males, 209 (83%) in whites, and seven (3%) in persons of races other than white; in 36 (14%) cases, race was unspecified. Dates of onset of illness ranged from late June to early November. West Virginia reported 139 cases (55% of the national total), an average of 3.8 per 100,000 population per year (Table 1). Among persons aged <18 years, who accounted for 133 (96%) of the total number of cases in West Virginia, the incidence was 15.8 per year. A fatal case

*For national surveillance, a confirmed case is defined as febrile illness associated with neurologic manifestations ranging from headache to aseptic meningitis or encephalitis with onset during a period when arbovirus transmission is likely to occur, plus at least one of the following criteria: 1) fourfold or greater serial change in serum antibody titer; 2) isolation of virus from, or demonstration of viral antigen or genomic sequences in, tissue, blood, cerebrospinal fluid, or other body fluid; or 3) demonstration of specific immunoglobulin M (IgM) antibody in serum or cerebrospinal fluid by IgM-capture enzyme immunoassay with confirmation by demonstration of IgG antibodies by another serologic assay (e.g., neutralization or hemagglutination inhibition). A probable case is defined as compatible illness occurring during a period when arbovirus transmission is likely, plus an elevated but stable (twofold or less serial change) antibody titer to an arbovirus (e.g., ≥320 by hemagglutination inhibition, ≥128 by complement fixation, ≥256 by immunofluorescence, ≥160 by neutralization, or ≥400 by IgM-capture enzyme immunoassay) (*1*).

Arboviral Infections — Continued

TABLE 1. Number and annual rate* of reported human cases of La Crosse encephalitis (LAC), eastern equine encephalomyelitis (EEE), and St. Louis encephalitis (SLE), by state — United States, 1996–1997

State	1996 population (thousands)†	LAC No. 1996	LAC No. 1997	LAC Annual rate	EEE No. 1996	EEE No. 1997	EEE Annual rate	SLE No. 1996	SLE No. 1997	SLE Annual rate
Alabama	4,273	0	0	—	1	0	0.01	0	1	0.01
California	31,878	0	0	—	0	0	—	0	1	0.002
Florida	14,400	0	0	—	1	3	0.01	0	9	0.03
Georgia	7,353	0	0	—	0	3	0.02	0	0	—
Illinois	11,847	13	3	0.07	0	0	—	0	0	—
Indiana	5,841	3	1	0.03	0	0	—	0	0	—
Kentucky	3,884	0	3	0.04	0	0	—	0	0	—
Louisiana	4,351	1	0	0.01	1	4	0.06	0	0	—
Massachusetts	6,092	0	0	—	0	1	0.01	0	0	—
Michigan	9,594	0	0	—	0	1	0.01	0	0	—
Minnesota	4,658	7	5	0.13	0	0	—	0	0	—
North Carolina	7,323	3	4	0.05	2	0	0.01	0	0	—
Ohio	11,173	20	13	0.15	0	0	—	0	0	—
South Carolina	3,699	0	0	—	0	2	0.03	0	0	—
Tennessee	5,320	1	10	0.10	0	0	—	0	0	—
Texas	19,128	1	1	0.01	0	0	—	2	0	0.01
Virginia	6,675	2	6	0.06	0	0	—	0	1	0.01
West Virginia	1,826	66	73	3.81	0	0	—	0	1	0.03
Wisconsin	5,160	8	8	0.16	0	0	—	0	0	—
Total		**125**	**127**		**5**	**14**		**2**	**13**	

*Per 100,000 population.
†U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census.

occurred in a 19-month-old child in Minnesota who became ill in early August 1997 and died in November.

St. Louis Encephalitis

During 1996–1997, a total of 15 St. Louis encephalitis (SLE) cases (14 confirmed and one probable; two fatal) were reported from six states (Table 1). Patients ranged in age from 6 months to 83 years (mean: 54 years). Ten (67%) cases occurred in females; 12 (80%), in whites; and two (13%), in blacks; in one (7%) case, race was unspecified. Dates of onset of illness ranged from July 21 to late October. During 1997, Florida reported nine cases from seven central or southern counties. Enzootic SLE virus activity in sentinel chickens was detected several weeks before the first human case was diagnosed, prompting state and local public health authorities to issue public health alerts and intensify mosquito-control measures.

Eastern Equine Encephalomyelitis

During 1996–1997, a total of 19 eastern equine encephalomyelitis (EEE) cases (all confirmed; five fatal) were reported from eight states (Table 1). Patients ranged in age from 10 months to 81 years (mean: 35 years); 10 (53%) cases occurred in males; 15 (79%), in whites; and three (16%), in blacks; in one (5%) case, race was unspecified.

Arboviral Infections — Continued

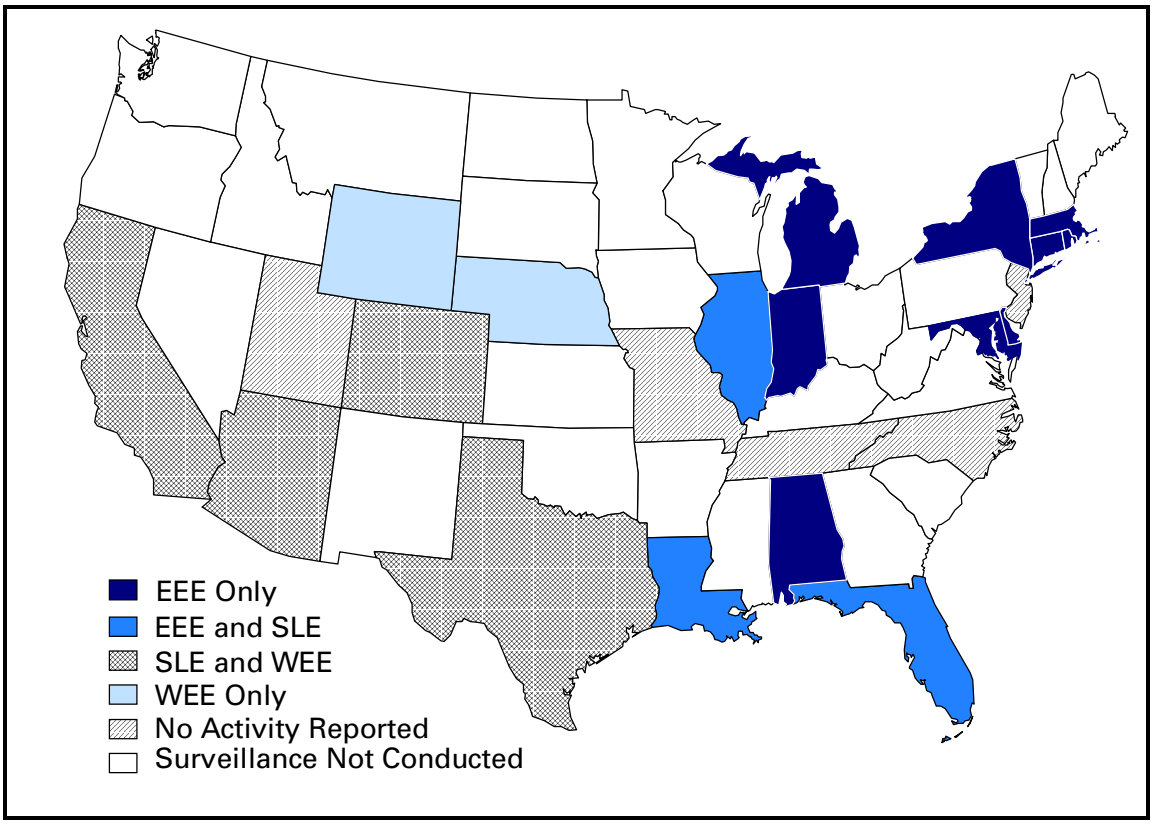
In all but one case, dates of onset of illness ranged from early July to mid-November. The exception was a 58-year-old man from southwestern Alabama who became ill with EEE on January 8, 1996, and died in early February. The most likely location of the patient's exposure to EEE virus was in a neighboring county at a quail farm near a hardwood swamp.

Enzootic and Epizootic Arbovirus Activity

During 1996–1997, a total of 23 states conducted surveillance for SLE, EEE, and/or western equine encephalomyelitis (WEE) virus activity using virus isolation or antigen detection in captured mosquitoes, virus-specific antibody assays in sentinel or wild birds, or a combination of methods. Enzootic arboviral activity was reported from 18 states (Figure 1).

Although arboviral disease cases among horses or other animals are not officially reported to CDC, some state health departments attempt to track such cases because cases of EEE and WEE in horses may indicate incipient human cases. During 1996–1997, a total of 274 cases of arboviral encephalitis in horses (151 cases in 1996 and 123 in 1997) were reported to public health authorities in 21 states (Table 2). In addition, epizootics or sporadic clinical cases of hemorrhagic enterocolitis associated with infection with EEE virus (Alabama, Arkansas, Connecticut, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Rhode Island, Texas, Virginia, and Wisconsin)

FIGURE 1. Reported enzootic activity of St. Louis encephalitis (SLE), eastern equine encephalomyelitis (EEE), or western equine encephalomyelitis (WEE) virus in mosquitoes or sentinel or wild birds, by state — United States, 1996–1997



Arboviral Infections — Continued

TABLE 2. Number of eastern (EEE) and western (WEE) equine encephalomyelitis cases among horses, by state — United States, 1996–1997

State	EEE		WEE	
	1996	1997	1996	1997
Alabama	9	13	0	0
Arkansas	0	1	0	0
California	0	0	1	4
Colorado	0	0	3	0
Connecticut	0	0	0	0
Florida	69	42	0	0
Georgia	5	11	0	0
Indiana	0	1	0	0
Kentucky	1	1	0	0
Louisiana	0	17	0	0
Maryland	0	0	0	0
Minnesota	2	0	1	0
Mississippi	29	4	0	0
Nebraska	0	0	1	0
New Hampshire	3	0	0	0
North Carolina	10	3	0	0
North Dakota	0	0	0	3
Ohio	0	1	0	0
Rhode Island	0	1	0	0
South Carolina	6	1	0	0
Tennessee	0	3	0	0
Texas	6	15	0	2
Virginia	5	0	0	0
Wisconsin	0	0	0	0
Total	**145**	**114**	**6**	**9**

or central nervous system disease cases associated with infection with WEE virus (California) were detected on emu farms in 14 states.

