CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

October 29, 1993 / Vol. 42 / No. 42

MMWR
MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Measles — United States, First 26 Weeks, 1993

As of July 3, 1993 (week 26), local and state health departments had reported a provisional total of 167 measles cases for 1993 (*1*)—the lowest total reported for the first 26 weeks of any year since surveillance began in 1943 and a 99% decrease from the 13,787 cases reported during the first 26 weeks of 1990, the peak of the recent resurgence (*2*). Cases were reported from 18 states. This report summarizes the epidemiologic characteristics of measles cases reported for the first 26 weeks of 1993 and compares them with cases reported during 1989–1991.

Characteristics

In addition to the 167 measles cases reported through CDC's National Notifiable Diseases Surveillance System (NNDSS), eight additional cases not reported through NNDSS as of week 26 were identified by CDC's National Immunization Program. Of these 175 reported measles cases, 102 (58%) were acquired indigenously; one case was acquired in Puerto Rico. Of 14 (8%) imported cases, the country of acquisition was known for 12: five were acquired in Germany, two in Japan, and one each in Haiti, Liberia, the Philippines, Sierra Leone, and El Salvador. A total of 58 (33%) cases were epidemiologically linked to imported cases.

Of the 98 (56%) cases for which serologic testing for measles was reported, 93 were serologically confirmed. Although the other five cases were seronegative, all met the standard CDC case definition for measles (*3*).

Of the 175 case-patients, 54 (31%) were aged <5 years, including 17 (10%) aged <12 months. In addition, 77 (44%) case-patients were aged 5–19 years, and 44 (25%) were aged ≥20 years (Table 1).

Vaccination Status

Overall, 39 (22%) reported case-patients had received one dose of measles-containing vaccine on or after the first birthday; no cases were reported among persons who had received two doses of vaccine. A total of 47 (27%) reported case-patients were unvaccinated but vaccine-eligible (i.e., U.S. citizens aged ≥16 months without medical, religious, or philosophic exemption to vaccination) (Table 1). Other unvaccinated groups included 35 (20%) persons with philosophic ex-

Measles — Continued

emption to vaccination, 30 (17%) who were aged <16 months, 10 (6%) who were born before 1957, and 10 (6%) who were non-U.S. citizens. Vaccination status varied by age group: 36% of persons aged 5–19 years were adequately vaccinated, compared with 14% of children aged 1–4 years (Table 1).

Outbreaks

The largest measles outbreaks were reported from California (Los Angeles County [29 cases] and Sonoma County [40 cases]) and Vermont (Chittenden County [20 cases]). In all three counties, 60%–78% of cases occurred among school-aged persons (i.e., aged 5–19 years). In the Los Angeles County and Chittenden County outbreaks, previous receipt of one dose of measles-containing vaccine was documented for 40% and 82% of school-aged persons, respectively. In Sonoma County, the outbreak involved an alternative-lifestyle community; because most persons claimed philosophic exemption to vaccination, 95% were unvaccinated. The index patient of this outbreak had acquired measles in Germany.

Two small outbreaks were reported from Connecticut (Hartford County [seven cases]) and Honolulu (nine cases). In Hartford County, four of the seven cases occurred among adults aged ≥25 years; although the specific source of the outbreak was unidentified, it probably was related to ongoing measles transmission in Puerto Rico. In Honolulu, seven of the nine cases occurred among preschool-aged children; the index patient of this outbreak had acquired measles in the Philippines.

Reported by: State and local health depts. M Nelson, PhD, L Dales, MD, Immunization Br, California Dept of Health Svcs. P Frederick, MPH, Los Angeles County Dept of Health Svcs, Los Angeles. R Houseknecht, PhD, State Epidemiologist, Vermont Dept of Health. P Lamb, Connecticut State Dept of Public Health and Addiction Svcs. National Immunization Program, CDC.

Editorial Note: During 1989–1991, widespread measles activity occurred in the United States; however, in 1992, reported measles cases decreased sharply (*4*). The sus-

TABLE 1. Age and vaccination status of 175 reported measles case-patients — United States, first 26 weeks, 1993

Age group (yrs)	Vaccinated*				Unvaccinated						Total	
	2 doses		1 dose		Vaccine-eligible†		Not routinely eligible for vaccination§		Other¶			
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
<12 mos	NE**	—	NE	—	NE	—	17	(100)	NE	—	**17**	**(10)**
1– 4 yrs	0	—	5	(14)	8	(22)	14††	(38)	10§§	(27)	**37**	**(21)**
5–19 yrs	0	—	28	(36)	18	(23)	0	—	31§§	(40)	**77**	**(44)**
≥20 yrs	0	—	6	(14)	21	(48)	11	(25)	6	(14)	**44**	**(25)**
Total	**0**	**—**	**39**	**(22)**	**47**	**(27)**	**42**	**(24)**	**47**	**(27)**	**175**	**(100)**

* At least one dose of measles-containing vaccine on or after the first birthday.
† U.S. citizens aged ≥16 months without medical, religious, or philosophic exemption to vaccination.
§ Persons aged <16 months, born before 1957, with medical contraindication, or with documented physician or serologic evidence of measles immunity.
¶ Non-U.S. citizens and persons with religious or philosophic exemption to vaccination.
** Not eligible.
†† Thirteen (93%) case-patients were aged <16 months (i.e., less than the routine age of vaccination).
§§ Seven (70%) 1–4-year-olds and 28 (90%) 5–19-year-olds in this category had philosophic exemption to vaccination.

Measles — Continued

tained decline during the first 26 weeks of 1993 represents the lowest total of reported measles cases in the history of measles surveillance in the United States. From 1985 through 1992, an average of 54% of the annual total of measles cases had been reported by week 26 (range: 47%–67%) (CDC unpublished data, 1993). Based on current reporting trends—and if no large outbreaks occur—fewer than 500 measles cases may be reported in 1993.

During 1993, measles cases have involved predominantly school-aged persons, and the largest outbreaks have occurred among school-aged persons who had received one dose of measles vaccine (i.e., vaccine failures). In contrast, during 1989–1991, cases involved predominantly preschool-aged children, and the largest outbreaks occurred among unvaccinated preschool-aged children living in large urban areas (*5–7*). In addition, during 1993, the largest measles outbreak among predominantly preschool-aged children has involved nine cases in Hawaii; during 1989–1991, several outbreaks among such children involved more than 1000 cases.

The decline in measles incidence during 1992 and 1993 most likely reflects increased measles vaccination coverage levels among preschool-aged children. The estimated level of measles vaccination coverage for children aged 2 years was substantially higher in 1991 (83%) than in 1985 (61%) (*8*) (CDC, unpublished data, 1993). In addition, this decline may reflect a decrease in measles importation from other countries in the Western Hemisphere associated with aggressive measles-control programs.

The risk for measles outbreaks among school-aged persons and college entrants can be reduced through systematic efforts to introduce and enforce vaccination with a second dose of measles vaccine among members of these age groups (*9*). In addition, efforts must be continued to further increase measles vaccination levels among preschool-aged children to ensure against the recurrence of measles outbreaks among young children in urban settings.

Although the low reported incidence of measles during the first 26 weeks of 1993 suggests that transmission has been interrupted in many parts of the United States, the report of 102 indigenous cases without a known source indicates that undetected transmission is occurring in some areas. Reports of individual cases of measles should be immediately and thoroughly investigated and, when possible, serologically confirmed; rapid implementation of appropriate vaccination strategies can prevent small clusters of cases from becoming large outbreaks.

References

1. CDC. Table II. Cases of selected notifiable diseases, United States, weeks ending July 3, 1993, and June 27, 1992 (26th week). MMWR 1993;42:510.
2. CDC. Table II. Cases of specified notifiable diseases, United States, weeks ending June 30, 1990, and July 1, 1989 (26th week). MMWR 1990;39:448.
3. CDC. Case definitions for public health surveillance. MMWR 1990;39(no. RR-13):23.
4. CDC. Measles—United States, 1992. MMWR 1993;42:378–81.
5. Atkinson WL, Orenstein WA, Krugman S. The resurgence of measles in the United States, 1989–1990. Annu Rev Med 1992;43:451–63.
6. Gindler JS, Atkinson WL, Markowitz LE, Hutchins SS. Epidemiology of measles in the United States in 1989 and 1990. Pediatr Infect Dis J 1992;11:841–6.
7. Atkinson WL, Hadler SC, Redd SB, Orenstein WA. Measles surveillance—United States, 1991. In: CDC surveillance summaries (November). MMWR 1992;41(no. SS-6):1–12.

Measles — Continued

8. Bureau of the Census. Statistical abstract of the United States, 1993. 113th ed. Washington, DC: US Department of Commerce, Bureau of the Census, 1993.
9. ACIP. Measles prevention: recommendations of the Immunization Practices Advisory Committee (ACIP). MMWR 1989;38(no. SS-9).

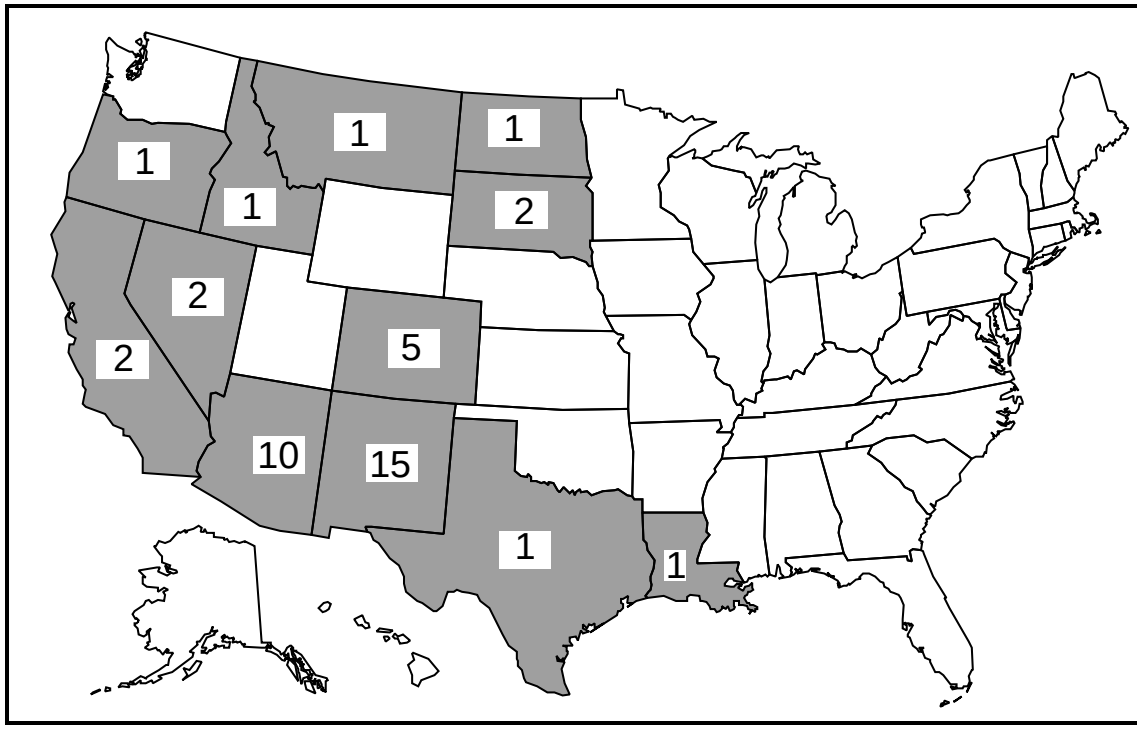
Emerging Infectious Diseases

Update: Hantavirus Pulmonary Syndrome — United States, 1993

A unique hantavirus has been identified as the cause of the outbreak of respiratory illness (hantavirus pulmonary syndrome [HPS]) first recognized in the southwestern United States in May 1993 (*1–3*). The habitat of the principal rodent reservoir for this virus, *Peromyscus maniculatus* (deer mouse), extends throughout most of the United States except the Southeast (*2*). Through October 21, 1993, HPS has been confirmed in 42 persons reported to CDC from 12 states (Figure 1). This report summarizes major clinical, pathologic, and diagnostic findings in patients with this newly recognized syndrome; addresses the use of the investigational antiviral drug ribavirin; and presents revised screening criteria for national surveillance.

