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## Knowledge About Folic Acid and Use of Multivitamins Containing Folic Acid Among Reproductive-Aged Women — Georgia, 1995

Neural tube defects (NTDs) are serious birth defects that affect an estimated 4000 pregnancies each year in the United States (*1*). However, women can substantially decrease the risk for this birth defect by consuming 400 μg (0.4 mg) of folic acid per day before conception and during early pregnancy. In September 1992, the Public Health Service (PHS) recommended that all women of childbearing age who are capable of becoming pregnant consume 400 μg of folic acid daily (*2*). To characterize knowledge about the benefits of folic acid and use of multivitamins containing folic acid among Georgia women, the Division of Public Health, Georgia Department of Human Resources (GDHR), analyzed data from the 1995 Georgia Women's Health Survey (GWHS)—a comprehensive study of women's health that included questions about folic acid. This report summarizes the survey findings regarding knowledge and use of folic acid, which indicate that only 20% of Georgia women aged 15–44 years consumed a multivitamin containing ≥400 μg of folic acid per day, and 71% did not know that folic acid can prevent some birth defects.

GDHR conducted the GWHS during January–July 1995. GWHS was a random-digit–dialed telephone survey of a probability sample of 4005 Georgia women aged 15–44 years; 3130 (78%) women responded (*3*). Data for households with more than one eligible woman or multiple residential phone numbers were weighted to adjust for the unequal probability of selection. The sample was highly representative of all childbearing-aged women in Georgia (*3*).

Survey respondents were asked, "During the past 30 days, how often have you taken multivitamins?"; responses were "every day," "several times a week," "once a week," "less than once a week," and "don't know." Respondents also were asked "What brand of multivitamins do you or did you take most often?" and "Have you heard or read that taking a vitamin called folic acid can help prevent some birth defects?" The amount of folic acid women consumed was estimated based on the amount in the multivitamin brand they reported using.

Overall, 20% (95% confidence interval [CI]=19%–21%) of respondents reported consuming a multivitamin containing ≥400 μg of folic acid per day, 5% (95% CI=4%–6%) reported consuming a multivitamin containing ≥400 μg of folic acid several times a week, and 29% (95% CI=27%–30%) reported they had heard folic acid can help

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prevent some birth defects. Of those who had heard folic acid can help prevent some birth defects, 30% (95% CI=27%–32%) reported consuming a multivitamin containing ≥400 μg of folic acid per day, and 6% (95% CI=5%–8%) reported consuming a multivitamin containing ≥400 μg of folic acid several times a week. Of the 71% (95% CI=70%–73%) who had not heard about folic acid, 16% (95% CI=15%–18%) reported consuming a multivitamin containing ≥400 μg of folic acid per day, and 4% (95% CI=3%–5%) reported consuming a multivitamin containing ≥400 μg of folic acid several times a week.

Prevalence of knowledge about folic acid varied directly by respondents' educational and income levels. Women with a college degree were more likely to have heard about folic acid than were those with only some high school (45% [95% CI=41%–49%] versus 12% [95% CI=9%–15%]), and women with incomes above 150% of poverty level were more likely than women with incomes below 150% of poverty level (31% [95% CI=29%–33%] versus 18% [95% CI=15%–21%]).* Women with higher educational levels were more likely to consume a multivitamin containing ≥400 μg of folic acid per day than were less educated women (some high school education [10% (95% CI=7%–13%)], high school diploma [20% (95% CI=17%–23%)], some college education [23% (95% CI=20%–25%)], and college or postgraduate degree [27% (95% CI=24%–30%)]), and women with incomes above 150% of poverty level were more likely than women with incomes below 150% of poverty level (22% [95% CI=20%–23%] versus 14% [95% CI=11%–17%]).

For each educational level, women who reported knowledge of folic acid were more likely to have consumed a multivitamin containing ≥400 μg of folic acid per day than women who had not heard about folic acid. Among women who had heard about folic acid, the prevalence of consuming a multivitamin containing ≥400 μg per day was 16% (95% CI=8%–24%) for those with some high school education; 32% (95% CI=26%–38%), with a high school diploma; 32% (95% CI=27%–37%), with some college education; and 29% (95% CI=25%–34%), with a college degree.

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**Editorial Note:** The findings in this report are subject to at least two limitations. First, folic acid consumption in the GWHS was measured on the basis of reported use of multivitamins only; no information was obtained about consumption of folic acid tablets or foods fortified with folic acid. Second, 22% of the sample did not participate in the survey, and the survey excluded households without telephones; therefore, prevalences of knowledge and use of folic acid may be overestimated.

In 1986 and 1995, nationwide surveys estimated that 20% and 25% of U.S. women, respectively, reported consuming a multivitamin containing ≥400 μg of folic acid per day (*4,5*); in South Carolina, 12% of the women who gave birth during October 1992–September 1994 reported consuming a multivitamin containing ≥400 μg per day (*6*).

*Poverty statistics are based on a definition originated by the Social Security Administration in 1964, that was subsequently modified by federal interagency committees in 1969 and 1980, and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

*Folic Acid — Continued*

These studies and the GWHS findings underscore that 75%–88% of the 60 million women of reproductive age in the United States may not obtain the amount of folic acid recommended by PHS to reduce the risk for spina bifida and other NTDs. In addition, GWHS and a recent survey by the March of Dimes (*5*) indicate a substantial percentage of reproductive-aged women remain unaware of the potential benefits of folic acid despite publication of the PHS recommendation in 1992.

The results of the survey in Georgia underscore the need for continuing efforts to increase consumption of and awareness about the benefits of folic acid among women of childbearing age. Convenient approaches for ensuring that women obtain adequate amounts of folic acid to reduce the risk for NTDs include daily consumption of either a vitamin supplement or a fortified breakfast cereal containing 400 μg of folic acid. In March 1996, the Food and Drug Administration (FDA) required many enriched foods (e.g., most flours, corn meals, pasta, and rice) to be fortified with 140 μg of folic acid per 100 g of cereal grains by January 1, 1998 (*7*); this mandate will increase daily consumption of folic acid on average by 100 μg. FDA also issued a regulation that permits the labels of products containing sufficient amounts of folate to claim the products may reduce the risk for having a pregnancy with NTDs (*8*). The use of health claims on folic acid-containing products and folate-rich foods (e.g., orange juice and green leafy vegetables) will assist in increasing awareness about the benefits of folic acid.

Because women who know about the benefits of folic acid are more likely to consume daily a multivitamin containing 400 μg of folic acid, the design and implementation of health education programs for women of childbearing age will be important in educating them about these benefits at the earliest possible time before they become pregnant.

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## Bull Riding-Related Brain and Spinal Cord Injuries — Louisiana, 1994–1995

Rodeos are popular sporting events in the southern and western United States, and bull riders sustain 37% of all rodeo-related injuries—more than participants in any other rodeo event (*1,2*). During 1994–1995 in Louisiana, five cases of central nervous system trauma associated with riding bulls in rodeo events were identified through the Louisiana Central Nervous System Injury Registry, a statewide, population-based surveillance system addressing brain and spinal cord injury incidence, etiology, and outcome. To further characterize these injury events, the Office of Public Health, Louisiana Department of Health and Hospitals, conducted chart reviews and follow-up telephone interviews with the five injured persons or their parents and interviewed rodeo organizations about rules, regulations, and membership. This report summarizes the investigations of these five cases and recommends use of protective equipment to reduce the risk for such injuries.

In November 1995, the Louisiana division of the National High School Rodeo Association (NHSRA) listed 67 high school students who were registered to compete as bull riders in Louisiana (F. Hinton, Louisiana division, NHSRA, personal communication, November 1995). Because other rodeo associations exist and riders frequently have membership in multiple associations, the number of bull riders cannot be accurately estimated.

**Case 1.** A 28-year-old man with 15 years' riding experience was thrown to the ground while riding a bull and suffered a fracture of the fifth and sixth cervical vertebrae and an incomplete* spinal cord injury. He had not been wearing any protective equipment (i.e., mouth guard, helmet, or protective vest). Emergency medical service (EMS) was not present at the event; the time between the call for an ambulance and its arrival was 45 minutes. He was hospitalized for 9 days; at discharge from acute care, he was unable to function independently in activities of daily living (e.g., eating, dressing, and walking) and was considered to have a severe disability. He had impaired movement below the level of the injury.

**Case 2.** A 14-year-old boy who had ridden a bull three times previously was thrown to the ground while riding; he struck his head and was then trampled by the bull. He sustained a brain stem contusion and an incomplete C2 spinal cord injury and was unconscious for 16 days. No information was available about the use of protective equipment or EMS response. He remained in a persistent vegetative state (i.e., dependent and no meaningful responsiveness) on discharge from the reporting acute-care facility 24 days after he was injured.

**Case 3.** A 26-year-old man with 2 years' riding experience struck his head against a bull's head while riding. He sustained a concussion with brief loss of consciousness, multiple facial bone fractures, and a trimalleolar fracture of his leg. He was wearing a protective vest. EMS was not present; the patient was transported to a hospital in a private vehicle by a family member and was in acute care for 2 days. He recovered with no reported functional limitations.

**Case 4.** A 15-year-old boy with 2 years' riding experience was thrown from and then trampled by a bull. He sustained an incomplete T10–T11 spinal cord injury, multiple rib

*A spinal cord injury resulting in any preserved motor or sensory function below the level of the injury.

*Bull Riding-Related Injuries — Continued*

fractures, a tension pneumothorax, and a splenic injury. He was not wearing protective equipment. The time between the EMS call and arrival was 10 minutes. Although at the time of discharge from acute care 17 days after he was injured he was reported to have no major deficits, he is no longer able to do heavy manual labor or compete in athletic events.

**Case 5.** A 17-year-old boy with 3 years' riding experience struck his head against a bull's head while riding. He sustained a brain injury and multiple nasal fractures and was unconscious for 5 days. He was not wearing protective equipment. EMS was present at the rodeo. After 40 days in acute care, he had pronounced cognitive and behavioral impairments.