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Editorial Note: During 1996–1997, LAC encephalitis remained the most frequently reported arboviral disease in the United States. The fatal case of LAC encephalitis reported from Minnesota during 1997 emphasizes that severe cases occur and can result in transient or permanent neurologic sequelae or death (*2*). The incidence, public health impact, and other aspects of this endemic disease are poorly understood and require further study. Ongoing CDC-supported studies and active surveillance efforts are expected to provide better estimates of the incidence of LAC encephalitis in West Virginia and other states (e.g., North Carolina) outside the north-central region, which has been most closely associated with LAC virus transmission. In addition, these studies will provide a better understanding of geographic and ecologic factors associated with LAC virus transmission (e.g., the relative contribution of treeholes and

Arboviral Infections — Continued

artificial containers such as used tires in the production of *Aedes triseriatus*, the eastern treehole mosquito and primary vector of LAC virus) (*2*).

SLE virus remains the most important cause of epidemic encephalitis in North America (*3*). Surveillance for early seasonal enzootic SLE virus transmission continues to be important in detecting and controlling outbreaks and reducing human risk through vector control and modification of human activity patterns (*4*). For example, in August 1997, following the detection of epizootic SLE virus activity in central Florida through active surveillance, public health authorities issued health alerts advising the public to 1) minimize outdoor activities during evening and nighttime hours (the peak biting period for *Culex nigripalpus*, the primary vector of SLE virus in Florida) (*5*), 2) ensure proper screening of residential doors and windows, 3) wear long-sleeved shirts and long pants when involved in nighttime outdoor activities, and 4) use DEET-containing repellents in an approved manner. These alerts may have prevented a more extensive outbreak by prompting residents to change their evening activity patterns (S. Wiersma, M.D., Florida Department of Health, personal communication, 1998) and may in part explain the marked difference in the severity of the Florida SLE epidemics of 1997 (nine cases, one death) and 1990 (223 cases, 11 deaths).

EEE is the most severe of the arboviral encephalitides, with an overall case-fatality rate of approximately 35% (*6*). The fatal EEE case in an Alabama resident during 1996 was unusual because it was the first human EEE case reported from Alabama since 1965, and the onset of illness was in January. In most regions of the United States where EEE virus is enzootic, transmission to humans usually occurs during May–October (*7*). This case illustrates that year-round EEE virus transmission can occur near the Gulf Coast.

The emu is an imported species of large, flightless bird farmed for meat and other products nationwide. Emus are highly susceptible to EEE virus infection, which typically results in acute hemorrhagic enterocolitis and death (*8*). High-titered viremias develop in infected emus; therefore, emus may contribute to EEE virus amplification in the peridomestic environment, placing humans at increased risk. In addition, EEE virus can be isolated from the bloody feces of infected emus, and emu-to-emu transmission of EEE virus has been documented experimentally (CDC, unpublished data, 1998). No human infections with EEE virus have been associated with raising or handling emus. In the eastern United States, vaccination of emus with EEE virus vaccines approved for use in horses is a common practice that can protect them against an otherwise lethal challenge dose of EEE virus under experimental conditions (CDC, unpublished data, 1998).

No human cases of WEE have been reported since 1994, and only three cases have been reported during the 1990s. Reasons for the decrease in cases may include underrecognition and underdiagnosis of cases.

Health-care providers should consider arboviral infections in the differential diagnosis of all cases of aseptic meningitis and viral encephalitis, obtain appropriate specimens for laboratory testing, and promptly report cases to state health departments. Reasons for making a specific etiologic diagnosis in such cases include 1) ruling out diseases for which specific therapy is available, 2) better informing patients and their families about prognosis, and 3) alerting public health authorities to take appropriate control measures. Human disease risk can be effectively reduced with active environ-

Arboviral Infections — Continued

mental surveillance systems and appropriate mosquito-control measures, and by providing timely information to the public.

References

1. CDC. Case definitions for infectious conditions under public health surveillance. MMWR 1997;46(no. RR-10):12–3.
2. Grimstad PR. California serogroup virus disease. In: Monath TP, ed. The arboviruses: epidemiology and ecology. Vol 2. Boca Raton, Florida: CRC Press, 1988:99–136.
3. Monath TP. Epidemiology. In: Monath TP, ed. St. Louis encephalitis. Washington, DC: American Public Health Association, 1980:239–312.
4. CDC. Guidelines for arbovirus surveillance in the United States. Fort Collins, Colorado: US Department of Health and Human Services, Public Health Service, CDC, 1993.
5. Mitchell CJ, Francy DB, Monath TP. Arthropod vectors. In: Monath TP, ed. St. Louis encephalitis. Washington, DC: American Public Health Association, 1980:313–79.
6. Deresiewicz RL, Thaler SJ, Hsu L, Zamani AA. Clinical and neuroradiographic manifestations of eastern equine encephalitis. N Engl J Med 1997;26:1867–74.
7. Morris CD. Eastern equine encephalomyelitis. In: Monath TP, ed. The arboviruses: epidemiology and ecology. Vol 3. Boca Raton, Florida: CRC Press, 1988:1–20.
8. Tully TN Jr, Shane SM, Poston RP, et al. Eastern equine encephalitis in a flock of emus (*Dromaius novaehollandiae*). Avian Diseases 1992;36:808–12.

Monitoring Environmental Disease — United States, 1997

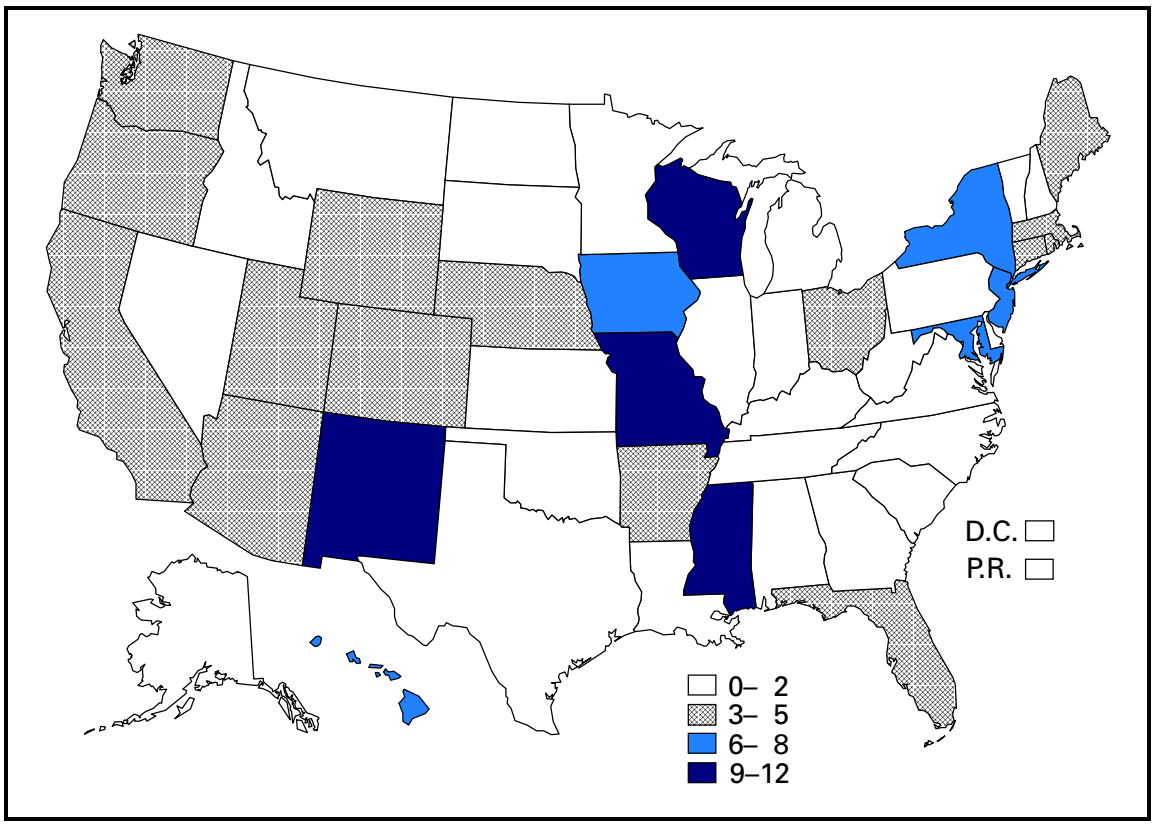
One of the national health objectives for 2000 (HP2000) is to establish and monitor nonoccupational "sentinel" environmental diseases, including asthma, heatstroke, hypothermia, heavy metal poisoning, pesticide poisoning, carbon monoxide poisoning, acute chemical poisoning, and methemoglobinemia, in at least 35 states (baseline: 0 states in 1990) (objective 11.16) (*1*). To assess progress toward this objective, the Council of State and Territorial Epidemiologists (CSTE), the Association of Schools of Public Health, and CDC conducted a telephone survey of environmental epidemiologists in each of the 50 states, the District of Columbia, and Puerto Rico during June–August 1997. This report summarizes the results of that survey, which indicate that progress is being made toward the HP2000 objective.

Approximately 2–3 weeks before the telephone survey was conducted, a questionnaire on environmental disease surveillance systems in each jurisdiction was sent to the epidemiologist responsible for environmental health to allow time for gathering of information. The questionnaire inquired about each jurisdiction's surveillance activities, sources of surveillance data, funding, and goals. Each jurisdiction was asked to describe its surveillance activities from among the following: data collection only; data collection and review; or data collection, review, and case investigation. No additional definitions were provided, and interpretation of the three classifications was left to the respondent.

Responses were obtained from all 52 environmental epidemiologists. The telephone survey identified 174 environmental public health surveillance systems from 51 jurisdictions. The mean number of systems per jurisdiction was three; the median was two (range: zero to 12) (Figure 1). Of the 174, a total of 79 (45%) systems monitored lead exposure, with most systems monitoring childhood blood lead levels (BLLs) (51 [65%] of 79). The remaining 28 systems monitored nonoccupational adult

Monitoring Environmental Disease — Continued

FIGURE 1. Number of environmental public health surveillance systems, by jurisdiction — United States, 1997



lead exposures. The environmental diseases least frequently monitored were heatstroke and hypothermia (four systems each) (Table 1). One jurisdiction (Missouri) had surveillance systems for all 12 of the environmental public health conditions covered by the survey. One jurisdiction did not have any surveillance systems.

