

MMWRTM
**MORBIDITY AND MORTALITY
WEEKLY REPORT**

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Salmonellosis Associated with Chicks and Ducklings — Michigan and Missouri, Spring 1999

During the spring of 1999, outbreaks of salmonellosis associated with handling chicks and ducklings occurred in Michigan and Missouri. This report summarizes the epidemiologic information for the outbreaks and provides an overview of legislative efforts to control the distribution of chicks and ducklings. These outbreaks demonstrate that handling chicks and ducklings is a health risk, especially for children, and highlight the need for thorough handwashing after contact with chicks, ducklings, and other young fowl.

Michigan

In May 1999, the Michigan Department of Community Health (MDCH) was notified of an increase in *Salmonella* serotype Infantis infections with closely related pulsed-field gel electrophoresis (PFGE) patterns; 21 case-patients were reported with onset of illness during April 1–July 31, 1999. Ages of infected persons ranged from 8 days to 82 years (mean: 25 years); eight (38%) were aged <10 years. Twelve (57%) were female. Symptoms reported during patient interviews included diarrhea (81%), fever (57%), bloody diarrhea (24%), and vomiting (14%). Three patients were hospitalized. Overall, 17 (82%) patients reported direct and/or indirect contact with young fowl: eight (38%) with chicks, two (10%) with ducklings, one (5%) with pheasant, and six (29%) with multiple species, including chicks and ducklings. Of the young fowl that were traceable, 88% were shipped from a single hatchery.

MDCH conducted a case-control study to identify exposures associated with illness. Nineteen patients were enrolled and were matched by age and place of residence to 37 healthy controls using sequential-digit dialing. During the 5 days before illness onset, 14 (74%) of 19 patients had direct contact with young fowl or resided in a household that raised fowl (chicks, ducklings, goslings, pheasants, and/or turkeys) compared with six (16%) of 37 controls (matched odds ratio [MOR]=20; 95% confidence interval [CI]=3–378). In several households, young birds were kept inside the home. One child kept young birds in his bedroom and another carried chicks inside his jacket.

MDCH, with assistance from the Michigan Department of Agriculture (MDA), visited the implicated hatchery in September 1999. During the spring, the hatchery shipped approximately 100,000 birds per week by mail order directly to customers and to several feed and farm supply retail outlets across the state. Fowl were shipped in lots of 25 to 100 birds, and usually were raised for backyard use (i.e., meat and egg production for

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the family). *S. Infantis* with the outbreak PFGE pattern was recovered from three of 47 environmental samples and five of 33 bird samples taken at the hatchery. Other *Salmonella* serotypes also were isolated from the environmental samples, including serotypes Montevideo (seven), Chester (one), and Mbandaka (one).

Missouri

In April 1999, the Missouri Department of Health (MDOH) noted a cluster of *Salmonella* serotype Typhimurium infections with an identical PFGE pattern; 40 case-patients were identified with onset of illness during April 4–May 30, 1999. The ages of infected persons ranged from 8 months to 46 years (mean: 13 years); 28 (70%) were age <20 years; 23 (58%) were male. Symptoms reported by the 33 patients interviewed included fever (42%), bloody diarrhea (27%), stomach cramps (27%), and vomiting (21%). Three patients were hospitalized. Overall, 32 (97%) persons reported exposure to young fowl: 18 (56%) were exposed to chicks, 10 (31%) to ducklings, three (9%) to both chicks and ducklings, and one (3%) to a young turkey.

MDOH conducted a case-control study of persons exposed to chicks or ducklings to identify whether specific behaviors were associated with illness. Twenty case-patients were enrolled; 40 controls who had been exposed to chicks and ducklings during the same time were identified through media advertisements and word-of-mouth. During the 4 weeks before onset of patient illness, chicks or ducklings that were identified as ill by the patient or handler were associated with human illness (odds ratio [OR]=21; 95% CI=2–508); handwashing after handling fowl was protective against illness (OR=0.0; 95% CI=0.0–0.2).

Legislative Efforts

During February 2000, CDC contacted 51 state and territorial public health departments to ascertain laws on the sale of baby fowl to noncommercial distributors and private persons; 28 (55%) responded. Ten (36%) states have laws restricting the sale of baby fowl for noncommercial purposes, including the sale of fowl aged <3 weeks (Indiana and Maryland), <4 weeks (Ohio and Pennsylvania), <8 weeks (Massachusetts and Virginia), and <12 weeks (Connecticut). In addition, Connecticut, Ohio, and Virginia require fowl to be sold in groups of greater than five birds. Illinois prohibits the sale of chicks during the Easter season, and Kansas requires persons to have a temporary or permanent license to sell chicks.

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Editorial Note: Although most of the 1.4 million human salmonellosis cases that occur annually in the United States are caused by foodborne sources (1), direct contact with animals, particularly reptiles and occasionally birds, also may be a source of infection (2–4). Most reptiles and many birds shed *Salmonella* in their feces. Humans become infected when contaminated food, hands, or other objects are placed in the mouth; therefore, handwashing is critical to prevent *Salmonella* infections following direct or indirect contact with animals. The Missouri outbreak described in this report and previous outbreaks (3,4) demonstrate that handling young fowl can be a risk for *Salmonella* infections, particularly in children who receive fowl as gifts during Easter; children have

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more frequent hand-to-mouth contact and are less likely to practice handwashing after handling fowl. The Michigan outbreak describes the risk for infection associated with the backyard production of fowl.

Prevention efforts, such as sales restrictions and consumer education, may be difficult because selling pet fowl and raising backyard fowl are largely unregulated. Several states responding to the survey reported laws that restrict the sale of chicks, ducklings, and other young fowl. Some of these restrictions are based on previous reports of chick-associated and duckling-associated salmonellosis during Easter (5). Enforcement also may be difficult because young fowl can be purchased by mail and Internet orders from out-of-state hatcheries. State-mandated point-of-sale educational material may be effective in educating consumers about the risk for salmonellosis. States may wish to join Michigan and Missouri in issuing a press release during the spring of 2000 to raise public awareness about the risk for *Salmonella* infections posed by young fowl. MDCH, MDA, and MDOH have developed safety instructions to be distributed with young fowl that emphasize the importance of handwashing and supervision of young children interacting with young fowl.

To prevent the transmission of *Salmonella* from chicks, ducklings, and other young fowl to humans, persons should avoid contact with feces and carefully wash their hands with soap and water after handling young fowl or anything that has come in contact with them. Chicks, ducklings, and other young fowl may not be appropriate pets for children and should not be kept in households with infants, children aged <5 years, or immunocompromised persons. During investigations of *Salmonella* infections, especially during spring and Easter, health-care workers and public health personnel should consider contact with young fowl as a potential source and obtain cultures from these animals if they are suspected as the source of infection.

References

1. Mead PS, Slutsker L, Dietz V, et al. Food-related illness and death in the United States. *J Emerg Infect Dis* 1999;5:607–25.
2. Mermin J, Hoar B, Angulo FJ. Iguanas and *Salmonella Marina* infection in children: a reflection of the increasing incidence of reptile-associated salmonellosis in the United States. *Pediatrics* 1997;99:399–402.
3. CDC. *Salmonella hadar* associated with pet ducklings—Connecticut, Maryland, and Pennsylvania, 1991. *MMWR* 1992;41:185–7.
4. CDC. *Salmonella* serotype Montevideo infections associated with chicks—Idaho, Washington, and Oregon, spring 1995 and 1996. *MMWR* 1997;46:237–9.
5. Crawford KL. Legislation concerning the sale of live baby fowl as pets. In: *Salmonella* surveillance report 1967. Atlanta, Georgia: US Department of Health, Education and Welfare, Public Health Service, CDC, 1967 (publication no. 61).