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**Editorial Note:** In competitive bull riding, the rider holds with one hand a length of braided rope wrapped around the bull's midsection. The rope is not tied in any way; only the force of the rider's grip on the rope keeps the rider on the bull. Riders must remain on the bull for 8 seconds, during which their free hand cannot touch the bull, themselves, or the rope (*3,4*). Because riders and bulls are matched by random draw, injuries are more likely to occur when a younger, less experienced rider draws a high-spirited bull. Bull-riding schools for experienced riders exist but are not widely used. For developing basic skills, riders practice on mechanical bulls, calves or young steers, and barrels suspended from ropes (K. Henry, Professional Bull Riders Association [PBR], personal communication, January 1996), although mechanical bull riding also has been associated with injuries (*5*).

The findings in this report document severe bull riding-associated brain and spinal cord injuries and permanent disability among young males. The number of such injuries may increase directly with the popularity of rodeo sports—from July 1992 to July 1995, membership in the Louisiana division of the NHSRA increased 47% (F. Hinton, NHSRA, personal communication, November 1995).

Protective head gear designed for bull riding has not been developed or recommended by rodeo organizations. Protective vests designed for bull riding are required for youth competition but not for professional competition (*3,4,6*). Use of protective head gear recommended to prevent horseback-riding–associated traumatic brain injuries (*7*) may decrease the risk for brain injury in bull riding but has not been assessed for that use. Potential barriers to using protective equipment include cost and a perception that some protective equipment detracts from the desired rugged, western appearance (K. Henry, PBR, personal communication, January 1996; T. Corfield, National Intercollegiate Rodeo Association [NIRA], personal communication, November 1995).

Timely transport by EMS providers to definitive care should decrease the severity and improve the outcome of injuries (*8*). EMS availability depends on which rodeo organization, if any, sponsors the event. For example, the Professional Rodeo Cowboys Association requires the onsite presence of an emergency medical technician and an ambulance; if the ambulance leaves to transport an injured rodeo participant, the rodeo is to be suspended until another ambulance arrives (*4*). Rodeos sponsored by college and high school associations require the presence at all times of an

*Bull Riding-Related Injuries — Continued*

emergency medical technician with a suitable conveyance (*3* ; T. Corfield, NIRA, personal communication, November 1995). At least three of the five injuries described in this report occurred at nonsanctioned rodeos.

The cases described in this report indicate the need for assessing the effectiveness of existing equipment, recommendations for its use in bull riding, and the need for new equipment; graduated competition; and matching the bulls with the skill levels of riders. To reduce the impact of injuries, adequate emergency medical care and transportation should be required for all rodeo events. The Louisiana Office of Public Health is working with the Louisiana Sports Medicine and Safety Advisory Committee (a group initially formed in 1990 to address spinal cord injuries among high school football players), the Tulane Institute of Sports Medicine, the Louisiana Sports Medicine Alliance, and the Louisiana High School Rodeo Association to increase participant awareness of the risk for injury related to bull riding and to develop prevention strategies.

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## Human Ehrlichiosis — Maryland, 1994

Ehrlichiosis is an emerging tickborne infectious disease caused by obligate intracellular, gram-negative rickettsia that infect leukocytes. Human monocytic ehrlichiosis (HME) is caused by *Ehrlichia chaffeensis* and is believed to be transmitted by *Amblyomma americanum* (the Lone Star tick). Most HME cases have been reported in southeastern and south-central states. During May–July 1994, five cases of serologically confirmed HME were identified among residents of Maryland. All five persons lived near the Chesapeake Bay and had antecedent histories of tick exposure. This report summarizes the clinical and epidemiologic features of these cases and the results of serologic testing at CDC of specimens from Maryland residents with suspected tickborne infection.

**Case 1.** On May 17, 1994, a 35-year-old man had onset of fever, headache, malaise, fatigue, myalgia, and back pain. His illness progressed to include anorexia, nausea, vomiting, diarrhea, and a nonproductive cough. On May 22, he was admitted to a hospital for evaluation with a white blood cell count (WBC) of 7.2 X $10^6$/L (with

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63% neutrophils and 20% band forms) and a temperature of 100.3 F (37.9 C), and rales were noted in the right lung base. Other laboratory abnormalities included thrombocytopenia (platelet count: 118 X $10^6$/L [normal: 150–400 X $10^6$/L]) and elevated aspartate aminotransferase (AST) (87 IU/L [normal: 8–20 IU/L]) and lactate dehydrogenase (LDH) (303 IU/L [normal: 45–90 IU/L]). The patient's hospital course included persistent fever despite intravenous (IV) treatment with a third-generation cephalosporin, hypotension, and progressive confusion and somnolence. Bacterial cultures of blood, cerebrospinal fluid (CSF), and stool and serologic tests, including an antibody titer for *E. chaffeensis*, were negative. He was placed in intensive care for pharmacologic support of his blood pressure. Analysis of CSF indicated lymphocytic pleocytosis. Because he did not improve within 48 hours, the antibiotic regimen was empirically changed to IV ciprofloxacin and doxycycline, and symptoms began to resolve within 24 hours. He was discharged on May 30. A serum specimen obtained at discharge was positive for *E. chaffeensis* antibody by immunofluorescent assay (IFA) (titer of 1:4096). The patient reported a history of extensive tick exposure associated with his job as a surveyor and at his residence on a farm in Kent County.

**Case 2.** On June 3, 1994, a 41-year-old man had onset of fever, chills, severe headache, malaise, fatigue, myalgia, and back pain. His illness progressed during the next week, and he was evaluated as an outpatient. On June 10, he was admitted to a hospital because of continuing fever and progression of symptoms. Physical examination was normal except for a temperature of 101 F (38.3 C). Laboratory tests included a WBC of 3.4 X $10^6$/L (with 12% atypical lymphocytes); AST, 268 IU/L; LDH, 517 IU/L; alkaline phosphatase (AP), 150 IU/L (normal: 20–70 IU/L); 1+ protein, ketones, and bilirubin in the urine; and CSF lymphocytic pleocytosis. An initial serologic test for *E. chaffeensis* antibodies and other infectious agents and bacterial cultures of blood were negative. Because the patient's physician was aware of case 1 and recognized clinical similarities to that case, *E. chaffeensis* infection was suspected, and he was treated with IV ciprofloxacin and doxycycline. Although the patient's fever resolved in 3 days, headache, myalgia, and lethargy persisted. He was discharged on June 16. Analysis of a serologic specimen obtained at discharge detected a titer to *E. chaffeensis* of >1:1024; a follow-up titer to *E. chaffeensis* obtained 2 months after the onset of his illness was <1:16. Diplopia attributed to a palsy of the sixth cranial nerve developed late in the course of illness but subsequently resolved. The patient reported frequent exposure to ticks in the vicinity of his residence in a small town and while hiking and biking in the neighboring woods of Kent County.

**Case 3.** In July 1994, a 45-year-old construction worker who lived near Annapolis and worked in Aberdeen had gradual onset of fatigue, fever, headache, myalgia, and malaise. He sought care from his physician on July 20 and received trimethoprim-sulfamethoxazole for suspected sinusitis. However, he developed nausea, vomiting, diarrhea, and jaundice, and on July 27 his physician prescribed doxycycline and obtained a serum sample for Lyme disease (LD) serology (antibody to *Borrellia burgdorferi*). On about August 1, the physician notified the patient to discontinue the doxycycline because his LD test was negative (titer <1:75). On August 8, the patient was hospitalized because of continuation and progression of his symptoms. Clinical and laboratory findings included an elevated temperature, petechial rash, leukopenia, thrombocytopenia, and modestly elevated levels of serum alanine aminotransferase (ALT) and AST. IV doxycycline and cefotaxime were initiated for treatment of the

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unexplained fever and severe headache. When analysis of CSF, an abdominal ultrasound, and a computerized axial tomography of the brain were normal, the cefotaxime was discontinued. Analysis of a blood specimen obtained August 10 included an indeterminate IFA for Rocky Mountain spotted fever (RMSF) and an *E. chaffeensis* titer of 1:1024. Symptoms began to resolve within 3–4 days after initiation of IV doxycycline, and monocytic inclusion bodies were detected in a peripheral blood smear obtained August 15. The patient reported that on some days he removed 25–30 ticks from his clothes and that 2 weeks before onset of symptoms, he removed a partially engorged tick from his hip approximately 36 hours after attachment.

**Case 4.** On July 27, 1994, a 63-year-old woman began a camping trip to Virginia, North Carolina, South Carolina, and Tennessee. On August 6, she removed an engorged tick attached to her back, which she believed had become attached 24–48 hours earlier during a hike in the mountains of eastern Tennessee. On August 8, she had onset of a backache followed by fever, headache, myalgia, abdominal pain, fatigue, and confusion. She was admitted to a hospital in Maryland on August 15 because of progression of her symptoms. Laboratory abnormalities on admission included pancytopenia—which progressed over a 24-hour period to a WBC of 2.6 X $10^6$/L, a red blood cell count of 3.5 X $10^6$/L, and a platelet count of 88 X $10^6$/L—and increased levels of AP (245 IU/L) and AST (201 IU/L). Atypical pneumonia and hepatitis were suspected, and IV erythromycin was initiated. IV doxycycline subsequently was added to the regimen when a consulting physician suspected RMSF or ehrlichiosis. Because of persistent abdominal pain and tenderness with mildly elevated bilirubin, ALT, and AST, an ultrasonogram of the gall bladder was performed. The wall appeared thickened, and on August 16 she underwent a cholecystectomy; complications included extensive bleeding. Analysis of a blood sample obtained August 15 was negative for ehrlichiosis and RMSF; however, an IFA titer to *E. chaffeensis* was 1:1024 in a sample obtained August 23. Administration of doxycycline was continued, and she was discharged on September 11.