Using the description for each disease monitoring system described in this report, 15 (9%) of the surveillance systems collected data only, 46 (27%) collected data and conducted reviews, and 110 (64%) collected data and conducted both reviews and case investigations. Asthma was the only condition for which no systems conducted case investigations.

Sources of Data

Data about environmental disease surveillance were collected from numerous sources. Of the 79 lead exposure surveillance systems, 76 (96%) provided information about primary source of data. Of these, 71 (93%) used laboratory data as the primary source of information. Laboratory reporting was mandatory in jurisdictions covered by 65 (86%) of 76 systems. Data about BLLs were gathered electronically by 35 (46%) systems. Five lead surveillance systems used electronic reporting exclusively.

Of the remaining 95 nonlead environmental disease surveillance systems, three did not provide information about primary source of data. The sources of data for the other 92 systems included laboratories (37 [40%]), clinicians (19 [21%]), hospitals (14 [15%]), poison-control centers (seven [8%]), and other sources (15 [16%]). Labora-

Monitoring Environmental Disease — Continued

TABLE 1. Number of environmental public health surveillance systems, by type* and classification of system — United States,† 1997

Type of system	Classification			Total
	Data collection only	Data collection and review	Data collection, review, and case investigation	
Elevated blood lead levels	4	9	66	**79**
Children	*1*	*2*	*48*	***51***
Adults§	*3*	*7*	*18*	***28***
Pesticide poisoning	4	4	12	**20**
Mercury poisoning	0	6	8	**15**
Arsenic poisoning	0	4	6	**11**
Cadmium poisoning	0	4	6	**11**
Methemoglobinemia	2	2	5	**9**
Acute chemical poisoning¶	1	4	3	**8**
Carbon monoxide poisoning	3	2	2	**7**
Asthma	1	5	0	**6**
Heatstroke	0	3	1	**4**
Hypothermia	0	3	1	**4**
Total	**15**	**46**	**110**	**174****

*The 12 nonoccupational sentinel environmental conditions specified by the 2000 national health objective 11.16 (*1*).
†Includes District of Columbia and Puerto Rico.
§Excludes cases associated with occupational exposure.
¶Acids, ammonia, bases, chlorine, other inorganic substances, paints and dyes, volatile organic compounds, and polychlorinated biphenyls.
**Includes three surveillance systems that included data collection and case investigation but excluded routine review of cases.

tory reporting was mandatory in the jurisdictions covered by 27 (72%) of 37 systems gathering data from laboratories, and reporting by clinicians was mandatory in 15 (79%) of the 19 systems gathering data from clinicians. No nonlead surveillance systems received information electronically.

Funding

Thirty-six (71%) of 51 childhood lead monitoring systems and 14 (50%) of 28 adult lead monitoring systems were either entirely or largely dependent on federal funds for their operation. Twenty-one (23%) of 95 nonlead environmental disease monitoring systems received any federal funding.

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Editorial Note: The findings in this report indicate that childhood lead poisoning was the only "sentinel environmental disease" for which HP2000 objective 11.16 has been achieved (*1*). Although not every system met the requirement to be identified as a surveillance system (ongoing collection, analysis, and use of health data), most of the childhood lead monitoring systems collected, reviewed, and took appropriate action based on the data.

Monitoring Environmental Disease — Continued

The findings in this report are subject to at least two limitations. First, jurisdiction-based surveillance systems can have different case definitions. For example, although CDC recommends using BLLs ≥10 μg/dL to identify children with elevated BLLs, some jurisdictions used higher values. Jurisdiction-specific case definitions may be necessary because of limited resources and other considerations. CDC, in collaboration with other agencies and organizations, is developing definitions for several environmental diseases such as carbon monoxide poisoning and asthma. Using a standard case definition may allow data from numerous jurisdictions to be more easily summarized and compared. However, each jurisdiction will base its environmental health priorities on its own needs and available resources. Second, >90% of the systems identified in the 1997 survey reviewed the data collected, and in most cases implemented activities based on the data. This survey did not collect information about the frequency or extent of data review or of follow-up activities. Usefulness of routinely collected environmental disease data depends on timely analysis of the data followed by dissemination of information to persons who "need to know," such as policy makers and program managers (*2–7*).

Surveillance systems should be simple, sensitive, representative, and timely to be most effective in controlling and preventing disease (*8*). Surveillance systems at the local, state, and national levels are useful for assessing case investigations, implementing control activities, evaluating interventions, monitoring trends, and identifying risk factors. A comprehensive integrated public health surveillance system that combines local, state, and national surveillance activities can best achieve the primary goal of public health surveillance, namely a reduction in disease morbidity and mortality (*3*). Progress toward the HP2000 objective is evident from the results of this survey. Adequate resources and increased public awareness about the value of surveillance systems in preventing and controlling disease are necessary to fully achieve the objective (*2*).

References

1. Public Health Service. Healthy people 2000—midcourse review and 1995 revisions. Washington, DC: US Department of Health and Human Services, Public Health Service, 1995.
2. Thacker SB, Stroup DF. Future directions for comprehensive public health surveillance and health information systems in the United States. Am J Epidemiol 1994;140:383–97.
3. Meriwether RA. Blueprint for a national public health surveillance system for the 21st century. J Public Health Management Practice 1996;2:16–23.
4. Thacker SB, Stroup DF, Parrish RG, Anderson HA. Surveillance in environmental public health: issues, systems, and sources. Am J Public Health 1996;86:633–8.
5. Berkelman RL, Stroup DF, Buehler JW. Public health surveillance. In: Detels R, Holland WW, McEwan J, Omenn GS, eds. Oxford textbook of public health. 3rd ed. New York, New York: Oxford University Press, 1997:735–50.
6. Hertz-Picciotto I. Toward a coordinated system for the surveillance of environmental health hazards [Comment]. Am J Public Health 1996;86:638–41.
7. MacDonald SC, Pertowski CA, Jackson RJ. Environmental public health surveillance. J Public Health Management Practice 1996;2:45–9.
8. CDC. Guidelines for evaluating surveillance systems. MMWR 1988;37(S-5).

Epidemic Malaria Transmission — Armenia, 1997

The dissolution of the Former Soviet Union (FSU) has resulted in the disruption of the health infrastructure in many of the republics, as indicated in part by increases in infectious diseases that were previously controlled (e.g., diphtheria, typhoid, and hepatitis A). In 1994, the Ministry of Health (MOH) of Armenia (1995 population: 3.5 million) detected the first locally acquired case of malaria since the 1940s; the number of imported cases (15) was approximately twice the annual average during 1986–1989 (seven). In 1995, although no locally acquired cases were reported, the number of imported cases increased to 502. In 1996 and 1997, the total (locally acquired and imported) number of reported cases of malaria was 347 and 841, respectively. This report summarizes surveillance for malaria in Armenia during 1996–1997.

Cases were initially identified based on clinical suspicion; confirmation was based on microscopic examination of blood smears by the national laboratory. All cases were caused by *Plasmodium vivax*. Local clinics and hospitals gathered data and reported this information to the regional public health offices, which in turn reported to the national level.

From 1996 to 1997, the incidence rate (IR) for all reported cases of malaria increased from nine to 22 per 100,000 population (Table 1). Locally acquired cases accounted for 567 (67%) of the 841 cases reported in 1997. Although 30 (37%) of 81 districts recorded malaria cases, seven (9%) reported locally acquired infections. In 1997, the Masis district registered 527 (63%) of the total and 505 (89%) of the locally acquired cases (IR=592 and 567 cases per 100,000 population, respectively) (Figure 1). The seasonal peak for locally acquired cases occurred in September (132 [23%]); 416 (73%) cases were reported during July–October (Figure 2).

To identify possible vectors, the MOH took a convenience sample of mosquitos using standard trapping techniques. *Anopheles maculipennis* was identified as the most common vector species captured (98%).

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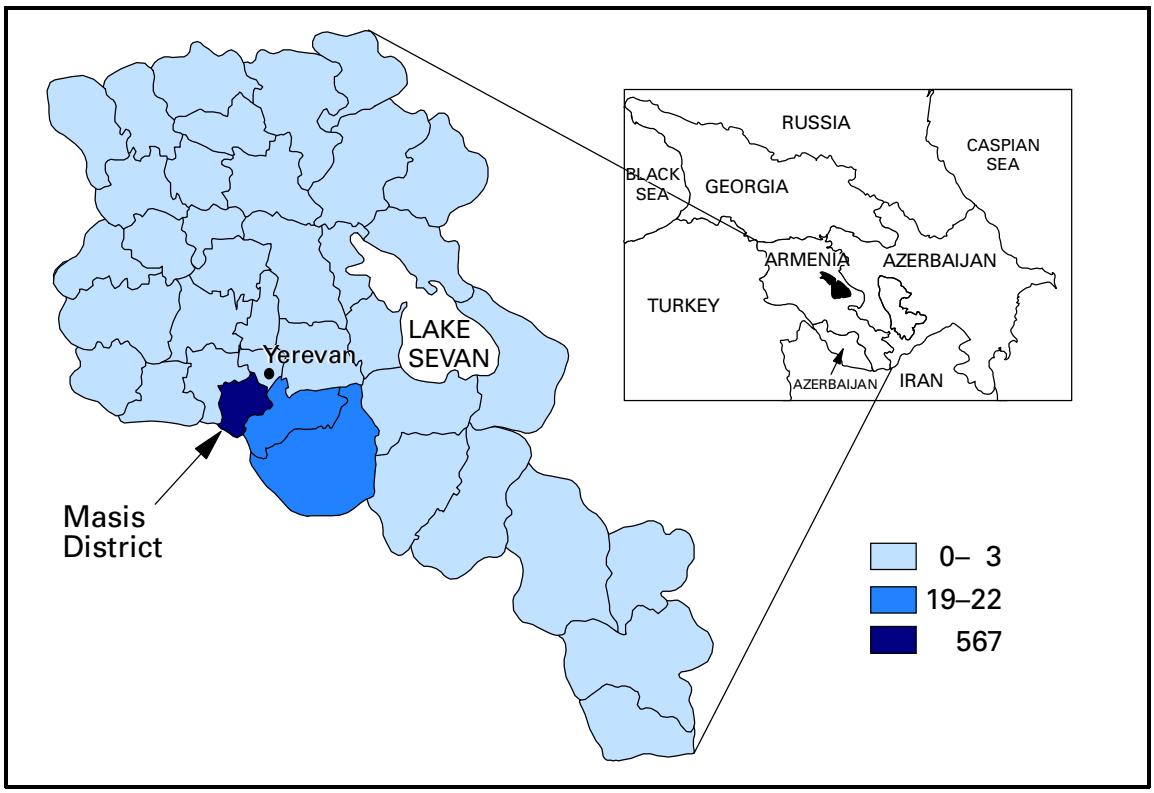
TABLE 1. Number of locally acquired and imported cases of malaria and incidence rates (IR)*, by year — Armenia, 1986–1997†

	Locally acquired			Total	
Year	No.	(IR)	Imported	No.	(IR)
1986	0		9	**9**	
1987	0		7	**7**	
1988	0		8	**8**	
1989	0		3	**3**	
1994	1	(<0.1)	15	**16**	**(0.4)**
1995	0		502	**502**	**(13.3)**
1996	149	(3.9)	198	**347**	**(9.2)**
1997	567	(15.0)	274	**841**	**(22.2)**

*Per 100,000 population.
†Surveillance data were not available for 1990–1993.