The earliest retrospectively confirmed case of HPS occurred in July 1991; the two most recently reported case-patients had onsets of illness in September 1993 (Figure 2). Case-patients' ages have ranged from 12 years to 69 years (median: 32 years); 22 (52%) were male. Overall, 26 (62%) case-patients have died. Twenty-three (55%) case-patients were American Indians; 15 (36%), non-Hispanic whites; three (7%), Hispanic; and one (2%), black.

FIGURE 1. Number of cases of hantavirus pulmonary syndrome, by state — July 7, 1991–October 21, 1993

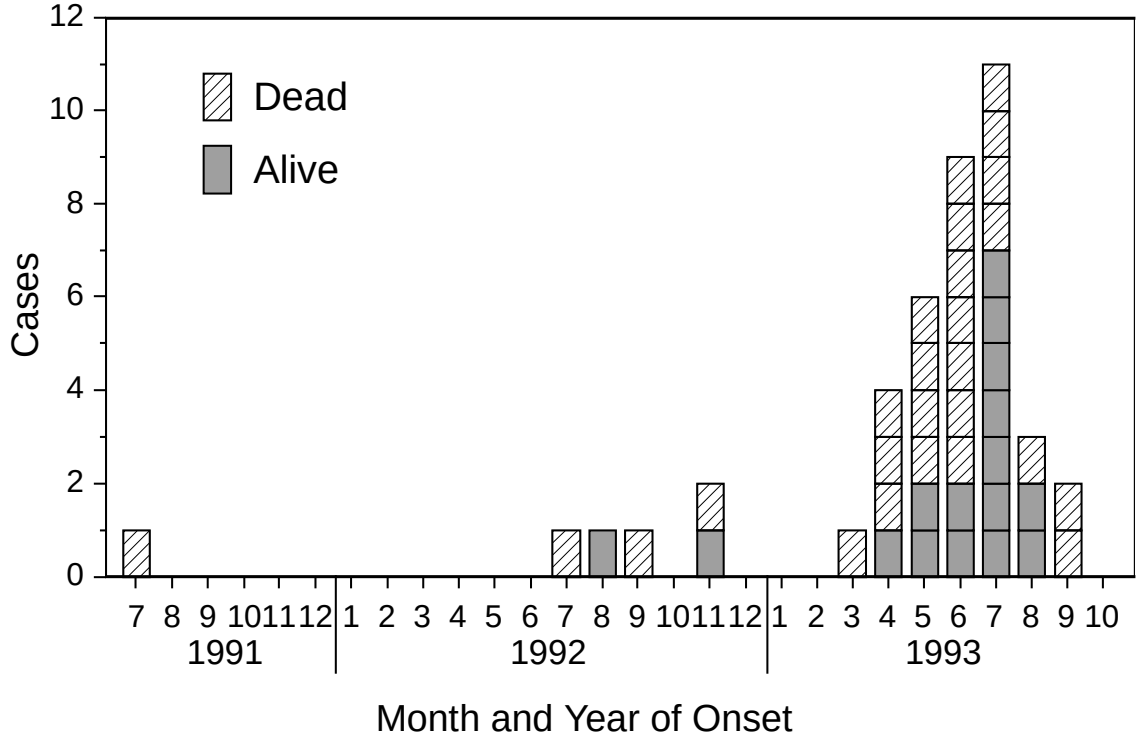


Hantavirus Pulmonary Syndrome — Continued

Clinical findings. Onset of illness has been characterized by a prodrome consisting of fever, myalgia, and variable respiratory symptoms (e.g., cough) followed by the abrupt onset of acute respiratory distress. Other symptoms reported during the early phase of illness have included headache and gastrointestinal complaints (e.g., abdominal pain, nausea, and/or vomiting). Among 17 case-patients studied in the four-corners region (New Mexico, Arizona, Colorado, and Utah), hemoconcentration was noted on admission in 13 (76%) and thrombocytopenia in 12 (71%). In all case-patients reviewed, bilateral pulmonary infiltrates developed within 2 days of hospitalization. The hospital course was characterized by fever, hypoxia, and hypotension; recovery in survivors has been without sequelae.

Pathologic findings. Postmortem examination has routinely revealed serous pleural effusions and heavy edematous lungs. Although histopathologic findings in the lung are characteristic of the illness, the degree of involvement has varied among patients. Microscopic findings have included interstitial infiltrates of mononuclear cells in the alveolar septa, congestion, septal and alveolar edema with or without mononuclear cell exudate, focal hyaline membranes, and occasional alveolar hemorrhage. Cellular debris and neutrophils are not prominent. Large mononuclear cells with the appearance of immunoblasts were found in red and periarteriolar white pulp of the spleen, hepatic portal triads, and other sites. Hantavirus antigens can be detected by immunohistochemistry (IHC) in formalin-fixed tissues using specific monoclonal and polyclonal antibodies. Hantavirus antigens, localized primarily in endothelial cells, have been detected in most organs, with marked accumulations in the lungs.

FIGURE 2. Number of cases of hantavirus pulmonary syndrome, by month and year of onset — United States, July 7, 1991–October 21, 1993



Hantavirus Pulmonary Syndrome — Continued

Virologic diagnosis. Adequate serum specimens were available for antibody testing in 39 of the 42 confirmed case-patients; 38 had detectable antibodies against heterologous hantavirus antigens, particularly Prospect Hill virus. One additional case-patient had antibodies detected only with a recombinant protein serologic assay (*4*). Twenty-seven case-patients had polymerase chain reaction (PCR) evidence of hantavirus ribonucleic acid in frozen lung tissue and/or positive immunohistochemical staining of formalin-fixed tissue for hantavirus antigen, in addition to compatible pathologic findings. Each of three tests—serology, PCR, and IHC—were completed for 16 case-patients. The three tests were concordantly positive for 15 case-patients; antibodies against heterologous antigens were not detected in the serum of one patient. In addition, in seven of these patients, PCR testing of peripheral blood mononuclear cells obtained early in the course of disease was positive.

Clinical screening criteria. To standardize the investigation and laboratory assessment of persons with possible HPS in the United States, clinical screening criteria were developed by CDC in consultation with the Council of State and Territorial Epidemiologists to detect persons with an illness similar to that of persons with confirmed hantavirus infection reported in the initial outbreak in the four-corners region. Cases meeting the clinical screening criteria (see box) should be reported to CDC through state health departments. In addition, patients meeting these clinical screening criteria will need to have laboratory evidence of acute hantavirus infection before they can be confirmed as having HPS.

Reported by: S Allen, R Feddersen, K Foucar, MD, B Hjelle, MD, D James, S Jenison, MD, F Koster, MD, H Levy, MD, G Mertz, MD, S Simpson, J Williams, Dept of Pathology, and Dept of Medicine, Univ of New Mexico School of Medicine, Albuquerque; K Nolte, MD, New Mexico Office of Medical Investigations; CM Sewell, DrPH, State Epidemiologist, New Mexico Dept of Health. L Sands, DO, State Epidemiologist, Arizona Dept of Health Svcs. GW Rutherford, III, MD, State Epidemiologist, California Dept of Health Svcs. RE Hoffman, MD, State Epidemiologist, Colorado Dept of Health. FR Dixon, MD, State Epidemiologist, Div of Health, Idaho Dept of Health and Welfare. L McFarland, DrPH, State Epidemiologist, Office of Public Health, Louisiana Dept of Health and Hospitals. TA Damrow, PhD, State Epidemiologist, Montana State Dept of Health and Environmental Sciences. A DiSalvo, MD, State Health Laboratory, Div of Health, Nevada State Dept of Human Resources. LA Shireley, MPH, State Epidemiologist, North Dakota State Dept of Health and Consolidated Laboratories. D Fleming, MD, State Epidemiologist, State Health Div, Oregon Dept of Human Resources. KA Senger, State Epidemiologist, South Dakota State Dept of Health. DM Simpson, MD, State Epidemiologist, Texas Dept of Health. CR Nichols, MPA, State Epidemiologist, Utah Dept of Health. Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Clinical syndromes previously associated with hantavirus infections have been characterized by hemorrhagic features and by renal involvement (*5*). In comparison, the clinical manifestations of hantavirus infection in the United States have been distinguished by the predominance of respiratory symptoms and only limited renal involvement (*6,7*).

No defined set of symptoms and signs reliably distinguishes HPS at the time of presentation from other forms of noncardiogenic pulmonary edema or adult respiratory distress syndrome. In addition to thrombocytopenia and hemoconcentration, other abnormalities have included leukocytosis, increased band forms on differential, hypoalbuminemia, and lactic acidosis. Efforts are ongoing both to identify clinical and laboratory features that distinguish HPS from other infections with similar manifestations and to develop improved diagnostic tests for rapid early diagnosis (*7*). Serologic

Hantavirus Pulmonary Syndrome — Continued

Screening Criteria for Hantavirus Pulmonary Syndrome in Persons with Unexplained Respiratory Illness

Potential case-patients must have one of the following:

- a febrile illness (temperature ≥101 F [≥38.3 C]) occurring in a previously healthy person characterized by unexplained adult respiratory distress syndrome, OR bilateral interstitial pulmonary infiltrates developing within 1 week of hospitalization with respiratory compromise requiring supplemental oxygen,

OR

- an unexplained respiratory illness resulting in death in conjunction with an autopsy examination demonstrating noncardiogenic pulmonary edema without an identifiable specific cause of death.