Measles Outbreak — Netherlands, April 1999–January 2000

On June 21, 1999, a cluster of five cases of measles was reported among the 390 students attending a religion-affiliated elementary school in the Netherlands. Persons belonging to this religious denomination routinely do not accept vaccination. Municipal health services (MHSs) investigated and found 160 suspected measles cases among children attending the school. By February 4, 2000, 2961 measles cases, including three measles-related deaths, had been reported by 35 MHSs to the national registry. This report summarizes the investigation of the measles outbreak in the Netherlands,

Measles — Continued

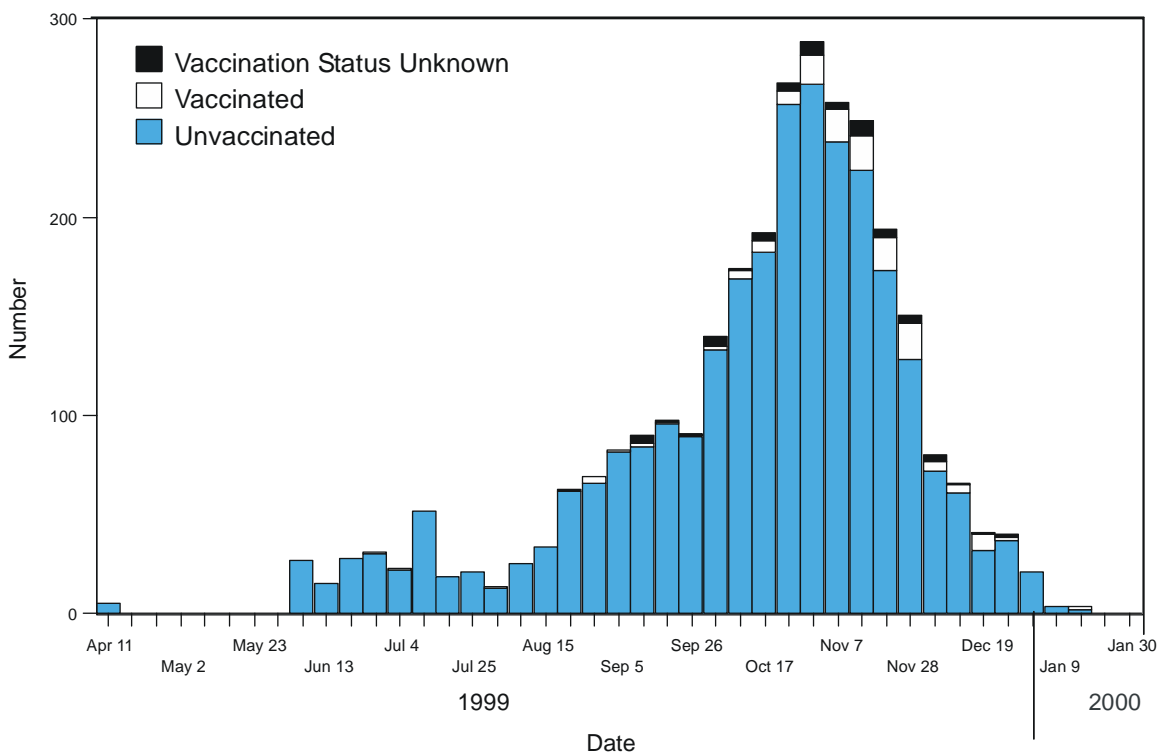
which indicated that measles can be a severe disease among unvaccinated populations in the Netherlands.

Measles is a notifiable disease in the Netherlands, and cases that occurred during this outbreak were reported by physicians to the local MHS as part of routine surveillance. The vaccination status of ill persons was reviewed based on written records kept by reporting physicians and sent to the vaccination registry. In April 1999, the first cluster of measles cases occurred, followed by the reported elementary school outbreak in June. No cases of measles with onset in May were reported, and transmission was low during June and July (Figure 1). When schools reopened in August, the number of cases increased. The outbreak peaked during October–November, then decreased rapidly. As of February 4, the last reported cases had onset during the week of January 16. Since then, the number of reported cases has decreased substantially, suggesting that the outbreak is ending.

From April 15, 1999, to February 4, 2000, 2961 cases of measles were reported in 35 (67%) of the country's 52 MHSs; 2317 (78%) were reported by 10 MHSs. All reporting municipalities have large communities affiliated with the religious group. Of the 105 case-patients tested for measles immunoglobulin type M, 100 (95%) had serologically confirmed measles.

Complications among acute measles case-patients were assessed by telephone follow-up with reporting physicians; 510 (17%) cases had one or more complications and/or hospitalizations (Table 1). Three patients died as the result of measles complications: one child aged 2 years had an underlying cardiac disorder and subsequent cardiac failure, one child aged 3 years developed myocarditis, and one adolescent aged 17 years

FIGURE 1. Reported number of measles cases, by week of disease onset and vaccination status — Netherlands, April 15, 1999–February 4, 2000



*Measles — Continued***TABLE 1. Complications from reported cases of measles — Netherlands, April 15, 1999–February 4, 2000**

Complication	No.	(%)
Death	3	(0.1)
Hospitalization for encephalitis	5	(0.2)
Hospitalization for other reasons	63	(2.1)
Pneumonia	130	(4.4)
Otitis media	170	(5.7)
Pneumonia and otitis media	26	(0.9)
Other respiratory disorders	56	(1.9)
Other	57	(1.9)
No complications	2451	(82.8)
Total	2961	(100.0)

developed kidney failure and acute respiratory distress syndrome. Sixty-eight (2.2%) persons were reported hospitalized: 37 (1.2%) for pneumonia, seven (0.2%) for dehydration, five (0.2%) for encephalitis, four (0.1%) for high fever, three (0.1%) for shortness of breath, two (0.1%) for severe otitis media, two (0.1%) for croup, and six (0.2%) for other reasons. Two persons developed measles while hospitalized for other reasons.

Of the 2882 patients whose ages were known, the median age was 6 years (range: 0–52 years): 95 (3%) were aged <1 year; 949 (33%), aged 1–4 years; 1282 (44%), aged 5–9 years; 382 (13%), aged 10–14 years; 87 (3%), aged 15–19 years; and 87 (3%), aged ≥20 years. Information on vaccination status was available for 2907 persons; 2770 (95%) were unvaccinated and 137 (5%) were vaccinated children. Of the 137, 117 (85%) were aged <9 years and all had received one dose of measles, mumps, and rubella vaccine (MMR); in 20 (15%) children the number of doses was unknown. Based on data from the national registry, 2749 persons whose ages were known were unvaccinated: 2317 (84%) persons eligible for vaccination were not vaccinated for religious reasons and 173 (6%) for other reasons (e.g., lack of concern about measles or concern about adverse events); 187 (7%) were not eligible for vaccination: 160 (85%) were aged <14 months (the recommended age for administration of the first dose of measles vaccine), 20 (11%) were born before 1976 (the year measles vaccination was introduced), and seven (4%) had a contraindication for measles vaccination. For the remaining 72 (3%) unvaccinated persons, the reason for not being vaccinated was unknown.

In response to the outbreak in the Netherlands, on July 1, control activities were implemented, including 1) tracing contacts of cases, 2) offering vaccine or immunoglobulin to susceptible contacts, 3) alerting all secondary-care and tertiary-care hospitals about the measles outbreak, 4) requesting general physicians to report all suspected cases, 5) conducting catch-up vaccination sessions at MHSs and mother and child clinics, 6) increasing media attention about undervaccination, and 7) urging parents to complete vaccination of children.

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Editorial Note: The three measles-related deaths and 68 hospitalizations that occurred among 2961 cases in the Netherlands indicate that measles can be severe and may result in death even in industrialized countries. Rates of complications reported in this outbreak are comparable with those in the United States and other industrialized countries (1).

Measles notification and vaccination began in 1976 in the Netherlands, where measles epidemics have occurred every 5–7 years: 1976, 1983, 1988, 1992–1993, and 1999–2000. Since 1987, two doses of MMR have been recommended at age 14 months and 9 years. Measles vaccination is not mandatory for entry into school in the Netherlands. During 1997–1999, nationwide coverage of children for both doses was reported between 95% and 96% (2). However, coverage was not distributed uniformly throughout the country. In 1999, coverage ranged from 53% to 90% in municipalities that had a high percentage of residents who were members of a particular group that refrains from vaccination on religious grounds (2). This community in the Netherlands, estimated at 300,000 persons (2% of the overall population) lives as a close social network in a circumscribed geographic area mostly in the provinces of Gelderland, Utrecht, Zuid-Holland, and Zeeland. Approximately half of the 4%–5% of unvaccinated persons in the Netherlands are members of this group. Although the Netherlands has high overall MMR coverage, 36 (7%) of 539 municipalities have one-dose coverage of <90%.

Although measles is more severe in malnourished or immunosuppressed persons, severe disease or death may result in persons with no underlying illness. Measles vaccine is a highly effective method for preventing this disease, and lack of vaccination resulted in this outbreak. Similar to the outbreak of poliomyelitis among religious communities in 1992 (3,4), measles spread from the Netherlands to Canada through visiting relatives. The resulting outbreak in Canada was limited to 17 cases within the religious community possibly because stringent control measures were taken (5).