Epidemic Malaria Transmission — Continued

FIGURE 1. Incidence rates* of locally acquired malaria, by district — Armenia, 1997



*Per 100,000 population.

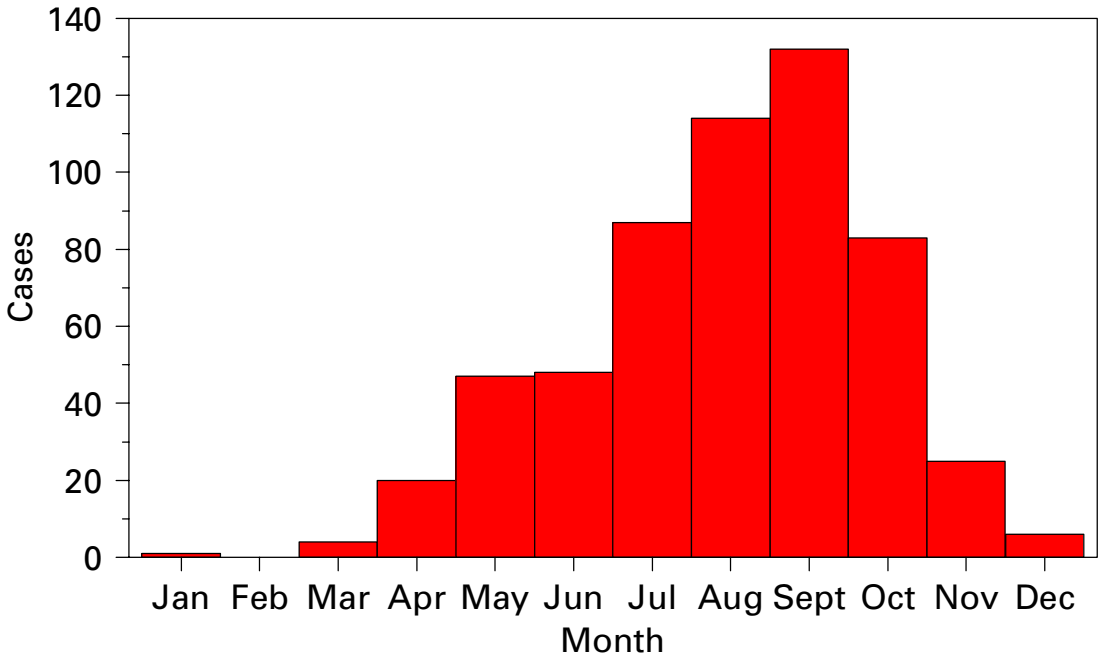
Editorial Note: The World Health Organization (WHO) estimates that malaria causes 300 to 500 million illness episodes and 1.5 to 2.7 million deaths worldwide each year (*1*). From 1945 to 1986, FSU-wide malaria eradication efforts (including mosquito vector control, case detection and treatment, and chemoprophylaxis) curtailed transmission in Armenia, one of the 15 Newly Independent States of the FSU. During 1988–1995, severe financial constraints and the war with Azerbaijan contributed to cessation of vector-control activities in Armenia (which had included the use of mosquito-larvivorous fish [*Gambusia affinis*], insecticide spraying, and the reduction of mosquito breeding sites). These circumstances, combined with an eroding health infrastructure, may have hindered new malaria cases from being diagnosed, treated, and reported properly during this period. Displaced persons returning from the war with Azerbaijan during the cease-fire accounted for many of the imported cases in 1995; the resurgence of locally transmitted malaria probably resulted from persons with imported cases transmitting infection to the increased density of vectors.

In December 1992, the MOH and CDC, with the support of the U.S. Agency for International Development, began restructuring the health information systems (HIS) in Armenia. The reform began with the development of an emergency surveillance system designed to detect acute health risks (*2,3*). By 1996, through additional training and technical support, the MOH adopted a countrywide, comprehensive, and sustainable HIS reform program*. The prompt detection of this malaria epidemic highlights the success of this Armenian HIS reform.

*Armenian Prikaz (administrative directive) no. 550, July 30, 1996.

Epidemic Malaria Transmission — Continued

FIGURE 2. Number of cases of locally acquired malaria, by month — Armenia, 1997



The magnitude of the increase in malaria may be underestimated because surveillance relied on clinical suspicion. Because few cases were seen until recently, physicians may not have suspected malaria and submitted blood smears for laboratory confirmation.

The next steps for malaria control and prevention in Armenia should focus on surveillance, clinical practice, public education, and environmental control. Enhanced surveillance will include 1) initiating active, case-based surveillance; 2) establishing a regional surveillance network because malaria is endemic in neighboring countries; and 3) conducting epidemiologic and entomologic studies to characterize the affected population, determine risk factors for acquisition and transmission, and target interventions. Improving clinical practice will require continuing medical education for physicians in the early diagnosis and treatment of malaria and improved microscopic diagnostic capabilities for rapid and accurate diagnosis. Such capabilities will be essential if *P. falciparum* malaria emerges, because treatment recommendations depend on the species detected. Community health education about recognizing malaria symptoms should be provided. Vector control should be conducted in the Masis district, especially during the peak transmission season (July to October). Efforts led by WHO are under way to institute some of these control measures during the next malaria season; additional control measures may be taken if resources become available.

References

1. World Health Organization. World malaria situation in 1993. Wkly Epidemiol Rec 1996;71:17–22.
2. CDC. Emergency public health surveillance in response to food and energy shortages—Armenia, 1992. MMWR 1993;42:69–71.
3. McNabb SJN, Welch K, Laumark S, et al. Population-based nutritional risk survey of pensioners in Yerevan, Armenia. Am J Prev Med 1994;10:65–70.

Age- and State-Specific Prevalence Estimates of Insured and Uninsured Persons — United States, 1995–1996

Lack of health insurance has been associated with delayed health care (*1*) and increased mortality (*2*). Underinsurance (i.e., the inability to pay out-of-pocket expenses despite having insurance) also may result in adverse health consequences (*3*). Insurance coverage varies with age and locality (*4*), but state-specific estimates of insurance status by age are not regularly published. To characterize insurance coverage status by age, CDC analyzed data from the Behavioral Risk Factor Surveillance System (BRFSS) for 1995–1996. Because persons aged 55–64 years are not yet eligible for Medicare, may be in fair or poor health, risk eroding retirement savings if they incur major medical expenses, and must pay high individual health premiums (*5*), characteristics of uninsured persons aged 55–64 years also were examined. This report summarizes the results of the analysis and indicates that a substantial proportion of all adults are either uninsured or underinsured.

The BRFSS is a continuous, state-based, random-digit–dialed telephone survey of persons aged ≥18 years in the United States (*6*). For this report, data collected during 1995 and 1996 were combined to decrease variance in estimates. The study included 186,493 respondents aged 18–64 years who responded to insurance questions; of these, 26,238 were aged 55–64 years. Estimates were statistically weighted by sex, age, and race/ethnicity to reflect the noninstitutionalized civilian population of each state. Standard errors were calculated taking into account the complex survey design. Prevalence estimates were reported only when the standard error was <30% of the estimate; as a result, state-specific rates for underinsured persons are not presented. Respondents were categorized as uninsured if they answered "no" to the question "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?" Respondents were categorized as underinsured if they answered "yes" to the preceding question and to the question "Was there a time during the last 12 months when you needed to see a doctor, but could not because of the cost?" (*7*). Adequate insurance was defined as reporting both being insured and having no access problems because of cost.

Overall, 16.3% of respondents were uninsured, 6.8% were underinsured, and 76.9% were adequately insured. Being uninsured was most frequently reported by persons aged 18–24 years (median for all states: 25.4%; range: 11.6%–39.9%) (Table 1); being underinsured, by persons aged 25–34 years (median: 7.5%; range: 4.6%–11.2%) and 35–44 years (median: 7.2%; range: 3.3%–11.1%); and being adequately insured, by persons aged 55–64 years (median: 84.4%; range: 71.7%–93.4%). Hawaii had the lowest prevalence of being uninsured for two of five age groups. Louisiana had the highest levels of being uninsured among three age groups, and Texas had the highest levels among two age groups.

Among persons aged 55–64 years, 5.2% (Maryland and Michigan) to 21.4% (Louisiana) were uninsured, and approximately 1.9% to 11.3% were underinsured. Although 35% of persons aged 55–64 years resided in the South, 45% of the uninsured and 44% of the underinsured in this age group resided in the South.* Women comprise 53% of

* *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.