Potential case-patients are to be *excluded* if they have any of the following:

- a predisposing underlying medical condition (e.g., severe underlying pulmonary disease, solid tumors or hematologic malignancies, congenital or acquired immunodeficiency disorders, or medical conditions [e.g., rheumatoid arthritis or organ transplant recipients] requiring immunosuppressive drug therapy [e.g., steroids or cytotoxic chemotherapy]).
- an acute illness that provides a likely explanation for the respiratory illness (e.g., recent major trauma, burn, or surgery; recent seizures or history of aspiration; bacterial sepsis; another respiratory disorder such as respiratory syncytial virus in young children; influenza; or legionella pneumonia).

Confirmed case-patients must have the following:

- at least one specimen (i.e., serum and/or tissue) available for laboratory testing for evidence of hantavirus infection.

AND

- in a patient with a compatible clinical illness, either serology (presence of hantavirus-specific immunoglobulin M or rising titers of immunoglobulin G), polymerase chain reaction for hantavirus ribonucleic acid, or immunohistochemistry for hantavirus antigen is positive.

tests in combination with PCR and IHC should be used in confirming the diagnosis of acute hantavirus infection.

The prognosis is poorest in case-patients with shock and with severe lactic acidosis. Anecdotal reports suggest that periods of severe hypoxia or hypotension before stabilization in the intensive-care setting adversely affect survival. Supportive measures are the basis for therapy; severe hypoxia and overhydration should be avoided or prevented. Pressors or cardiotonic drugs should be employed to maintain perfusion without excessive fluid administration. Testing for alternative diagnoses should be

Hantavirus Pulmonary Syndrome — Continued

done, and appropriate treatment to cover infections mimicking HPS should be administered early.

Observed racial/ethnic differences and the age distribution of cases may reflect differences in activities that facilitate exposure to the rodent reservoir for this virus, usually in rural settings. For example, persons participating in agricultural activities near habitats of infected rodents may be at greater risk for infection.

Previously isolated hantaviruses have demonstrated in vitro sensitivity to the investigational antiviral drug ribavirin. Based on this finding and evidence of activity of intravenous ribavirin therapy against Hantaan virus infection (*8*), intravenous ribavirin has been made available as an investigational agent through a CDC-sponsored open label protocol for patients with HPS. Whether treatment with ribavirin has had any beneficial effect on the course of HPS is unknown. Further plans for study of ribavirin are under consideration by a collaborative working group sponsored by the National Institute for Allergy and Infectious Diseases, National Institutes of Health.

Physicians who want to enroll patients should contact the CDC Ribavirin Officer of the Day (telephone [404] 639-1510 weekdays or [404] 639-2888 evenings and weekends). Alternatively, physicians in the four-corners area may contact the enrolling coinvestigator in their state. Physicians must report patients meeting the screening criteria for HPS and submit appropriate clinical samples to state health departments to confirm the diagnosis.

References

1. CDC. Outbreak of acute illness—southwestern United States, 1993. MMWR 1993;42:421–4.
2. CDC. Update: outbreak of hantavirus infection—southwestern United States, 1993. MMWR 1993;42:441–3.
3. CDC. Update: outbreak of hantavirus infection—southwestern United States, 1993. MMWR 1993;42:477–9.
4. CDC. Progress in the development of hantavirus diagnostic assays—United States. MMWR 1993;42:770–1.
5. World Health Organization. Haemorrhagic fever with renal syndrome: memorandum from a WHO meeting. Bull WHO 1983;61:269–75.
6. Kim D. Clinical analysis of 111 fatal cases of epidemic hemorrhagic fever. Amer J Med 1965;39:218–20.
7. Tsai TF. Hemorrhagic fever with renal syndrome: clinical aspects. Lab Anim Sci1987;37:419–27.
8. Huggins JW, Hsiang CM, Cosgriff TM, et al. Prospective, double-blind, concurrent, placebo-controlled clinical trial of intravenous ribavirin therapy of hemorrhagic fever with renal syndrome. J Infect Dis 1991;164:1119–27.

Current Trends

Home-Health and Hospice Care — United States, 1992

An estimated 9.5 million persons in the United States have difficulty performing basic life activities because of mental or physical health conditions (*1*). In recent years, an increasing range of home-care services—including home-health care and hospice care—have been created for persons requiring long-term care, and access to such care has been increased through public programs such as Medicare and Medicaid (*2*). To better characterize the use of these services in the United States, CDC's

Home-Health and Hospice Care — Continued

National Center for Health Statistics conducted the 1992 National Home and Hospice Care Survey (NHHCS), the first survey of home-health agencies and hospices and their patients. This report presents preliminary findings from the survey.

During September–December 1992, CDC used a three-stage probability sample design to survey 1500 agencies and approximately 14,000 patients that were selected from among 8036 agencies either classified by the 1991 National Health Provider Inventory as providing home-health or hospice care (*3*) or newly opened for business from November 1991 through June 1992. Differences are significant at the 0.05 level.

Home-Health Care

On any day during the survey period, an estimated 1,237,100 patients received care from approximately 7000 home-health agencies in the United States (*4*). Most patients were female (67%) and married (33%) or widowed (36%); the average age was 70 years, and 75% were aged ≥65 years (Table 1).

Most (55%) home-health patients received assistance in at least one of the activities of daily living (ADLs) crucial to independent community living (i.e., bathing, dressing, transferring in or out of a bed or chair, using the toilet, or eating). Approximately half (51%) received assistance in bathing; 44%, dressing; 33%, transferring in or out of a bed or chair; 24%, using the toilet; and 14%, eating. On average, agency staff assisted patients with 1.7 ADLs.

In addition to assistance in self-care activities, home-health patients received a variety of restorative, therapeutic, and social services. The most common of these were skilled nursing services (80%), personal care (45%), physical therapy (15%), homemaker/companion services (11%), social services (9%), and medications (8%).

First-listed diagnoses on admission to the agency varied among home-health patients. The most frequent diagnoses included heart disease (*International Classification of Diseases, Ninth Revision, Clinical Modification* [ICD-9-CM] codes 391–392.0, 393–398, 402–404, 410–416, and 420–429) (12%), diabetes mellitus (ICD-9-CM code 250) (8%), arthropathies and related disorders (ICD-9-CM codes 710–719) (6%), malignant neoplasms (ICD-9-CM codes 140–208 and 230–234) (6%), cerebrovascular disease (ICD-9-CM codes 430–436) (6%), essential hypertension (ICD-9-CM code 401) (4%), and fractures (ICD-9-CM codes 800–829) (4%). These diagnoses accounted for 46% of all first-listed diagnoses.

During the 12 months preceding the survey, there were approximately 3,066,300 discharges from the care of home-health agencies. Reasons for discharge were improvement or stabilization of the condition causing enrollment (52%); transfer to a nursing home, hospital, or some other health facility (17%); death (8%); and discharge for some other reason (23%). Patients may have had more than one discharge during the year. The average length of service before discharge was 94 days.

Hospice Care

Hospice care provides palliative and supportive services that enhance the quality of life of terminally ill patients and their families. On any day during the survey period, an estimated 1000 hospices in the United States provided care to approximately 47,200 patients (*4*); 77% were aged ≥65 years (average age on admission: 71 years). When compared with home-health patients, higher proportions of hospice patients were male (45%) and married (49%) (Table 1). In addition, hospice patients were more likely to receive skilled nursing services (86%), social services (52%), medications (33%),

Home-Health and Hospice Care — Continued

TABLE 1. Selected characteristics of current home-health and hospice patients — United States, 1992*

Characteristic	Home-health No. patients	Home-health (%)	Hospice No. patients	Hospice (%)
Average age (yrs) on admission	69.5		71.4	
Sex				
Male	411,300	(33.2)	21,300	(45.1)
Female	825,800	(66.8)	25,900	(54.9)
Marital status				
Married	413,700	(33.4)	23,300	(49.4)
Widowed	438,800	(35.5)	16,200	(34.3)
Divorced/Separated	57,900	(4.7)	2,400	(5.0)
Never married	150,300	(12.1)	3,100	(6.5)
Unknown	176,500	(14.3)	†	†
Living arrangements				
Private/Semiprivate residence	1,194,500	(96.6)	40,800	(86.5)
Alone	411,300	(33.3)	5,900	(12.5)
With others	773,000	(62.5)	34,300	(72.8)
Board and care/Residential-care facility	31,000	(2.5)	†	†
Health facility	6,000	(0.5)	3,800	(8.0)
Other/Unknown	†	†	†	†
Activities of daily living received help with				
Bathing	629,800	(50.9)	26,900	(57.0)
Dressing	548,500	(44.3)	23,500	(49.9)
Transferring in/out of a bed or chair	402,100	(32.5)	19,800	(42.1)
Using the toilet	301,500	(24.4)	17,800	(37.8)
Eating	171,400	(13.9)	13,500	(28.6)
Average no. activities of daily living received personal assistance with	1.7		2.2	
Selected services received during previous billing period				
Skilled nursing services	989,600	(80.0)	40,700	(86.3)
Personal care	550,400	(44.5)	23,700	(50.3)
Physical therapy	191,800	(15.5)	†	†
Homemaker/Companion services	130,000	(10.5)	5,000	(10.5)
Social services	115,100	(9.3)	24,500	(51.9)
Medications	99,400	(8.0)	15,800	(33.4)
Occupational therapy	43,300	(3.5)	†	†
Counseling	36,900	(3.0)	14,200	(30.2)
Referral services	30,000	(2.4)	2,500	(5.3)
High-tech care (including enterostomal therapy)	29,900	(2.4)	†	†
Dietary/Nutritional services	27,000	(2.2)	3,100	(6.5)
Physician services	24,500	(2.0)	9,200	(19.5)
Respite care	†	†	3,700	(7.9)
Selected first-listed admission diagnoses				
Heart disease (ICD-9-CM§ codes 391–392.0, 393–398, 402–404, 410–416, 420–429)	153,600	(12.4)	4,900	(10.4)
Diabetes mellitus (ICD-9-CM code 250)	94,400	(7.6)	†	†
Arthropathies and related disorders (ICD-9-CM codes 710–719)	75,900	(6.1)	†	†
Malignant neoplasms (ICD-9-CM codes 140–208, 230–234)	73,100	(5.9)	30,500	(64.7)
Cerebrovascular disease (ICD-9-CM codes 430–436)	70,800	(5.7)	†	†
Essential hypertension (ICD-9-CM code 401)	49,500	(4.0)	†	†
Fractures (ICD-9-CM codes 800–829)	46,100	(3.7)	†	†
Total¶	**1,237,100**	**(100.0)**	**47,200**	**(100.0)**
Discharge status				
Alive	2,828,800	(92.3)	18,700	(9.0)
Dead	237,500	(7.7)	188,300	(91.0)
Total discharges**	**3,066,300**	**(100.0)**	**207,000**	**(100.0)**
Average length of service (days)	94.0		59.7	

*Estimates based on data from the National Home and Hospice Care Survey. For any value, confidence intervals do not exceed ±9%.