Until measles is eradicated worldwide, epidemics will continue to occur periodically in the Netherlands. The World Health Organization (WHO) has established goals to eliminate measles as an indigenous disease from the Region of the Americas by the end of 2000, the European Region by 2007, and the Eastern Mediterranean Region by 2010. To reach these goals, the WHO regional office for Europe has conducted workshops aimed at assisting participating countries to develop an elimination strategy based on the percentage of persons susceptible to measles in their population. In addition to these activities, increased commitment at the regional and national levels is needed to eliminate measles in the European Region (6).

References

1. CDC. Measles, mumps, and rubella—vaccine use and strategies for elimination of measles, rubella, and congenital rubella syndrome and control of mumps: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1998;47(no. RR-8).
2. Anonymous. Vaccinatietoestand Nederland per 1 januari 1999 [Dutch]. The Hague, the Netherlands: Inspectorate of Health, 2000.
3. CDC. Update: poliomyelitis outbreak—Netherlands, 1992. *MMWR* 1992;41:917–9.
4. CDC. Isolation of wild poliovirus type 3 among members of a religious community objecting to vaccination—Alberta, Canada, 1993. *MMWR* 1993;42:337–9.
5. van de Berichten LCI. Mazelenbestrijding in Canada [Dutch]. In: Ruijs H, ed. *Infectieziekten Bulletin* 2000;11:14.

Measles — Continued

6. Ramsey M, Expanded Programme on Immunization in the European Region of the World Health Organization. Measles: a strategic framework for the elimination of measles in the European Region, February 1997. Copenhagen, Denmark: World Health Organization, 1999.

Fatal Yellow Fever in a Traveler Returning from Venezuela, 1999

On September 28, 1999, a previously healthy 48-year-old man from California sought care at a local emergency department (ED) and was hospitalized with a 2-day history of fever (102 F [38.9 C]), chills, headache, photophobia, diffuse myalgias, joint pains, nausea, vomiting, constipation, upper abdominal discomfort, and general weakness. On September 26, he had returned from a 10-day trip to Venezuela. On September 29, an infectious disease physician from the ED contacted the Marin County Health Department (MCHD) about the patient's symptoms; MCHD reported his illness to the California Department of Health Services (CDHS) as a suspected case of viral hemorrhagic fever. This report describes the investigation of the case.

On admission to the hospital, physical examination revealed icteric sclerae and tenderness in the upper abdomen. Multiple red papular lesions with excoriations consistent with recent mosquito bites were seen on his lower legs and feet. No hepatosplenomegaly or lymphadenopathy was noted. Laboratory results indicated markedly elevated serum bilirubin (5.9 mg/dL) and liver enzymes (alanine aminotransferase: >5000 U/L; aspartate aminotransferase: >3750 U/L; and alkaline phosphatase: 194 U/L), leukopenia (white cell count: $3.4 \times 10^3/\text{mm}^3$ with 82% segmented, 2% bands, and 2% atypical lymphocytes), thrombocytopenia (platelet count: 77,000/ mm^3), and evidence of acute renal failure (creatinine: 5.9 mg/dL; potassium: 6.4 mmol/L; and bicarbonate: 16 mmol/L).

A preliminary diagnosis of hemorrhagic fever syndrome was made, and the patient was placed on doxycycline and ceftriaxone. Cultures of blood and urine were negative for bacterial pathogens. Blood smears for malaria were negative. On October 1, the patient developed general seizures and upper respiratory obstruction. He was placed on mechanical ventilation and transferred to the intensive care unit. His condition deteriorated rapidly, with severe coagulopathy and cardiac arrhythmias. He died on October 4.

On October 7, an autopsy of the chest and abdomen was performed at the University of California San Francisco Medical Center. Histopathologic examination of the liver showed extensive necrosis, steatosis, and numerous Councilman bodies compatible with fulminant yellow fever (YF) hepatitis. Evidence of disseminated angioinvasive aspergillosis involving the lungs, heart, kidneys, adrenal glands, small and large bowel, stomach, and disseminated intravascular coagulation also was seen. Specimens of the liver were examined at CDC; YF viral antigens were found by immunohistochemistry (IHC) and YF virus-specific nucleic acids by polymerase chain reaction. Other IHC tests were negative for dengue virus, leptospira, New World arenaviruses, spotted fever group rickettsiae, and hantavirus. The patient's serum was tested by CDHS; no antibody to YF virus (17D) was detected by immunofluorescence in serum drawn September 28, but an IgG titer of 1:128 and an IgM titer of >1:80 were detected in serum drawn October 1.

During September 16–25, the patient had traveled with six companions to rainforests in southern Venezuela (Amazonas State). He experienced multiple mosquito bites during his visit despite using DEET-based repellents. Before his trip, the patient had received tetanus toxoid, typhoid vaccine, hepatitis A vaccine, and malaria prophylaxis, but not YF

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vaccine. The six travel companions were contacted by CDHS about their health and vaccination status; none had become ill during or following the trip. Five had received YF vaccine before travel. The unvaccinated traveler's serum was negative for YF virus antibody tested at CDC by enzyme-linked immunosorbent assay.

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Editorial Note: This report describes the second case of imported fatal YF in a U.S. resident returning from South America since 1996, and the first such cases since 1924. Neither patient had received YF vaccine before travel. In the case described in this report, viral hemorrhagic fever was suspected and reported to the local health department. Histopathology, IHC studies, nucleic acid testing, and serology all demonstrated that the traveler died of YF complicated by angioinvasive aspergillosis. In 1996, a Tennessee resident returned from a 9-day trip to Brazil with fever, headache, and myalgias (1). He died 10 days after onset of symptoms, and YF virus was identified from tissue culture.

YF occurs in at least seven tropical South American countries (Bolivia, Brazil, Colombia, Ecuador, French Guiana, Peru, and Venezuela) and much of sub-Saharan Africa (2). The sylvatic cycle involves nonhuman primates and mosquitoes that breed in tree holes (3). Persons living or working in proximity to such jungle or forest habitats who are bitten by infected mosquitoes can develop "jungle YF." Another cycle exists between humans and *Aedes aegypti* mosquitoes. *Ae. aegypti* mosquitoes are present in most urban centers of South and Central America, the Caribbean, and parts of the southern United States; persons in these areas are at risk for urban YF infection. YF has not been reported from India or other parts of Asia despite the presence of *Ae. aegypti* (4).

World Health Organization (WHO) data suggest that YF transmission is increasing (4,5). After adjustments for underreporting, WHO estimates that approximately 200,000 YF cases occur each year, most in sub-Saharan Africa (4). Concomitant with increased YF transmission, the number of travelers from the United States to South America and Africa has more than doubled since 1988 (6). These travelers may be at risk for YF unless precautions are taken, including receipt of YF vaccine.

YF is one of three diseases (the others are plague and cholera) subject to international quarantine regulations (7). CDC is required to notify WHO of all YF cases in the United States within 24 hours. Accordingly, all suspected and confirmed cases should be reported immediately through local and state health departments to CDC's National Center for Infectious Diseases, Division of Quarantine (DQ), telephone (404) 639-8100; acute and convalescent-phase serum should be collected and sent for viral isolation and diagnosis to CDC's National Center for Infectious Diseases, Division of Vector-borne Infectious Diseases, telephone (970) 221-6400. CDC's DQ also is responsible for certifying YF vaccination centers in the United States. Since September 1, 1977, CDC has delegated to state and territorial health departments the responsibility to designate and supervise nonfederal YF vaccination centers within their jurisdictions. The location of certified U.S. YF vaccination centers is available from local and state health departments. If YF vaccine is medically contraindicated, health-care providers should supply

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persons with a letter listing reasons for not vaccinating, and persons should carry this with them when traveling. Details of vaccine recommendations and requirements of individual countries are available from the CDC World-Wide Web site, <http://www.cdc.gov/travel> (2).

CDC recommends YF vaccination for travelers to countries reporting YF (2). Vaccination also is recommended for travel outside urban areas of countries that officially do not report the disease but are in the YF-enzootic zone. Travelers should also take protective measures to reduce contact with mosquitoes; these include wearing clothes that cover most of the body, staying in well-screened areas, using insect repellent (containing DEET at a concentration of <35% are recommended) on exposed skin and clothing, and sleeping under bed nets treated with permethrin or deltamethrin insecticides.