Insured and Uninsured Persons — Continued

TABLE 1. Percentage of persons aged 18–64 years who were uninsured, by state and age group — United States, Behavioral Risk Factor Surveillance System, 1995–1996

	18–24 years		25–34 years		35–44 years		45–54 years		55–64 years	
State	%	SE*	%	SE	%	SE	%	SE	%	SE
Alabama	24.1	2.5	22.7	1.7	15.5	1.3	12.0	1.4	13.6	1.7
Alaska	33.3	4.3	18.6	1.9	19.0	2.0	11.0	1.6	18.9	4.0
Arizona	31.3	3.1	22.1	2.3	19.3	2.2	14.0	1.9	9.8	1.7
Arkansas	28.2	3.0	20.7	1.8	20.8	1.6	16.7	1.7	15.6	1.7
California	38.7	2.3	26.3	1.3	18.6	1.5	14.8	1.4	15.1	1.6
Colorado	27.0	3.1	20.2	1.7	12.8	1.2	10.4	1.3	10.6	1.7
Connecticut	21.1	3.0	14.6	1.4	9.9	1.4	5.8	0.9	6.0	1.2
Delaware	23.5	2.8	14.0	1.5	10.4	1.0	8.8	1.2	11.5	1.7
Florida	34.5	2.4	23.8	1.4	20.3	1.2	15.0	1.2	14.5	1.3
Georgia	17.0	2.2	11.3	1.1	8.3	0.8	11.6	1.3	8.8	1.6
Hawaii	11.6	1.9	10.1	1.3	8.3	1.0	5.6	†	0.9	†
Idaho	29.3	2.1	19.3	1.3	15.5	1.1	13.0	1.3	12.5	1.4
Illinois	30.0	2.2	14.8	1.2	9.7	0.9	7.4	0.9	11.3	1.5
Indiana	19.9	2.1	16.3	1.4	10.6	1.0	7.5	1.0	10.8	1.5
Iowa	20.3	1.7	15.9	1.1	8.7	0.8	6.8	0.8	7.1	1.0
Kansas	23.4	2.6	16.6	1.5	9.2	1.0	8.0	1.1	8.2	1.5
Kentucky	27.1	2.2	20.1	1.4	14.3	1.2	12.9	1.2	12.6	1.4
Louisiana	33.8	2.8	28.7	2.0	21.2	1.7	22.7	2.0	21.4	2.4
Maine	33.6	3.8	18.2	1.9	17.2	1.6	13.2	1.6	12.9	2.0
Maryland	22.5	1.9	13.0	0.9	8.7	0.8	7.8	0.8	5.2	0.7
Massachusetts	22.0	3.0	14.5	1.4	10.7	1.1	8.4	1.3	5.8	1.5
Michigan	21.3	2.0	12.1	1.1	8.6	1.0	6.4	0.9	5.2	1.0
Minnesota	14.6	1.4	10.9	0.8	7.9	0.7	5.1	0.6	5.5	0.8
Mississippi	23.9	2.9	17.3	1.8	15.8	1.6	15.5	1.8	12.5	1.8
Missouri	28.0	3.2	16.9	1.5	16.3	1.7	12.6	1.7	13.8	2.1
Montana	28.5	3.3	23.6	2.0	17.8	1.5	17.5	1.8	9.7	1.8
Nebraska	17.0	2.5	10.8	1.3	9.1	1.1	7.5	1.2	8.0	1.4
Nevada	31.6	3.5	16.9	1.8	16.7	1.7	14.1	1.8	10.5	1.8
New Hampshire	32.8	3.7	15.3	1.6	9.3	1.1	7.3	1.2	12.7	2.0
New Jersey	18.0	2.4	16.7	1.8	9.8	1.4	6.5	1.0	6.0	1.2
New Mexico	39.8	4.3	24.6	2.5	21.0	2.1	18.2	2.2	12.9	2.2
New York	27.0	2.3	18.1	1.1	12.8	1.1	8.9	1.0	7.2	1.0
North Carolina	26.5	2.3	15.8	1.2	14.2	1.1	9.0	1.0	8.8	1.2
North Dakota	20.9	2.3	17.8	1.6	10.5	1.2	9.7	1.3	8.6	1.8
Ohio	30.1	3.2	13.9	2.0	11.1	1.5	6.7	1.2	8.0	1.7
Oklahoma	30.3	3.0	23.6	1.9	19.0	1.8	14.0	1.8	17.3	1.9
Oregon	30.0	2.4	19.5	1.4	13.2	1.0	9.9	1.0	9.9	1.3
Pennsylvania	22.1	2.1	15.0	1.2	11.1	0.9	7.9	0.8	7.6	1.1
Rhode Island	20.0	2.7	17.4	1.6	10.6	1.1	8.3	1.3	7.5	1.5
South Carolina	25.3	3.3	18.4	1.7	13.2	1.3	12.9	1.5	13.7	1.9
South Dakota	19.5	2.1	15.1	1.5	9.6	1.1	7.9	1.2	7.1	1.3
Tennessee	25.6	2.3	14.3	1.3	10.4	1.1	11.2	1.2	8.5	1.4
Texas	39.9	3.3	24.3	1.7	21.5	1.6	16.6	1.7	21.3	2.5
Utah	21.2	2.1	16.1	1.3	10.5	1.1	8.5	1.1	8.2	1.3
Vermont	21.2	2.5	16.4	1.3	12.2	1.1	12.1	1.2	11.8	1.4
Virginia	24.4	2.7	15.6	1.4	11.6	1.2	12.1	1.7	12.5	2.0
West Virginia	33.4	2.7	27.8	1.7	20.1	1.4	12.9	1.3	12.6	1.4
Washington	25.1	2.0	17.7	1.2	10.8	0.1	9.2	0.9	7.6	1.0
Wisconsin	21.7	2.8	12.1	1.6	7.7	1.0	5.8	1.0	6.6	1.3
Wyoming	36.6	2.6	25.1	1.6	16.5	1.1	12.4	1.2	14.7	1.6
Median	*25.4*		*16.9*		*11.9*		*10.1*		*10.5*	

*Standard error.
†SE was <30% of the estimate.

Insured and Uninsured Persons — Continued

persons aged 55–64 years and 56% of the uninsured in this age group. Although widowed and separated women were 1.3 times more likely to be uninsured than men of similar marital status, most (53%) uninsured women were married. Blacks and Hispanics represented 9% and 6%, respectively, of persons aged 55–64 years and 15% each of uninsured persons in this age group. Blacks and Hispanics aged 55–64 years reported higher mean rates of being uninsured than did whites; the uninsured rate for blacks in this age group ranged from 1.3 to 2.6 times the rate for whites in the West and Midwest, respectively; for Hispanics the uninsured rate ranged from 2.3 to 3.4 times the rate for whites in the Northeast and West, respectively. Among persons aged 55–64 years, 40% of uninsured persons and 30% of underinsured persons reported an annual household income of <$15,000.

In a separate analysis, BRFSS estimates for uninsured persons were compared with those from the 1995 National Health Interview Survey (NHIS) Health Insurance supplement (*8*). For this supplement, insurance status was determined by responses to a series of questions about specific types of insurance plans, including private, public, military, Indian Health Service, or single-purpose plans. Respondents with any of these types of insurance plans were categorized as insured. A total of 54,495 respondents aged 18–64 years were included for analysis; 7288 were aged 55–64 years.

Between the two data sources, no statistically significant differences in national prevalence were observed for uninsured persons. However, the NHIS prevalence estimate for persons aged 55–64 years (9.3%[†]) was lower than the BRFSS estimate (11.0%). By region, NHIS estimates of being uninsured were slightly lower than BRFSS means for persons aged 55–64 years; differences ranged from 0.1% in the Northeast to 2.6% in the South.

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Editorial Note: The findings in this report are consistent with previous studies that have documented that persons aged 18–24 years had the highest rates of being uninsured and that persons aged 55–64 years had the highest rates of being insured (*4*). State variation in insurance coverage has been reported (*4,7*) and may be related to differences in employment-based health coverage (*4*). The regional and state variation found among persons aged 55–64 years has not been reported.

[†]This percentage may differ from other published studies using NHIS data. CDC's National Center for Health Statistics data include persons with only single purpose insurance plans and persons with Indian Health coverage as uninsured.

Insured and Uninsured Persons — Continued

The findings in this report indicate that a substantial proportion of all adults, including those aged 55–64 years, are either uninsured or underinsured, placing these persons at increased risk for unnecessary morbidity or mortality (*1–3*). Approaches to increase coverage for these populations include more affordable private insurance, a national health insurance program, or allowing certain segments of the population to purchase Medicare. Although the purchase of Medicare coverage might appeal to many uninsured persons, particularly those aged 55–64 years, those with household incomes <$15,000 would probably be unable to purchase Medicare coverage without assistance.

The findings in this report are subject to at least three limitations. First, because these results are based on self-reported telephone survey data, the number of uninsured persons is a conservative estimate and the findings are subject to reporting biases. Second, differences observed between NHIS and BRFSS regional estimates of the percentage of persons aged 55–64 years who are uninsured probably reflect methodologic differences. Finally, when combined for 1995–1996, BRFSS data provided stable state estimates of insurance status; however, similar information at a local level is not available and would be useful for policy development and health planning.

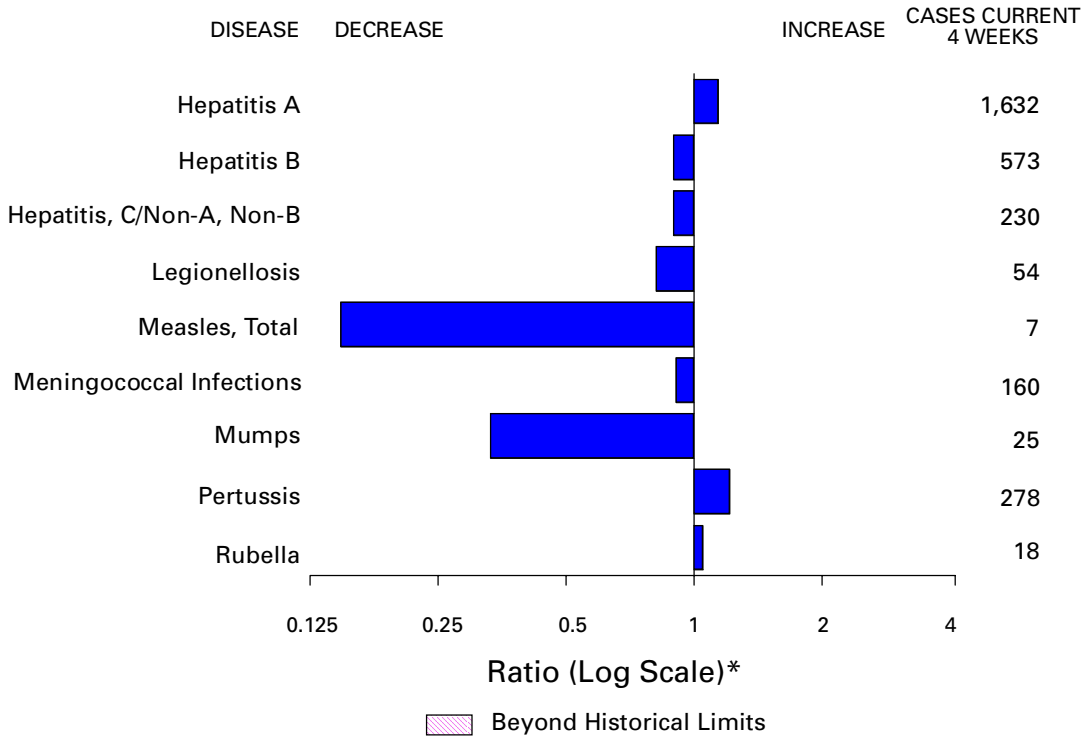
References

1. Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. Ann Intern Med 1991;114:325–31.
2. Franks P, Clancy CM, Gold MR. Health insurance and mortality: evidence from a national cohort. JAMA 1993;270:737–41.
3. Blendon RJ, Donelan K, Hill CA, Carter W, Beatrice D, Altman D. Paying medical bills in the United States: why health insurance isn't enough. JAMA 1994;271:949–51.
4. Snider SC. Who are the medically uninsured in the United States? Stat Bull Metrop Insur Co 1994;75:20–30.
5. Davis K. Uninsured in an era of managed care. Health Serv Res 1997;31:641–9.
6. CDC. Health risks in America: gaining insight from the Behavioral Risk Factor Surveillance System. Revised edition. Atlanta: US Department of Health and Human Services, CDC, 1997.
7. CDC. State-specific prevalence estimates of uninsured and underinsured persons—Behavioral Risk Factor Surveillance System, 1995. MMWR 1998;47:51–5.
8. Benson V, Marano MA. Current estimates from the National Health Interview Survey, 1995. Hyattsville, Maryland: US Department of Health and Human Services, CDC, National Center for Health Statistics. (Vital and health statistics, series 10, no. 199) (in press).