†Unreliable (standard error >30% of estimate).

§*International Classification of Diseases, Ninth Revision, Clinical Modification.*

¶As of day before survey began.

**During the 12 months preceding the survey.

Home-Health and Hospice Care — Continued

counseling (30%), and physician services (20%). Hospice patients usually were admitted with specific diagnoses; 65% of hospice patients were admitted with a first-listed diagnosis of malignant neoplasms, and 10% were admitted with a diagnosis involving heart disease. Eighty-seven percent of hospice patients received care in private or semiprivate residences; 8% received care in short-stay hospitals, nursing homes, or other health facilities.

During the 12 months preceding the survey, an estimated 207,000 patients were discharged from hospices; of these, 91% died while receiving hospice care. The average completed length of service before discharge was 60 days.

Reported by: Long-Term Care Statistics Br, Div of Health Care Statistics, National Center for Health Statistics, CDC.

Editorial Note: The findings in this report indicate that home-health agencies and hospices play an increasing role in providing care to the population requiring long-term care. In addition to providing long-term maintenance care, home-health agencies provide skilled rehabilitative and therapeutic services (*5*). Hospice was first introduced in the United States in 1974, and these findings are among the first national estimates for hospice patients.

Since 1965, when Title XVIII (Medicare) of the Social Security Act was enacted, Medicare coverage of home-health services has been limited to post-acute care, focusing on recuperative care rather than long-term maintenance care. In 1992, 90% of home-health agency patients received services from agencies certified by Medicare (*4*). Medicare added hospice benefits in 1983, and by 1992, 92% of hospice patients were in hospices certified by Medicare (*4*).

The findings in this report indicate that home-health agencies primarily provide skilled rehabilitative and therapeutic services or "medically oriented" home care. In 1987, estimated annual national expenditures for medically oriented home-health care were $5 billion (*6*), while estimated annual expenditures for home-health care, including care provided by homemakers and personal-care providers, were $11.6 billion (*2*). Medically oriented home-health care represents less than half of formal home-health services rendered to the long-term–care population.

Home-health care is the fastest growing segment of the health-care system. In 1991, expenditures for home-health care increased 29% over 1990 (*6*). The findings in this report can be used to monitor changes in the use of these services and in the range of services and types of patients using these services.

References

1. LaPlante MP. People with disabilities in basic life activities in the U.S. [Disability statistics abstract no. 3]. Washington, DC: US Department of Education, National Institute on Disability and Rehabilitation Research, 1992.
2. Altman BM, Walden DC. Home health care: use, expenditures, and sources of payment. Rockville, Maryland: US Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research, 1993; AHCPR publication no. (PHS)93-0040. (National Medical Expenditures Survey Research findings no. 15).
3. Delfosse R. Hospice and home health agency characteristics: 1991 National Health Provider Inventory. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, NCHS. Vital Health Stat (in press).
4. Strahan G. Overview of home health and hospice patients: preliminary data from the 1992 National Home and Hospice Care Survey. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1993. (Advance data no. 235).

Home-Health and Hospice Care — Continued

5. Keenan JM, Fanale JE. Home care: past and present, problems and potential. J Am Geriatr Soc 1989;37:1076–83.
6. Letsch SW, Lazenby HC, Levit KR, Cowan CA. National health expenditures, 1991. Health Care Financing R 1992;14:1–30.

Current Trends

Update: Changes in Notifiable Disease Surveillance Data — United States, 1992–1993

Since April 1990, CDC has graphically presented changes in reported cases of 14 notifiable infectious diseases reported through the National Notifiable Diseases Surveillance System (NNDSS) (*1*). Figure I of each issue of *MMWR* displays on a log scale the ratio of the number of cases reported in the most recently ended 4-week period to that of the mean of the number of cases reported in 15 historical 4-week periods (*2*). During 1992–1993, Figure I has indicated a decline in incidence in selected reportable diseases (e.g., measles, mumps, and rubella). Declines in the incidence of these diseases could represent either true declines or changes in notifiable disease surveillance (e.g., a lower percentage of all cases was reported than previously). During June–August, 1993, CDC evaluated the surveillance system to determine the reasons for the declines. This report summarizes the results of the evaluation.

To assess potential causes for artifactual declines in reported notifiable diseases, CDC consulted with surveillance staff of 13 state health departments*. This consultation identified at least four factors that may affect reporting of infectious diseases through the NNDSS, including 1) changes in health department staffing for surveillance (e.g., reductions associated with recent budgetary constraints), 2) the addition of new variables to the electronic record used in data transmission from many states to CDC, 3) improved efficiency of quality control of data at CDC (e.g., more timely electronic quality control may have enhanced verification of provisional data), and 4) greater use of uniform case definitions that were published in 1990 (*3*). Systematic investigation of these potential factors included further consultation with reporting staff in selected states, comparison of national and state provisional and revised data for selected diseases for 1987–1992, and assessment by CDC programs responsible for the surveillance and prevention of measles, mumps, rubella, and hepatitis.

In general, during 1992 and 1993, weekly numbers of reported cases decreased for several diseases, including hepatitis (unspecified), measles, mumps, and rubella; in comparison, numbers of reported cases of hepatitis non-A, non-B (NANBH) increased. Neither underreporting nor delayed reporting appeared to account for the apparent decreased reported incidence of measles, mumps, or rubella. The baseline years (1987–1991) used in the calculations to produce Figure I included periods of increased reported incidence for measles, mumps, and rubella. For example, the number of reported measles cases increased from 1030 in 1983 to 16,342 in 1990 (most recent peak); mumps, from 2612 in 1984 to 10,233 in 1987 (most recent peak); and rubella, from 188 in 1988 to 1256 in 1991 (most recent peak). For each of these diseases, the

*Alabama, Alaska, Arkansas, California, Idaho, Illinois, Iowa, Missouri, New Jersey, North Dakota, Ohio, Pennsylvania, and South Carolina.

Notifiable Disease Surveillance Data — Continued

number of cases reported in the peak year was four–18 times higher than that reported during years of lower incidence. For each disease, the number of cases reported for 1992 was comparable to prior years of low incidence—provisional totals for 1992 were 1694 cases of measles, 2049 cases of mumps, and 137 cases of rubella†.

Overall, the number of reported cases of hepatitis (unspecified) has declined since 1980. Increased availability and use of laboratory tests for hepatitis may have resulted in fewer cases reported as type unspecified while the availability of a test for antibody to hepatitis C virus (anti-HCV) has caused an artifactual increase in the number of reported cases of acute NANBH. In particular, some persons with positive anti-HCV tests and no evidence of acute viral hepatitis have been reported as cases of NANBH. These positive anti-HCV tests may represent either chronic or past infection with HCV (anti-HCV is detectable in the blood indefinitely following HCV infection) or false-positive results. In some cases, blood banks have reported positive anti-HCV screening results to health departments as acute NANBH cases. CDC is working with state and local health departments to clarify use of the anti-HCV test in NANBH surveillance.

Reported by: Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; National Immunization Program; Div of Surveillance and Epidemiology, Epidemiology Program Office, CDC.

Editorial Note: The findings in this report underscore the importance of changes in the reported national incidence of notifiable diseases. For example, this evaluation indicates that the declines in measles, mumps, and rubella during 1992–1993 represent actual declines in disease incidence. The apparent size of the decline was magnified because the current reported incidence of each disease was compared with an earlier baseline period of substantially increased incidence. In contrast, the changes in reported incidence of hepatitis (unspecified) and hepatitis (NANB) more likely reflect changes in the availability and use of specific laboratory tests rather than substantial recent changes in incidence of these infections.

No serologic test is available to detect acute HCV infection. Therefore, reports of possible acute cases of hepatitis C should be based on the case definition for NANBH (i.e., discrete onset of symptoms and jaundice or elevated serum aminotransferase levels and serologic data [immunoglobulin M (IgM) negative for antibody to hepatitis A virus, and IgM negative for antibody to hepatitis B core antigen (if done) or hepatitis B surface antigen]). The mean duration between onset of symptoms and/or signs and anti-HCV seroconversion is 4–5 weeks and can be considerably longer in some persons (*4*).

The graphical display of Figure I reflects changes in incidence of some diseases when compared with recent historical experience. Other methods of data presentation may be more appropriate for representing secular trends. CDC has evaluated this graphical display method (*5,6*) and is investigating other methods to detect aberrations in reported cases of notifiable diseases (*7*). However, no analytic method to detect aberrations in data should substitute for other methods of epidemiologic analysis, such as laboratory confirmation and communication with state public health staff. Whenever the graphical presentation shows deviation from the baseline, reporting in both the current and baseline periods must be investigated.

†Totals for 1992 and prior years reported here are the accumulated totals of the originally reported weekly provisional figures for that year. These are the numbers that are used for the five baseline years in the creation of Figure I for the *MMWR*. They differ slightly from figures reported for weeks 52 or 53 at the end of each calendar year, which are the accumulated totals.

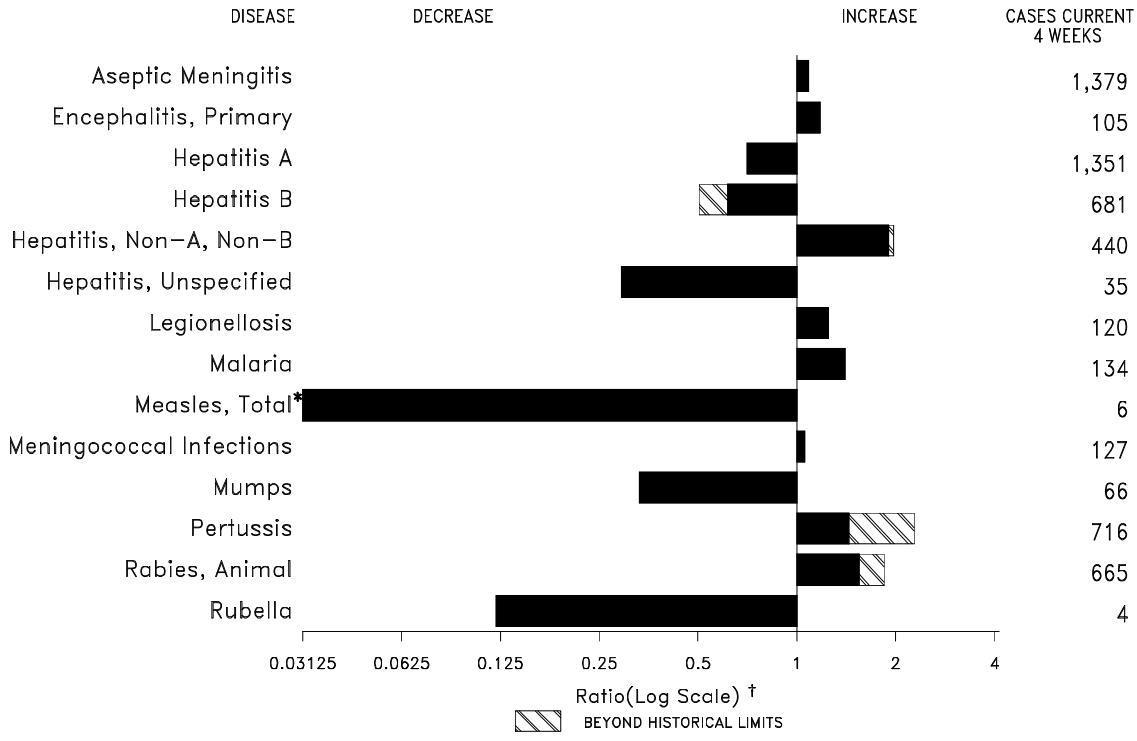
Notifiable Disease Surveillance Data — Continued