**Case 5.** On June 20, 1994, a 38-year-old man who worked at a golf course had onset of fatigue, "a feverish feeling," myalgia, arthralgia, mild headache, and generalized weakness. On June 23, he was examined by a physician who diagnosed atrial fibrillation; neutropenia (1.2 X $10^6$/L) with a lymphocytosis (59%) was detected. Digoxin was initiated for treatment of atrial fibrillation. On June 27, he was hospitalized to evaluate his persistent fever. Findings included a temperature of 104 F (40 C), headache, facial flushing, generalized mild lymphadenopathy, and enlarged erythematous tonsils. Although his WBC had increased to 4.2 X $10^6$/L, his platelet count had decreased (from 153 X $10^6$/L to 100 X $10^6$/L), and liver enzymes were slightly elevated (AST: 70 IU/L and ALT: 72 IU/L). Treatment with gentamicin and piperacillin was initiated for fever of uncertain origin. However, because rickettsial disease infection was suspected, on June 30 treatment was changed to include ampicillin and doxycycline. His clinical condition improved markedly within 48 hours. An IFA of a serum specimen obtained June 30 indicated a titer to *E. chaffeensis* of ≥1:512, and an enzyme immunoassay for LD indicated a titer of 1:435. The patient reported removing nonengorged ticks from his body approximately 2–3 weeks before the onset of his illness.

**Serologic testing.** The Shore Health Laboratory in eastern Maryland saved frozen aliquots of serum specimens from 91 patients submitted for RMSF serology by physicians practicing on the eastern shore of Maryland during 1993 and 1994. CDC

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performed IFAs for *Rickettsia rickettsii* and *E. chaffeensis* antibodies on these specimens. Of the 12 persons who provided both acute- and convalescent-phase specimens, one was positive for *R. rickettsii* and two for *E. chaffeensis*; of the latter two, one had at least an eightfold increase in IFA titer, and the other had titers of 1:256 and 1:512 on serum samples drawn 6 weeks apart. Of the 79 patients with one blood specimen, no samples were positive for *R. rickettsii*; however, 11 (14%) had titers to *E. chaffeensis* of ≥1:128, which is considered to be consistent with recent infection.

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**Editorial Note:** The findings of this investigation and results of IFAs for *E. chaffeensis* conducted by CDC on serum specimens from Maryland residents indicate that cases of HME occurred in Maryland at least as early as 1988 and that the incidence of HME may be increasing (Table 1). In addition, these findings are consistent with other reports indicating that the incidence of HME is equal to or greater than that of RMSF (*1–3*). Although no cases of human granulocytic ehrlichiosis (HGE) have been confirmed in Maryland, the clinical features of HGE are identical to those of HME (*4*), and its suspected vector, *Ixodes scapularis*, is present throughout the eastern and central part of the state. The IFAs for HME and HGE usually do not crossreact, and each test must be performed independently if ehrlichiosis is suspected in patients potentially exposed in areas where both vectors are present (*4,5*).

The cases described in this report underscore that serologic testing for ehrlichiosis often is negative during the acute phase of infection. Therefore, therapy with a tetracycline antibiotic or with chloramphenicol should be initiated based on clinical suspicion before the diagnosis is serologically confirmed (*1–3*). The responses of the cases in Maryland are consistent with previous reports (*1,2*), which indicate that IV therapy with large doses of third-generation cephalosporins—a practice often used for treating fevers of unknown origin—is not effective for treating ehrlichiosis, and

**TABLE 1. Results of immunofluorescent assays for *Ehrlichia chaffeensis* antibody conducted by CDC on serum specimens, by year — Maryland, 1985–1994**

| Year | Negative | Positive* | Total |
|---|---|---|---|
| 1985 | 2 | 0 | **2** |
| 1986 | 1 | 0 | **1** |
| 1987 | 0 | 0 | **0** |
| 1988 | 10 | 2 | **12** |
| 1989 | 11 | 1 | **12** |
| 1990 | 10 | 0 | **10** |
| 1991 | 10 | 0 | **10** |
| 1992 | 14 | 1 | **15** |
| 1993 | 8 | 1 | **9** |
| 1994 | 27 | 8† | **35** |

*Titers ≥1:128.
†Includes all five cases described in this report.

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treatment with doxycycline generally is associated with clinical improvement within 24–48 hours.

The cases in Maryland also reflect the spectrum of illness caused by HME. HME, HGE, and RMSF should be considered in the differential diagnosis of febrile patients with generalized illness who reside, work, or vacation in tick-endemic areas and who have histories of tick exposure (*1–3*). These tickborne infections may be associated with thrombocytopenia, elevated hepatic enzymes, and CSF pleocytosis, and should be included in the differential diagnosis of patients with suspected influenza, viral hepatitis, aseptic meningitis, and cholecystitis.

Because HME is transmitted by ticks, persons who work outdoors, participate in outdoor activities, or reside in tick-endemic areas should take precautions to reduce tick exposures. These include wearing long pants and pulling socks over the pants cuffs when walking in woods or grassy areas, using insect repellent, and carefully checking for and removing ticks found on clothing and skin.

The CDC surveillance case definition for ehrlichiosis requires a clinically compatible history with a minimum antibody titer of ≥1:64 or a fourfold or greater change in antibody titers to *E. chaffeensis* using the IFA. Serum samples from persons with clinically suspected cases should be sent to CDC through the state health department or, in Maryland, to the Shore Health Laboratory at the Easton Memorial Hospital or to the Clinical Microbiology Laboratory at the Johns Hopkins Medical Systems in Baltimore.

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## Asthma Surveillance Programs in Public Health Departments — United States

Although asthma affects more than 14 million persons in the United States (*1,2*), there have been no nationally coordinated efforts to assist state health departments in developing asthma surveillance programs. To characterize asthma surveillance and control programs in public health departments in the United States, during March and April 1996, the Council of State and Territorial Epidemiologists and CDC conducted a survey of state and territorial epidemiologists. This report presents the results of that survey, which indicate that most states lack the funding and data necessary to develop asthma surveillance programs.

Questionnaires were sent to the 54 state and territorial epidemiologists who were asked to identify the appropriate person to respond to questions about asthma programs in the state. Responses were received from 48 states and three territories. Of the 51 respondents, 43 reported no state- or territorial-level asthma-control program.

*Asthma Surveillance — Continued*

Based on a priority ranking scale with five items suggesting reasons states might not have an asthma-control program, the two most important reasons included lack of funds and shortage of staff. In an open-ended response, 10 states reported that asthma was not a public health priority in their state. However, 37 (86%) of the 43 states/territories expressed an interest in starting an asthma-control program.

Potential data available for characterizing asthma included hospital discharge records (42 [82%]), emergency department visits (16 [31%]), use of public or private health-care services for asthma care (10 [20%]), first-time visitors to a health-care provider (four [8%]), and survey data about the quality of life for persons with asthma (four [8%]). Only Wisconsin maintained a surveillance system to monitor trends in asthma.

Of the 42 states/territories with hospital discharge data, 14 previously had analyzed the data for asthma morbidity. Reasons for inability to use hospital discharge data included restricted access to the data because of legislative constraints and incompatible data formats.

Although no state or territory maintains an asthma-control program, 26 state health departments have been associated with efforts to control asthma in selected communities in their state, including environmental control measures (22), public education (14), patient education (14), education of health-care providers (12), and legislation (five).

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**Editorial Note:** During 1985–1990, the estimated medical costs of asthma care in the United States increased from $4.5 billion to $6.2 billion, and in 1985 these costs represented approximately 1% of total U.S. health-care costs (*3*). In the United States, asthma is the most common chronic disease of childhood and affects approximately 5 million children aged <18 years; asthma is the fourth leading cause of disability in children (*4*). Rates for asthma prevalence, hospitalization, and death are highest among children residing in inner cities, and important risk factors for asthma-related mortality include being poor or black (*1,5,6*).

National health objectives for the year 2000 regarding asthma prevention are to establish and monitor state-based plans to define and track sentinel respiratory diseases triggered by environmental factors, reduce hospitalizations, reduce the proportion of persons with activity limitations, and increase the proportion of persons with asthma that get formal patient education (objectives 11.16, 11.1, 17.4, and 17.14b) (*7*).

The findings in this report indicate that states lack the funding, staff, and data necessary to develop asthma surveillance programs. Although 84% of respondents reported the availability of hospital discharge data, most state and territorial health departments have not used the data because of barriers to its access such as negotiating its use with a private entity, legal barriers, or incompatible data systems. Other potential sources for obtaining state-specific data about asthma include adding state-specific questions about asthma to the Behavioral Risk Factor Surveillance System, designating asthma a performance measure in the Health Plan and Employer Data and Information Set (HEDIS), and monitoring Medicaid data over time.

*Asthma Surveillance — Continued*

Despite the need for state-specific data and the need to develop surveillance systems to monitor trends in asthma, approximately half of the responding health departments have been associated with efforts to reduce the impact of asthma in selected communities in their state. State and territorial health departments need to determine the local burden of asthma and should explore approaches for eliminating barriers that prevent the use of existing data. Collaboration between CDC and other federal agencies, managed-care organizations, academic institutions, and states and territories to design and implement comprehensive community-based asthma surveillance systems will better characterize the burden of asthma in the United States and will enable states to target areas where asthma-prevention programs should be implemented.