Errata: Vol. 47, No. 21

In the article "Assessing Adolescent Pregnancy—Maine, 1980–1996," two errors occurred. On page 434, the name of a survey was incorrect. The sentence that begins on the 12th line of the first full paragraph should read, "The *Maine Youth Risk Behavior Survey*, a survey of adolescents in grades 9–12, was used to obtain information about adolescent sexual behavior." On page 436, the students being discussed were incorrectly identified. The last sentence of the first full paragraph should read, "The percentage of males and females *in high school* who had ever had sexual intercourse was 58% in 1991, 49% in 1995, and 52% in 1997; the changes in these percentages were not statistically significant."

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending June 27, 1998, 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 — provisional cases of selected notifiable diseases, United States, cumulative, week ending June 27, 1998 (25th Week)

	Cum. 1998		Cum. 1998
Anthrax	-	Plague	-
Brucellosis	34	Poliomyelitis, paralytic¶	-
Cholera	4	Psittacosis	21
Congenital rubella syndrome	3	Rabies, human	-
Cryptosporidiosis*	846	Rocky Mountain spotted fever (RMSF)	81
Diphtheria	1	Streptococcal disease, invasive Group A	1,148
Encephalitis: California*	2	Streptococcal toxic-shock syndrome*	33
eastern equine*	-	Syphilis, congenital**	128
St. Louis*	-	Tetanus	12
western equine*	-	Toxic-shock syndrome	65
Hansen Disease	58	Trichinosis	6
Hantavirus pulmonary syndrome*†	4	Typhoid fever	135
Hemolytic uremic syndrome, post-diarrheal*	16	Yellow fever	-
HIV infection, pediatric*§	106		

-:no reported cases
*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–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update May 24, 1998.
¶ One suspected case of polio with onset in 1998 has been reported to date.
**Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

Reporting Area	AIDS		Chlamydia		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS§				
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1998	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997
UNITED STATES	20,034	27,944	244,571	235,320	685	357	143,519	137,638	1,891	1,636
NEW ENGLAND	640	1,151	9,161	8,239	103	69	2,430	2,803	23	33
Maine	13	25	457	452	5	-	30	28	-	-
N.H.	21	17	441	370	18	16	45	57	-	-
Vt.	10	24	187	188	4	4	13	24	-	1
Mass.	275	462	4,062	3,388	57	38	975	1,050	22	29
R.I.	58	80	1,199	981	3	1	175	231	1	3
Conn.	263	543	2,815	2,860	16	10	1,192	1,413	-	-
MID. ATLANTIC	5,695	8,425	29,581	27,575	72	18	16,406	16,698	200	145
Upstate N.Y.	710	1,338	N	N	50	-	2,878	2,848	154	107
N.Y. City	3,153	4,138	16,364	14,269	3	6	7,046	6,324	-	-
N.J.	993	1,861	4,626	4,742	19	11	2,631	3,457	-	-
Pa.	839	1,088	8,591	8,564	N	1	3,851	4,069	46	38
E.N. CENTRAL	1,518	1,977	41,074	34,691	134	67	27,683	20,611	248	320
Ohio	281	408	11,921	10,434	32	12	7,157	6,439	6	7
Ind.	293	359	2,706	4,204	46	20	1,769	2,820	3	9
Ill.	610	608	11,994	6,231	29	-	9,589	3,030	11	52
Mich.	252	473	10,232	8,678	27	17	7,480	6,197	228	234
Wis.	82	129	4,221	5,144	N	18	1,688	2,125	-	18
W.N. CENTRAL	351	536	14,555	15,081	80	46	7,017	6,566	110	33
Minn.	56	99	2,305	3,143	30	24	814	1,091	5	2
Iowa	20	66	2,010	2,222	21	-	638	598	11	16
Mo.	176	254	5,634	5,565	10	17	4,034	3,493	90	4
N. Dak.	4	4	290	408	1	2	29	26	-	2
S. Dak.	9	2	788	595	2	1	125	62	-	-
Nebr.	36	48	1,023	931	7	-	346	341	2	2
Kans.	50	63	2,505	2,217	9	2	1,031	955	2	7
S. ATLANTIC	5,037	7,208	52,583	44,769	48	29	42,159	43,145	96	108
Del.	57	111	1,210	612	-	1	649	542	-	-
Md.	571	948	4,001	3,446	12	4	4,576	5,570	5	3
D.C.	413	533	N	N	1	-	1,656	1,959	-	-
Va.	368	599	5,135	5,289	N	7	2,849	3,762	5	10
W. Va.	47	57	1,309	1,427	N	2	371	455	4	9
N.C.	335	364	10,801	7,935	11	10	9,034	7,724	12	28
S.C.	318	371	9,002	5,919	1	-	5,823	5,350	1	25
Ga.	608	859	11,989	7,928	8	-	9,896	9,284	9	-
Fla.	2,320	3,366	9,136	12,213	12	5	7,305	8,499	60	33
E.S. CENTRAL	788	828	17,268	16,319	39	11	16,347	16,170	74	180
Ky.	101	114	2,984	3,149	10	-	1,702	2,015	14	7
Tenn.	272	373	5,945	6,038	20	10	5,051	5,038	57	113
Ala.	233	196	4,679	3,847	9	-	5,906	5,458	3	6
Miss.	182	145	3,660	3,285	U	1	3,688	3,659	U	54
W.S. CENTRAL	2,473	3,120	35,864	22,547	44	5	20,492	16,690	512	191
Ark.	81	119	1,553	1,369	3	1	1,145	2,213	5	5
La.	415	538	6,429	3,941	-	1	5,274	3,711	10	101
Okla.	134	138	4,784	3,496	5	3	2,605	2,232	2	4
Tex.	1,843	2,325	23,098	13,741	36	-	11,468	8,534	495	81
MOUNTAIN	725	841	8,435	13,296	61	43	3,144	3,561	233	151
Mont.	13	22	595	477	4	-	23	20	4	10
Idaho	14	28	917	691	7	1	83	50	87	23
Wyo.	2	13	301	255	2	-	15	25	43	37
Colo.	127	224	-	2,884	19	11	1,083	947	13	21
N. Mex.	111	67	1,830	1,865	9	6	355	418	51	32
Ariz.	286	189	3,735	4,882	N	9	1,373	1,547	3	18
Utah	57	65	748	815	13	10	74	119	19	3
Nev.	115	233	309	1,427	7	6	138	435	13	7
PACIFIC	2,807	3,858	36,050	52,803	104	69	7,841	11,394	395	475
Wash.	203	287	5,286	4,348	25	22	899	927	10	14
Oreg.	88	144	2,682	2,245	29	26	360	329	2	2
Calif.	2,463	3,377	26,201	44,733	48	18	6,232	9,711	328	375
Alaska	12	22	913	668	2	-	155	190	1	-
Hawaii	41	28	968	809	N	3	195	237	54	84
Guam	-	2	8	193	N	-	2	27	-	-
P.R.	834	760	U	U	-	U	187	319	-	-
V.I.	17	49	N	N	N	U	U	U	U	U
Amer. Samoa	-	-	U	U	N	U	U	U	U	U
C.N.M.I.	-	1	N	N	N	U	14	16	-	2

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–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update May 24, 1998.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

