

MMWRTM
**MORBIDITY AND MORTALITY
WEEKLY REPORT**

- 265 Outbreak of Hendra-Like Virus — Malaysia and Singapore, 1998–1999
- 269 Aldicarb as a Cause of Food Poisoning — Louisiana, 1998
- 271 Frequency of Vaccine-Related and Therapeutic Injections — Romania, 1998

Outbreak of Hendra-Like Virus — Malaysia and Singapore, 1998–1999

During September 29, 1998–April 4, 1999, 229 cases of febrile encephalitis (111 [48%] fatal) were reported to the Malaysian Ministry of Health (MOH). During March 13–19, 1999, nine cases of similar encephalitic illnesses (one fatal) and two cases of respiratory illness occurred among abattoir workers in Singapore. Tissue culture isolation identified a previously unknown infectious agent from ill patients. This report summarizes the preliminary epidemiologic and laboratory investigations of these cases, which indicate that a previously unrecognized paramyxovirus related to, but distinct from, the Australian Hendra virus is associated with this outbreak.

MALAYSIA

A case of suspected illness was defined as fever, severe headache, myalgia, and signs of encephalitis or meningitis. Three clusters of cases have been identified. The first cluster began in late September 1998 near the city of Ipoh in the state of Perak. Cases continued to occur in this region until early February 1999. The second cluster occurred near the city of Sikamat in the state of Negri Sembilan in December 1998 and January 1999. The third and largest cluster began near the city of Bukit Pelandok in the state of Negri Sembilan in December 1998. Two cases occurred in the state of Selangor (Figure 1).

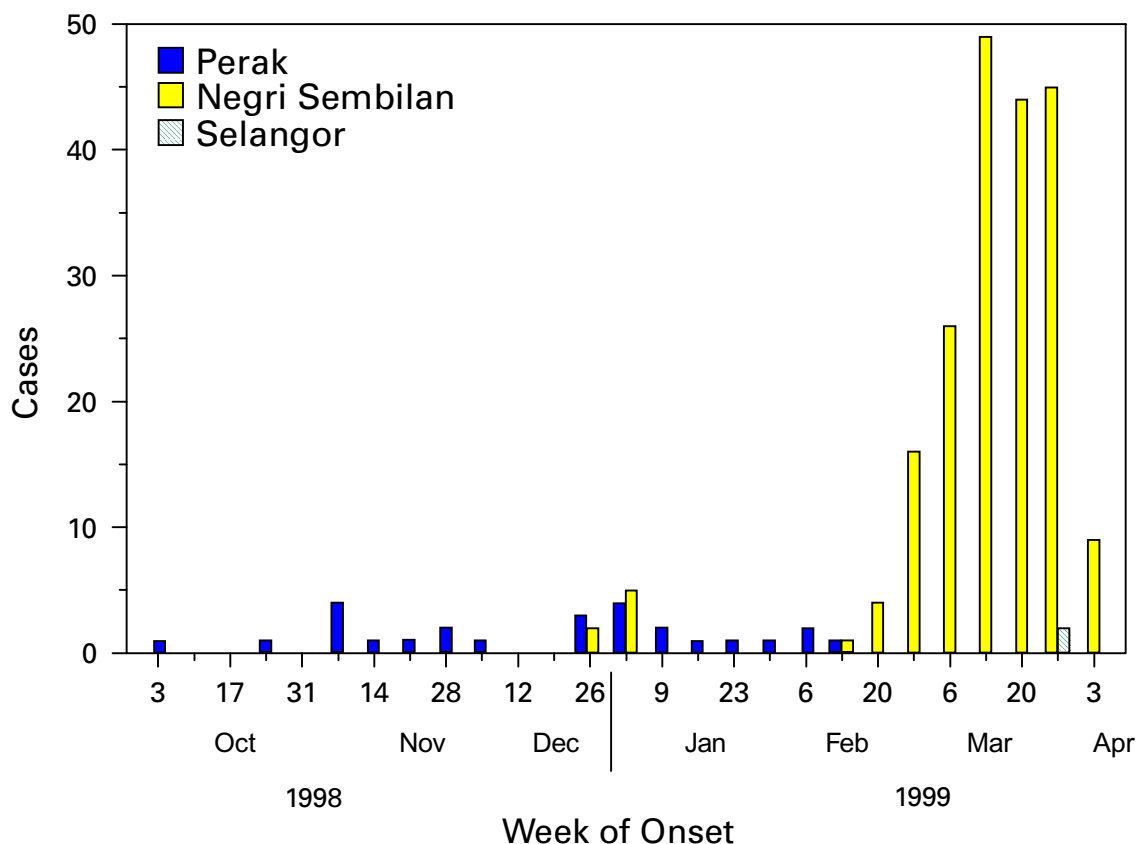
Cases have occurred primarily among adult men who had histories of close contact with swine. Concurrent with the human cases, illness and death occurred among swine from the same regions. Initially, Japanese encephalitis (JE) virus was considered the probable etiologic agent for this outbreak, and specimens from some patients tested positive for infection with JE virus. However, the predominance of cases in men who had close contact with swine suggested the possibility of another agent.

Laboratory Features

Tissue culture isolation from central nervous system specimens at the Department of Medical Microbiology, University of Malaya, identified a previously unknown infectious agent. Additional laboratory analysis at CDC of samples from 13 patients found recent JE virus infection in only one of 13 serum specimens. Electron microscopic studies of isolation material from three patients demonstrated virus-like structures consistent with a paramyxovirus, and immunofluorescence tests of cells infected with this virus suggested a virus related to Hendra virus (formerly called equine morbillivirus). Additional laboratory testing, including preliminary nucleotide sequence in-

Hendra-Like Virus — Continued

FIGURE 1. Number of cases of Hendra-like virus infection, by week of illness onset — Perak, Negri Sembilan, and Selangor states, Malaysia 1998–1999



formation, indicated the virus was related but not identical to the Hendra virus. Using a capture-IgM ELISA with prototype Hendra virus antigens, IgM antibodies were detected in the 12 JE-negative serum specimens. Tissues from three of four case-patients who died contained viral antigen that reacted with hyperimmune serum against Hendra virus by immunohistochemistry (IHC). All four specimens were negative for JE antigen.

Laboratory studies at CDC and in Malaysia demonstrated Hendra-virus IgM antibodies in serum specimens of 23 (88%) of 26 cases; in addition, Hendra-like antigens were detected in central nervous system tissue from four of five case-patients and from lung and kidney tissues of one case-patient tested. Hendra-like virus sequences have been found in four case-patients. Central nervous system, lung, and kidney tissues from swine from affected farms in Malaysia also have been positive for Hendra-like antigens by IHC.

Epidemiologic Features

Illness has been characterized by 3–14 days of fever and headache followed by drowsiness and disorientation that can progress to coma within 24–48 hours; a few patients had respiratory illness. Of the 229 case-patients, most have been men working on pig farms in Perak and Negri Sembilan. One case-patient became ill 10 days after his last known exposure to swine. Five cases have been reported in Malaysian

Hendra-Like Virus — Continued

abattoir workers exposed to swine. No cases have been reported among health-care workers caring for case-patients.

In some instances, illness in pigs occurred 1–2 weeks before illness in humans. The disease in swine is not well defined but appears to include rapid and labored breathing; an explosive nonproductive cough; and neurologic changes, including lethargy or aggressive behavior.

Case Report

On March 7, 1999, a 49-year-old pig farmer in Malaysia developed fever, headache, behavior changes, and mild blurred vision. The following day, he became lethargic and was subsequently hospitalized with a diagnosis of viral fever. During the next several days, the farmer's neurologic status progressively worsened, and he developed generalized seizures, respiratory failure requiring mechanical ventilation, blood pressure instability, and high spiking fevers. He died on March 13.

On admission, complete blood count, electrolytes, and head computed tomography scan were normal. A lumbar puncture performed on March 13 showed no white blood cells, a normal glucose level, and a protein level of 2.09 g/L (normal: 0.15–0.45 g/L). The patient's serum was negative for JE virus IgM antibodies; his serum and cerebrospinal fluid (CSF) specimens were positive for Hendra-like virus IgM and IgG antibodies. A brother who had worked on the same pig farm and had died a few days earlier from encephalitis also had IgM antibodies to Hendra-like virus in both serum and CSF.