References
1. CDC. Proposed changes in format for presentation of notifiable disease report data. MMWR 1989;38:805–9.
2. Stroup DF, Williamson GD, Herndon JL, Karon JM. Detection of aberrations in the occurrence of notifiable diseases surveillance data. Stat Med 1989;8:323–9.
3. CDC. Case definitions for public health surveillance. MMWR 1990;39(no. RR-13).
4. Vallari DS, Jett BW, Alter HJ, Mimms LT, Holzman R, Shih JW. Serologic markers of posttransfusion hepatitis C viral infection. J Clin Microbiol 1992;30:552–6.
5. Stroup DF, Wharton M, Kafadar K, Dean AG. Evaluation of a method for detecting aberrations in public health surveillance data. Am J Epidemiol 1993;137:373–80.
6. CDC. Update: graphic method for presentation of notifiable disease data—United States, 1990. MMWR 1991;40:124–5.
7. Stroup DF, Thacker SB, Herndon JL. Application of multiple time series analysis to the estimation of pneumonia and influenza mortality by age, 1962–1983. Stat Med 1988;7:1045–59.

Erratum: Vol. 42, No. 41

In the article "Outbreaks of *Salmonella enteritidis* Gastroenteritis—California, 1993," on page 795, the first sentence under the heading "Outbreak 3: Santa Clara County" should read "In March 1993, 22 persons who had eaten at a local sandwich shop during February 28–March 4 developed diarrhea, fever, and abdominal cramps; *three* were hospitalized." In addition, the third sentence of the paragraph should read "Preliminary findings of a case-control study conducted by the Santa Clara County Health Department *identified 16 additional cases* and implicated sandwiches as the vehicle of transmission; no other food was associated with illness."

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending October 23, 1993, with historical data — United States



*The large apparent decrease in reported cases of measles(total) reflects dramatic fluctuations in the historical baseline. (Ratio (log scale) for week forty-two is 0.01347).

† 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 thehatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending October 23, 1993 (42nd Week)

	Cum. 1993		Cum. 1993
AIDS*	83,485	Measles: imported	55
Anthrax	-	indigenous	205
Botulism: Foodborne	13	Plague	8
Infant	55	Poliomyelitis, Paralytic§	-
Other	2	Psittacosis	44
Brucellosis	73	Rabies, human	1
Cholera	17	Syphilis, primary & secondary	20,541
Congenital rubella syndrome	6	Syphilis, congenital, age < 1 year¶	1,493
Diphtheria	-	Tetanus	36
Encephalitis, post-infectious	137	Toxic shock syndrome	192
Gonorrhea	306,224	Trichinosis	10
Haemophilus influenzae (invasive disease)†	946	Tuberculosis	16,973
Hansen Disease	148	Tularemia	108
Leptospirosis	33	Typhoid fever	281
Lyme Disease	5,546	Typhus fever, tickborne (RMSF)	409

*Updated monthly; last update October 2, 1993.
†Of 900 cases of known age, 292 (32%) were reported among children less than 5 years of age.
§Two (2) cases of suspected poliomyelitis have been reported in 1993; 4 of the 5 suspected cases with onset in 1992 were confirmed; the confirmed cases were vaccine associated.
¶Reports through second quarter of 1993.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending October 23, 1993, and October 17, 1992 (42nd Week)

Reporting Area	AIDS*	Aseptic Menin-gitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionel-losis	Lyme Disease
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	83,485	9,988	706	137	306,224	397,039	17,151	9,680	3,970	496	997	5,546
NEW ENGLAND	4,183	333	15	8	6,748	8,270	400	388	441	13	67	1,562
Maine	118	37	2	-	74	84	15	10	4	-	5	11
N.H.	83	44	-	2	62	98	33	91	357	3	5	56
Vt.	58	38	4	-	21	23	5	8	2	-	2	5
Mass.	2,210	135	7	4	2,457	3,001	192	215	70	10	37	159
R.I.	274	79	2	2	345	557	67	20	8	-	18	247
Conn.	1,440	-	-	-	3,789	4,507	88	44	-	-	-	1,084
MID. ATLANTIC	20,227	705	50	8	36,743	44,900	852	1,084	306	5	193	2,807
Upstate N.Y.	3,118	399	34	5	7,275	8,902	326	337	198	1	63	1,516
N.Y. City	10,941	104	1	-	10,337	16,201	177	121	1	-	3	3
N.J.	3,909	-	-	-	4,292	6,126	228	335	77	-	29	622
Pa.	2,259	202	15	3	14,839	13,671	121	291	30	4	98	666
E.N. CENTRAL	6,686	1,727	156	26	57,397	74,894	1,876	1,133	494	13	259	83
Ohio	1,286	599	55	4	17,965	22,338	239	151	32	-	133	35
Ind.	718	192	19	11	6,415	7,309	530	196	14	1	49	21
Ill.	2,423	389	32	3	13,587	24,484	604	208	61	5	14	10
Mich.	1,606	509	40	8	14,631	17,223	170	326	353	7	52	17
Wis.	653	38	10	-	4,799	3,540	333	252	34	-	11	-
W.N. CENTRAL	2,694	630	26	10	16,754	21,269	1,924	540	147	14	81	147
Minn.	579	75	7	-	1,997	2,466	351	59	9	4	1	57
Iowa	159	134	4	2	1,259	1,380	46	30	8	2	15	8
Mo.	1,466	198	2	8	9,655	11,800	1,214	383	107	8	21	38
N. Dak.	2	12	3	-	38	63	63	-	-	-	1	2
S. Dak.	22	19	5	-	193	147	16	-	-	-	-	-
Nebr.	164	22	1	-	476	1,378	165	14	8	-	36	4
Kans.	302	170	4	-	3,136	4,035	69	54	15	-	7	38
S. ATLANTIC	17,732	2,084	194	54	82,060	118,392	982	1,808	571	67	172	749
Del.	308	67	3	-	1,200	1,432	10	136	126	-	10	363
Md.	2,039	207	22	-	13,400	12,823	131	230	20	5	43	128
D.C.	1,181	33	-	-	3,956	4,787	9	37	1	-	13	2
Va.	1,273	250	36	6	9,618	13,207	113	113	30	31	6	63
W. Va.	66	28	100	-	547	694	20	33	28	-	3	41
N.C.	960	212	28	-	20,315	20,102	67	248	59	-	22	73
S.C.	1,269	25	-	-	8,785	8,985	17	43	3	1	18	9
Ga.	2,328	141	1	-	4,660	34,159	75	181	106	1	32	36
Fla.	8,308	1,121	4	48	19,579	22,203	540	787	198	29	25	34
E.S. CENTRAL	2,179	659	34	7	35,556	39,909	242	1,099	809	4	38	24
Ky.	275	283	12	6	3,934	3,880	90	71	10	-	14	7
Tenn.	897	157	8	-	9,828	12,621	73	935	785	3	16	14
Ala.	611	151	1	-	13,336	13,969	48	87	4	1	2	3
Miss.	396	68	13	1	8,458	9,439	31	6	10	-	6	-
W.S. CENTRAL	8,451	1,126	61	2	37,201	43,210	1,872	1,366	273	143	27	55
Ark.	327	56	1	-	7,445	6,227	46	50	4	2	4	2
La.	1,028	77	6	-	9,793	11,941	67	180	121	4	3	1
Okla.	648	1	7	-	3,313	4,450	149	260	93	10	11	21
Tex.	6,448	992	47	2	16,650	20,592	1,610	876	55	127	9	31
MOUNTAIN	3,375	598	28	4	8,903	10,146	3,287	490	287	69	60	21
Mont.	29	-	-	1	60	96	65	7	3	-	5	-
Idaho	58	11	-	-	138	93	208	42	-	3	1	2
Wyo.	33	6	-	-	68	47	12	26	93	-	6	9
Colo.	1,106	194	14	-	2,811	3,685	741	61	44	38	7	-
N. Mex.	267	112	4	2	765	758	306	182	93	2	5	2
Ariz.	1,136	161	8	-	3,246	3,459	1,189	76	13	12	12	-
Utah	231	44	1	-	286	279	646	42	27	13	9	3
Nev.	515	70	1	1	1,529	1,729	120	54	14	1	15	5
PACIFIC	17,958	2,126	142	18	24,862	36,049	5,716	1,772	642	168	100	98
Wash.	1,337	-	1	-	3,072	3,269	653	190	153	9	10	4
Oreg.	680	-	-	-	967	1,335	80	28	13	1	-	2
Calif.	15,586	1,992	136	18	19,837	30,473	4,282	1,526	463	155	82	91
Alaska	58	18	4	-	503	550	641	9	10	-	-	-
Hawaii	297	116	1	-	483	422	60	19	3	3	8	1
Guam	-	2	-	-	39	50	2	2	-	1	-	-
P.R.	2,338	48	-	-	416	192	72	330	76	2	-	-
V.I.	40	-	-	-	79	85	-	4	-	-	-	-
Amer. Samoa	-	-	-	-	39	38	18	-	-	-	-	-
C.N.M.I.	-	3	1	-	65	64	-	1	-	1	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly; last update October 2, 1993.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 23, 1993, and October 17, 1992 (42nd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	1993	Cum. 1993	Cum. 1992
UNITED STATES	966	-	205	-	55	2,176	1,902	21	1,309	192	4,569	2,385	-	167	143
NEW ENGLAND	72	-	57	-	5	65	103	-	8	7	642	191	-	1	6
Maine	3	-	2	-	-	4	7	-	-	-	19	11	-	1	1
N.H.	6	-	2	-	-	13	13	-	-	1	232	45	-	-	-
Vt.	1	-	30	-	1	-	6	-	-	6	74	9	-	-	-
Mass.	36	-	14	-	3	21	57	-	2	-	248	89	-	-	-
R.I.	2	-	-	-	1	21	1	-	2	-	6	2	-	-	4
Conn.	24	-	9	-	-	6	19	-	4	-	63	35	-	-	1
MID. ATLANTIC	194	-	11	-	6	205	226	-	99	50	598	144	-	54	10
Upstate N.Y.	108	-	-	-	2	111	101	-	34	41	264	91	-	10	7
N.Y. City	24	-	5	-	2	56	19	-	2	-	7	11	-	22	-
N.J.	40	-	6	-	2	38	37	-	12	-	51	42	-	16	3
Pa.	22	-	-	-	-	-	69	-	51	9	276	-	-	6	-
E.N. CENTRAL	62	-	16	-	7	60	299	4	201	73	1,037	512	-	6	9
Ohio	13	-	5	-	3	6	85	1	67	53	389	68	-	1	-
Ind.	3	-	1	-	-	20	48	2	5	13	114	31	-	1	-
Ill.	32	-	5	-	-	17	86	-	52	-	260	43	-	1	8
Mich.	14	-	5	-	1	13	51	1	62	7	88	11	-	2	1
Wis.	-	-	-	-	3	4	29	-	15	-	186	359	-	1	-
W.N. CENTRAL	28	-	1	-	2	11	125	-	47	20	470	191	-	1	8
Minn.	8	-	-	-	-	10	7	-	2	18	272	33	-	-	-
Iowa	3	-	-	-	-	1	24	-	9	-	35	5	-	-	3
Mo.	7	-	1	-	-	-	46	-	28	2	123	92	-	1	1
N. Dak.	2	-	-	-	-	-	3	-	5	-	3	13	-	-	-
S. Dak.	2	-	-	-	-	-	5	-	-	-	8	14	-	-	-
Nebr.	4	-	-	-	-	-	13	-	2	-	13	10	-	-	-
Kans.	2	-	-	-	2	-	27	-	1	-	16	24	-	-	4
S. ATLANTIC	247	-	17	-	13	125	349	2	381	17	485	141	-	9	18
Del.	2	-	1	-	-	1	13	-	5	-	14	7	-	2	-
Md.	35	-	-	-	4	16	44	-	67	4	121	25	-	2	5
D.C.	11	-	-	-	-	-	5	-	1	1	12	1	-	-	-
Va.	27	-	-	-	4	15	38	-	25	-	52	10	-	-	-
W. Va.	2	-	-	-	-	-	12	-	16	-	8	8	-	-	1
N.C.	94	-	-	-	-	24	59	2	199	10	102	35	-	-	-
S.C.	5	-	-	-	-	29	31	-	15	-	64	10	-	-	7
Ga.	17	-	-	-	-	3	77	-	14	-	32	14	-	-	-
Fla.	54	-	16	-	5	37	70	-	39	2	80	31	-	5	5
E.S. CENTRAL	25	-	1	-	-	461	125	-	47	4	261	27	-	-	1
Ky.	4	-	-	-	-	444	21	-	-	-	29	1	-	-	-
Tenn.	10	-	-	-	-	-	35	-	13	2	163	8	-	-	1
Ala.	6	-	1	-	-	-	39	-	22	2	58	15	-	-	-
Miss.	5	-	-	-	-	17	30	-	12	-	11	3	-	-	-
W.S. CENTRAL	24	-	8	-	3	1,102	191	14	197	4	151	203	-	17	7
Ark.	3	-	-	-	-	-	19	-	4	-	10	15	-	-	-
La.	4	-	1	-	-	-	34	-	17	2	11	9	-	1	-
Okla.	5	-	-	-	-	11	25	-	11	2	88	28	-	1	-
Tex.	12	-	7	-	3	1,091	113	14	165	-	42	151	-	15	7
MOUNTAIN	31	-	5	-	1	35	151	-	59	7	356	344	-	9	8
Mont.	2	-	-	-	-	-	13	-	-	-	7	7	-	-	-
Idaho	1	-	-	-	-	-	12	-	5	2	111	41	-	2	1
Wyo.	-	-	-	-	-	1	3	-	2	-	1	-	-	-	-
Colo.	19	-	2	-	1	29	31	-	16	2	119	56	-	-	2
N. Mex.	5	-	-	-	-	2	4	N	N	-	36	94	-	-	-
Ariz.	-	-	2	-	-	3	70	-	13	-	48	111	-	2	2
Utah	1	-	-	-	-	-	11	-	4	3	30	33	-	4	1
Nev.	3	-	1	-	-	-	7	-	19	-	4	2	-	1	2
PACIFIC	283	-	89	-	18	112	333	1	270	10	569	632	-	70	76
Wash.	28	-	-	-	-	11	62	-	10	1	60	189	-	-	8
Oreg.	4	-	-	-	-	3	23	N	N	3	21	39	-	3	1
Calif.	242	-	78	-	7	57	225	1	231	6	471	370	-	39	44
Alaska	3	-	-	-	2	9	13	-	8	-	5	14	-	1	-
Hawaii	6	-	11	-	9	32	10	-	21	-	12	20	-	27	23
Guam	1	U	2	U	-	10	1	U	6	U	-	-	U	-	3
P.R.	-	-	224	-	-	411	8	-	3	3	9	12	-	-	1
V.I.	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-
Amer. Samoa	-	U	1	U	-	-	-	U	1	U	2	6	U	-	-
C.N.M.I.	-	-	-	-	1	2	-	-	12	-	1	1	-	-	-