Reporting Area	Legionellosis		Lyme Disease		Malaria		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal
	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998*	Cum. 1997	Cum. 1998
UNITED STATES	485	395	2,376	2,154	513	706	3,182	4,157	4,757	8,080	3,274
NEW ENGLAND	24	27	677	458	19	31	37	81	147	209	634
Maine	1	1	1	3	3	1	1	-	U	15	101
N.H.	3	4	14	7	3	2	1	-	2	6	33
Vt.	1	4	4	3	-	2	3	-	1	3	30
Mass.	9	8	157	75	11	16	23	39	119	117	214
R.I.	4	5	31	43	2	2	-	1	25	16	35
Conn.	6	5	470	327	-	8	9	41	U	52	221
MID. ATLANTIC	102	69	1,328	1,346	132	210	100	201	1,051	1,430	709
Upstate N.Y.	30	17	767	445	34	34	16	20	140	194	509
N.Y. City	19	3	7	74	65	126	23	38	667	753	U
N.J.	4	12	193	344	19	37	18	87	244	293	86
Pa.	49	37	361	483	14	13	43	56	U	190	114
E.N. CENTRAL	151	145	39	36	46	72	452	352	282	853	48
Ohio	64	63	34	12	3	7	74	110	5	148	35
Ind.	23	25	4	10	2	7	97	75	6	76	4
Ill.	14	5	-	4	15	31	168	36	271	437	2
Mich.	30	31	1	10	25	17	89	59	U	140	6
Wis.	20	21	U	U	1	10	24	72	U	52	1
W.N. CENTRAL	37	26	22	26	29	23	71	82	118	238	345
Minn.	3	1	9	14	13	9	3	13	U	64	63
Iowa	4	7	9	1	3	6	-	3	U	27	77
Mo.	14	2	1	9	9	5	55	45	82	92	17
N. Dak.	-	2	-	-	2	-	-	-	U	5	74
S. Dak.	1	1	-	-	-	-	1	-	13	4	54
Nebr.	12	10	1	1	-	1	4	1	5	8	3
Kans.	3	3	2	1	2	2	8	20	18	38	57
S. ATLANTIC	64	54	220	186	124	117	1,332	1,673	862	1,484	1,030
Del.	7	6	5	39	1	2	15	14	-	17	17
Md.	12	11	147	117	43	41	318	469	137	140	253
D.C.	4	3	4	7	7	7	38	62	55	46	-
Va.	7	11	20	3	21	29	85	134	118	140	330
W. Va.	N	N	5	1	-	-	2	3	24	26	41
N.C.	6	6	12	7	10	7	369	344	200	172	136
S.C.	5	2	1	1	4	9	155	206	142	166	72
Ga.	2	-	2	1	15	14	238	292	186	273	81
Fla.	20	15	24	10	23	8	112	149	U	504	100
E.S. CENTRAL	20	20	23	35	14	16	533	897	160	605	121
Ky.	12	6	6	5	2	4	59	76	U	88	19
Tenn.	5	7	8	12	8	4	265	375	U	221	70
Ala.	3	2	9	4	4	5	130	233	160	197	32
Miss.	U	5	U	14	U	3	79	213	U	99	U
W.S. CENTRAL	16	5	10	13	17	8	405	587	53	1,198	104
Ark.	-	-	5	4	1	2	52	94	53	98	21
La.	1	1	-	1	4	4	150	197	-	85	-
Okla.	6	1	-	2	2	2	24	57	U	104	83
Tex.	9	3	5	6	10	-	179	239	U	911	-
MOUNTAIN	29	26	3	6	24	36	98	81	214	250	80
Mont.	1	1	-	-	-	2	-	-	12	6	29
Idaho	-	2	1	-	3	-	-	-	4	5	-
Wyo.	1	1	-	1	-	2	1	-	2	2	40
Colo.	5	6	1	2	7	17	7	3	U	49	1
N. Mex.	2	1	-	-	9	5	12	4	27	19	1
Ariz.	4	7	-	1	4	4	73	65	108	112	7
Utah	15	5	-	-	1	2	3	3	32	11	2
Nev.	1	3	1	2	-	4	2	6	29	46	-
PACIFIC	42	23	54	48	108	193	154	203	1,870	1,813	203
Wash.	4	6	1	1	9	8	12	7	117	141	-
Oreg.	-	-	8	10	10	10	2	4	57	73	-
Calif.	37	16	45	37	88	169	140	190	1,598	1,461	183
Alaska	-	-	-	-	-	3	-	1	22	44	20
Hawaii	1	1	-	-	1	3	-	1	76	94	-
Guam	-	-	-	-	-	-	-	3	-	13	-
P.R.	-	-	-	-	-	3	109	110	46	88	28
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	-	-	-	-	98	8	54	-	-

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

*Additional information about areas displaying "U" for cumulative 1998 Tuberculosis cases can be found in Notice to Readers, *MMWR* Vol. 47, No. 2, p. 39.

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	1998	Cum. 1998	1998	Cum. 1998	Cum. 1998	Cum. 1997
UNITED STATES	539	590	10,456	13,295	3,715	4,438	1	23	-	13	36	73
NEW ENGLAND	33	33	132	305	52	81	-	-	-	1	1	10
Maine	2	3	13	41	-	5	-	-	-	-	-	-
N.H.	5	4	7	18	10	5	-	-	-	-	-	1
Vt.	2	2	11	7	1	3	-	-	-	-	-	-
Mass.	22	21	41	150	16	37	-	-	-	1	1	8
R.I.	2	2	9	26	25	8	-	-	-	-	-	-
Conn.	-	1	51	63	-	23	-	-	-	-	-	1
MID. ATLANTIC	76	84	650	1,142	527	656	-	9	-	2	11	16
Upstate N.Y.	31	18	155	146	148	124	-	2	-	-	2	4
N.Y. City	13	23	185	497	143	257	-	-	-	-	-	5
N.J.	28	27	140	169	90	126	U	7	U	1	8	2
Pa.	4	16	170	330	146	149	U	-	U	1	1	5
E.N. CENTRAL	83	88	1,319	1,420	368	743	-	9	-	3	12	8
Ohio	34	45	172	194	35	41	-	-	-	1	1	-
Ind.	22	8	89	144	36	53	-	2	-	1	3	-
Ill.	23	24	218	356	66	144	-	-	-	-	-	6
Mich.	-	11	745	619	215	229	-	7	-	1	8	2
Wis.	4	-	95	107	16	276	-	-	-	-	-	-
W.N. CENTRAL	39	28	857	982	171	263	-	-	-	-	-	11
Minn.	25	19	60	90	16	23	-	-	-	-	-	2
Iowa	1	3	373	143	30	20	-	-	-	-	-	-
Mo.	8	3	346	537	98	192	-	-	-	-	-	1
N. Dak.	-	-	3	9	4	3	-	-	-	-	-	-
S. Dak.	-	2	8	14	1	-	-	-	-	-	-	8
Nebr.	-	1	15	41	7	8	-	-	-	-	-	-
Kans.	5	-	52	148	15	17	U	-	U	-	-	-
S. ATLANTIC	115	98	910	677	542	524	1	2	-	5	7	3
Del.	-	-	2	14	-	3	-	-	-	1	1	-
Md.	35	40	169	112	80	78	-	-	-	1	1	1
D.C.	-	-	30	14	6	21	-	-	-	-	-	1
Va.	12	7	127	92	53	60	-	-	-	2	2	-
W. Va.	4	3	1	6	3	9	-	-	-	-	-	-
N.C.	15	16	49	103	104	108	-	-	-	-	-	1
S.C.	4	3	16	64	3	59	-	-	-	-	-	-
Ga.	24	20	241	128	86	57	-	-	-	1	1	-
Fla.	21	9	275	144	207	129	1	2	-	-	2	-
E.S. CENTRAL	31	36	173	335	187	347	-	-	-	-	-	1
Ky.	4	4	12	42	22	21	-	-	-	-	-	-
Tenn.	20	22	117	205	134	229	-	-	-	-	-	-
Ala.	7	8	44	49	31	38	-	-	-	-	-	1
Miss.	U	2	U	39	U	59	U	U	U	U	U	-
W.S. CENTRAL	30	28	2,040	2,658	631	521	-	-	-	-	-	4
Ark.	-	2	43	123	46	40	-	-	-	-	-	-
La.	13	6	40	108	47	63	-	-	-	-	-	-
Okla.	15	18	282	823	31	18	-	-	-	-	-	-
Tex.	2	2	1,675	1,604	507	400	-	-	-	-	-	4
MOUNTAIN	66	64	1,658	1,960	419	422	-	-	-	-	-	7
Mont.	-	-	51	50	3	5	-	-	-	-	-	-
Idaho	-	1	136	76	18	14	-	-	-	-	-	-
Wyo.	-	1	23	20	2	14	-	-	-	-	-	-
Colo.	14	9	128	224	52	83	-	-	-	-	-	-
N. Mex.	5	6	83	152	167	145	-	-	-	-	-	-
Ariz.	37	23	1,052	906	114	84	-	-	-	-	-	5
Utah	4	3	116	337	38	49	-	-	-	-	-	-
Nev.	6	21	69	195	25	28	U	-	U	-	-	2
PACIFIC	66	131	2,717	3,816	818	881	-	3	-	2	5	13
Wash.	3	2	570	261	63	34	-	-	-	1	1	-
Oreg.	29	22	205	192	57	55	-	-	-	-	-	-
Calif.	28	101	1,907	3,268	687	775	-	3	-	1	4	10
Alaska	1	1	12	22	6	11	-	-	-	-	-	-
Hawaii	5	5	23	73	5	6	U	-	U	-	-	3
Guam	-	-	-	-	-	3	U	-	U	-	-	-
P.R.	2	-	23	176	245	332	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	5	1	1	28	26	U	-	U	-	-	1

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

*Of 131 cases among children aged <5 years, serotype was reported for 73 and of those, 31 were type b.