References

1. McFarland JM, Baddour LM, Nelson JE, et al. Imported yellow fever in a United States citizen. *Clin Infect Dis* 1997;25:1143–7.
2. CDC. Health information for international travel 1999–2000. Atlanta, Georgia: US Department of Health and Human Services, 1999. Available at <http://www.cdc.gov/travel>.
3. Monath TP. Yellow fever. In: Plotkin SA, Orenstein WA, eds. *Vaccines*. 3rd ed. Philadelphia, Pennsylvania: WB Saunders, 1999:815–79.
4. Robertson SE, Hull BP, Tomori O, Bele O, LeDuc JW, Esteves K. Yellow fever: a decade of reemergence. *JAMA* 1996;276:1157–62.
5. World Health Organization. Yellow fever, 1996–1997. *Wkly Epidemiol Rec* 1998;73:354–9.
6. International Trade Administration. U.S. resident travel to Canada, Mexico and overseas countries historical visitation outbound—1988–1998. Available at: <http://www.tinet.ita.doc.gov/research/reports/basic/national>. Accessed April 12, 2000.
7. World Health Organization. *International health regulations (1969): third annotated edition*. Geneva, Switzerland: World Health Organization, 1983:10–2.

*Notice to Readers***CDC Launches Internet Site in Spanish**

CDC has launched its Spanish language web site, CDC En Español, on the World-Wide Web at <http://www.cdc.gov/spanish/>. It is also accessible from the left navigation side bar of the CDC home page.

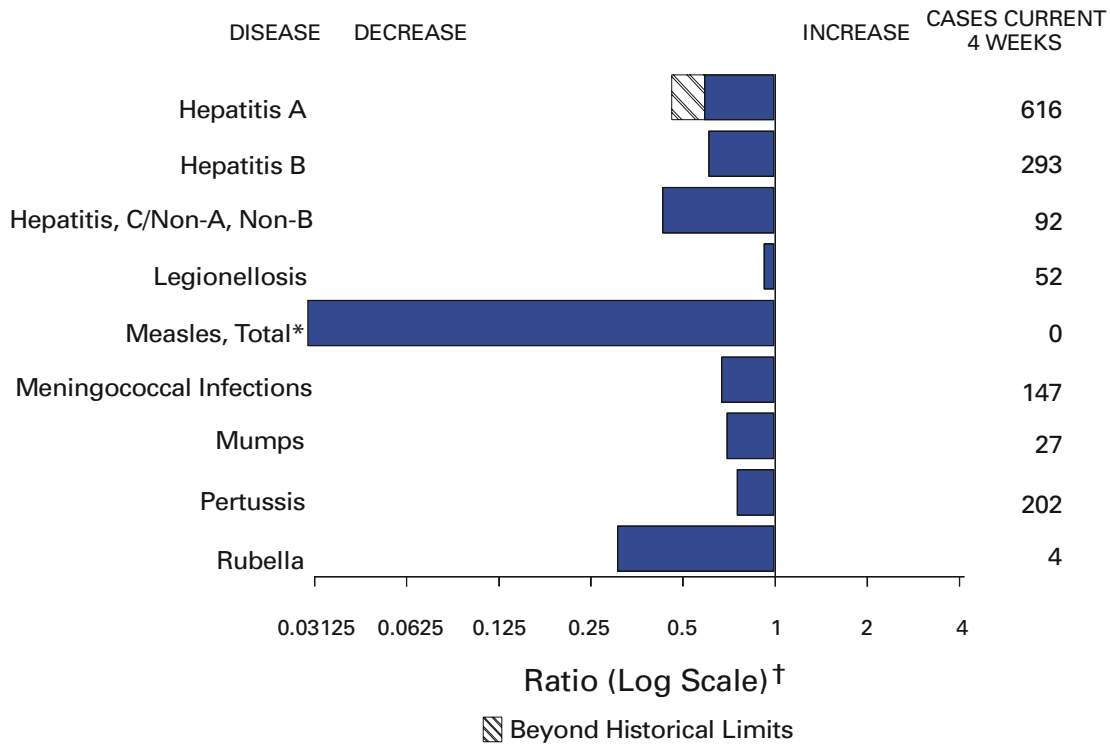
CDC En Español is not a translation of the English language web site but is a site tailored to Hispanic/Latino populations. It provides health-related information to the Hispanic/Latino professional and to the Spanish-speaking community. The site also includes information directed at special groups, such as adolescents, students, teachers, patients, health-care providers, women, and men.

Included is information from the CDC and Agency for Toxic Substances and Disease Registry (ATSDR) centers, institutes, and offices and appropriate links to other key federal agency web sites that are important to the Hispanic/Latino community. CDC En Español provides an opportunity for CDC/ATSDR and its national and international partners to access common information and discuss issues. Questions related to CDC En Español can be sent by e-mail to spanish@cdc.gov.

Notice to Readers**Satellite Broadcast on Geographic Information System**

A satellite broadcast on Geographic Information System (GIS), "GIS in Public Health: Using Mapping and Spatial Analysis Technologies for Health Protection," is scheduled for May 11, 2000, from noon to 2:30 p.m. eastern daylight time. This broadcast, produced jointly by CDC and the Agency for Toxic Substances and Disease Registry, will provide an overview of GIS applications in public health, environmental health, and health-care practice, including research and surveillance using GIS. GIS provides a mechanism for layering health, demographic, environmental, and other data in a geographic format to facilitate analysis and highlight patterns of health-related occurrences. The program is intended to assist participants in identifying ways in which GIS can be useful to their own health professions. It will include demonstrations of GIS technology and show how GIS has helped health professionals understand health issues. Additional information is available on the World-Wide Web at <http://www.cdc.gov/phtn/gis/gis.htm>, or telephone (404) 639-6338.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending April 8, 2000, with historical data — United States



*No measles cases were reported for the current 4-week period, yielding a ratio for week 14 of zero (0).

† 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 April 8, 2000 (14th Week)

	Cum. 2000		Cum. 2000
Anthrax	-	HIV infection, pediatric*§	32
Brucellosis*	7	Plague	2
Cholera	-	Poliomyelitis, paralytic	-
Congenital rubella syndrome	1	Psittacosis*	4
Cyclosporiasis*	4	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	29
Encephalitis: California* serogroup viral	2	Streptococcal disease, invasive Group A	852
eastern equine*	-	Streptococcal toxic-shock syndrome*	32
St. Louis*	-	Syphilis, congenital†	10
western equine*	-	Tetanus	4
Ehrlichiosis human granulocytic (HGE)*	13	Toxic-shock syndrome	36
human monocytic (HME)*	1	Trichinosis	2
Hansen Disease*	11	Typhoid fever	77
Hantavirus pulmonary syndrome*†	-	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	23		

-: 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 from reports to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update March 26, 2000.

¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 8, 2000, and April 10, 1999 (14th Week)