*References*

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4. CDC. Disabilities among children aged ≤17 years—United States, 1991–1992. MMWR 1995;44: 609–13.
5. CDC. Asthma—United States, 1982–1992. MMWR 1995;43:952–5.
6. Weiss KB, Wagener DK. Changing patterns of asthma mortality. JAMA 1990;264:1683–7.
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## *Notice to Readers*

### Satellite Videoconference on HIV/AIDS Prevention for Teens

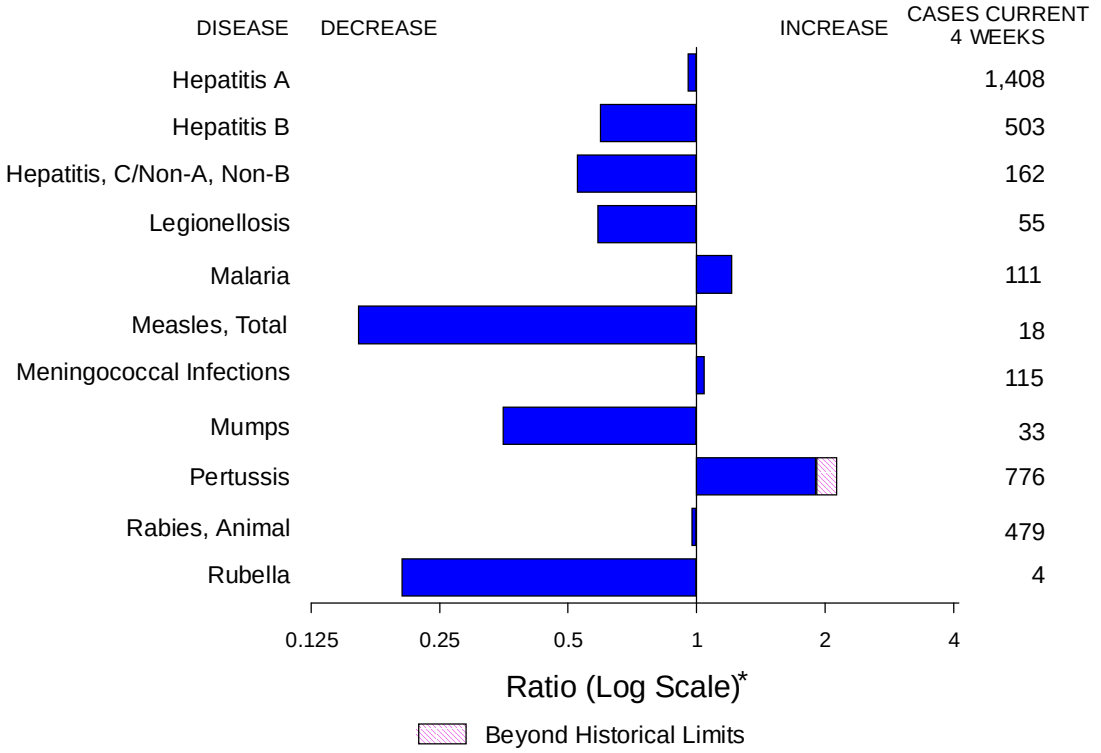
"HIV/AIDS Prevention for Teens," a satellite videoconference, will be broadcast live to sites nationwide from the Massachusetts Corporation for Educational Telecommunications (MCET) through a cooperative agreement with CDC on December 12, 1996, from 3 p.m. to 4:30 p.m. eastern standard time. The course is aimed at teachers of students in grades 6–12, health educators, community leaders, counselors, and administrators. Participants will receive an overview of HIV/AIDS education and guidance in targeting prevention strategies for youth.

Additional information, registration forms, and coordinates for down-link sites are available from MCET, telephone (800) 556-4376. The deadline to register down-link sites and participants is November 5.

### Erratum: Vol. 45, No. 34

In the article "HIV Testing Among Women Aged 18–44 Years—United States, 1991 and 1993" in the third paragraph, on page 734, the first sentence should read, "From 1991 to 1993, the proportion of women aged 18–44 years who had ever been tested for HIV increased 69% (from 18.8% to 31.8%) (Table 1)."

**FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending September 14, 1996, 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 September 14, 1996 (37th Week)**

| | Cum. 1996 | | Cum. 1996 |
|---|---|---|---|
| Anthrax | - | HIV infection, pediatric*§ | 195 |
| Brucellosis | 60 | Plague | 1 |
| Cholera | 2 | Poliomyelitis, paralytic¶ | - |
| Congenital rubella syndrome | 1 | Psittacosis | 28 |
| Cryptosporidiosis* | 1,392 | Rabies, human | 1 |
| Diphtheria | 1 | Rocky Mountain spotted fever (RMSF) | 487 |
| Encephalitis: California* | 44 | Streptococcal toxic-shock syndrome* | 13 |
| eastern equine* | 1 | Syphilis, congenital** | 225 |
| St. Louis* | - | Tetanus | 20 |
| western equine* | - | Toxic-shock syndrome | 99 |
| Hansen Disease | 73 | Trichinosis | 15 |
| Hantavirus pulmonary syndrome*† | 11 | Typhoid fever | 241 |

-: 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, National Center for HIV, STD, and TB Prevention (NCHSTP), last update August 27, 1996.
¶ Three suspected cases of polio with onset in 1996 has been reported to date.
**Updated quarterly from reports to the Division of STD Prevention, NCHSTP.

## TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending September 14, 1996, and September 16, 1995 (37th Week)

| Reporting Area | AIDS* | | Chlamydia | *Escherichia coli* O157:H7 | | Gonorrhea | | Hepatitis C/NA,NB | | Legionellosis | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | NETSS† | PHLIS§ | | | | | | |
| | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1996 | Cum. 1996 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 |
| UNITED STATES | 45,416 | 50,257 | 257,673 | 1,722 | 908 | 200,026 | 277,220 | 2,361 | 2,795 | 597 | 842 |
| NEW ENGLAND | 1,849 | 2,388 | 12,017 | 243 | 55 | 5,067 | 5,354 | 81 | 95 | 34 | 21 |
| Maine | 31 | 75 | 635 | 20 | - | 38 | 66 | - | - | 2 | 5 |
| N.H. | 58 | 75 | 397 | 28 | 30 | 80 | 81 | 7 | 12 | 2 | 1 |
| Vt. | 14 | 21 | U | 16 | 15 | 42 | 44 | 28 | 9 | 3 | - |
| Mass. | 873 | 999 | 4,796 | 121 | 10 | 1,573 | 1,881 | 40 | 69 | 18 | 12 |
| R.I. | 123 | 179 | 1,387 | 10 | - | 369 | 364 | 6 | 5 | 9 | 3 |
| Conn. | 750 | 1,039 | 4,802 | 48 | - | 2,965 | 2,918 | - | - | N | N |
| MID. ATLANTIC | 12,627 | 13,055 | 31,096 | 150 | 38 | 23,096 | 31,484 | 205 | 324 | 149 | 140 |
| Upstate N.Y. | 1,672 | 1,707 | N | 106 | 12 | 4,393 | 6,730 | 161 | 158 | 53 | 38 |
| N.Y. City | 7,052 | 6,555 | 15,097 | 8 | - | 7,762 | 12,543 | 1 | 1 | 5 | 4 |
| N.J. | 2,402 | 3,090 | 3,286 | 36 | 5 | 3,649 | 3,163 | - | 134 | 9 | 21 |
| Pa. | 1,501 | 1,703 | 12,713 | N | 21 | 7,292 | 9,048 | 43 | 31 | 82 | 77 |
| E.N. CENTRAL | 3,616 | 3,791 | 44,210 | 422 | 284 | 30,113 | 55,251 | 328 | 226 | 156 | 252 |
| Ohio | 810 | 808 | 13,640 | 108 | 57 | 10,058 | 17,258 | 25 | 8 | 67 | 119 |
| Ind. | 462 | 379 | 7,080 | 62 | 39 | 4,589 | 6,448 | 7 | 2 | 34 | 58 |
| Ill. | 1,579 | 1,521 | 17,415 | 179 | 84 | 12,555 | 14,099 | 52 | 67 | 9 | 22 |
| Mich. | 570 | 816 | U | 73 | 56 | U | 12,691 | 244 | 149 | 33 | 23 |
| Wis. | 195 | 267 | 6,075 | N | 48 | 2,911 | 4,755 | - | - | 13 | 30 |
| W.N. CENTRAL | 1,060 | 1,179 | 20,020 | 383 | 197 | 8,827 | 14,479 | 90 | 63 | 33 | 55 |
| Minn. | 189 | 242 | 2,702 | 163 | 115 | U | 2,176 | 1 | 2 | 3 | 2 |
| Iowa | 69 | 68 | 2,866 | 86 | 55 | 741 | 1,090 | 40 | 12 | 9 | 17 |
| Mo. | 541 | 559 | 8,767 | 47 | - | 5,865 | 8,159 | 31 | 17 | 6 | 13 |
| N. Dak. | 10 | 4 | 2 | 12 | 13 | - | 21 | - | 5 | - | 3 |
| S. Dak. | 9 | 14 | 721 | 13 | - | 102 | 141 | - | 1 | 2 | 1 |
| Nebr. | 74 | 80 | 1,801 | 33 | 3 | 670 | 855 | 5 | 14 | 10 | 12 |
| Kans. | 168 | 212 | 3,161 | 29 | 11 | 1,449 | 2,037 | 13 | 12 | 3 | 7 |
| S. ATLANTIC | 11,216 | 12,603 | 38,190 | 93 | 51 | 67,754 | 76,530 | 182 | 171 | 101 | 138 |
| Del. | 215 | 239 | 1,148 | - | 1 | 1,039 | 1,565 | - | - | 10 | 2 |
| Md. | 1,324 | 1,621 | 4,812 | N | 7 | 10,018 | 9,108 | 1 | 7 | 20 | 24 |
| D.C. | 799 | 740 | N | - | - | 3,144 | 3,161 | - | - | 8 | 4 |
| Va. | 795 | 961 | 7,881 | N | 22 | 6,550 | 7,845 | 10 | 10 | 13 | 18 |
| W. Va. | 83 | 83 | 1 | N | 2 | 365 | 497 | 9 | 41 | 1 | 3 |
| N.C. | 603 | 712 | U | 23 | 12 | 12,727 | 16,888 | 34 | 45 | 7 | 30 |
| S.C. | 586 | 673 | - | 8 | 7 | 8,038 | 8,668 | 21 | 16 | 4 | 28 |
| Ga. | 1,651 | 1,639 | 7,990 | 27 | - | 13,243 | 14,193 | U | 15 | 3 | 14 |
| Fla. | 5,160 | 5,935 | 16,358 | 25 | - | 12,630 | 14,605 | 107 | 37 | 35 | 15 |
| E.S. CENTRAL | 1,563 | 1,614 | 21,070 | 40 | 37 | 22,499 | 28,900 | 424 | 756 | 36 | 48 |
| Ky. | 272 | 196 | 4,709 | 8 | 4 | 2,982 | 3,368 | 21 | 24 | 3 | 9 |
| Tenn. | 580 | 665 | 9,309 | 18 | 30 | 8,198 | 9,810 | 323 | 730 | 18 | 23 |
| Ala. | 431 | 410 | 5,969 | 9 | 3 | 9,530 | 12,007 | 4 | 2 | 3 | 6 |
| Miss. | 280 | 343 | U | 5 | - | 1,789 | 3,715 | 76 | U | 12 | 10 |
| W.S. CENTRAL | 4,562 | 4,589 | 30,539 | 38 | 10 | 22,697 | 38,836 | 331 | 211 | 18 | 17 |
| Ark. | 186 | 209 | - | 11 | 3 | 2,489 | 3,736 | 7 | 5 | 2 | 5 |
| La. | 1,046 | 713 | 4,962 | 5 | 4 | 5,336 | 8,035 | 142 | 131 | 1 | 2 |
| Okla. | 189 | 206 | 5,463 | 8 | 1 | 3,497 | 3,887 | 69 | 34 | 5 | 4 |
| Tex. | 3,141 | 3,461 | 20,114 | 14 | 2 | 11,375 | 23,178 | 113 | 41 | 10 | 6 |
| MOUNTAIN | 1,325 | 1,515 | 11,688 | 140 | 68 | 5,127 | 6,760 | 418 | 334 | 29 | 89 |
| Mont. | 23 | 16 | - | 14 | - | 24 | 51 | 14 | 11 | 1 | 4 |
| Idaho | 29 | 37 | 1,106 | 27 | 10 | 80 | 107 | 92 | 43 | - | 2 |
| Wyo. | 3 | 12 | 410 | 8 | 2 | 25 | 39 | 134 | 133 | 3 | 8 |
| Colo. | 362 | 493 | - | 53 | 31 | 1,077 | 2,093 | 40 | 51 | 7 | 33 |
| N. Mex. | 118 | 123 | 2,705 | 8 | - | 576 | 754 | 54 | 39 | 1 | 4 |
| Ariz. | 370 | 392 | 4,768 | N | 17 | 2,589 | 2,608 | 53 | 32 | 13 | 9 |
| Utah | 127 | 111 | 1,108 | 19 | - | 213 | 173 | 22 | 10 | 2 | 12 |
| Nev. | 293 | 331 | 1,591 | 11 | 8 | 543 | 935 | 9 | 15 | 2 | 17 |
| PACIFIC | 7,597 | 9,523 | 48,843 | 213 | 168 | 14,846 | 19,626 | 302 | 615 | 41 | 82 |
| Wash. | 508 | 664 | 6,588 | 65 | 71 | 1,437 | 1,885 | 41 | 156 | 5 | 19 |
| Oreg. | 339 | 324 | U | 62 | 36 | 412 | 560 | 6 | 33 | - | - |
| Calif. | 6,594 | 8,292 | 36,799 | 83 | 52 | 12,446 | 16,278 | 106 | 394 | 32 | 58 |
| Alaska | 23 | 53 | 832 | 3 | 2 | 296 | 479 | 3 | 1 | 1 | - |
| Hawaii | 133 | 190 | 872 | N | 7 | 255 | 424 | 146 | 31 | 3 | 5 |
| Guam | 4 | - | 168 | N | - | 31 | 81 | 1 | 5 | 2 | 1 |
| P.R. | 1,524 | 1,828 | N | 13 | U | 210 | 426 | 77 | 170 | - | - |
| V.I. | 17 | 27 | N | N | U | - | - | - | - | - | - |
| Amer. Samoa | - | - | - | N | U | - | 19 | - | - | - | - |
| C.N.M.I. | 1 | - | N | N | U | 11 | 45 | - | 5 | - | - |