*For measles only, imported cases include both out-of-state and international importations.
N: Not notifiable U: Unavailable † International § Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 23, 1993, and October 17, 1992 (42nd Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	20,541	27,510	192	16,973	18,242	108	281	409	7,314
NEW ENGLAND	304	532	14	412	401	-	26	6	1,298
Maine	5	5	3	31	19	-	-	-	-
N.H.	28	35	4	9	15	-	2	-	109
Vt.	1	1	1	5	6	-	-	-	24
Mass.	112	272	5	224	217	-	18	6	538
R.I.	13	24	1	46	31	-	-	-	-
Conn.	145	195	-	97	113	-	6	-	627
MID. ATLANTIC	1,870	3,769	30	3,745	4,297	1	55	26	2,775
Upstate N.Y.	172	284	15	359	574	1	11	6	2,097
N.Y. City	905	2,132	1	2,192	2,476	-	26	-	-
N.J.	250	467	-	649	751	-	14	10	368
Pa.	543	886	14	545	496	-	4	10	310
E.N. CENTRAL	2,879	4,159	40	1,531	1,825	4	35	14	99
Ohio	903	658	12	261	270	-	7	9	5
Ind.	282	225	1	177	151	1	1	1	10
Ill.	844	1,889	7	651	939	2	19	2	19
Mich.	478	772	20	367	397	1	7	2	16
Wis.	372	615	-	75	68	-	1	-	49
W.N. CENTRAL	1,309	1,230	12	390	428	36	2	21	297
Minn.	61	78	2	50	120	-	-	1	38
Iowa	58	41	5	41	34	-	-	7	64
Mo.	1,076	925	2	204	194	15	2	10	20
N. Dak.	1	1	-	5	8	-	-	-	51
S. Dak.	1	-	-	12	18	16	-	2	38
Nebr.	10	24	-	18	16	2	-	-	9
Kans.	102	161	3	60	38	3	-	1	77
S. ATLANTIC	5,467	7,503	23	3,390	3,398	3	42	186	1,712
Del.	90	168	1	39	43	-	1	1	123
Md.	303	528	1	318	306	-	8	11	515
D.C.	273	305	-	139	89	-	-	-	15
Va.	530	602	7	356	298	-	4	9	324
W. Va.	12	17	-	62	74	-	-	6	77
N.C.	1,537	2,039	3	431	434	2	2	112	81
S.C.	811	1,022	-	328	330	-	-	10	139
Ga.	903	1,459	2	620	698	-	3	30	389
Fla.	1,008	1,363	9	1,097	1,126	1	24	7	49
E.S. CENTRAL	3,167	3,507	11	1,071	1,134	4	7	53	180
Ky.	287	138	3	308	312	1	2	8	17
Tenn.	778	948	4	150	283	2	2	32	72
Ala.	685	1,220	2	411	333	1	3	4	91
Miss.	1,417	1,201	2	202	206	-	-	9	-
W.S. CENTRAL	4,769	4,966	2	1,909	2,117	42	5	90	515
Ark.	622	713	-	148	161	26	-	7	28
La.	2,110	2,060	-	-	155	-	1	1	5
Okla.	327	302	2	129	124	13	1	78	63
Tex.	1,710	1,891	-	1,632	1,677	3	3	4	419
MOUNTAIN	197	296	12	402	470	12	10	13	157
Mont.	1	7	-	15	-	5	-	1	22
Idaho	-	1	1	12	19	-	-	-	6
Wyo.	7	3	-	4	-	3	-	9	19
Colo.	59	52	2	32	46	-	5	3	26
N. Mex.	24	36	1	46	64	1	2	-	9
Ariz.	85	148	1	186	204	-	2	-	56
Utah	9	8	5	23	65	2	1	-	4
Nev.	12	41	2	84	72	1	-	-	15
PACIFIC	579	1,548	48	4,123	4,172	6	99	-	281
Wash.	50	73	7	211	240	1	6	-	-
Oreg.	37	39	-	81	106	2	1	-	-
Calif.	478	1,424	41	3,581	3,564	3	89	-	263
Alaska	8	4	-	42	50	-	-	-	18
Hawaii	6	8	-	208	212	-	3	-	-
Guam	2	3	-	31	58	-	-	-	-
P.R.	418	290	-	185	200	-	-	-	38
V.I.	37	56	-	2	3	-	-	-	-
Amer. Samoa	-	-	-	2	-	-	1	-	-
C.N.M.I.	3	6	-	28	50	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending October 23, 1993 (42nd Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	530	379	78	48	10	15	36
Boston, Mass.	177	110	35	20	4	8	14
Bridgeport, Conn.	48	34	6	6	1	1	4
Cambridge, Mass.	27	20	6	1	-	-	1
Fall River, Mass.	26	24	1	1	-	-	2
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	21	17	-	2	1	1	2
Lynn, Mass.	21	17	3	1	-	-	2
New Bedford, Mass.	25	21	3	-	-	1	-
New Haven, Conn.	37	28	3	5	-	1	4
Providence, R.I.	36	24	5	5	2	-	2
Somerville, Mass.	4	4	-	-	-	-	-
Springfield, Mass.	37	28	5	3	-	1	2
Waterbury, Conn.	26	19	3	3	-	1	-
Worcester, Mass.	45	33	8	1	2	1	3
MID. ATLANTIC	2,512	1,587	466	323	74	62	121
Albany, N.Y.	45	29	5	5	4	2	3
Allentown, Pa.	26	22	2	1	1	-	1
Buffalo, N.Y.	98	55	26	12	3	2	1
Camden, N.J.	33	22	6	3	2	-	1
Elizabeth, N.J.	18	10	2	5	1	-	2
Erie, Pa.§	41	33	7	-	1	-	2
Jersey City, N.J.	47	33	5	6	2	1	2
New York City, N.Y.	1,343	850	242	189	35	27	58
Newark, N.J.	84	31	20	21	4	8	5
Paterson, N.J.	27	15	10	1	1	-	-
Philadelphia, Pa.	312	170	76	38	13	15	16
Pittsburgh, Pa.§	92	61	17	8	3	3	6
Reading, Pa.	11	10	1	-	-	-	3
Rochester, N.Y.	122	93	17	10	1	1	12
Schenectady, N.Y.	23	18	1	1	2	1	-
Scranton, Pa.§	41	28	4	9	-	-	1
Syracuse, N.Y.	95	68	18	6	1	2	6
Trenton, N.J.	33	21	5	7	-	-	1
Utica, N.Y.	21	18	2	1	-	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,980	1,242	355	210	120	53	81
Akron, Ohio	75	51	11	6	5	2	-
Canton, Ohio	43	34	5	4	-	-	4
Chicago, Ill.	386	164	65	80	68	9	8
Cincinnati, Ohio	115	74	23	10	5	3	5
Cleveland, Ohio	134	84	32	14	2	2	2
Columbus, Ohio	206	134	41	12	12	7	10
Dayton, Ohio	115	90	16	5	1	3	12
Detroit, Mich.	227	127	51	27	13	9	1
Evansville, Ind.	44	33	4	7	-	-	2
Fort Wayne, Ind.	73	55	14	4	-	-	5
Gary, Ind.	16	7	4	5	-	-	-
Grand Rapids, Mich.	51	36	8	4	1	2	2
Indianapolis, Ind.	U	U	U	U	U	U	U
Madison, Wis.	49	33	14	2	-	-	2
Milwaukee, Wis.	132	93	20	6	3	10	11
Peoria, Ill.	40	27	9	2	2	-	1
Rockford, Ill.	52	40	8	2	1	1	7
South Bend, Ind.	52	40	7	3	1	1	1
Toledo, Ohio	103	72	13	13	3	2	8
Youngstown, Ohio	67	48	10	4	3	2	-
W.N. CENTRAL	752	566	106	40	20	19	45
Des Moines, Iowa	40	33	6	1	-	-	2
Duluth, Minn.	32	25	5	2	-	-	2
Kansas City, Kans.	27	22	3	2	-	-	-
Kansas City, Mo.	92	68	12	3	5	4	6
Lincoln, Nebr.	28	19	5	4	-	-	5
Minneapolis, Minn.	197	147	24	10	7	9	13
Omaha, Nebr.	77	58	14	4	-	1	2
St. Louis, Mo.	140	104	22	4	6	4	6
St. Paul, Minn.	56	43	6	6	1	-	8
Wichita, Kans.	63	47	9	4	1	1	1