Reporting Area	AIDS		Chlamydia [§]		Cryptosporidiosis		Escherichia coli O157:H7*			
	Cum. 2000 [†]	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	NETSS		PHLIS	
							Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	10,143	11,376	134,665	175,255	302	395	352	298	201	251
NEW ENGLAND	666	529	5,739	5,690	15	19	32	43	28	38
Maine	11	5	286	191	3	1	3	4	2	-
N.H. 8	19	284	288	-	2	4	3	4	3	-
Vt.	1	4	152	132	8	1	1	3	2	-
Mass.	446	354	2,688	2,499	2	12	10	20	7	19
R.I. 21	30	624	596	2	-	-	1	-	1	-
Conn.	179	117	1,705	1,984	-	3	14	12	13	15
MID. ATLANTIC	2,471	2,834	7,096	21,080	25	76	35	15	39	7
Upstate N.Y.	131	359	N	N	18	26	35	10	32	1
N.Y. City	1,441	1,443	464	10,053	4	39	-	2	-	-
N.J.	563	593	1,107	3,371	-	4	-	3	2	6
Pa.	336	439	5,525	7,656	3	7	N	N	5	-
E.N. CENTRAL	921	842	23,677	28,073	49	65	52	55	10	41
Ohio	139	148	6,179	8,685	14	9	15	23	5	12
Ind.	88	124	3,192	3,234	3	5	10	10	1	8
Ill.	542	402	6,759	7,286	-	7	16	11	-	8
Mich.	114	125	5,831	5,868	9	10	11	11	2	7
Wis.	38	43	1,716	3,000	23	34	N	N	2	6
W.N. CENTRAL	203	246	6,916	9,990	23	26	76	71	48	61
Minn.	44	39	1,658	2,073	4	11	18	12	22	16
Iowa	15	30	991	857	3	3	15	8	4	2
Mo.	90	99	1,287	3,655	8	5	34	6	12	5
N. Dak.	-	3	61	243	1	-	2	2	2	2
S. Dak.	2	5	469	521	3	2	1	1	1	1
Nebr.	13	17	763	998	2	3	2	28	4	35
Kans.	39	53	1,687	1,643	2	2	4	14	3	-
S. ATLANTIC	2,848	3,163	26,955	35,461	53	64	33	27	16	18
Del.	45	40	812	797	1	-	-	1	-	-
Md.	271	344	2,734	3,620	5	5	5	1	1	-
D.C.	186	118	854	N	-	3	-	-	U	U
Va.	221	177	3,854	3,774	2	1	6	6	5	4
W. Va.	15	19	450	588	-	-	2	-	1	1
N.C.	128	197	5,495	5,686	4	1	8	7	2	6
S.C.	232	313	669	5,642	-	-	2	1	-	1
Ga.	300	349	5,015	7,311	32	42	3	1	3	U
Fla.	1,450	1,606	7,072	8,043	9	12	7	10	4	6
E.S. CENTRAL	415	490	12,324	12,715	11	4	21	23	13	12
Ky.	56	70	2,166	2,088	-	1	7	6	3	5
Tenn.	172	211	3,303	3,882	1	2	7	9	8	3
Ala.	120	109	4,602	3,543	7	1	1	4	-	3
Miss.	67	100	2,253	3,202	3	-	6	4	2	1
W.S. CENTRAL	824	1,174	21,111	23,098	9	25	15	9	18	18
Ark.	42	45	1,080	1,527	1	-	4	2	1	2
La.	143	119	4,451	3,234	-	15	-	3	9	3
Okla.	42	36	2,016	2,094	1	1	4	3	3	2
Tex.	597	974	13,564	16,243	7	9	7	1	5	11
MOUNTAIN	342	397	7,124	9,246	24	25	32	17	11	18
Mont.	5	4	328	309	1	2	8	-	-	-
Idaho	6	5	64	501	3	2	4	-	-	3
Wyo.	2	2	206	217	1	-	3	2	2	3
Colo.	70	74	911	2,105	6	3	10	5	5	3
N. Mex.	40	13	748	1,345	1	11	-	1	-	-
Ariz.	115	186	3,438	3,407	3	7	5	4	3	3
Utah	41	37	699	483	8	N	1	5	1	5
Nev.	63	76	730	879	1	-	1	-	-	1
PACIFIC	1,453	1,701	23,723	29,902	93	91	56	38	18	38
Wash.	148	88	3,400	3,306	N	N	5	5	7	16
Oreg.	35	45	1,196	1,611	2	7	7	13	8	10
Calif.	1,230	1,541	17,807	23,570	91	84	41	20	-	12
Alaska	5	6	651	553	-	-	-	-	-	-
Hawaii	35	21	669	862	-	-	3	-	3	-
Guam	13	1	-	126	-	-	N	N	U	U
P.R. 187	413	142	U	-	-	-	4	U	U	U
V.I. 16	10	-	U	-	U	-	U	U	U	U
Amer. Samoa	-	-	-	U	-	U	-	U	U	U
C.N.M.I.	-	-	-	U	-	U	-	U	U	U

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

* Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

[†] Updated monthly from reports to the Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update March 26, 2000.

[§] Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 8, 2000, and April 10, 1999 (14th Week)

Reporting Area	Gonorrhea		Hepatitis C/NA,NB		Legionellosis		Lyme Disease	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	70,757	93,601	587	949	172	231	824	1,233
NEW ENGLAND	1,606	1,930	19	3	10	15	80	274
Maine	18	15	-	-	2	2	-	1
N.H.	25	20	-	-	2	2	17	-
Vt.	14	15	1	2	-	3	-	-
Mass.	707	770	18	1	3	4	23	118
R.I.	157	148	-	-	-	1	-	8
Conn.	685	962	-	-	3	3	40	147
MID. ATLANTIC	4,851	11,326	13	37	29	63	584	682
Upstate N.Y.	1,462	1,467	13	19	15	15	272	202
N.Y. City	108	4,495	-	-	-	8	3	18
N.J.	623	1,979	-	-	-	5	-	126
Pa.	2,658	3,385	-	18	14	35	309	336
E.N. CENTRAL	15,157	16,861	61	516	50	70	5	48
Ohio	3,581	4,571	-	-	24	19	5	12
Ind.	1,449	1,849	-	-	12	5	-	1
Ill.	4,608	5,181	5	10	1	10	-	2
Mich.	4,455	4,040	56	140	8	22	-	1
Wis.	1,064	1,220	-	366	5	14	U	32
W.N. CENTRAL	2,360	4,225	96	51	12	8	30	22
Minn.	670	753	-	-	1	-	6	7
Iowa	199	257	-	-	3	3	1	2
Mo.	485	2,022	87	44	5	3	5	5
N. Dak.	4	21	-	-	-	-	-	1
S. Dak.	63	44	-	-	1	1	-	-
Nebr.	241	488	1	1	-	1	-	-
Kans.	698	640	8	6	2	-	18	7
S. ATLANTIC	19,433	27,138	29	65	34	27	98	140
Del.	435	467	-	-	2	2	9	7
Md.	1,895	3,707	3	20	9	4	70	109
D.C.	642	1,842	-	-	-	-	-	1
Va.	2,668	2,565	-	6	3	6	6	3
W. Va.	118	164	2	9	N	N	4	3
N.C.	4,874	5,036	7	17	4	5	4	15
S.C.	574	2,760	-	10	2	5	-	1
Ga.	3,310	4,927	-	1	2	-	-	-
Fla.	4,917	5,670	17	2	12	5	5	1
E.S. CENTRAL	8,734	10,017	114	64	5	14	-	17
Ky.	889	979	15	5	3	7	-	1
Tenn.	2,581	2,993	26	30	1	5	-	5
Ala.	3,450	3,183	3	1	1	2	-	6
Miss.	1,814	2,862	70	28	-	-	-	5
W.S. CENTRAL	11,330	13,146	133	103	1	1	-	-
Ark.	541	722	3	4	-	-	-	-
La.	3,289	2,986	44	78	-	1	-	-
Okla.	896	1,101	-	3	-	-	-	-
Tex.	6,604	8,337	86	18	1	-	-	-
MOUNTAIN	2,657	2,533	72	71	13	15	1	3
Mont.	4	8	1	4	-	-	-	-
Idaho	4	26	-	4	1	-	-	-
Wyo.	18	9	44	28	1	-	-	1
Colo.	949	588	10	9	6	1	-	-
N. Mex.	140	229	4	10	-	1	-	1
Ariz.	1,168	1,280	10	13	2	1	1	-
Utah	87	52	-	1	3	6	-	1
Nev.	287	341	3	2	-	6	-	-
PACIFIC	4,629	6,425	50	39	18	18	26	47
Wash.	615	564	5	2	5	4	-	-
Oreg.	138	239	9	4	N	N	1	1
Calif.	3,714	5,387	36	33	13	14	25	46
Alaska	79	106	-	-	-	-	-	-
Hawaii	83	129	-	-	-	-	N	N
Guam	-	18	-	-	-	-	-	-
P.R.	71	103	1	-	-	-	N	N
V.I.	-	U	-	U	-	U	-	U
Amer. Samoa	-	U	-	U	-	U	-	U
C.N.M.I.	-	U	-	U	-	U	-	U