SINGAPORE

All 11 case-patients had handled swine imported from Malaysia. Serologic testing at CDC confirmed recent Hendra-like virus infection in these 11 workers, and limited nucleotide sequence studies of the virus from the patient who died suggest it is identical to that from the Malaysia outbreak. Antibodies to Hendra virus were detected at the Australian Animal Health Laboratories in blood samples from four of 100 pigs imported from Malaysia for slaughter in another Singapore abattoir.

PUBLIC HEALTH ACTIONS

In addition to active surveillance for encephalitis cases, studies are under way to determine risk, if any, for human-to-human transmission among health-care workers and family members, to confirm the source of human infection (presumably pigs), to define specific risk factors associated with exposures to pigs and tissues from infected animals, and to determine the case-to-infection ratio and the epidemiology of this infection in pigs. Preliminary assessment suggests that spread of the virus among states in Malaysia has occurred through transport of infected swine. Susceptibility of other animal species is not known, and studies are under way to determine a presumed wildlife reservoir of this virus.

To prevent further outbreaks, Malaysian authorities have banned transport of pigs within the country. Army personnel and police are enforcing this ban, and quarantined pigs are being culled within a 3-mile (5-km) perimeter around recognized outbreak areas. In addition, Malaysian authorities recommend that all persons in the affected areas who have exposure to pigs (e.g., farm workers, truck drivers transporting animals, abattoir workers, and soldiers assisting in quarantine and culling of swine) use protective equipment, including protective clothing, gloves, boots, and masks.

Hendra-Like Virus — Continued

Singapore and Thailand have banned importation of pigs from Malaysia. Singapore also has banned horses returning from Malaysia. The Malaysian MOH has initiated an education campaign to inform the public about the outbreak and about precautions during contact with pigs.

Reported by: Dept of Medical Microbiology, Univ of Malaya, Kuala Lumpur; Institute for Medical Research; Vector Borne Disease Control Section, Disease Control Div, Ministry of Health; University Hospital, General Hospital, Kuala Lumpur; Seremban Hospital, Seremban; Ipoh Hospital, Ipoh; Institute of Veterinary Research, Veterinary Svc, Ministry of Agriculture; Ministry of Public Health, Malaysia. Changi General Hospital; Singapore General Hospital; Tan Tock Seng Hospital; Ministry of the Environment. Ministry of Health; Primary Production Dept, Ministry of National Development, Singapore. Commonwealth Scientific and Industrial Research Organization, Australian Animal Health Laboratory, Geelong, Queensland Dept of Primary Industries, Brisbane, Australia. Arbovirus Diseases Br, Div of Vectorborne Infectious Diseases; Div of Quarantine; Respiratory and Enteric Virus Br, Special Pathogens Br, Infectious Diseases Pathology Activity, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; and EIS officers, CDC.

Editorial Note: Hendra virus was first recognized in September 1994 after an outbreak of respiratory illness among 20 horses and two humans in Hendra, Queensland, Australia (1); 13 horses and one human died. In 1995, a second unrelated outbreak was identified that had occurred in August 1994 in Mackay, Queensland, in which two horses died and one human became infected (2,3). Transmissibility of Hendra virus from infected horses to other species appears to be low (4). All three previous human infections appear to have been acquired through exposure to blood or other body fluids or excretions of infected horses. Laboratory evidence suggests that fruit bats (*Pteropus* species) found in Australia (5) and in Papua New Guinea may be the natural host for the virus. Despite close contact between fruit bats and bat researchers in Australia, serologic evidence of infection has not been found in these persons (6).

The previously unrecognized paramyxovirus associated with these outbreaks of febrile encephalitis in Malaysia and Singapore is related to, but distinct from, the Australian Hendra virus (7). Serologic and IHC analyses support a causative role for this new virus in human and swine disease. Studies are under way to clarify what proportion of these illnesses is caused by infection with Hendra-like virus. The association between the disease in humans and pigs is supported by epidemiologic and laboratory data. Although the specific routes of transmission have yet to be determined, close contact with pigs appears to be necessary for human infection.

Travelers to Malaysia should be aware of these outbreaks of febrile encephalitis, which have involved only those closely associated with swine. No travel restrictions have been recommended or imposed at this time. U.S. residents anticipating travel to Malaysia should follow the CDC regional recommendations for Southeast Asia, which are available on the World-Wide Web at <http://www.cdc.gov/travel/index.htm> or <http://www.cdc.gov/travel/seasia.htm>. Persons in Malaysia are advised to contact the Malaysian health authorities for additional information. Information about the recent cases is available at the Malaysian Ministry of Health website at <http://dph.gov.my>.

References

1. Selvey LA, Wells RM, McCormack JG, et al. Infection of humans and horses by a newly described morbillivirus. *Med J Australia* 1995;162:642-5.
2. Hooper PT, Gould AR, Russell GM, Kattenbelt JA, Mitchell G. The retrospective diagnosis of a second outbreak of equine morbillivirus infection. *Australian Vet J* 1996;74:244-5.

Hendra-Like Virus — Continued

3. Rogers RJ, Douglas IC, Baldock FC, et al. Investigation of a second focus of equine morbillivirus infection in coastal Queensland. *Australian Vet J* 1996;74:243–4.
4. Williamson MM, Hooper PT, Selleck PW, et al. Transmission studies of Hendra virus (equine morbillivirus) in fruit bats, horses and cats. *Australian Vet J* 1998;76:813–8.
5. Philbey AW, Kirkland PD, Ross AD, et al. An apparently new virus (family Paramyxoviridae) infectious for pigs, humans, and fruit bats. *Emerg Infect Dis* 1998;4:269–71.
6. Selvey L, Taylor R, Arklay A, Gerrard J. Screening of bat carers for antibodies to equine morbillivirus. *Comm Dis Intelligence* 1996;20:477–8.
7. Yu M, Hansson E, Shiell B, Michalski W, Eaton BT, Wang L-F. Sequence analysis of the hendra virus nucleoprotein gene: comparison with other members of the subfamily paramyxovirinae. *J Gen Virol* 1998;79:1775–80.

Aldicarb as a Cause of Food Poisoning — Louisiana, 1998

Cholinesterase-inhibiting pesticides (i.e., organic phosphates and carbamates), widely used in agriculture, can cause illness if they contaminate food or drinking water. Aldicarb, a regulated carbamate pesticide, is highly toxic, and the U.S. Environmental Protection Agency (EPA) requires applicators to be trained and certified. This report describes a foodborne outbreak of aldicarb poisoning that occurred when improperly stored and labeled aldicarb was used mistakenly in food preparation.

On July 19, 1998, 20 employees attended a company lunch prepared from home-made foods. Shortly after eating, several persons developed neurologic and gastrointestinal symptoms. Ten visited a hospital emergency department, and two were hospitalized. On July 20, a hospital infection-control nurse reported the incident to the Louisiana Office of Public Health, which then investigated the outbreak.

Investigators interviewed all 20 lunch participants about illness and foods eaten during the meal; 14 (70%) reported gastrointestinal or neurologic symptoms. The most common gastrointestinal symptoms were abdominal cramps (13 [93%]), nausea (13 [93%]), and diarrhea (12 [86%]). Neurologic symptoms included dizziness (13 [93%]), sweating (12 [86%]), muscle fasciculations (12 [86%]), eye twitching (eight [57%]), and blurred vision (six [43%]). Illness lasted a median of 4 hours (range: 1–8 hours). Median time between ingestion of food and onset of symptoms was 45 minutes (range: 40 minutes–3 hours). The heart rate of one of the two persons hospitalized was 20 beats per minute on arrival at the emergency department, but his heart rate increased after treatment with atropine. The second person was hospitalized for an increased and irregular heart beat that responded to treatment with digitalis.