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

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, last update August 27, 1996.
†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 September 14, 1996, and September 16, 1995 (37th Week)

| Reporting Area | Lyme Disease | | Malaria | | Meningococcal Disease | | Syphilis (Primary & Secondary) | | Tuberculosis | | Rabies, Animal | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 |
| UNITED STATES | 8,108 | 7,888 | 969 | 903 | 2,344 | 2,221 | 7,547 | 11,727 | 13,372 | 14,565 | 4,287 | 5,598 |
| NEW ENGLAND | 2,676 | 1,573 | 39 | 37 | 97 | 102 | 120 | 269 | 292 | 356 | 517 | 1,127 |
| Maine | 24 | 16 | 7 | 5 | 12 | 7 | - | 2 | 4 | 11 | 70 | 21 |
| N.H. | 29 | 19 | 2 | 1 | 3 | 18 | 1 | 1 | 9 | 9 | 48 | 115 |
| Vt. | 15 | 8 | 2 | 1 | 3 | 6 | - | - | 1 | 2 | 117 | 136 |
| Mass. | 205 | 94 | 12 | 11 | 37 | 36 | 57 | 46 | 152 | 200 | 85 | 339 |
| R.I. | 388 | 251 | 6 | 4 | 10 | 4 | 1 | 3 | 24 | 35 | 33 | 247 |
| Conn. | 2,015 | 1,185 | 10 | 15 | 32 | 31 | 61 | 217 | 102 | 99 | 164 | 269 |
| MID. ATLANTIC | 4,572 | 5,156 | 233 | 247 | 202 | 280 | 295 | 610 | 2,418 | 3,095 | 519 | 1,463 |
| Upstate N.Y. | 2,673 | 2,618 | 59 | 48 | 63 | 76 | 51 | 63 | 291 | 359 | 264 | 867 |
| N.Y. City | 189 | 342 | 113 | 135 | 30 | 38 | 94 | 264 | 1,239 | 1,768 | - | - |
| N.J. | 571 | 1,367 | 46 | 47 | 53 | 70 | 77 | 126 | 499 | 524 | 101 | 260 |
| Pa. | 1,139 | 829 | 15 | 17 | 56 | 96 | 73 | 157 | 389 | 444 | 154 | 336 |
| E.N. CENTRAL | 54 | 347 | 99 | 121 | 328 | 315 | 933 | 2,015 | 1,433 | 1,390 | 74 | 80 |
| Ohio | 35 | 23 | 9 | 9 | 124 | 90 | 336 | 629 | 211 | 195 | 11 | 10 |
| Ind. | 17 | 13 | 14 | 15 | 51 | 46 | 160 | 241 | 120 | 128 | 5 | 12 |
| Ill. | 2 | 16 | 35 | 64 | 87 | 83 | 313 | 788 | 766 | 705 | 18 | 13 |
| Mich. | - | 5 | 30 | 13 | 34 | 57 | U | 203 | 261 | 300 | 27 | 33 |
| Wis. | U | 290 | 11 | 20 | 32 | 39 | 124 | 154 | 75 | 62 | 13 | 12 |
| W.N. CENTRAL | 109 | 74 | 38 | 18 | 192 | 137 | 272 | 579 | 334 | 430 | 404 | 269 |
| Minn. | 39 | 5 | 17 | 3 | 25 | 23 | 51 | 34 | 78 | 105 | 21 | 14 |
| Iowa | 18 | 9 | 2 | 2 | 39 | 25 | 15 | 36 | 44 | 48 | 183 | 95 |
| Mo. | 22 | 37 | 9 | 6 | 79 | 51 | 175 | 472 | 144 | 163 | 16 | 25 |
| N. Dak. | - | - | 1 | 1 | 3 | 1 | - | - | 6 | 3 | 52 | 24 |
| S. Dak. | - | - | - | 1 | 9 | 5 | - | - | 15 | 15 | 103 | 73 |
| Nebr. | 2 | 4 | 3 | 3 | 17 | 12 | 12 | 11 | 13 | 20 | 3 | 5 |
| Kans. | 28 | 19 | 6 | 2 | 20 | 20 | 19 | 26 | 34 | 76 | 26 | 33 |
| S. ATLANTIC | 485 | 513 | 215 | 171 | 487 | 364 | 2,660 | 2,941 | 2,448 | 2,584 | 1,977 | 1,498 |
| Del. | 78 | 37 | 3 | 1 | 2 | 6 | 30 | 10 | 20 | 43 | 52 | 74 |
| Md. | 274 | 343 | 58 | 46 | 53 | 31 | 464 | 326 | 213 | 291 | 451 | 307 |
| D.C. | 3 | 2 | 7 | 15 | 10 | 4 | 109 | 77 | 98 | 71 | 9 | 11 |
| Va. | 32 | 40 | 32 | 38 | 44 | 48 | 300 | 454 | 201 | 167 | 417 | 294 |
| W. Va. | 11 | 21 | 3 | 2 | 11 | 8 | 3 | 9 | 45 | 54 | 76 | 88 |
| N.C. | 58 | 44 | 20 | 15 | 60 | 64 | 715 | 815 | 329 | 316 | 508 | 354 |
| S.C. | 4 | 14 | 9 | 1 | 46 | 47 | 293 | 438 | 254 | 226 | 69 | 100 |
| Ga. | 1 | 9 | 23 | 23 | 118 | 72 | 479 | 550 | 448 | 478 | 217 | 200 |
| Fla. | 24 | 3 | 60 | 30 | 143 | 84 | 267 | 262 | 840 | 938 | 178 | 70 |
| E.S. CENTRAL | 51 | 52 | 23 | 20 | 133 | 148 | 1,686 | 2,397 | 1,230 | 1,021 | 153 | 212 |
| Ky. | 12 | 12 | 3 | 2 | 21 | 36 | 100 | 130 | 172 | 218 | 34 | 22 |
| Tenn. | 17 | 20 | 11 | 7 | 16 | 54 | 594 | 630 | 297 | 323 | 56 | 72 |
| Ala. | 6 | 7 | 3 | 8 | 56 | 29 | 406 | 473 | 596 | 296 | 60 | 111 |
| Miss. | 16 | 13 | 6 | 3 | 40 | 29 | 586 | 1,164 | 165 | 184 | 3 | 7 |
| W.S. CENTRAL | 84 | 83 | 22 | 38 | 274 | 268 | 1,118 | 2,318 | 1,578 | 1,941 | 285 | 526 |
| Ark. | 21 | 7 | - | 2 | 30 | 26 | 121 | 354 | 127 | 146 | 15 | 33 |
| La. | 1 | 4 | 4 | 4 | 47 | 39 | 381 | 743 | 59 | 188 | 13 | 24 |
| Okla. | 13 | 35 | - | 1 | 27 | 28 | 139 | 141 | 134 | 146 | 23 | 28 |
| Tex. | 49 | 37 | 18 | 31 | 170 | 175 | 477 | 1,080 | 1,258 | 1,461 | U | 441 |
| MOUNTAIN | 6 | 7 | 44 | 43 | 132 | 161 | 109 | 166 | 416 | 446 | 108 | 130 |
| Mont. | - | - | 6 | 3 | 4 | 2 | - | 4 | 14 | 10 | 19 | 38 |
| Idaho | - | - | - | 1 | 19 | 8 | 4 | - | 6 | 11 | - | 1 |
| Wyo. | 2 | 3 | 4 | - | 3 | 7 | 2 | - | 5 | 1 | 23 | 23 |
| Colo. | - | - | 20 | 18 | 28 | 40 | 23 | 92 | 54 | 38 | 30 | 9 |
| N. Mex. | 1 | 1 | 2 | 4 | 22 | 30 | 1 | 5 | 55 | 60 | 5 | 5 |
| Ariz. | - | - | 6 | 7 | 34 | 47 | 66 | 32 | 177 | 224 | 25 | 37 |
| Utah | 2 | 1 | 4 | 5 | 12 | 13 | 2 | 4 | 39 | 19 | 3 | 11 |
| Nev. | 1 | 2 | 2 | 5 | 10 | 14 | 11 | 29 | 66 | 83 | 3 | 6 |
| PACIFIC | 71 | 83 | 256 | 208 | 499 | 446 | 354 | 432 | 3,223 | 3,302 | 250 | 293 |
| Wash. | 12 | 8 | 17 | 16 | 77 | 73 | 5 | 11 | 182 | 187 | 6 | 9 |
| Oreg. | 11 | 13 | 17 | 13 | 87 | 80 | 10 | 18 | 75 | 84 | - | 1 |
| Calif. | 47 | 62 | 212 | 167 | 326 | 283 | 338 | 402 | 2,793 | 2,850 | 236 | 276 |
| Alaska | - | - | 3 | 2 | 6 | 6 | - | 1 | 48 | 52 | 8 | 7 |
| Hawaii | 1 | - | 7 | 10 | 3 | 4 | 1 | - | 125 | 129 | - | - |
| Guam | - | - | - | 1 | 1 | 2 | 3 | 8 | 35 | 83 | - | - |
| P.R. | - | - | - | 1 | 5 | 18 | 97 | 200 | 63 | 120 | 32 | 35 |
| V.I. | - | - | - | 2 | - | - | - | - | - | - | - | - |
| Amer. Samoa | - | - | - | - | - | - | - | - | - | 3 | - | - |
| C.N.M.I. | - | - | - | 1 | - | - | 1 | 5 | - | 30 | - | - |