N: Not notifiable

U: Unavailable

- : no reported cases

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 8, 2000, and April 10, 1999 (14th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	NETSS		PHLIS	
					Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	205	305	1,142	1,434	5,548	6,566	3,183	5,842
NEW ENGLAND	6	5	149	227	387	371	312	394
Maine	1	-	38	39	31	27	12	18
N.H.	-	-	3	16	24	14	20	13
Vt.	1	-	9	43	31	14	17	16
Mass.	2	5	48	48	214	216	187	218
R.I.	-	-	-	21	9	18	12	32
Conn.	2	-	51	60	78	82	64	97
MID. ATLANTIC	24	95	231	281	547	971	652	695
Upstate N.Y.	11	21	175	181	194	188	181	216
N.Y. City	8	41	U	U	191	299	217	276
N.J.	-	24	34	60	-	234	83	197
Pa.	5	9	22	40	162	250	171	6
E.N. CENTRAL	23	34	8	11	798	1,003	365	875
Ohio	3	4	2	2	209	217	137	169
Ind.	1	5	-	-	85	54	46	67
Ill.	10	14	-	-	253	313	1	310
Mich.	9	8	6	9	142	237	127	230
Wis.	-	3	-	-	109	182	54	99
W.N. CENTRAL	9	14	104	195	294	404	276	440
Minn.	4	2	22	25	42	111	81	157
Iowa	-	3	17	26	40	47	25	42
Mo.	-	7	2	6	105	90	91	125
N. Dak.	-	-	21	30	4	2	15	16
S. Dak.	-	-	18	48	16	13	17	21
Nebr.	1	-	-	1	35	31	22	32
Kans.	4	2	24	59	52	110	25	47
S. ATLANTIC	58	67	498	498	1,095	1,190	564	1,036
Del.	-	-	10	11	15	20	11	27
Md.	21	21	112	114	162	140	111	158
D.C.	2	6	-	-	1	24	U	U
Va.	15	12	123	112	123	140	86	129
W. Va.	-	1	30	25	27	20	19	24
N.C.	6	6	109	111	190	243	103	206
S.C.	-	-	34	43	94	68	68	76
Ga.	1	6	45	46	175	236	166	287
Fla.	13	15	35	36	308	299	-	129
E.S. CENTRAL	10	6	40	68	295	355	121	228
Ky.	2	2	9	17	64	74	23	52
Tenn.	1	2	23	23	67	96	67	93
Ala.	6	2	8	28	111	107	23	70
Miss.	1	-	-	-	53	78	8	13
W.S. CENTRAL	1	11	15	31	356	476	364	455
Ark.	-	2	-	-	59	61	22	49
La.	1	7	-	-	27	75	84	83
Okla.	-	1	15	31	59	59	35	45
Tex.	-	1	-	-	211	281	223	278
MOUNTAIN	15	14	45	40	519	521	307	505
Mont.	1	2	10	16	20	8	-	1
Idaho	-	1	-	-	34	17	-	25
Wyo.	-	-	21	11	7	6	3	8
Colo.	8	4	-	1	129	164	97	162
N. Mex.	-	2	3	-	48	62	28	60
Ariz.	2	4	11	12	167	150	123	134
Utah	2	1	-	-	71	71	56	79
Nev.	2	-	-	-	43	43	-	36
PACIFIC	59	59	52	83	1,257	1,275	222	1,214
Wash.	3	3	-	-	69	84	103	174
Oreg.	6	7	-	1	61	89	77	128
Calif.	49	44	42	78	1,058	1,016	-	839
Alaska	-	-	10	4	17	8	8	5
Hawaii	1	5	-	-	52	78	34	68
Guam	-	-	-	-	-	17	U	U
P.R.	-	-	8	26	7	100	U	U
V.I.	-	U	-	U	-	U	U	U
Amer. Samoa	-	U	-	U	-	U	U	U
C.N.M.I.	-	U	-	U	-	U	U	U

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

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 8, 2000, and April 10, 1999 (14th Week)

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS		Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999 [†]
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999				
UNITED STATES	3,442	3,254	1,353	1,726	1,521	1,789	2,268	3,397
NEW ENGLAND	72	79	51	72	24	20	71	95
Maine	2	1	-	-	-	-	-	3
N.H.	1	5	1	5	-	-	2	-
Vt.	1	4	-	3	-	1	-	-
Mass.	48	50	37	47	20	11	48	50
R.I.	7	11	4	8	1	1	7	15
Conn.	13	8	9	9	3	7	14	27
MID. ATLANTIC	308	271	233	152	40	81	467	525
Upstate N.Y.	181	57	73	20	2	7	38	55
N.Y. City	97	90	105	76	8	30	274	259
N.J.	-	81	23	56	6	20	123	126
Pa.	30	43	32	-	24	24	32	85
E.N. CENTRAL	541	552	181	284	365	288	263	288
Ohio	40	171	25	24	20	24	31	68
Ind.	77	19	9	9	125	77	16	19
Ill.	180	216	2	189	113	129	172	135
Mich.	198	71	139	48	88	49	24	49
Wis.	46	75	6	14	19	9	20	17
W.N. CENTRAL	244	198	125	148	19	46	116	120
Minn.	47	26	49	29	2	5	42	48
Iowa	44	2	21	3	8	3	8	6
Mo.	117	126	43	100	5	32	48	48
N. Dak.	1	1	-	2	-	-	-	1
S. Dak.	1	4	-	2	-	-	3	3
Nebr.	22	13	8	5	2	3	4	4
Kans.	12	26	4	7	2	3	11	10
S. ATLANTIC	497	538	84	123	481	649	431	647
Del.	3	7	2	2	2	1	-	5
Md.	27	31	8	5	91	137	58	58
D.C.	-	19	U	U	16	37	2	12
Va.	16	19	13	5	36	46	-	44
W. Va.	2	3	2	1	1	2	9	11
N.C.	32	66	11	35	151	142	66	89
S.C.	5	31	2	11	11	65	18	85
Ga.	59	57	25	19	83	118	128	124
Fla.	353	305	21	45	90	101	150	219
E.S. CENTRAL	167	336	85	189	226	317	142	210
Ky.	36	34	19	24	22	34	6	30
Tenn.	86	239	63	148	147	154	65	70
Ala.	9	39	1	16	34	79	71	83
Miss.	36	24	2	1	23	50	-	27
W.S. CENTRAL	311	522	287	575	205	254	56	524
Ark.	58	35	3	21	16	25	37	28
La.	19	43	45	36	59	44	-	U
Okla.	8	130	5	33	47	64	19	25
Tex.	226	314	234	485	83	121	-	471
MOUNTAIN	252	182	73	112	49	51	104	99
Mont.	1	3	-	-	-	-	4	-
Idaho	23	3	-	3	-	-	-	-
Wyo.	1	2	1	1	-	-	-	-
Colo.	33	34	17	26	1	-	14	U
N. Mex.	28	24	13	16	6	-	17	14
Ariz.	103	94	32	50	40	50	43	53
Utah	12	13	10	13	-	1	7	11
Nev.	51	9	-	3	2	-	19	21
PACIFIC	1,050	576	234	71	112	83	618	889
Wash.	187	20	182	37	13	11	39	45
Oreg.	76	16	45	19	2	1	-	26
Calif.	768	524	-	-	97	69	537	763
Alaska	7	-	1	-	-	1	15	13
Hawaii	12	16	6	15	-	1	27	42
Guam	-	3	U	U	-	-	-	-
P.R.	1	20	U	U	24	59	-	41
V.I.	-	U	U	U	-	U	-	U
Amer. Samoa	-	U	U	U	-	U	-	U
C.N.M.I.	-	U	U	U	-	U	-	U

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

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

[†]Cumulative reports of provisional tuberculosis cases for 1999 are unavailable ("U") for some areas using the Tuberculosis Information System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 8, 2000, and April 10, 1999 (14th Week)