The lunch consisted of pork roast, boiled rice, cabbage salad, biscuits, and soft drinks. Only the cabbage salad was associated with illness. Of the 16 persons who ate the cabbage salad, 14 became ill (attack rate: 88%); the four persons who had not eaten the cabbage salad did not develop symptoms (attack rate: 0%, $p=0.003$, Fisher's exact test).

The employee who prepared the cabbage salad reported mixing two 1-lb bags of precut, prepackaged cabbage in a bowl with vinegar and ground black pepper. The black pepper came from a can labeled "black pepper" that he had found 6 weeks before the lunch in the truck of a deceased relative. This black pepper had not been used by the employee for food preparation before the company lunch. The cabbage salad

Aldicarb — Continued

was prepared the night before the lunch and stored in the refrigerator until it was brought to work and served at approximately 11 a.m.

The contents of the black pepper container were tested for organophosphate and carbamate pesticides. High-performance liquid chromatography identified the granules in the container as 13.7% aldicarb, the pesticide TEMIK[®] 15G*. A 6-g portion of cabbage salad contained 272.6 parts per million (ppm) of aldicarb.

The deceased owner of the pepper can had been a crawfish farmer. After its investigation, the Louisiana Department of Agriculture and Forestry believed the crawfish farmer had used aldicarb on bait to prevent destruction of his crawfish nets, ponds, and levees by wild dogs and raccoons. The source of the TEMIK[®] 15G could not be determined despite the department's extensive traceback effort.

Reported by: TA Farley, MD, L McFarland, DrPH, State Epidemiologist, Infectious Disease Epidemiology Section, Louisiana Dept of Health and Hospitals; J McClelland, Louisiana Dept of Agriculture. Health Studies Br, Div of Environmental Hazards and Health Effects, National Center for Environmental Health; Div of Applied Public Health Training, Epidemiology Program Office; and an EIS Officer, CDC.

Editorial Note: Aldicarb (2-methyl-2-[methylthio] propionaldehyde O-[methylcarbamoyl] oxime) is one of the most potent pesticides used in the United States. It is absorbed rapidly through the gut and, in liquid form, through intact skin (1). As a cholinesterase inhibitor, it increases parasympathetic nervous system activity. Common symptoms of poisoning include malaise, dizziness, sweating, nausea, diarrhea, and muscle weakness; blurred vision and muscle spasms also can occur. EPA has placed aldicarb in its highest acute toxicity category.

Aldicarb is classified as a restricted-use pesticide and can be sold to and applied by trained certified applicators only. Applicators are required to wear personal protective equipment (i.e., coveralls, waterproof gloves, chemical-resistant footwear and headgear, and protective eyewear). In cases of aldicarb poisoning, atropine sulfate is the antidote of choice and can be supplemented by treatment of symptoms and rapid removal of the toxin (e.g., by induced vomiting) (2).

The 272.6 ppm of aldicarb found in a 6-g cabbage salad sample was enough to be toxic to humans. Each person who had eaten the salad would have consumed approximately 17 mg of aldicarb if equal amounts of salad had been eaten. A 150-lb (70-kg) adult would have ingested 0.2 mg of aldicarb per kg of body weight, nearly 10 times the lowest observed effect level for subclinical blood cholinesterase depression (0.025 mg per kg body weight). Blood levels as low as 0.0011 mg per kg body weight have been associated with poisoning in humans (3). In addition, cabbage and vinegar, both acidic substances, are less effective than alkaline substances at breaking down aldicarb to less toxic chemical compounds.

In addition to occupational exposures (4), aldicarb poisoning has resulted from unintentional or suicidal ingestion of aldicarb illegally used as a rodenticide (5) and from eating contaminated watermelons (6,7) and cucumbers (7). The largest pesticide-related foodborne outbreak in the United States occurred in 1985 when 1373 persons reported becoming ill after eating watermelons grown in soil treated with aldicarb; 78% of these persons had probable or possible pesticide-related illnesses (6). The median amount of aldicarb sulfoxide eaten per person in that outbreak was approximately 0.027 mg per kg body weight (8). Aldicarb residues have been detected

*Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services or CDC.

Aldicarb — Continued

in ground water and drinking water wells (9), but studies of the clinical implications of these exposures have been inconclusive (10). EPA has developed tolerance levels for aldicarb residues on food or animal feed and a maximum contaminant level for aldicarb in drinking water (0.003 mg/L).

Nonprofessional pesticide users and certified applicators should be alert to the adverse effects of pesticides on human health and to the risks involved in distributing pesticides to noncertified persons. In addition, the public should be reminded to store pesticides and other hazardous chemicals exclusively in containers that are clearly and correctly labeled and secured by safety caps. Finally, health-care providers and public health officials should keep in mind that food poisoning might result from pesticide or other chemical contamination as well as from infectious organisms.

References

1. Baron RL. Carbamate insecticides. In: Hayes WJ Jr, Laws ER Jr, eds. Handbook of pesticide toxicology. Vol 3. San Diego, California: Academic Press Inc, 1991.
2. Henry JA, Wiseman HM. Management of poisoning: a handbook for health care workers. Geneva, Switzerland: World Health Organization, 1997:133–7.
3. CDC. Aldicarb food poisoning from contaminated melons—California. MMWR 1986;35:254–8.
4. Safe Drinking Water Committee. Drinking water and health, Vol 5. Washington, DC: US Assembly of Life Sciences, National Research Council. National Academy of Sciences, 1983:10.
5. CDC. Poisonings associated with illegal use of aldicarb as a rodenticide—New York City, 1994–1997. MMWR 1997;46:961–3.
6. Green MA, Heumann MA, Wehr HM, et al. An outbreak of watermelon-borne pesticide toxicity. Am J Public Health 1987;77:1431–4.
7. Goes EA, Savage EP, Gibbons G, Aaronson M, Ford SA, Wheeler HW. Suspected foodborne carbamate pesticide intoxications associated with ingestion of hydroponic cucumbers. Am J Epidemiol 1980;111:254–60.
8. Goldman LR, Beller M, Jackson RJ. Aldicarb food poisonings in California, 1985–1988: toxicity estimates for humans. Arch Environ Health 1990;45:141–7.
9. US Environmental Protection Agency. Pesticides in groundwater [Database interim report]. Washington, DC: US Environmental Protection Agency, Office of Pesticide Programs, 1988.
10. Zaki MH, Moran D, Harris D. Pesticides in groundwater: the aldicarb story in Suffolk County, NY. Am J Public Health 1982;72:1391–5.

Frequency of Vaccine-Related and Therapeutic Injections — Romania, 1998

In Romania and other countries, therapeutic injections have been associated with transmission of hepatitis B and C viruses, human immunodeficiency virus type 1 (HIV-1), and other bloodborne pathogens (1–6). During 1997–1998, acute hepatitis B was associated with recent injections in Romanian children aged <5 years (3). Injection-associated bloodborne pathogen transmission occurs when infection-control practices are inadequate, and overuse of injections to administer medications might increase opportunities for transmission. To estimate the frequency of therapeutic injections and to describe the attitudes and practices of adults about injections to administer medications, local health departments in Romania surveyed the general population of four districts (Hunedoara, Iasi, Mures, and Prahova [1997 combined population: 2.8 million]) in June 1998. This report summarizes results from these surveys, which indicate that injections are used frequently to administer medications in Romania.

Therapeutic Injections — Continued

A cluster sample of 300 households in each of the four viral hepatitis sentinel surveillance districts was surveyed, totaling 1200 households (7). All household members, or adult guardians for children aged <15 years, were interviewed in person to collect information about age, sex, and number of vaccine-related or therapeutic injections received during June 1, 1997–May 31, 1998. To evaluate attitudes and practices regarding therapeutic injections among adults, one randomly selected person aged ≥18 years in each household was interviewed. Therapeutic injections were defined as injections or infusions administered through intradermal, subcutaneous, intramuscular, or intravenous routes and not given for vaccination or recreational drug use.