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

## TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending September 14, 1996, and September 16, 1995 (37th Week)

| Reporting Area | *H. influenzae*, invasive | | Hepatitis (viral), by type | | | | Measles (Rubeola) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | A | | B | | Indigenous | | Imported† | |
| | Cum. 1996* | Cum. 1995 | Cum. 1996 | Cum. 1995 | Cum. 1996 | Cum. 1995 | 1996 | Cum. 1996 | 1996 | Cum. 1996 |
| UNITED STATES | 808 | 837 | 18,744 | 20,405 | 6,639 | 7,045 | - | 397 | 3 | 39 |
| NEW ENGLAND | 22 | 32 | 255 | 196 | 140 | 171 | - | 10 | - | 4 |
| Maine | - | 3 | 14 | 21 | 2 | 7 | - | - | - | - |
| N.H. | 8 | 8 | 12 | 8 | 10 | 17 | - | - | - | - |
| Vt. | 1 | 2 | 6 | 5 | 10 | 5 | - | 1 | - | 1 |
| Mass. | 11 | 10 | 134 | 80 | 44 | 64 | - | 8 | - | 3 |
| R.I. | 2 | 3 | 13 | 25 | 9 | 8 | - | - | - | - |
| Conn. | - | 6 | 76 | 57 | 65 | 70 | - | 1 | - | - |
| MID. ATLANTIC | 131 | 120 | 1,131 | 1,248 | 963 | 1,000 | - | 23 | - | 5 |
| Upstate N.Y. | 41 | 33 | 309 | 296 | 248 | 272 | - | - | - | - |
| N.Y. City | 25 | 28 | 399 | 615 | 425 | 315 | - | 9 | - | 3 |
| N.J. | 40 | 14 | 245 | 173 | 184 | 260 | - | 3 | - | - |
| Pa. | 25 | 45 | 178 | 164 | 106 | 153 | - | 11 | - | 2 |
| E.N. CENTRAL | 126 | 144 | 1,597 | 2,344 | 705 | 796 | - | 5 | 3 | 7 |
| Ohio | 77 | 73 | 583 | 1,309 | 95 | 82 | - | 2 | 3 | 3 |
| Ind. | 7 | 18 | 232 | 128 | 120 | 150 | - | - | - | - |
| Ill. | 30 | 35 | 352 | 484 | 173 | 207 | - | 2 | - | 1 |
| Mich. | 7 | 16 | 311 | 266 | 270 | 301 | - | - | - | 3 |
| Wis. | 5 | 2 | 119 | 157 | 47 | 56 | - | 1 | - | - |
| W.N. CENTRAL | 41 | 62 | 1,639 | 1,405 | 323 | 465 | - | 21 | - | 2 |
| Minn. | 25 | 34 | 94 | 141 | 41 | 43 | - | 16 | - | 2 |
| Iowa | 5 | 3 | 265 | 63 | 66 | 34 | - | - | - | - |
| Mo. | 7 | 18 | 762 | 1,008 | 153 | 325 | - | 4 | - | - |
| N. Dak. | - | - | 80 | 22 | 2 | 4 | - | - | - | - |
| S. Dak. | 1 | 1 | 41 | 37 | 4 | 2 | - | - | - | - |
| Nebr. | 1 | 3 | 159 | 38 | 31 | 23 | - | - | - | - |
| Kans. | 2 | 3 | 238 | 96 | 26 | 34 | - | 1 | - | - |
| S. ATLANTIC | 185 | 166 | 900 | 796 | 1,042 | 894 | - | 6 | - | 9 |
| Del. | 2 | - | 12 | 9 | 7 | 6 | - | 1 | - | - |
| Md. | 47 | 55 | 155 | 155 | 217 | 183 | - | 2 | - | 2 |
| D.C. | 5 | - | 23 | 18 | 28 | 15 | - | - | - | - |
| Va. | 6 | 21 | 121 | 150 | 99 | 82 | - | - | - | 3 |
| W. Va. | 7 | 7 | 13 | 17 | 18 | 40 | - | - | - | - |
| N.C. | 22 | 25 | 102 | 85 | 253 | 203 | - | 3 | - | 1 |
| S.C. | 4 | 1 | 42 | 35 | 61 | 37 | - | - | - | - |
| Ga. | 73 | 52 | 90 | 51 | 10 | 62 | - | - | - | 2 |
| Fla. | 19 | 5 | 342 | 276 | 349 | 266 | - | - | - | 1 |
| E.S. CENTRAL | 22 | 8 | 999 | 1,257 | 594 | 628 | - | 2 | - | - |
| Ky. | 4 | 2 | 22 | 35 | 39 | 54 | - | - | - | - |
| Tenn. | 9 | - | 676 | 1,035 | 353 | 495 | - | 2 | - | - |
| Ala. | 8 | 5 | 139 | 64 | 48 | 79 | - | - | - | - |
| Miss. | 1 | 1 | 162 | 123 | 154 | - | U | - | U | - |
| W.S. CENTRAL | 31 | 53 | 3,882 | 2,880 | 876 | 948 | - | 26 | - | 2 |
| Ark. | - | 5 | 369 | 375 | 61 | 43 | - | - | - | - |
| La. | 3 | 1 | 109 | 84 | 84 | 152 | - | - | - | - |
| Okla. | 25 | 20 | 1,670 | 719 | 59 | 118 | - | - | - | - |
| Tex. | 3 | 27 | 1,734 | 1,702 | 672 | 635 | - | 26 | - | 2 |
| MOUNTAIN | 78 | 92 | 3,021 | 2,932 | 776 | 596 | - | 152 | - | 5 |
| Mont. | - | - | 89 | 83 | 9 | 19 | - | - | - | - |
| Idaho | 1 | 2 | 156 | 244 | 71 | 70 | - | 1 | - | - |
| Wyo. | 35 | 5 | 26 | 86 | 33 | 17 | - | 1 | - | - |
| Colo. | 11 | 14 | 330 | 378 | 98 | 87 | - | 4 | - | 3 |
| N. Mex. | 9 | 12 | 292 | 609 | 269 | 226 | - | 16 | - | - |
| Ariz. | 9 | 22 | 1,246 | 830 | 189 | 88 | - | 8 | - | - |
| Utah | 7 | 9 | 704 | 533 | 73 | 48 | - | 117 | - | 2 |
| Nev. | 6 | 28 | 178 | 169 | 34 | 41 | - | 5 | - | - |
| PACIFIC | 172 | 160 | 5,320 | 7,347 | 1,220 | 1,547 | - | 152 | - | 5 |
| Wash. | 2 | 8 | 346 | 599 | 66 | 139 | - | 51 | - | - |
| Oreg. | 22 | 22 | 612 | 1,907 | 50 | 92 | - | 4 | - | - |
| Calif. | 144 | 125 | 4,277 | 4,678 | 1,085 | 1,294 | - | 33 | - | 2 |
| Alaska | 2 | 1 | 32 | 32 | 10 | 10 | - | 63 | - | - |
| Hawaii | 2 | 4 | 53 | 131 | 9 | 12 | - | 1 | - | 3 |
| Guam | - | - | 2 | 6 | - | 4 | U | - | U | - |
| P.R. | 1 | 3 | 80 | 78 | 261 | 456 | - | 6 | - | - |
| V.I. | - | - | - | 6 | - | 14 | U | - | U | - |
| Amer. Samoa | - | - | - | 6 | - | - | U | - | U | - |
| C.N.M.I. | 10 | 11 | 1 | 23 | 5 | 16 | U | - | U | - |