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,344	854	256	139	62	33	77
Atlanta, Ga.	178	101	36	17	11	13	4
Baltimore, Md.	254	156	52	26	14	6	21
Charlotte, N.C.	74	43	15	11	4	1	5
Jacksonville, Fla.	96	72	15	5	4	-	6
Miami, Fla.	107	58	25	16	6	2	3
Norfolk, Va.	37	24	6	4	-	3	4
Richmond, Va.	123	103	11	6	2	1	8
Savannah, Ga.	46	32	8	3	2	1	4
St. Petersburg, Fla.	62	43	8	7	3	1	5
Tampa, Fla.	165	113	31	15	5	1	11
Washington, D.C.	177	88	47	27	11	4	6
Wilmington, Del.	25	21	2	2	-	-	-
E.S. CENTRAL	891	551	195	85	29	31	56
Birmingham, Ala.	121	79	18	13	3	8	6
Chattanooga, Tenn.	69	45	16	6	1	1	4
Knoxville, Tenn.	74	47	17	7	3	-	6
Lexington, Ky.	74	45	18	5	3	3	6
Memphis, Tenn.	189	117	40	19	5	8	23
Mobile, Ala.	152	82	36	18	8	8	2
Montgomery, Ala.	60	36	19	3	1	1	-
Nashville, Tenn.	152	100	31	14	5	2	9
W.S. CENTRAL	1,436	856	291	167	81	41	105
Austin, Tex.	69	40	10	10	8	1	8
Baton Rouge, La.	33	26	3	2	2	-	1
Corpus Christi, Tex.	55	32	10	6	3	4	6
Dallas, Tex.	185	114	36	27	7	1	3
El Paso, Tex.	60	43	12	4	1	-	8
Ft. Worth, Tex.	106	68	16	7	5	10	7
Houston, Tex.	409	216	100	60	23	10	39
Little Rock, Ark.	81	53	15	6	3	4	9
New Orleans, La.	93	45	20	15	13	-	-
San Antonio, Tex.	191	112	44	17	11	7	7
Shreveport, La.	34	27	7	-	-	-	6
Tulsa, Okla.	120	80	18	13	5	4	11
MOUNTAIN	789	549	111	81	20	28	55
Albuquerque, N.M.	88	68	11	5	1	3	2
Colo. Springs, Colo.	38	30	5	2	1	-	3
Denver, Colo.	124	73	26	16	2	7	15
Las Vegas, Nev.	88	59	17	6	4	2	4
Ogden, Utah	19	13	5	1	-	-	-
Phoenix, Ariz.	196	131	31	26	3	5	14
Pueblo, Colo.	25	21	1	3	-	-	3
Salt Lake City, Utah	90	60	7	11	6	6	10
Tucson, Ariz.	121	94	8	11	3	5	4
PACIFIC	1,991	1,285	364	223	65	50	128
Berkeley, Calif.	25	16	7	2	-	-	4
Fresno, Calif.	104	64	21	8	5	6	7
Glendale, Calif.	21	17	2	2	-	-	1
Honolulu, Hawaii	76	46	17	8	4	1	4
Long Beach, Calif.	76	44	12	12	4	4	5
Los Angeles, Calif.	523	347	87	60	18	8	21
Pasadena, Calif.	26	16	6	1	-	3	2
Portland, Oreg.	142	101	22	12	2	5	11
Sacramento, Calif.	167	113	29	8	9	8	17
San Diego, Calif.	163	97	29	31	5	1	12
San Francisco, Calif.	160	92	39	24	3	1	4
San Jose, Calif.	158	103	31	16	7	1	16
Santa Cruz, Calif.	30	20	5	4	-	1	4
Seattle, Wash.	152	88	29	23	4	8	5
Spokane, Wash.	61	39	14	5	3	-	3
Tacoma, Wash.	107	82	14	7	1	3	12
TOTAL	12,225¶	7,869	2,222	1,316	481	332	704

*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.

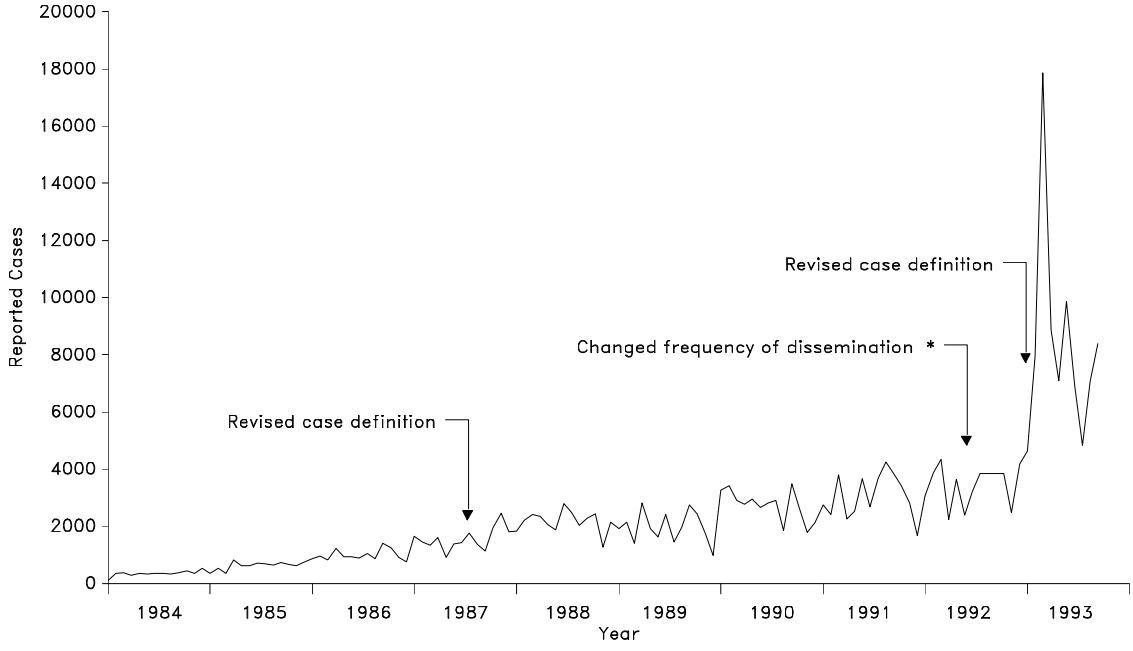
†Pneumonia and influenza.

§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.

FIGURE II. Acquired immunodeficiency syndrome cases, by 4-week period of report — United States, 1984–1993



*Change to reflect Notice to Readers, Vol. 41., No. 18., p. 325.