Of the 3676 survey participants (mean age: 38 years; range: 0–98 years; 48% male), 365 (10%) reported receiving at least one vaccine-related injection (median: two injections; range: one–15 injections) for a total of 988 injections; this proportion was inversely related to age, with 60% of children aged <5 years and 2% of persons aged ≥45 years receiving vaccine-related injections (Table 1). At least one therapeutic injection (median: eight injections; range: one–735 injections) was reported by 1334 (36%) participants for a total of 19,630 injections. The proportion of participants who reported receiving a therapeutic injection did not vary significantly across all age groups but was lower for males than for females (prevalence ratio=0.8; 95% CI=0.7–0.9) (Table 1). Of the 19,630 therapeutic injections, 643 (3%) were intravenous infusions, and 18,987 (97%) were other injections. Most (18,249 [96%]) of these other injections were administered by health-care workers; of these, 11,020 (56%) were administered in outpatient clinics or in homes, 6236 (32%) in hospitals, and 993 (5%) in dental settings.

Of the 1197 persons aged ≥18 years (mean age: 49 years; range: 18–95 years; 45% male) interviewed about attitudes and practices regarding therapeutic injections, 891 (74%) believed injectable medications were “stronger” than oral medications. A smaller proportion preferred injected over noninjected medications to treat fever (28%), “common cold” (29%), diarrhea (17%), and for vitamin supplementation (42%) (Table 2). In addition, 32% of the participants indicated they would ask their physician for an oral medication if an injection were prescribed, and 10% stated they would ask their physician for an injectable medication if an oral medication were prescribed

TABLE 1. Number and percentage of survey participants who reported receiving an injection during June 1, 1997–May 31, 1998, by sex, age, and type of injection — Hunedoara, Iasi, Mures, and Prahova districts, Romania

| Characteristic | No. participants | Vaccination | | | Therapeutic | | |
|-------------------------|------------------|-------------|-------------|------------------|-------------|-------------|------------------|
| | | No. | (%) | (95% CI*) | No. | (%) | (95% CI) |
| Sex† | | | | | | | |
| Male | 1755 | 167 | (9) | (8%–11%) | 571 | (32) | (29%–36%) |
| Female | 1911 | 196 | (10) | (8%–12%) | 762 | (40) | (37%–43%) |
| Age group (yrs)† | | | | | | | |
| 0– 4 | 202 | 123 | (60) | (53%–67%) | 78 | (38) | (30%–46%) |
| 5–14 | 442 | 119 | (27) | (22%–32%) | 111 | (25) | (19%–31%) |
| 15–44 | 1589 | 88 | (5) | (4%– 7%) | 582 | (37) | (33%–40%) |
| ≥45 | 1441 | 35 | (2) | (1%– 3%) | 563 | (39) | (36%–42%) |
| Total | 3676 | 365 | (10) | (8%–11%) | 1334 | (36) | (33%–39%) |

*Confidence interval.

†Because of missing data, numbers may not add up to total.

Therapeutic Injections — Continued

(Table 2). Syringes were reported in 46% (95% Confidence interval [CI]=42%–51%) of households, of which 96% (95% CI=94%–98%) were new disposable syringes.

Reported by: O Sfetcu, D Cremenasiu, S CIRCUMARU, Hunedoara Health District; M Barhala, R Florescu, E Duca, Iasi Health District; A Cojan, E Marialaky, MM Yanku, Mures Health District; M Irimia, A Dobrescu, Prahova Health District; M Popa, N Ion-Nedelcu, D Craciun, Dept of Preventive Medicine, Ministry of Health, Romania. Hepatitis Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; and an EIS Officer, CDC.

Editorial Note: By extrapolating the findings in this survey to the population of Romania (1997 population: 22.5 million), an estimated average of 5.3 therapeutic injections are administered annually per capita, and approximately 120 million therapeutic injections are administered each year. For each vaccine-related injection, survey respondents received 20 therapeutic injections.

In Romania, a substantial proportion of adults preferred injected medication for treatment of conditions for which injections generally are not indicated, including fever, acute upper respiratory tract infection, vitamin supplementation, and diarrhea. However, this proportion did not exceed 42% and suggests that Romanians may not insist on injectable medications for common illnesses. In other countries, reasons reported for demand for therapeutic injections include beliefs that the pain of the injection is a marker of efficacy, that medications are more effective when entering the body percutaneously, and that injections represent advanced technology (8).

In addition to patient preference for injections, physicians' prescribing practices also might affect the observed high use of therapeutic injections. In other countries, reported reasons for overuse of injections by health-care providers include a desire to observe therapy, belief that efficacy is greater when medications are injected, and

TABLE 2. Demographic characteristics and preference for injectable medications for common illnesses among persons aged ≥18 years — Hunedorara, Iasi, Mures, and Prahova districts, Romania, 1998*

| Characteristic | No. | (%) | (95% CI†) |
|--|-----|------|-----------|
| Sex‡ | | | |
| Men | 534 | (45) | — |
| Women | 662 | (55) | — |
| Age group (yrs) | | | |
| 18–34 | 309 | (26) | — |
| 35–49 | 338 | (28) | — |
| 50–64 | 292 | (24) | — |
| ≥65 | 258 | (22) | — |
| Preferred injectable medications for | | | |
| Fever | 340 | (28) | (25%–33%) |
| Common cold | 348 | (29) | (25%–33%) |
| Diarrhea | 210 | (17) | (15%–20%) |
| Vitamin supplementation | 504 | (42) | (37%–47%) |
| Would request oral medications from physician if injectable medications were prescribed | | | |
| | 381 | (32) | (28%–35%) |
| Would request injecting medications from physician if oral medications were prescribed | | | |
| | 125 | (10) | (8%–13%) |

* n=1197.

† Confidence interval.

‡ Because of missing data, numbers may not add to total.

Therapeutic Injections — Continued

occasionally, financial incentives to use injections (8). Population focus groups conducted in 1998 in Romania indicate that patients trust their physicians' advice about medical treatments and would not seek a second opinion if an injection were not prescribed (CDC, unpublished data, 1998). Additional information is needed on the determinants of physicians' prescribing practices in Romania to promote the use of alternatives to injected medications.

The findings in this report are subject to at least two limitations. First, review of survey participants' medical records could not be used to validate self-reports of injections. Participants' inability to recall accurately the number of injections received during the 12-month referent period, particularly participants who had been hospitalized, may have led to underestimation of the total number of injections received. Second, data are from only four districts in Romania and may not be representative of the entire country.

Because knowledge about and sufficient resources for proper infection-control practices for safe injections are limited in Romania (CDC, unpublished data, 1998), overuse of therapeutic injections increases opportunities for bloodborne pathogen transmission among patients. Accordingly, programs to improve injection safety should focus on reducing the number of therapeutic injections administered. Such programs might be developed more effectively if initial studies are conducted to estimate the frequency of injections in the population and identify determinants of injection use among patients and health-care providers.