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

*Of 188 cases among children aged <5 years, serotype was reported for 42 and of those, 12 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 September 14, 1996, and September 16, 1995 (37th Week)

| Reporting Area | Measles (Rubeola), cont'd. Total | | Mumps | | | Pertussis | | | Rubella | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cum. 1996 | Cum. 1995 | 1996 | Cum. 1996 | Cum. 1995 | 1996 | Cum. 1996 | Cum. 1995 | 1996 | Cum. 1996 | Cum. 1995 |
| UNITED STATES | 436 | 268 | 11 | 459 | 613 | 152 | 3,335 | 2,906 | - | 195 | 106 |
| NEW ENGLAND | 14 | 8 | - | 1 | 11 | 8 | 677 | 382 | - | 25 | 44 |
| Maine | - | - | - | - | 4 | - | 19 | 22 | - | - | - |
| N.H. | - | - | - | - | 1 | - | 66 | 28 | - | - | 1 |
| Vt. | 2 | - | - | - | - | 6 | 55 | 58 | - | 2 | - |
| Mass. | 11 | 2 | - | 1 | 2 | - | 489 | 259 | - | 20 | 7 |
| R.I. | - | 5 | - | - | 1 | - | 25 | 2 | - | - | - |
| Conn. | 1 | 1 | - | - | 3 | 2 | 23 | 13 | - | 3 | 36 |
| MID. ATLANTIC | 28 | 12 | - | 60 | 92 | 15 | 264 | 237 | - | 8 | 13 |
| Upstate N.Y. | - | 1 | - | 19 | 24 | 14 | 144 | 108 | - | 4 | 3 |
| N.Y. City | 12 | 5 | - | 14 | 13 | 1 | 23 | 35 | - | 2 | 8 |
| N.J. | 3 | 6 | - | 2 | 14 | - | 11 | 16 | - | 2 | 2 |
| Pa. | 13 | - | - | 25 | 41 | - | 86 | 78 | - | - | - |
| E.N. CENTRAL | 12 | 14 | 3 | 83 | 105 | 21 | 339 | 345 | - | 3 | 3 |
| Ohio | 5 | 1 | 3 | 38 | 32 | 7 | 166 | 102 | - | - | - |
| Ind. | - | - | - | 6 | 7 | 1 | 33 | 24 | - | - | - |
| Ill. | 3 | 2 | - | 18 | 31 | 12 | 108 | 67 | - | 1 | - |
| Mich. | 3 | 5 | - | 20 | 35 | 1 | 27 | 56 | - | 2 | 3 |
| Wis. | 1 | 6 | - | 1 | - | - | 5 | 96 | - | - | - |
| W.N. CENTRAL | 23 | 2 | - | 13 | 37 | 16 | 224 | 178 | - | 1 | - |
| Minn. | 18 | - | - | 5 | 2 | 15 | 172 | 78 | - | - | - |
| Iowa | - | - | - | 1 | 9 | - | 9 | 7 | - | 1 | - |
| Mo. | 4 | 1 | - | 4 | 21 | 1 | 28 | 46 | - | - | - |
| N. Dak. | - | - | - | 2 | 1 | - | 1 | 8 | - | - | - |
| S. Dak. | - | - | - | - | - | - | 4 | 10 | - | - | - |
| Nebr. | - | - | - | - | 4 | - | 6 | 8 | - | - | - |
| Kans. | 1 | 1 | - | 1 | - | - | 4 | 21 | - | - | - |
| S. ATLANTIC | 15 | 11 | 6 | 81 | 90 | 33 | 410 | 237 | - | 91 | 9 |
| Del. | 1 | - | - | - | - | - | 11 | 9 | - | - | - |
| Md. | 4 | 1 | - | 21 | 27 | 12 | 145 | 31 | - | - | 1 |
| D.C. | - | - | - | - | - | - | - | 5 | - | 1 | - |
| Va. | 3 | - | - | 12 | 19 | 12 | 55 | 15 | - | 2 | - |
| W. Va. | - | - | - | - | - | - | 2 | - | - | - | - |
| N.C. | 4 | - | 2 | 19 | 16 | - | 75 | 84 | - | 77 | 1 |
| S.C. | - | - | - | 5 | 9 | 3 | 29 | 20 | - | 1 | - |
| Ga. | 2 | 2 | 1 | 3 | 6 | - | 17 | 18 | - | - | - |
| Fla. | 1 | 8 | 3 | 21 | 13 | 6 | 76 | 55 | - | 10 | 7 |
| E.S. CENTRAL | 2 | - | - | 19 | 7 | 1 | 68 | 255 | - | 2 | 1 |
| Ky. | - | - | - | - | - | - | 26 | 17 | - | - | - |
| Tenn. | 2 | - | - | 1 | - | - | 17 | 203 | - | - | 1 |
| Ala. | - | - | - | 3 | 4 | 1 | 17 | 34 | - | 2 | - |
| Miss. | - | - | U | 15 | 3 | U | 8 | 1 | N | N | N |
| W.S. CENTRAL | 28 | 23 | 1 | 24 | 40 | 2 | 79 | 229 | - | 3 | 7 |
| Ark. | - | 2 | 1 | 2 | 6 | 2 | 9 | 31 | - | - | - |
| La. | - | 18 | - | 12 | 9 | - | 7 | 13 | - | 1 | - |
| Okla. | - | - | - | - | - | - | 8 | 22 | - | - | - |
| Tex. | 28 | 3 | - | 10 | 25 | - | 55 | 163 | - | 2 | 7 |
| MOUNTAIN | 157 | 68 | - | 22 | 26 | 14 | 310 | 467 | - | 6 | 4 |
| Mont. | - | - | - | - | 1 | 8 | 25 | 3 | - | - | - |
| Idaho | 1 | - | - | - | 2 | 1 | 99 | 88 | - | 2 | - |
| Wyo. | 1 | - | - | - | - | - | 5 | 1 | - | - | - |
| Colo. | 7 | 26 | - | 2 | 1 | - | 78 | 69 | - | 2 | - |
| N. Mex. | 16 | 31 | N | N | N | 2 | 44 | 79 | - | - | - |
| Ariz. | 8 | 10 | - | 1 | 2 | - | 23 | 153 | - | 1 | 3 |
| Utah | 119 | - | - | 2 | 11 | 3 | 14 | 18 | - | - | 1 |
| Nev. | 5 | 1 | - | 17 | 9 | - | 22 | 56 | - | 1 | - |
| PACIFIC | 157 | 130 | 1 | 156 | 205 | 42 | 964 | 576 | - | 56 | 25 |
| Wash. | 51 | 19 | - | 18 | 10 | 38 | 451 | 178 | - | 2 | 1 |
| Oreg. | 4 | 1 | - | - | - | 2 | 31 | 37 | - | 1 | - |
| Calif. | 35 | 108 | - | 113 | 176 | - | 458 | 319 | - | 50 | 19 |
| Alaska | 63 | - | - | 2 | 12 | - | 2 | - | - | - | - |
| Hawaii | 4 | 2 | 1 | 23 | 7 | 2 | 22 | 42 | - | 3 | 5 |
| Guam | - | - | U | 5 | 3 | U | 1 | 2 | U | - | 1 |
| P.R. | 6 | 3 | - | 1 | 2 | - | 1 | 1 | - | - | - |
| V.I. | - | - | U | - | 3 | U | - | - | U | - | - |
| Amer. Samoa | - | - | U | - | - | U | - | - | U | - | - |
| C.N.M.I. | - | - | U | - | - | U | - | - | U | - | - |