Reporting Area	<i>H. influenzae</i> , invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
	Cum. 2000 ^a	Cum. 1999	A		B		Indigenous		Imported*		Total	
			Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	2000	Cum. 2000	2000	Cum. 2000	Cum. 2000	Cum. 1999
UNITED STATES	335	351	3,099	5,001	1,236	1,619	-	4	-	2	6	27
NEW ENGLAND	19	23	78	54	12	47	-	-	-	-	-	2
Maine	1	2	4	2	1	-	U	-	U	-	-	-
N.H.	6	4	8	6	6	4	-	-	-	-	-	1
Vt.	2	3	3	1	2	1	-	-	-	-	-	-
Mass.	6	10	33	19	3	22	-	-	-	-	-	1
R.I.	-	-	-	2	-	5	-	-	-	-	-	-
Conn.	4	4	30	24	-	15	-	-	-	-	-	-
MID. ATLANTIC	47	50	127	318	124	238	-	-	-	-	-	-
Upstate N.Y.	22	22	62	69	26	48	-	-	-	-	-	-
N.Y. City	10	15	65	88	98	77	-	-	-	-	-	-
N.J.	11	12	-	39	-	30	-	-	-	-	-	-
Pa.	4	1	-	122	-	83	-	-	-	-	-	-
E.N. CENTRAL	42	52	404	1,066	131	148	-	3	-	-	3	-
Ohio	17	21	104	231	30	30	-	2	-	-	2	-
Ind.	4	5	15	38	5	8	-	-	-	-	-	-
Ill.	18	21	136	197	2	-	-	-	-	-	-	-
Mich.	3	5	136	569	93	103	-	1	-	-	1	-
Wis.	-	-	13	31	1	7	-	-	-	-	-	-
W.N. CENTRAL	14	27	341	252	66	88	-	1	-	-	1	-
Minn.	7	11	28	18	4	12	-	-	-	-	-	-
Iowa	-	4	35	43	14	15	-	-	-	-	-	-
Mo.	3	5	188	134	28	41	-	-	-	-	-	-
N. Dak.	1	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	1	-	8	-	-	-	-	-	-	-	-
Nebr.	1	2	10	23	8	9	U	-	U	-	-	-
Kans.	2	4	80	26	12	11	-	1	-	-	1	-
S. ATLANTIC	102	74	377	437	289	254	-	-	-	-	-	-
Del.	-	-	-	1	-	-	-	-	-	-	-	-
Md.	24	21	41	102	35	58	-	-	-	-	-	-
D.C.	-	2	2	16	6	6	-	-	-	-	-	-
Va.	20	9	46	37	37	26	-	-	-	-	-	-
W. Va.	2	1	30	5	2	5	-	-	-	-	-	-
N.C.	8	12	63	41	81	63	-	-	-	-	-	-
S.C.	4	2	11	5	2	31	-	-	-	-	-	-
Ga.	27	19	48	148	45	33	-	-	-	-	-	-
Fla.	17	8	136	82	81	32	-	-	-	-	-	-
E.S. CENTRAL	18	28	95	126	81	126	-	-	-	-	-	-
Ky.	9	5	12	23	18	9	-	-	-	-	-	-
Tenn.	6	11	21	53	28	55	-	-	-	-	-	-
Ala.	3	10	20	27	7	35	-	-	-	-	-	-
Miss.	-	2	42	23	28	27	-	-	-	-	-	-
W.S. CENTRAL	18	26	480	1,120	57	214	-	-	-	-	-	2
Ark.	-	-	51	12	17	15	-	-	-	-	-	-
La.	3	7	11	45	18	53	-	-	-	-	-	-
Okla.	15	17	102	168	22	40	-	-	-	-	-	-
Tex.	-	2	316	895	-	106	-	-	-	-	-	2
MOUNTAIN	44	38	236	459	108	134	-	-	-	-	-	-
Mont.	-	1	1	5	3	7	-	-	-	-	-	-
Idaho	2	1	11	16	4	7	-	-	-	-	-	-
Wyo.	-	1	6	2	-	2	U	-	U	-	-	-
Colo.	11	2	49	85	22	25	-	-	-	-	-	-
N. Mex.	10	10	26	11	32	37	-	-	-	-	-	-
Ariz.	18	20	113	279	37	30	-	-	-	-	-	-
Utah	3	3	15	18	3	7	-	-	-	-	-	-
Nev.	-	-	15	43	7	19	-	-	-	-	-	-
PACIFIC	31	33	961	1,169	368	370	-	-	-	2	2	23
Wash.	2	-	50	76	10	11	-	-	-	-	-	5
Oreg.	9	13	61	75	26	29	U	-	U	-	-	8
Calif.	9	17	847	1,013	324	319	-	-	-	2	2	10
Alaska	1	2	3	3	3	7	-	-	-	-	-	-
Hawaii	10	1	-	2	5	4	-	-	-	-	-	-
Guam	-	-	-	2	-	2	U	-	U	-	-	-
P.R.	-	1	19	49	12	56	-	-	-	-	-	-
V.I.	-	U	-	U	-	U	U	-	U	-	-	U
Amer. Samoa	-	U	-	U	-	U	U	-	U	-	-	U
C.N.M.I.	-	U	-	U	-	U	U	-	U	-	-	U

N: Not notifiable

U: Unavailable

- : no reported cases

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

^aOf 74 cases among children aged <5 years, serotype was reported for 31 and of those, 6 were type b.

TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 8, 2000, and April 10, 1999 (14th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999
UNITED STATES	700	775	5	105	113	59	1,013	1,535	-	12	15
NEW ENGLAND	40	41	-	2	3	13	274	141	-	5	4
Maine	3	3	U	-	-	U	9	-	U	-	-
N.H.	3	5	-	-	1	-	48	19	-	1	-
Vt.	2	2	-	-	-	5	60	9	-	-	-
Mass.	25	26	-	-	2	6	139	106	-	3	4
R.I.	1	2	-	1	-	-	7	2	-	-	-
Conn.	6	3	-	1	-	2	11	5	-	1	-
MID. ATLANTIC	62	80	2	7	15	17	101	308	-	2	1
Upstate N.Y.	13	20	2	5	2	6	64	258	-	2	1
N.Y. City	15	26	-	-	3	-	-	10	-	-	-
N.J.	16	14	-	-	-	-	-	7	-	-	-
Pa.	18	20	-	2	10	11	37	33	-	-	-
E.N. CENTRAL	114	123	-	11	16	4	149	154	-	-	-
Ohio	24	46	-	3	6	-	108	89	-	-	-
Ind.	18	6	-	-	-	1	9	8	-	-	-
Ill.	30	42	-	3	4	2	13	24	-	-	-
Mich.	32	16	-	5	6	1	9	16	-	-	-
Wis.	10	13	-	-	-	-	10	17	-	-	-
W.N. CENTRAL	55	104	-	10	3	3	37	47	-	2	1
Minn.	3	25	-	-	-	2	16	-	-	-	-
Iowa	12	18	-	3	2	1	9	9	-	-	-
Mo.	35	34	-	1	1	-	4	10	-	-	-
N. Dak.	1	-	-	-	-	-	1	-	-	-	-
S. Dak.	2	5	-	-	-	-	1	2	-	-	-
Nebr.	1	5	U	4	-	U	2	1	U	-	1
Kans.	1	17	-	2	-	-	4	25	-	2	-
S. ATLANTIC	114	106	1	13	17	2	78	74	-	3	2
Del.	-	2	-	-	-	-	1	-	-	-	-
Md.	11	20	-	4	4	-	21	28	-	-	1
D.C.	-	1	-	-	1	-	-	-	-	-	-
Va.	19	16	-	2	2	-	5	7	-	-	-
W. Va.	3	1	-	-	-	-	-	-	-	-	-
N.C.	21	16	-	2	4	-	28	22	-	-	1
S.C.	6	16	1	5	2	2	14	6	-	3	-
Ga.	22	16	-	-	-	-	9	6	-	-	-
Fla.	32	18	-	-	4	-	-	5	-	-	-
E.S. CENTRAL	50	66	-	1	3	1	23	34	-	-	-
Ky.	11	12	-	-	-	-	13	9	-	-	-
Tenn.	22	22	-	-	-	-	1	17	-	-	-
Ala.	14	21	-	1	1	1	8	6	-	-	-
Miss.	3	11	-	-	2	-	1	2	-	-	-
W.S. CENTRAL	43	61	-	1	15	-	5	39	-	-	5
Ark.	5	14	-	1	-	-	5	4	-	-	-
La.	13	31	-	-	2	-	-	2	-	-	-
Okla.	10	13	-	-	1	-	-	3	-	-	-
Tex.	15	3	-	-	12	-	-	30	-	-	5
MOUNTAIN	47	62	-	7	7	13	223	213	-	-	1
Mont.	1	-	-	1	-	-	1	1	-	-	-
Idaho	6	8	-	-	-	-	32	83	-	-	-
Wyo.	-	2	U	-	-	U	-	2	U	-	-
Colo.	10	18	-	1	2	10	118	49	-	-	-
N. Mex.	7	7	-	1	N	3	48	12	-	-	-
Ariz.	15	19	-	-	-	-	17	40	-	-	-
Utah	6	4	-	2	4	-	4	24	-	-	1
Nev.	2	4	-	2	1	-	3	2	-	-	-
PACIFIC	175	132	2	53	34	6	123	525	-	-	1
Wash.	13	17	-	2	-	3	44	223	-	-	-
Oreg.	19	29	N	N	N	U	18	8	U	-	-
Calif.	140	78	2	50	28	3	54	276	-	-	1
Alaska	1	4	-	-	1	-	4	2	-	-	-
Hawaii	2	4	-	1	5	-	3	16	-	-	-
Guam	-	-	U	-	1	U	-	1	U	-	-
P.R.	-	7	-	-	-	-	-	-	-	-	-
V.I.	-	U	U	-	U	U	-	U	U	-	U
Amer. Samoa	-	U	U	-	U	U	-	U	U	-	U
C.N.M.I.	-	U	U	-	U	U	-	U	U	-	U