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

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 27, 1998, and June 21, 1997 (25th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997
UNITED STATES	1,472	1,977	3	229	339	78	2,050	2,537	5	253	64
NEW ENGLAND	68	116	-	-	7	15	358	534	-	33	-
Maine	4	11	-	-	-	-	5	6	-	-	-
N.H.	4	12	-	-	-	6	34	61	-	-	-
Vt.	1	2	-	-	-	3	34	166	-	-	-
Mass.	33	62	-	-	2	6	269	279	-	6	-
R.I.	3	8	-	-	4	-	3	12	-	-	-
Conn.	23	21	-	-	1	-	13	10	-	27	-
MID. ATLANTIC	139	214	-	15	37	10	259	203	1	112	19
Upstate N.Y.	36	57	-	3	8	10	130	76	1	105	4
N.Y. City	15	34	-	4	1	-	4	46	-	2	15
N.J.	37	41	U	1	6	U	5	11	U	4	-
Pa.	51	82	U	7	22	U	120	70	U	1	-
E.N. CENTRAL	221	288	-	40	37	4	187	248	-	-	3
Ohio	83	104	-	19	14	-	71	72	-	-	-
Ind.	41	33	-	4	4	4	53	29	-	-	-
Ill.	47	85	-	1	8	-	14	34	-	-	-
Mich.	26	38	-	16	10	-	32	31	-	-	-
Wis.	24	28	-	-	1	-	17	82	-	-	3
W.N. CENTRAL	118	145	-	20	11	14	168	139	-	13	-
Minn.	19	24	-	10	4	14	100	87	-	-	-
Iowa	18	31	-	6	6	-	39	8	-	-	-
Mo.	48	66	-	3	-	-	12	22	-	2	-
N. Dak.	-	1	-	1	-	-	-	1	-	-	-
S. Dak.	6	4	-	-	-	-	4	3	-	-	-
Nebr.	4	5	-	-	1	-	5	3	-	-	-
Kans.	23	14	U	-	-	U	8	15	U	11	-
S. ATLANTIC	254	328	1	33	41	5	126	207	3	9	17
Del.	1	4	-	-	-	-	1	-	-	-	-
Md.	22	34	-	-	1	-	25	77	-	-	-
D.C.	-	5	-	-	-	-	1	2	-	-	-
Va.	23	34	-	4	6	-	6	25	-	-	1
W. Va.	7	13	-	-	-	-	1	4	-	-	-
N.C.	36	59	1	8	7	2	44	46	2	5	10
S.C.	37	38	-	4	10	1	14	11	-	-	6
Ga.	58	61	-	1	5	1	6	6	1	1	-
Fla.	70	80	-	16	12	1	28	36	-	3	-
E.S. CENTRAL	103	143	-	1	19	-	48	48	-	-	1
Ky.	16	38	-	-	3	-	18	12	-	-	-
Tenn.	40	44	-	1	3	-	17	18	-	-	-
Ala.	47	44	-	-	6	-	13	12	-	-	1
Miss.	U	17	U	U	7	U	U	6	U	U	-
W.S. CENTRAL	179	192	-	31	41	6	135	72	1	68	3
Ark.	22	25	-	-	-	1	18	2	-	-	-
La.	35	38	-	2	11	-	1	11	-	-	-
Okla.	26	23	-	-	-	-	13	9	-	-	-
Tex.	96	106	-	29	30	5	103	50	1	68	3
MOUNTAIN	85	118	-	21	46	19	456	678	-	5	4
Mont.	3	7	-	-	-	-	1	7	-	-	-
Idaho	4	8	-	3	2	11	188	432	-	-	1
Wyo.	3	1	-	1	1	-	7	4	-	-	-
Colo.	19	33	-	4	3	7	93	174	-	-	-
N. Mex.	15	19	N	N	N	-	64	32	-	1	-
Ariz.	29	27	-	4	29	-	68	15	-	1	3
Utah	9	11	-	3	6	1	23	4	-	2	-
Nev.	3	12	U	6	5	U	12	10	U	1	-
PACIFIC	305	433	2	68	100	5	313	408	-	13	17
Wash.	41	51	-	5	12	3	139	179	-	9	3
Oreg.	56	89	N	N	N	2	19	23	-	-	-
Calif.	203	290	2	48	71	-	149	193	-	2	7
Alaska	1	1	-	2	5	-	2	2	-	-	-
Hawaii	4	2	U	13	12	U	4	11	U	2	7
Guam	-	1	U	-	1	U	-	-	U	-	-
P.R.	4	8	-	1	4	-	2	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	2	4	U	1	-	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending June 27, 1998 (25th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	328	237	56	21	6	8	16
Boston, Mass.	U	U	U	U	U	U	U
Bridgeport, Conn.	27	21	3	2	1	-	1
Cambridge, Mass.	15	13	1	1	-	-	2
Fall River, Mass.	22	16	4	2	-	-	-
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	28	18	7	3	-	-	2
Lynn, Mass.	9	8	1	-	-	-	-
New Bedford, Mass.	25	19	4	2	-	-	1
New Haven, Conn.	42	32	7	1	-	2	2
Providence, R.I.	47	35	4	2	3	3	-
Somerville, Mass.	5	4	1	-	-	-	-
Springfield, Mass.	27	17	6	2	1	1	-
Waterbury, Conn.	32	20	9	3	-	-	-
Worcester, Mass.	49	34	9	3	1	2	8
MID. ATLANTIC	2,134	1,431	458	168	46	30	100
Albany, N.Y.	46	28	8	9	-	1	3
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	74	60	12	1	1	-	9
Camden, N.J.	29	13	8	5	-	3	1
Elizabeth, N.J.	22	9	10	1	1	1	-
Erie, Pa.	40	32	6	2	-	-	-
Jersey City, N.J.	31	19	8	2	1	1	-
New York City, N.Y.	1,156	770	252	102	21	11	46
Newark, N.J.	U	U	U	U	U	U	U
Paterson, N.J.	19	10	5	1	2	-	-
Philadelphia, Pa.	300	183	75	21	12	9	13
Pittsburgh, Pa.§	44	27	11	4	2	-	3
Reading, Pa.	30	25	3	1	1	-	3
Rochester, N.Y.	124	89	26	5	2	2	9
Schenectady, N.Y.	24	19	4	1	-	-	2
Scranton, Pa.	28	23	4	1	-	-	2
Syracuse, N.Y.	59	48	5	2	2	2	6
Trenton, N.J.	61	43	14	4	-	-	2
Utica, N.Y.	24	15	5	3	1	-	-
Yonkers, N.Y.	23	18	2	3	-	-	1
E.N. CENTRAL	1,960	1,320	389	152	60	38	92
Akron, Ohio	44	31	7	5	1	-	-
Canton, Ohio	28	20	5	2	1	-	2
Chicago, Ill.	386	234	82	39	17	13	21
Cincinnati, Ohio	107	82	16	5	-	4	13
Cleveland, Ohio	150	104	28	6	3	9	3
Columbus, Ohio	156	103	33	11	8	1	10
Dayton, Ohio	108	74	22	10	1	1	5
Detroit, Mich.	224	122	59	30	11	2	9
Evansville, Ind.	52	39	6	6	-	1	1
Fort Wayne, Ind.	47	39	5	2	1	-	1
Gary, Ind.	14	10	3	1	-	-	-
Grand Rapids, Mich.	49	36	9	3	-	1	9
Indianapolis, Ind.	155	100	38	9	4	4	-
Lansing, Mich.	32	24	4	1	3	-	1
Milwaukee, Wis.	119	87	24	5	3	-	3
Peoria, Ill.	51	41	8	1	1	-	4
Rockford, Ill.	47	33	10	4	-	-	3
South Bend, Ind.	63	48	8	3	3	1	1
Toledo, Ohio	83	60	17	3	3	-	5
Youngstown, Ohio	45	33	5	6	-	1	1
W.N. CENTRAL	754	545	121	35	21	17	43
Des Moines, Iowa	158	111	26	13	6	2	11
Duluth, Minn.	24	17	5	1	1	-	2
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	94	58	16	1	2	2	6
Lincoln, Nebr.	32	27	4	1	-	-	2
Minneapolis, Minn.	161	130	19	3	5	4	11
Omaha, Nebr.	71	52	9	4	5	1	2
St. Louis, Mo.	120	74	29	8	1	8	-
St. Paul, Minn.	94	76	13	4	1	-	9
Wichita, Kans.	U	U	U	U	U	U	U

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	3,234	1,947	731	363	82	106	101
Atlanta, Ga.	1,971	1,158	478	224	38	73	40
Baltimore, Md.	206	113	51	31	6	3	16
Charlotte, N.C.	93	59	16	9	3	6	8
Jacksonville, Fla.	148	102	25	14	4	3	4
Miami, Fla.	107	72	25	7	2	1	-
Norfolk, Va.	50	37	3	4	3	3	2
Richmond, Va.	59	30	16	8	2	-	2
Savannah, Ga.	53	28	6	11	6	2	5
St. Petersburg, Fla.	75	58	9	6	-	2	6
Tampa, Fla.	163	110	29	16	6	2	11
Washington, D.C.	295	166	73	33	12	11	7
Wilmington, Del.	14	14	-	-	-	-	-
E.S. CENTRAL	795	536	162	56	20	18	54
Birmingham, Ala.	180	126	30	7	8	6	16
Chattanooga, Tenn.	67	46	17	4	-	-	5
Knoxville, Tenn.	86	63	15	3	3	2	8
Lexington, Ky.	65	39	17	5	2	2	8
Memphis, Tenn.	113	71	26	11	3	2	8
Mobile, Ala.	89	55	17	13	-	4	1
Montgomery, Ala.	65	48	12	2	2	1	1
Nashville, Tenn.	130	88	28	11	2	1	7
W.S. CENTRAL	1,344	862	290	112	42	38	74
Austin, Tex.	70	45	13	6	4	2	5
Baton Rouge, La.	42	23	12	6	1	-	-
Corpus Christi, Tex.	44	32	10	1	-	1	5
Dallas, Tex.	223	133	52	19	11	8	3
El Paso, Tex.	72	46	15	6	-	5	7
Ft. Worth, Tex.	91	67	15	6	-	3	4
Houston, Tex.	315	201	64	30	12	8	19
Little Rock, Ark.	72	43	13	7	3	6	4
New Orleans, La.	125	81	28	11	2	3	-
San Antonio, Tex.	186	129	38	13	6	-	18
Shreveport, La.	U	U	U	U	U	U	U
Tulsa, Okla.	104	62	30	7	3	2	9
MOUNTAIN	907	598	187	80	20	22	60
Albuquerque, N.M.	94	53	25	12	3	1	8
Boise, Idaho	35	21	9	5	-	-	-
Colo. Springs, Colo.	49	34	7	5	1	2	1
Denver, Colo.	111	78	20	7	1	5	14
Las Vegas, Nev.	202	134	45	14	3	6	9
Ogden, Utah	U	U	U	U	U	U	U
Phoenix, Ariz.	160	100	32	15	7	6	11
Pueblo, Colo.	27	16	4	6	1	-	1
Salt Lake City, Utah	112	76	27	7	1	1	5
Tucson, Ariz.	117	86	18	9	3	1	11
PACIFIC	2,190	1,570	391	146	43	40	157
Berkeley, Calif.	11	7	2	1	-	1	1
Fresno, Calif.	118	92	12	8	4	2	10
Glendale, Calif.	39	28	10	1	-	-	1
Honolulu, Hawaii	82	49	23	4	2	4	7
Long Beach, Calif.	59	46	12	1	-	-	8
Los Angeles, Calif.	771	544	139	63	17	8	48
Pasadena, Calif.	25	19	5	1	-	-	3
Portland, Oreg.	164	127	24	5	3	5	7
Sacramento, Calif.	201	153	33	8	3	4	21
San Diego, Calif.	112	80	19	8	2	3	10
San Francisco, Calif.	129	83	29	14	-	3	11
San Jose, Calif.	154	108	28	12	3	3	14
Santa Cruz, Calif.	48	38	9	1	-	-	2
Seattle, Wash.	119	82	18	9	6	4	1
Spokane, Wash.	63	47	11	5	-	-	6
Tacoma, Wash.	95	67	17	5	3	3	7
TOTAL	13,646¶	9,046	2,785	1,133	340	317	697

U: Unavailable -: no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 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 this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

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The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format and on a paid subscription basis for paper copy. To receive an electronic copy on Friday of each week, send an e-mail message to *listserv@listserv.cdc.gov*. The body content should read *SUBscribe mmwr-toc*. Electronic copy also is available from CDC's World-Wide Web server at *http://www.cdc.gov/* 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.

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