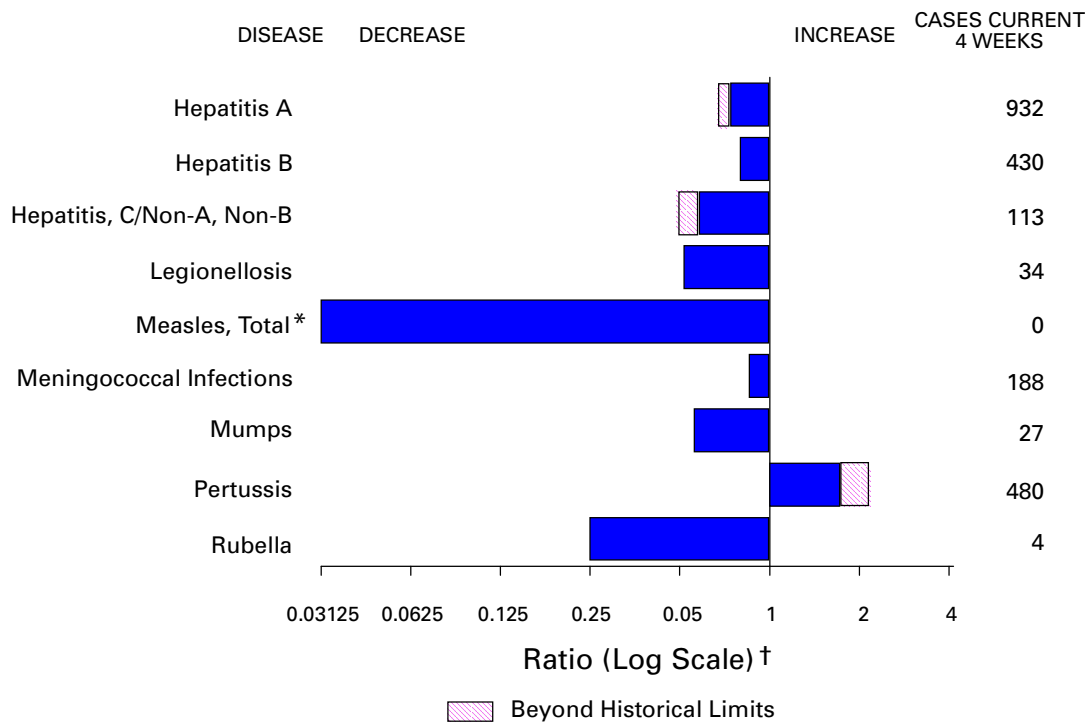
References

1. Kane M. Unsafe injections. *Bull World Health Organ* 1998;76:99–100.
2. Hutin YJF, Harpaz R, Drobeniuc J, Favorov M, Shapiro CN, Woodruff BA. Transmission of hepatitis B virus in Moldova: association with injections given in different health care settings. Presented at the 37th meeting of the Interscience Conference on Antimicrobial Agents and Chemotherapy. Toronto, Ontario, Canada, September 1997.
3. Hutin YJF, Craciun D, Ion-Nedelcu N, Mast EE, Alter MJ, Margolis HS. Using surveillance data to monitor key aspects of the epidemiology of hepatitis B virus (HBV) infection in Romania. Presented at the 36th annual meeting of the Infectious Disease Society of America. Denver, Colorado, November 1998.
4. Hyams KC, Mansour MM, Massoud A, Dunn MA. Parenteral antischistosomal therapy: a potential risk factor for hepatitis B infection. *J Med Virol* 1987;23:109–14.
5. Mohamed MK, Hussein MH, Massoud AA, et al. Study of the risk factors for viral hepatitis C infection among Egyptians applying for work abroad. *J Egypt Public Health Assoc* 1996;71:113–42.
6. Hersh BS, Popovici F, Jezek Z, et al. Risk factors for HIV infection among abandoned Romanian children. *AIDS* 1993;7:1617–24.
7. Bennett S, Woods T, Liyanage W, Smith D. A simplified general method for cluster-sample surveys of health in developing countries. *World Health Stat Q* 1991;44:98–106.
8. Reeler AV. Injections: a fatal attraction? *Soc Sci Med* 1990;31:1119–25.

Erratum: Vol. 48, No. 11

In the report, "Mass Treatment of Humans Who Drank Unpasteurized Milk from Rabid Cows—Massachusetts, 1996–1998," on page 229, the second sentence of the second paragraph should read: In addition to concerns about rabies transmission from animals to humans through bites, rabid livestock raise the issue of potential foodborne transmission.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending April 3, 1999, with historical data — United States



*No measles cases were reported for the current 4-week period, yielding a ratio for week 13 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 3, 1999 (13th Week)

| | Cum. 1999 | | Cum. 1999 |
|---|-----------|---|-----------|
| Anthrax | - | Plague | - |
| Brucellosis | 11 | Poliomyelitis, paralytic | - |
| Cholera | - | Psittacosis | 8 |
| Congenital rubella syndrome | 1 | Rabies, human | - |
| Cryptosporidiosis* | 246 | Rocky Mountain spotted fever (RMSF) | 34 |
| Diphtheria | - | Streptococcal disease, invasive Group A | 482 |
| Encephalitis: California* | 1 | Streptococcal toxic-shock syndrome* | 11 |
| eastern equine* | - | Syphilis, congenital [¶] | 7 |
| St. Louis* | - | Tetanus | 5 |
| western equine* | - | Toxic-shock syndrome | 27 |
| Hansen Disease | 13 | Trichinosis | 3 |
| Hantavirus pulmonary syndrome* [†] | 2 | Typhoid fever | 63 |
| Hemolytic uremic syndrome, post-diarrheal* | 6 | Yellow fever | - |
| HIV infection, pediatric* [‡] | 37 | | |

-: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 28, 1999.

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

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 3, 1999, and April 4, 1998 (13th Week)