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

# TABLE IV. Deaths in 121 U.S. cities,* week ending September 14, 1996 (37th Week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I† Total |
|---|---|---|---|---|---|---|---|
| | All Ages | >65 | 45-64 | 25-44 | 1-24 | <1 | |
| NEW ENGLAND | 551 | 414 | 69 | 42 | 15 | 11 | 22 |
| Boston, Mass. | 126 | 91 | 15 | 15 | 3 | 2 | 3 |
| Bridgeport, Conn. | 36 | 26 | 7 | 2 | - | 1 | 1 |
| Cambridge, Mass. | 9 | 7 | 1 | 1 | - | - | 1 |
| Fall River, Mass. | 25 | 22 | 2 | - | 1 | - | 1 |
| Hartford, Conn. | 44 | 30 | 8 | 4 | 2 | - | 1 |
| Lowell, Mass. | 18 | 14 | 1 | 1 | 2 | - | 2 |
| Lynn, Mass. | 12 | 7 | 2 | 3 | - | - | - |
| New Bedford, Mass. | 24 | 20 | 1 | 2 | 1 | - | 1 |
| New Haven, Conn. | 38 | 23 | 6 | 4 | 2 | 3 | 4 |
| Providence, R.I. | 72 | 60 | 7 | 4 | - | 1 | 4 |
| Somerville, Mass. | 6 | 4 | 1 | 1 | - | - | - |
| Springfield, Mass. | 50 | 36 | 8 | 2 | 2 | 2 | 1 |
| Waterbury, Conn. | 28 | 27 | 1 | - | - | - | 3 |
| Worcester, Mass. | 63 | 47 | 9 | 3 | 2 | 2 | - |
| MID. ATLANTIC | 2,203 | 1,464 | 444 | 215 | 50 | 30 | 106 |
| Albany, N.Y. | 50 | 34 | 8 | 5 | - | 3 | 2 |
| Allentown, Pa. | 41 | 25 | 9 | 3 | 1 | 3 | 4 |
| Buffalo, N.Y. | 79 | 65 | 10 | 3 | 1 | - | - |
| Camden, N.J. | 35 | 23 | 5 | 4 | 3 | - | 3 |
| Elizabeth, N.J. | 5 | 2 | 3 | - | - | - | - |
| Erie, Pa.§ | 39 | 33 | 6 | - | - | - | 2 |
| Jersey City, N.J. | 35 | 25 | 5 | 4 | - | 1 | 3 |
| New York City, N.Y. | 1,153 | 732 | 250 | 139 | 22 | 10 | 47 |
| Newark, N.J. | 58 | 23 | 16 | 14 | 3 | 2 | 1 |
| Paterson, N.J. | 19 | 12 | 7 | - | - | - | - |
| Philadelphia, Pa. | 300 | 201 | 62 | 22 | 12 | 3 | 18 |
| Pittsburgh, Pa.§ | 63 | 43 | 14 | 4 | 1 | 1 | 3 |
| Reading, Pa. | 11 | 7 | 2 | 1 | - | 1 | 4 |
| Rochester, N.Y. | 104 | 84 | 12 | 4 | 2 | 2 | 4 |
| Schenectady, N.Y. | 18 | 16 | 1 | 1 | - | - | 2 |
| Scranton, Pa.§ | 26 | 21 | 4 | - | 1 | - | 1 |
| Syracuse, N.Y. | 96 | 64 | 20 | 6 | 4 | 2 | 4 |
| Trenton, N.J. | 17 | 10 | 4 | 2 | - | 1 | 1 |
| Utica, N.Y. | 22 | 19 | 2 | 1 | - | - | 2 |
| Yonkers, N.Y. | 32 | 25 | 4 | 2 | - | 1 | 5 |
| E.N. CENTRAL | 2,046 | 1,365 | 397 | 169 | 56 | 57 | 97 |
| Akron, Ohio | 58 | 42 | 8 | 2 | 3 | 3 | - |
| Canton, Ohio | 34 | 24 | 8 | - | 1 | 1 | 2 |
| Chicago, Ill. | 391 | 229 | 89 | 42 | 12 | 17 | 15 |
| Cincinnati, Ohio | 167 | 122 | 28 | 12 | 2 | 3 | 14 |
| Cleveland, Ohio | 137 | 88 | 28 | 12 | 3 | 6 | 3 |
| Columbus, Ohio | 199 | 141 | 30 | 15 | 7 | 6 | 15 |
| Dayton, Ohio | 123 | 88 | 20 | 9 | 3 | 3 | 6 |
| Detroit, Mich. | 214 | 120 | 59 | 23 | 7 | 5 | 5 |
| Evansville, Ind. | 43 | 34 | 6 | 3 | - | - | 1 |
| Fort Wayne, Ind. | 54 | 35 | 16 | 1 | 2 | - | 3 |
| Gary, Ind. | U | U | U | U | U | U | U |
| Grand Rapids, Mich. | 57 | 38 | 9 | 7 | - | 3 | 5 |
| Indianapolis, Ind. | 136 | 92 | 26 | 12 | 3 | 3 | 3 |
| Madison, Wis. | U | U | U | U | U | U | U |
| Milwaukee, Wis. | 124 | 92 | 21 | 7 | 3 | 1 | 6 |
| Peoria, Ill. | 34 | 28 | 5 | 1 | - | - | 3 |
| Rockford, Ill. | 59 | 41 | 9 | 5 | 3 | 1 | 5 |
| South Bend, Ind. | 56 | 40 | 9 | 5 | - | 2 | 4 |
| Toledo, Ohio | 97 | 72 | 12 | 5 | 5 | 3 | 5 |
| Youngstown, Ohio | 63 | 39 | 14 | 8 | 2 | - | 2 |
| W.N. CENTRAL | 738 | 489 | 135 | 64 | 27 | 17 | 56 |
| Des Moines, Iowa | 70 | 48 | 15 | 3 | 1 | 3 | 6 |
| Duluth, Minn. | 29 | 19 | 6 | 4 | - | - | 4 |
| Kansas City, Kans. | 19 | 10 | 4 | 4 | 1 | - | - |
| Kansas City, Mo. | 87 | 58 | 14 | 5 | 4 | - | 4 |
| Lincoln, Nebr. | 38 | 28 | 8 | 2 | - | - | 3 |
| Minneapolis, Minn. | 168 | 118 | 25 | 15 | 6 | 4 | 14 |
| Omaha, Nebr. | 81 | 53 | 15 | 7 | 2 | 4 | 3 |
| St. Louis, Mo. | 129 | 83 | 27 | 13 | 5 | 1 | 16 |
| St. Paul, Minn. | 69 | 40 | 12 | 8 | 5 | 4 | 5 |
| Wichita, Kans. | 48 | 32 | 9 | 3 | 3 | 1 | 1 |
| S. ATLANTIC | 1,393 | 843 | 304 | 162 | 41 | 43 | 66 |
| Atlanta, Ga. | 151 | 82 | 37 | 20 | 6 | 6 | 2 |
| Baltimore, Md. | 289 | 172 | 51 | 43 | 13 | 10 | 19 |
| Charlotte, N.C. | 107 | 70 | 21 | 14 | 1 | 1 | 10 |
| Jacksonville, Fla. | 117 | 77 | 23 | 13 | 1 | 3 | 2 |
| Miami, Fla. | 106 | 64 | 29 | 10 | 2 | 1 | - |
| Norfolk, Va. | 54 | 34 | 7 | 4 | 5 | 4 | 4 |
| Richmond, Va. | 83 | 48 | 23 | 10 | 1 | 1 | 2 |
| Savannah, Ga. | 41 | 25 | 9 | 3 | 1 | 3 | 4 |
| St. Petersburg, Fla. | 56 | 42 | 9 | 1 | - | 4 | 2 |
| Tampa, Fla. | 183 | 119 | 40 | 12 | 7 | 5 | 16 |
| Washington, D.C. | 177 | 92 | 44 | 32 | 4 | 5 | 5 |
| Wilmington, Del. | 29 | 18 | 11 | - | - | - | - |
| E.S. CENTRAL | 640 | 415 | 143 | 51 | 20 | 10 | 43 |
| Birmingham, Ala. | 98 | 63 | 20 | 8 | 3 | 3 | 5 |
| Chattanooga, Tenn. | 41 | 29 | 9 | 3 | - | - | 2 |
| Knoxville, Tenn. | 62 | 41 | 13 | 4 | 3 | 1 | 7 |
| Lexington, Ky. | 70 | 40 | 17 | 10 | 2 | 1 | 9 |
| Memphis, Tenn. | 97 | 65 | 19 | 8 | 5 | - | 10 |
| Mobile, Ala. | 85 | 56 | 19 | 3 | 3 | 4 | - |
| Montgomery, Ala. | 32 | 25 | 5 | 2 | - | - | 3 |
| Nashville, Tenn. | 155 | 96 | 41 | 13 | 4 | 1 | 7 |
| W.S. CENTRAL | 1,475 | 963 | 288 | 144 | 44 | 34 | 81 |
| Austin, Tex. | 70 | 38 | 18 | 10 | 2 | 2 | 4 |
| Baton Rouge, La. | 33 | 22 | 3 | 6 | - | 2 | 3 |
| Corpus Christi, Tex. | 46 | 32 | 10 | 3 | 1 | - | 1 |
| Dallas, Tex. | 162 | 104 | 28 | 16 | 8 | 6 | 6 |
| El Paso, Tex. | 91 | 61 | 17 | 6 | 5 | 2 | 1 |
| Ft. Worth, Tex. | 116 | 71 | 23 | 13 | 2 | 7 | 6 |
| Houston, Tex. | 350 | 210 | 78 | 41 | 11 | 10 | 33 |
| Little Rock, Ark. | 65 | 44 | 14 | 6 | - | 1 | 2 |
| New Orleans, La. | 132 | 83 | 28 | 15 | 5 | 1 | - |
| San Antonio, Tex. | 225 | 158 | 44 | 15 | 3 | 3 | 10 |
| Shreveport, La. | 60 | 44 | 10 | 5 | 1 | - | 7 |
| Tulsa, Okla. | 125 | 96 | 15 | 8 | 6 | - | 8 |
| MOUNTAIN | 825 | 546 | 152 | 78 | 25 | 22 | 45 |
| Albuquerque, N.M. | 94 | 66 | 15 | 12 | 1 | - | 1 |
| Colo. Springs, Colo. | 56 | 37 | 7 | 8 | - | 4 | 3 |
| Denver, Colo. | 97 | 63 | 15 | 11 | 2 | 6 | 5 |
| Las Vegas, Nev. | 119 | 76 | 30 | 6 | 6 | - | 8 |
| Ogden, Utah | 21 | 15 | 4 | 1 | 1 | - | 1 |
| Phoenix, Ariz. | 184 | 117 | 32 | 15 | 12 | 7 | 12 |
| Pueblo, Colo. | 19 | 15 | 3 | 1 | - | - | 2 |
| Salt Lake City, Utah | 92 | 57 | 15 | 15 | 3 | 2 | 3 |
| Tucson, Ariz. | 143 | 100 | 31 | 9 | - | 3 | 10 |
| PACIFIC | 1,598 | 1,100 | 284 | 135 | 46 | 33 | 108 |
| Berkeley, Calif. | 16 | 11 | 5 | - | - | - | 2 |
| Fresno, Calif. | 61 | 40 | 15 | 2 | 4 | - | 3 |
| Glendale, Calif. | 9 | 5 | 2 | 2 | - | - | 1 |
| Honolulu, Hawaii | 62 | 50 | 8 | 1 | 1 | 2 | 11 |
| Long Beach, Calif. | 69 | 47 | 11 | 7 | 1 | 3 | 9 |
| Los Angeles, Calif. | 516 | 339 | 100 | 52 | 16 | 9 | 19 |
| Pasadena, Calif. | 31 | 24 | 1 | 4 | 1 | 1 | 4 |
| Portland, Oreg. | 144 | 97 | 31 | 11 | 5 | - | 7 |
| Sacramento, Calif. | U | U | U | U | U | U | U |
| San Diego, Calif. | 141 | 91 | 23 | 13 | 6 | 8 | 17 |
| San Francisco, Calif. | 150 | 92 | 34 | 15 | 6 | 3 | 11 |
| San Jose, Calif. | 192 | 145 | 26 | 12 | 4 | 5 | 17 |
| Santa Cruz, Calif. | 24 | 20 | 2 | 2 | - | - | 1 |
| Seattle, Wash. | 127 | 93 | 19 | 13 | 2 | - | - |
| Spokane, Wash. | 56 | 46 | 7 | 1 | - | 2 | 6 |
| Tacoma, Wash. | U | U | U | U | U | U | U |
| TOTAL | 11,469¶ | 7,599 | 2,216 | 1,060 | 324 | 257 | 624 |

U: Unavailable -: no reported cases

*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.

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