N: Not notifiable

U: Unavailable

- : no reported cases

**TABLE IV. Deaths in 122 U.S. cities,* week ending
April 8, 2000 (14th Week)**

Reporting Area	All Causes, By Age (Years)						P&I† Total	Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	471	343	81	26	8	13	59	S. ATLANTIC	1,134	740	227	83	32	50	79
Boston, Mass.	117	73	29	6	1	8	17	Atlanta, Ga.	U	U	U	U	U	U	U
Bridgeport, Conn.	40	29	5	3	1	2	3	Baltimore, Md.	112	69	21	14	5	2	10
Cambridge, Mass.	23	20	2	1	-	-	3	Charlotte, N.C.	93	67	16	5	1	4	8
Fall River, Mass.	19	17	2	-	-	-	-	Jacksonville, Fla.	146	101	27	9	3	6	15
Hartford, Conn.	52	37	8	5	2	-	7	Miami, Fla.	124	81	29	9	5	-	10
Lowell, Mass.	28	24	3	1	-	-	4	Norfolk, Va.	56	39	7	5	2	3	5
Lynn, Mass.	12	9	1	2	-	-	1	Richmond, Va.	56	38	9	3	2	4	2
New Bedford, Mass.	20	15	5	-	-	-	1	Savannah, Ga.	56	40	10	4	1	1	5
New Haven, Conn.	33	20	8	3	2	-	1	St. Petersburg, Fla.	33	27	2	1	2	1	5
Providence, R.I.	U	U	U	U	U	U	U	Tampa, Fla.	185	132	39	10	1	3	12
Somerville, Mass.	4	3	1	-	-	-	2	Washington, D.C.	253	134	59	23	10	26	7
Springfield, Mass.	45	34	8	1	1	-	5	Wilmington, Del.	20	12	8	-	-	-	-
Waterbury, Conn.	22	19	1	1	1	-	2	E.S. CENTRAL	875	574	197	67	22	15	48
Worcester, Mass.	56	43	8	3	1	1	13	Birmingham, Ala.	164	107	33	19	3	2	18
MID. ATLANTIC	2,173	1,543	387	164	36	42	120	Chattanooga, Tenn.	93	69	16	3	4	1	3
Albany, N.Y.	59	44	9	3	3	-	3	Knoxville, Tenn.	113	75	30	7	1	-	5
Allentown, Pa.	U	U	U	U	U	U	U	Lexington, Ky.	51	37	8	3	1	2	5
Buffalo, N.Y.	71	51	13	7	-	-	7	Memphis, Tenn.	192	117	47	19	5	4	6
Camden, N.J.	28	20	6	2	-	-	1	Mobile, Ala.	72	50	13	5	2	2	2
Elizabeth, N.J.	17	15	1	-	-	1	2	Montgomery, Ala.	48	29	14	3	1	1	2
Erie, Pa.‡	49	37	8	3	-	1	3	Nashville, Tenn.	142	90	36	8	5	3	7
Jersey City, N.J.	44	22	9	10	-	3	-	W.S. CENTRAL	1,545	958	348	129	76	34	126
New York City, N.Y.	1,055	749	196	80	20	10	35	Austin, Tex.	96	61	21	11	2	1	6
Newark, N.J.	U	U	U	U	U	U	U	Baton Rouge, La.	28	19	7	2	-	-	2
Paterson, N.J.	15	8	3	3	-	1	-	Corpus Christi, Tex.	56	45	8	2	-	-	2
Philadelphia, Pa.	327	215	64	29	6	12	30	Dallas, Tex.	189	118	37	21	9	4	12
Pittsburgh, Pa.‡	103	77	13	6	1	6	8	El Paso, Tex.	111	72	26	6	6	1	6
Reading, Pa.	31	27	4	-	-	-	2	Ft. Worth, Tex.	125	75	33	7	6	4	10
Rochester, N.Y.	153	114	23	8	3	5	13	Houston, Tex.	408	227	104	41	31	5	43
Schenectady, N.Y.	19	15	3	1	-	-	1	Little Rock, Ark.	68	41	18	6	1	2	9
Scranton, Pa.‡	35	25	7	3	-	-	3	New Orleans, La.	74	35	10	9	12	8	3
Syracuse, N.Y.	107	81	17	4	3	2	8	San Antonio, Tex.	208	138	43	16	6	5	16
Trenton, N.J.	30	19	6	4	-	1	3	Shreveport, La.	56	38	12	2	1	3	7
Utica, N.Y.	30	24	5	1	-	-	1	Tulsa, Okla.	126	89	29	6	1	1	10
Yonkers, N.Y.	U	U	U	U	U	U	U	MOUNTAIN	1,047	695	209	97	27	19	82
E.N. CENTRAL	2,087	1,445	424	132	28	56	173	Albuquerque, N.M.	95	63	19	11	-	2	5
Akron, Ohio	61	37	9	4	1	10	4	Boise, Idaho	65	42	11	8	1	3	4
Canton, Ohio	35	29	6	-	-	-	4	Colo. Springs, Colo.	44	33	4	5	1	1	-
Chicago, Ill.	421	265	102	37	6	9	49	Denver, Colo.	126	77	28	11	5	5	16
Cincinnati, Ohio	115	74	28	5	2	6	11	Las Vegas, Nev.	229	150	56	15	6	2	13
Cleveland, Ohio	111	68	28	9	1	5	5	Ogden, Utah	32	24	6	1	-	-	1
Columbus, Ohio	194	128	41	19	2	4	16	Phoenix, Ariz.	183	116	34	22	7	4	7
Dayton, Ohio	139	103	26	6	3	1	5	Pueblo, Colo.	29	19	6	4	-	-	2
Detroit, Mich.	173	103	38	24	5	3	9	Salt Lake City, Utah	111	75	20	12	2	2	18
Evansville, Ind.	52	43	8	-	-	1	5	Tucson, Ariz.	133	96	25	8	4	-	16
Fort Wayne, Ind.	61	47	11	2	-	1	4	PACIFIC	1,980	1,480	323	108	31	36	169
Gary, Ind.	11	8	2	1	-	-	-	Berkeley, Calif.	28	20	4	1	-	3	4
Grand Rapids, Mich.	39	34	3	-	1	1	4	Fresno, Calif.	50	35	10	4	-	1	4
Indianapolis, Ind.	168	120	37	5	2	4	22	Glendale, Calif.	39	32	3	3	-	1	6
Lansing, Mich.	43	33	8	1	1	-	4	Honolulu, Hawaii	79	61	13	3	2	-	2
Milwaukee, Wis.	142	102	30	4	2	4	15	Long Beach, Calif.	97	77	15	2	-	3	13
Peoria, Ill.	54	45	6	1	1	1	4	Los Angeles, Calif.	702	529	110	39	14	10	56
Rockford, Ill.	56	44	10	2	-	-	3	Pasadena, Calif.	17	14	3	-	-	-	4
South Bend, Ind.	49	38	5	2	1	3	1	Portland, Oreg.	152	114	22	8	4	4	9
Toledo, Ohio	104	76	18	8	-	2	6	Sacramento, Calif.	177	130	30	12	2	3	18
Youngstown, Ohio	59	48	8	2	-	1	2	San Diego, Calif.	188	131	40	9	3	4	22
W.N. CENTRAL	626	452	112	27	20	15	45	San Francisco, Calif.	U	U	U	U	U	U	U
Des Moines, Iowa	U	U	U	U	U	U	U	San Jose, Calif.	175	132	26	10	2	4	18
Duluth, Minn.	29	20	9	-	-	-	1	Santa Cruz, Calif.	27	22	4	-	1	-	1
Kansas City, Kans.	41	27	10	2	2	-	3	Seattle, Wash.	112	82	15	10	3	2	1
Kansas City, Mo.	90	57	14	6	6	7	4	Spokane, Wash.	46	34	9	2	-	1	6
Lincoln, Nebr.	41	31	7	3	-	-	2	Tacoma, Wash.	91	67	19	5	-	-	5
Minneapolis, Minn.	120	97	13	6	2	2	8	TOTAL	11,938†	8,230	2,308	833	280	280	901
Omaha, Nebr.	80	65	7	2	2	4	6								
St. Louis, Mo.	84	56	18	5	3	2	14								
St. Paul, Minn.	81	61	14	2	4	-	3								
Wichita, Kans.	60	38	20	1	1	-	4								

U: Unavailable -no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more.

†A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

‡Pneumonia and influenza.

§Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

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