| Reporting Area | AIDS | | Chlamydia | | <i>Escherichia coli</i> O157:H7 | | Gonorrhea | | Hepatitis C/NA,NB | |
|----------------|------------|-----------|-----------|-----------|---------------------------------|--------------------|-----------|-----------|-------------------|-----------|
| | Cum. 1999* | Cum. 1998 | Cum. 1999 | Cum. 1998 | NETSS [†] | PHLIS [§] | Cum. 1999 | Cum. 1998 | Cum. 1999 | Cum. 1998 |
| | | | | | Cum. 1999 | Cum. 1999 | | | | |
| UNITED STATES | 11,513 | 11,980 | 126,640 | 140,665 | 279 | 117 | 69,551 | 83,392 | 557 | 914 |
| NEW ENGLAND | 542 | 314 | 4,810 | 5,301 | 42 | 27 | 1,604 | 1,454 | 46 | 23 |
| Maine | 5 | 8 | 153 | 219 | 4 | - | 10 | 11 | - | - |
| N.H. | 18 | 12 | 244 | 259 | 2 | 1 | 19 | 26 | - | - |
| Vt. | 4 | 8 | 117 | 86 | 3 | - | 14 | 2 | 1 | 2 |
| Mass. | 367 | 92 | 2,333 | 2,128 | 19 | 16 | 721 | 530 | 45 | 21 |
| R.I. | 30 | 34 | 547 | 626 | 1 | 1 | 141 | 81 | - | - |
| Conn. | 118 | 160 | 1,416 | 1,983 | 13 | 9 | 699 | 804 | - | - |
| MID. ATLANTIC | 2,841 | 3,417 | 17,838 | 17,030 | 15 | 1 | 9,152 | 9,834 | 44 | 98 |
| Upstate N.Y. | 360 | 426 | N | N | 12 | - | 867 | 1,712 | 29 | 83 |
| N.Y. City | 1,441 | 1,933 | 9,437 | 8,925 | - | 1 | 4,282 | 4,074 | - | - |
| N.J. | 600 | 574 | 2,472 | 2,944 | 3 | - | 1,176 | 1,774 | - | - |
| Pa. | 440 | 484 | 5,928 | 5,161 | N | - | 2,827 | 2,274 | 15 | 15 |
| E.N. CENTRAL | 841 | 993 | 19,178 | 21,431 | 45 | 25 | 12,962 | 16,226 | 111 | 121 |
| Ohio | 147 | 173 | 5,924 | 6,813 | 23 | 8 | 3,483 | 4,099 | - | 5 |
| Ind. | 124 | 257 | - | - | 5 | 7 | 726 | 1,561 | - | 2 |
| Ill. | 402 | 373 | 6,821 | 5,786 | 6 | 3 | 4,435 | 4,934 | 2 | 16 |
| Mich. | 124 | 144 | 5,418 | 5,392 | 11 | 4 | 3,886 | 4,294 | 109 | 98 |
| Wis. | 44 | 46 | 1,015 | 3,440 | N | 3 | 432 | 1,338 | - | - |
| W.N. CENTRAL | 248 | 207 | 4,142 | 8,908 | 70 | 15 | 1,455 | 3,977 | 31 | 22 |
| Minn. | 38 | 31 | 1,434 | 1,773 | 22 | 12 | 541 | 605 | - | - |
| Iowa | 29 | 11 | 396 | 923 | 6 | 2 | 160 | 248 | - | 3 |
| Mo. | 97 | 100 | - | 3,222 | 6 | 1 | - | 2,039 | 29 | 17 |
| N. Dak. | 3 | 3 | 102 | 248 | 2 | - | 7 | 26 | - | - |
| S. Dak. | 6 | 7 | 436 | 421 | 1 | - | 39 | 70 | - | - |
| Nebr. | 19 | 24 | 700 | 757 | 26 | - | 293 | 304 | - | 2 |
| Kans. | 56 | 31 | 1,074 | 1,564 | 7 | - | 415 | 685 | 2 | - |
| S. ATLANTIC | 3,237 | 3,186 | 28,096 | 28,267 | 27 | 10 | 21,106 | 22,404 | 58 | 32 |
| Del. | 40 | 40 | 724 | 621 | 1 | - | 427 | 357 | - | - |
| Md. | 345 | 335 | 1,960 | 2,006 | 1 | - | 2,171 | 2,308 | 19 | 3 |
| D.C. | 118 | 262 | N | N | - | - | 680 | 882 | - | - |
| Va. | 179 | 230 | 3,341 | 3,044 | 6 | 2 | 2,309 | 1,980 | 6 | 1 |
| W. Va. | 19 | 30 | 594 | 1,189 | - | 1 | 106 | 394 | 8 | 2 |
| N.C. | 198 | 216 | 5,485 | 5,752 | 7 | 3 | 4,847 | 4,763 | - | 7 |
| S.C. | 321 | 183 | 5,151 | 4,405 | 1 | 1 | 2,629 | 2,847 | 9 | - |
| Ga. | 349 | 372 | 3,967 | 6,427 | 2 | - | 2,946 | 5,113 | 1 | 8 |
| Fla. | 1,668 | 1,518 | 6,874 | 4,823 | 9 | 3 | 4,991 | 3,760 | 15 | 11 |
| E.S. CENTRAL | 493 | 442 | 9,598 | 10,007 | 18 | 4 | 8,267 | 9,475 | 27 | 35 |
| Ky. | 70 | 65 | - | 1,607 | 5 | - | - | 918 | 1 | 7 |
| Tenn. | 214 | 141 | 3,590 | 3,301 | 9 | 3 | 2,793 | 2,802 | 25 | 25 |
| Ala. | 110 | 119 | 3,545 | 2,618 | 4 | - | 3,188 | 3,283 | 1 | 3 |
| Miss. | 99 | 117 | 2,463 | 2,481 | - | 1 | 2,286 | 2,472 | - | - |
| W.S. CENTRAL | 1,182 | 1,356 | 15,363 | 20,871 | 7 | 6 | 9,206 | 12,618 | 37 | 32 |
| Ark. | 45 | 52 | 1,361 | 937 | 2 | 2 | 673 | 1,133 | 2 | 2 |
| La. | 121 | 206 | 4,266 | 3,144 | 1 | 2 | 3,562 | 2,702 | 25 | - |
| Okla. | 35 | 71 | 2,059 | 2,305 | 3 | 2 | 1,086 | 1,281 | 1 | - |
| Tex. | 981 | 1,027 | 7,677 | 14,485 | 1 | - | 3,885 | 7,502 | 9 | 30 |
| MOUNTAIN | 405 | 377 | 6,910 | 7,464 | 16 | 6 | 1,801 | 2,013 | 49 | 149 |
| Mont. | 4 | 10 | 309 | 223 | - | - | 8 | 11 | 4 | 4 |
| Idaho | 5 | 8 | 432 | 468 | - | 1 | 26 | 43 | 4 | 56 |
| Wyo. | 2 | 1 | 180 | 187 | 1 | 1 | 7 | 10 | 14 | 38 |
| Colo. | 76 | 65 | 1,902 | 1,949 | 5 | 2 | 496 | 645 | 9 | 9 |
| N. Mex. | 13 | 52 | 1,084 | 1,004 | 1 | - | 182 | 180 | 4 | 21 |
| Ariz. | 190 | 127 | 2,011 | 2,610 | 4 | 1 | 768 | 899 | 11 | - |
| Utah | 37 | 35 | 399 | 538 | 5 | 1 | 44 | 58 | 1 | 10 |
| Nev. | 78 | 79 | 593 | 485 | - | - | 270 | 167 | 2 | 11 |
| PACIFIC | 1,724 | 1,688 | 20,705 | 21,386 | 39 | 23 | 3,998 | 5,391 | 154 | 402 |
| Wash. | 90 | 133 | 3,121 | 2,648 | 5 | 8 | 541 | 470 | 2 | 5 |
| Oreg. | 45 | 40 | 1,325 | - | 13 | 9 | 184 | - | 4 | 7 |
| Calif. | 1,562 | 1,481 | 15,244 | 17,692 | 21 | 6 | 3,099 | 4,735 | 148 | 355 |
| Alaska | 6 | 11 | 465 | 503 | - | - | 96 | 76 | - | 1 |
| Hawaii | 21 | 23 | 550 | 543 | - | - | 78 | 110 | - | 34 |
| Guam | 1 | - | - | 77 | N | - | - | 6 | - | - |
| P.R. | 411 | 457 | U | U | 2 | U | 77 | 106 | U | U |
| V.I. | 10 | 13 | N | N | N | U | U | U | U | U |
| Amer. Samoa | - | - | U | U | N | U | U | U | U | U |
| C.N.M.I. | - | - | U | N | N | U | - | 8 | - | - |

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

*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 28, 1999.

†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 April 3, 1999, and April 4, 1998 (13th Week)