FIGURE III. Tuberculosis cases, by 4-week period of report — United States, 1984–1993

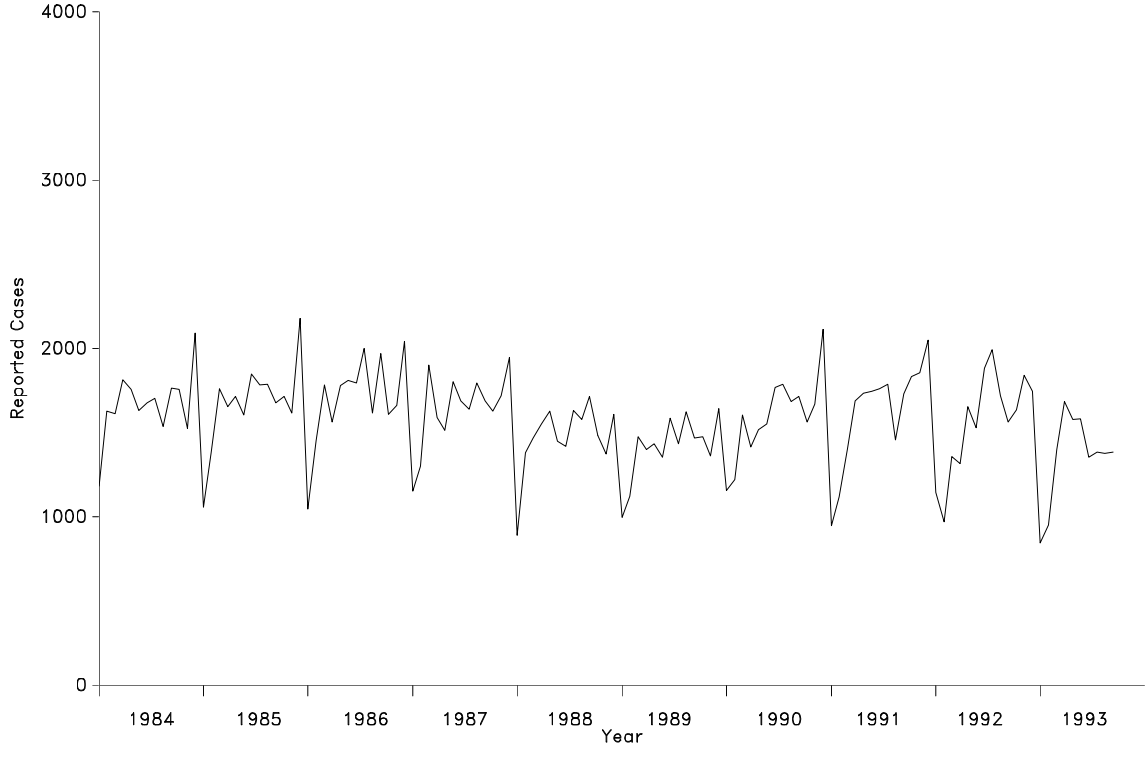


FIGURE IV. Gonorrhea cases, by 4-week period of report — United States, 1984–1993

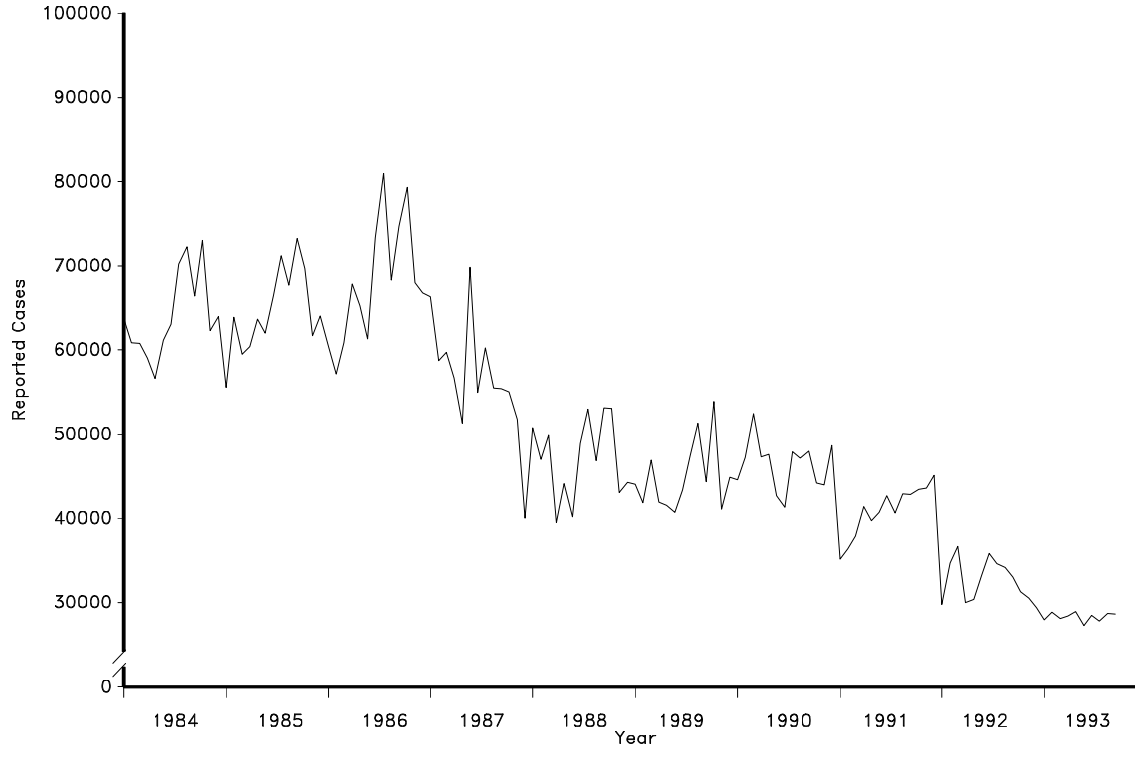
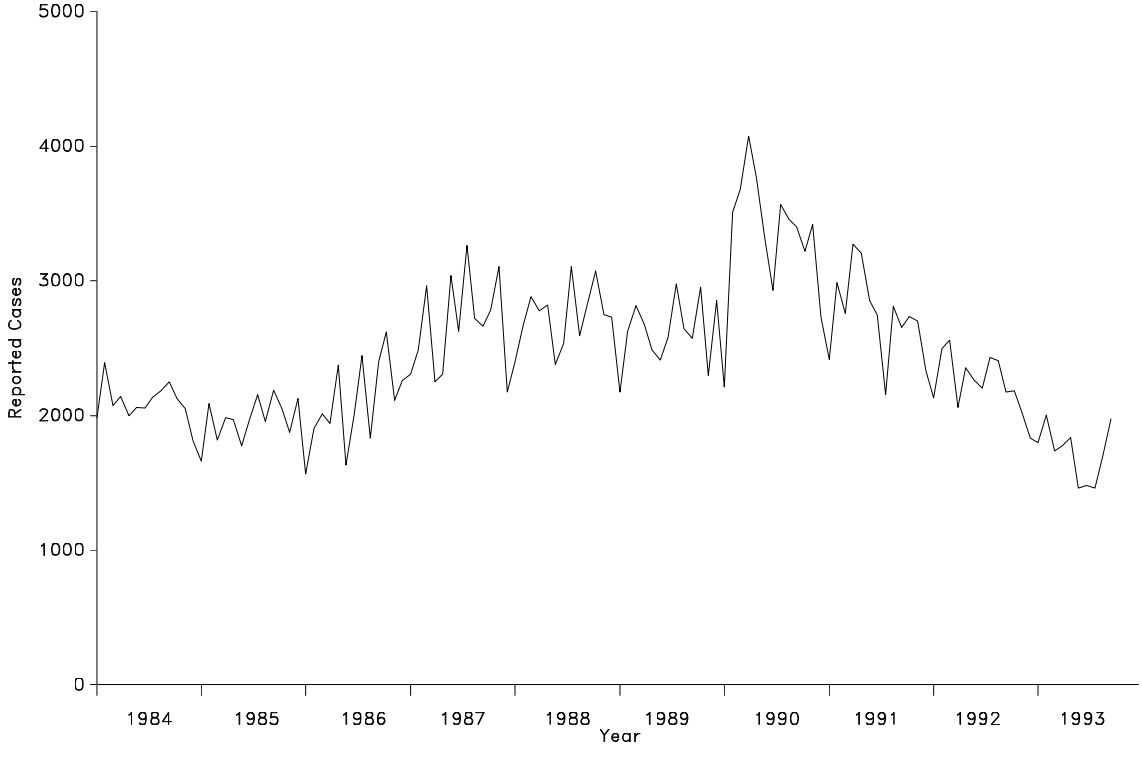


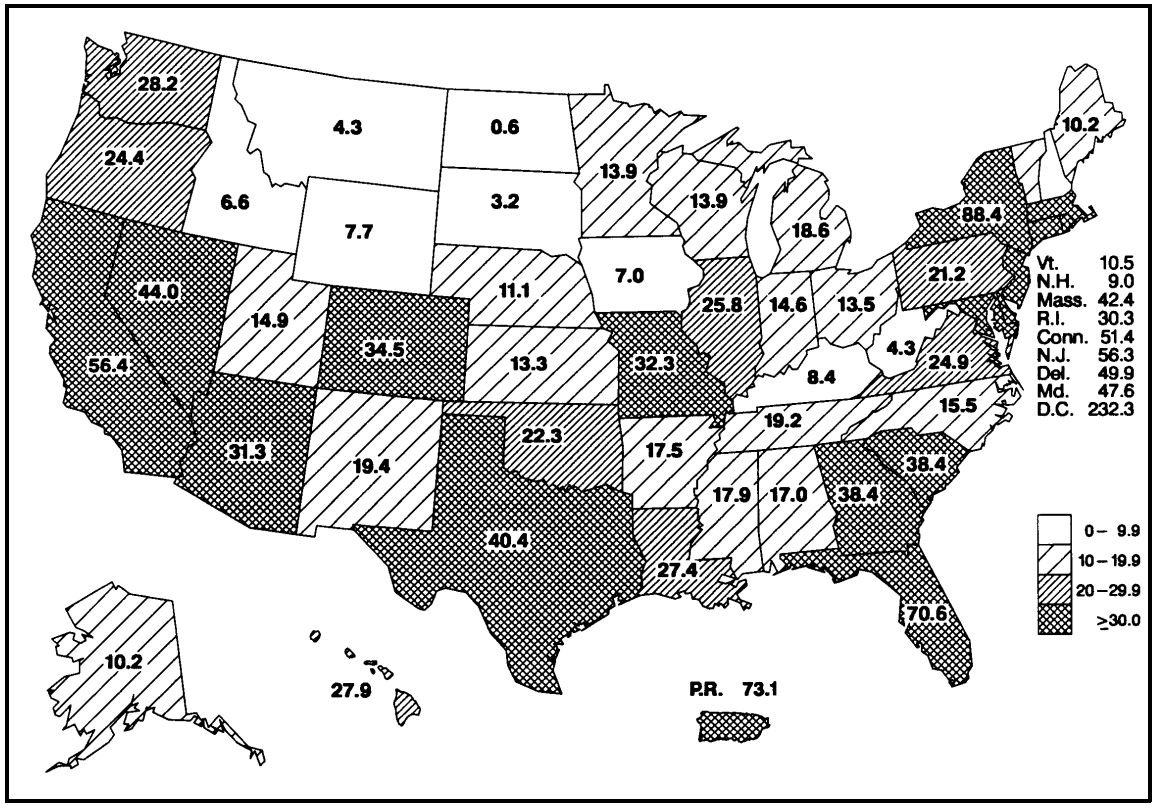
FIGURE V. Syphilis cases, by 4-week period of report — United States, 1984–1993



Quarterly AIDS Map

The following map provides information on the reported number of acquired immunodeficiency syndrome (AIDS) cases per 100,000 population by state of residence for October 1992 through September 1993. The map appears quarterly in *MMWR*. More detailed information on AIDS cases is provided in the quarterly *HIV/AIDS Surveillance Report*, single copies of which are available free from the CDC National AIDS Clearinghouse, P.O. Box 6003, Rockville, MD 20849-6003; telephone (800) 458-5231.

AIDS cases per 100,000 population — United States, October 1992–September 1993



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

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

☆**U.S. Government Printing Office: 1993-733-131/83040 Region IV**