| Reporting Area | Legionellosis | | Lyme Disease | | Malaria | | Syphilis (Primary & Secondary) | | Tuberculosis | | Rabies, Animal | |
|----------------|---------------|--------------|--------------|--------------|--------------|--------------|-----------------------------------|--------------|---------------|---------------|-------------------|---|
| | Cum. 1999 | Cum. 1998 | Cum. 1999 | Cum. 1998 | Cum. 1999 | Cum. 1998 | Cum. 1999 | Cum. 1998 | Cum. 1999* | Cum. 1998* | Cum. 1999 | |
| UNITED STATES | 192 | 306 | 833 | 988 | 246 | 280 | 1,398 | 1,803 | 1,083 | 1,813 | 1,146 | |
| NEW ENGLAND | 13 | 18 | 146 | 183 | 3 | 12 | 16 | 18 | 77 | 83 | 199 | |
| Maine | 2 | 1 | - | 2 | - | - | - | 1 | 3 | 3 | 36 | |
| N.H. | 1 | 2 | - | 5 | - | 1 | - | 1 | - | 2 | 13 | |
| Vt. | 3 | 1 | - | 2 | - | - | 1 | - | - | 1 | 40 | |
| Mass. | 3 | 5 | 96 | 42 | 3 | 11 | 10 | 14 | 41 | 42 | 41 | |
| R.I. | 1 | 4 | 8 | 15 | - | - | 1 | - | 15 | 10 | 19 | |
| Conn. | 3 | 5 | 42 | 117 | - | - | 4 | 2 | 18 | 25 | 50 | |
| MID. ATLANTIC | 55 | 67 | 490 | 637 | 67 | 93 | 55 | 66 | 404 | 421 | 249 | |
| Upstate N.Y. | 15 | 16 | 140 | 296 | 21 | 21 | 5 | 7 | 41 | 54 | 163 | |
| N.Y. City | 4 | 16 | 3 | 17 | 15 | 49 | 28 | 9 | 246 | 259 | U | |
| N.J. | 5 | 3 | 97 | 74 | 21 | 14 | 2 | 22 | 117 | 108 | 51 | |
| Pa. | 31 | 32 | 250 | 250 | 10 | 9 | 20 | 28 | U | U | 35 | |
| E.N. CENTRAL | 42 | 123 | 19 | 19 | 17 | 21 | 242 | 258 | 55 | 74 | 3 | |
| Ohio | 18 | 42 | 13 | 14 | 4 | 1 | 24 | 49 | U | U | 2 | |
| Ind. | 5 | 25 | 5 | 4 | 4 | 1 | 32 | 41 | U | U | - | |
| Ill. | 2 | 17 | - | - | - | - | 11 | 159 | 111 | U | U | - |
| Mich. | 16 | 17 | 1 | 1 | 7 | 7 | 27 | 38 | 48 | 49 | 1 | |
| Wis. | 1 | 22 | U | U | 2 | 1 | - | 19 | 7 | 25 | - | |
| W.N. CENTRAL | 8 | 18 | 13 | 9 | 12 | 12 | 6 | 50 | 98 | 84 | 133 | |
| Minn. | - | 1 | 6 | 1 | 2 | 4 | 1 | 3 | 42 | 26 | 25 | |
| Iowa | 6 | 2 | 2 | 6 | 3 | 2 | 1 | - | - | - | 24 | |
| Mo. | 1 | 7 | - | 1 | 6 | 5 | - | 36 | 43 | 39 | 5 | |
| N. Dak. | - | - | 1 | - | - | - | - | - | 1 | 1 | 30 | |
| S. Dak. | 1 | - | - | - | - | - | - | - | 3 | 4 | 25 | |
| Nebr. | - | 7 | - | - | - | - | 1 | 4 | 4 | 4 | 1 | |
| Kans. | - | 1 | 4 | 1 | 1 | 1 | 3 | 7 | 5 | 14 | 23 | |
| S. ATLANTIC | 32 | 34 | 106 | 101 | 69 | 56 | 520 | 697 | 172 | 355 | 416 | |
| Del. | 2 | 6 | - | 2 | - | 1 | 1 | 6 | - | 5 | - | |
| Md. | 5 | 8 | 83 | 86 | 20 | 22 | 117 | 186 | U | U | 87 | |
| D.C. | - | 2 | 1 | 4 | 6 | 3 | 10 | 23 | 10 | 27 | - | |
| Va. | 5 | 3 | 2 | 2 | 11 | 6 | 41 | 52 | 17 | 53 | 98 | |
| W. Va. | N | N | 2 | 1 | 1 | - | 2 | - | 11 | 17 | 22 | |
| N.C. | 5 | 4 | 14 | 1 | 5 | 6 | 130 | 207 | 78 | 175 | 97 | |
| S.C. | 5 | 4 | 1 | - | - | - | 62 | 85 | 56 | 78 | 27 | |
| Ga. | - | - | - | 2 | 5 | 12 | 78 | 64 | U | U | 46 | |
| Fla. | 10 | 7 | 3 | 3 | 21 | 6 | 79 | 74 | U | U | 39 | |
| E.S. CENTRAL | 8 | 11 | 13 | 11 | 3 | 8 | 247 | 319 | 79 | 145 | 60 | |
| Ky. | 2 | 5 | - | 1 | - | - | - | 34 | U | U | 13 | |
| Tenn. | 5 | 3 | 5 | 5 | 2 | 4 | 132 | 160 | U | U | 22 | |
| Ala. | 1 | 1 | 6 | 5 | 1 | 2 | 78 | 69 | 73 | 93 | 25 | |
| Miss. | - | 2 | 2 | - | - | 2 | 37 | 56 | 6 | 52 | - | |
| W.S. CENTRAL | 1 | 2 | - | 1 | 5 | 5 | 232 | 231 | 51 | 498 | 19 | |
| Ark. | - | - | - | 1 | - | 1 | 25 | 30 | 28 | 22 | - | |
| La. | 1 | - | - | - | 3 | 3 | 61 | 87 | U | U | - | |
| Okla. | - | - | - | - | 1 | - | 61 | 12 | 23 | 28 | 19 | |
| Tex. | - | 2 | - | - | 1 | 1 | 85 | 102 | - | 448 | - | |
| MOUNTAIN | 14 | 15 | 3 | 1 | 12 | 15 | 34 | 73 | 38 | 56 | 34 | |
| Mont. | - | 1 | - | - | 2 | - | - | - | - | 2 | 15 | |
| Idaho | - | - | - | - | 1 | 1 | - | - | - | 2 | - | |
| Wyo. | - | 1 | 1 | - | - | - | - | - | - | 1 | 8 | |
| Colo. | 1 | 4 | - | - | 4 | 4 | - | 4 | U | U | 1 | |
| N. Mex. | 1 | 1 | 1 | - | 2 | 5 | - | 7 | 13 | 12 | - | |
| Ariz. | 1 | 1 | - | - | 3 | 2 | 32 | 57 | U | U | 10 | |
| Utah | 5 | 6 | 1 | - | - | 1 | 1 | 2 | 11 | 11 | - | |
| Nev. | 6 | 1 | - | 1 | - | 2 | 1 | 3 | 14 | 28 | - | |
| PACIFIC | 19 | 18 | 43 | 26 | 58 | 58 | 46 | 91 | 109 | 97 | 33 | |
| Wash. | 2 | 1 | - | 1 | 3 | 1 | 11 | 4 | 58 | 45 | - | |
| Oreg. | - | - | 1 | 1 | 7 | 6 | - | - | U | U | - | |
| Calif. | 17 | 17 | 42 | 24 | 44 | 51 | 33 | 87 | U | U | 30 | |
| Alaska | - | - | - | - | - | - | 1 | - | 10 | 11 | 3 | |
| Hawaii | - | - | - | - | 4 | - | 1 | - | 41 | 41 | - | |
| Guam | - | 1 | - | - | - | 1 | - | - | - | 37 | - | |
| P.R. | - | - | - | - | - | - | 59 | 59 | - | 30 | 16 | |
| V.I. | U | U | U | U | U | U | U | U | U | U | U | |
| Amer. Samoa | U | U | U | U | U | U | U | U | U | U | U | |
| C.N.M.I. | - | - | - | - | - | - | - | 59 | - | 32 | - | |

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

*Cumulative reports of provisional tuberculosis cases for 1998 and 1999 are unavailable ("U") for some areas using the Tuberculosis Information Management System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 3, 1999, and April 4, 1998 (13th Week)

| Reporting Area | <i>H. influenzae</i> , invasive | | Hepatitis (Viral), by type | | | | Measles (Rubeola) | | | | | |
|----------------|------------------------------------|--------------|----------------------------|--------------|--------------|--------------|-------------------|--------------|-----------|--------------|--------------|--------------|
| | Cum. 1999* | Cum. 1998 | A | | B | | Indigenous | | Imported† | | Total | |
| | | | Cum. 1999 | Cum. 1998 | Cum. 1999 | Cum. 1998 | 1999 | Cum. 1999 | 1999 | Cum. 1999 | Cum. 1999 | Cum. 1998 |
| UNITED STATES | 290 | 309 | 3,585 | 4,872 | 1,399 | 2,059 | - | 10 | - | 9 | 19 | 11 |
| NEW ENGLAND | 22 | 22 | 36 | 88 | 22 | 34 | - | - | - | 1 | 1 | 1 |
| Maine | 2 | 2 | 2 | 9 | - | - | - | - | - | - | - | - |
| N.H. | 3 | 1 | 5 | 5 | 2 | 4 | - | - | - | 1 | 1 | - |
| Vt. | 3 | 2 | 1 | 4 | 1 | - | - | - | - | - | - | - |
| Mass. | 11 | 17 | 11 | 25 | 17 | 18 | - | - | - | - | - | 1 |
| R.I. | - | - | - | 5 | 2 | 1 | - | - | - | - | - | - |
| Conn. | 3 | - | 17 | 40 | - | 11 | - | - | - | - | - | - |
| MID. ATLANTIC | 36 | 44 | 212 | 416 | 179 | 316 | - | - | - | - | - | 2 |
| Upstate N.Y. | 22 | 17 | 64 | 92 | 44 | 78 | - | - | - | - | - | - |
| N.Y. City | 2 | 13 | 33 | 151 | 35 | 81 | - | - | - | - | - | - |
| N.J. | 12 | 13 | 36 | 78 | 27 | 59 | - | - | - | - | - | 1 |
| Pa. | - | 1 | 79 | 95 | 73 | 98 | - | - | - | - | - | 1 |
| E.N. CENTRAL | 29 | 46 | 851 | 809 | 121 | 445 | - | - | - | - | - | 1 |
| Ohio | 19 | 21 | 212 | 99 | 29 | 22 | - | - | - | - | - | - |
| Ind. | 1 | 5 | 29 | 87 | 4 | 214 | - | - | - | - | - | - |
| Ill. | 8 | 19 | 89 | 210 | - | 62 | - | - | - | - | - | - |
| Mich. | 1 | - | 519 | 338 | 88 | 123 | - | - | - | - | - | 1 |
| Wis. | - | 1 | 2 | 75 | - | 24 | - | - | - | - | - | - |
| W.N. CENTRAL | 29 | 10 | 186 | 470 | 77 | 101 | - | - | - | - | - | - |
| Minn. | 10 | 4 | 11 | 15 | 11 | 6 | - | - | - | - | - | - |
| Iowa | 5 | 1 | 32 | 208 | 13 | 13 | - | - | - | - | - | - |
| Mo. | 10 | 1 | 110 | 193 | 45 | 68 | - | - | - | - | - | - |
| N. Dak. | - | - | - | 2 | - | 1 | - | - | - | - | - | - |
| S. Dak. | 1 | - | 8 | 2 | - | 1 | - | - | - | - | - | - |
| Nebr. | 1 | - | 14 | 12 | 6 | 4 | - | - | - | - | - | - |
| Kans. | 2 | 4 | 11 | 38 | 2 | 8 | - | - | 11 | - | - | - |
| S. ATLANTIC | 74 | 60 | 455 | 420 | 262 | 232 | - | - | - | - | - | 5 |
| Del. | - | - | 1 | - | - | - | - | - | - | - | - | - |
| Md. | 22 | 14 | 99 | 100 | 45 | 41 | - | - | - | - | - | 1 |
| D.C. | 2 | - | 16 | 15 | 6 | 3 | - | - | - | - | - | - |
| Va. | 8 | 9 | 33 | 72 | 24 | 25 | - | - | - | - | - | 2 |
| W. Va. | 1 | 2 | 3 | - | 4 | 1 | - | - | - | - | - | - |
| N.C. | 12 | 8 | 41 | 27 | 54 | 64 | - | - | - | - | - | - |
| S.C. | 2 | 1 | 5 | 8 | 26 | - | - | - | - | - | - | - |
| Ga. | 15 | 17 | 110 | 109 | 33 | 57 | - | - | - | - | - | 1 |
| Fla. | 12 | 9 | 147 | 89 | 70 | 41 | - | - | - | - | - | 1 |
| E.S. CENTRAL | 23 | 21 | 102 | 121 | 87 | 126 | - | - | - | - | - | - |
| Ky. | 2 | 5 | 6 | 5 | 7 | 9 | U | - | U | - | - | - |
| Tenn. | 12 | 10 | 70 | 66 | 55 | 94 | - | - | - | - | - | - |
| Ala. | 8 | 5 | 24 | 30 | 25 | 23 | - | - | - | - | - | - |
| Miss. | 1 | 1 | 2 | 20 | - | - | - | - | - | - | - | - |
| W.S. CENTRAL | 16 | 17 | 299 | 303 | 93 | 134 | - | - | - | 2 | 2 | - |
| Ark. | - | - | 9 | 11 | 10 | 23 | - | - | - | - | - | - |
| La. | 3 | 7 | 13 | 8 | 19 | 10 | - | - | - | - | - | - |
| Okla. | 11 | 8 | 118 | 113 | 27 | 14 | - | - | - | - | - | - |
| Tex. | 2 | 2 | 159 | 171 | 37 | 87 | - | - | - | 2 | 2 | - |
| MOUNTAIN | 36 | 55 | 372 | 844 | 134 | 207 | - | 1 | - | - | 1 | - |
| Mont. | 1 | - | 4 | 7 | 5 | 2 | - | - | - | - | - | - |
| Idaho | 1 | - | 11 | 53 | 7 | 9 | - | - | - | - | - | - |
| Wyo. | 1 | - | 1 | 12 | - | 2 | U | - | U | - | - | - |
| Colo. | 2 | 11 | 80 | 69 | 28 | 27 | - | 1 | - | - | 1 | - |
| N. Mex. | 10 | - | 9 | 46 | 43 | 84 | - | - | - | - | - | - |
| Ariz. | 18 | 30 | 210 | 545 | 24 | 47 | - | - | - | - | - | - |
| Utah | 3 | 3 | 16 | 46 | 8 | 17 | - | - | - | - | - | - |
| Nev. | - | 11 | 41 | 66 | 19 | 19 | - | - | - | - | - | - |
| PACIFIC | 25 | 34 | 1,072 | 1,401 | 424 | 464 | - | 9 | - | 6 | 15 | 2 |
| Wash. | - | 1 | 74 | 145 | 9 | 33 | - | - | - | - | - | - |
| Oreg. | 11 | 19 | 66 | 119 | 21 | 49 | - | 8 | - | - | 8 | - |
| Calif. | 12 | 11 | 929 | 1,114 | 383 | 375 | - | 1 | - | 6 | 7 | 2 |
| Alaska | 2 | 1 | 2 | 2 | 7 | 2 | - | - | - | - | - | - |
| Hawaii | - | 2 | 1 | 21 | 4 | 5 | - | - | - | - | - | - |
| Guam | - | - | - | - | - | - | U | - | U | - | - | - |
| P.R. | - | 1 | 21 | 13 | 31 | 154 | - | - | - | - | - | - |
| V.I. | U | U | U | U | U | U | U | U | U | U | U | U |
| Amer. Samoa | U | U | U | U | U | U | U | U | U | U | U | U |
| C.N.M.I. | - | - | - | - | - | 24 | U | - | U | - | - | - |

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

*Of 56 cases among children aged <5 years, serotype was reported for 24 and of those, 4 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 April 3, 1999, and April 4, 1998 (13th Week)

| Reporting Area | Meningococcal Disease | | Mumps | | | Pertussis | | | Rubella | | |
|----------------|-----------------------|-----------|-------|-----------|-----------|-----------|-----------|-----------|---------|-----------|-----------|
| | Cum. 1999 | Cum. 1998 | 1999 | Cum. 1999 | Cum. 1998 | 1999 | Cum. 1999 | Cum. 1998 | 1999 | Cum. 1999 | Cum. 1998 |
| UNITED STATES | 667 | 860 | 3 | 94 | 116 | 181 | 1,180 | 1,093 | 1 | 9 | 126 |
| NEW ENGLAND | 34 | 48 | - | 1 | - | 1 | 118 | 218 | - | 2 | 21 |
| Maine | 3 | 4 | - | - | - | - | - | 4 | - | - | - |
| N.H. | - | 1 | - | 1 | - | 1 | 19 | 18 | - | - | - |
| Vt. | 2 | 1 | - | - | - | - | 10 | 25 | - | - | - |
| Mass. | 24 | 20 | - | - | - | - | 83 | 166 | - | 2 | 1 |
| R.I. | 2 | 3 | - | - | - | - | 2 | - | - | - | - |
| Conn. | 3 | 19 | - | - | - | - | 4 | 5 | - | - | 20 |
| MID. ATLANTIC | 65 | 91 | - | 14 | 10 | 127 | 298 | 147 | - | - | 70 |
| Upstate N.Y. | 13 | 24 | - | 2 | 2 | 125 | 256 | 78 | - | - | 65 |
| N.Y. City | 18 | 10 | - | 3 | 5 | - | 10 | 6 | - | - | 1 |
| N.J. | 15 | 21 | - | - | - | - | - | 6 | - | - | 4 |
| Pa. | 19 | 36 | - | 9 | 3 | 2 | 32 | 57 | - | - | - |
| E.N. CENTRAL | 96 | 139 | 2 | 12 | 18 | 8 | 106 | 128 | - | - | - |
| Ohio | 47 | 51 | - | 6 | 9 | 6 | 89 | 36 | - | - | - |
| Ind. | 7 | 24 | - | - | - | - | 2 | 34 | - | - | - |
| Ill. | 28 | 34 | - | - | - | - | - | 5 | - | - | - |
| Mich. | 14 | 13 | 2 | 6 | 9 | 2 | 15 | 15 | - | - | - |
| Wis. | - | 17 | - | - | - | - | - | 38 | - | - | - |
| W.N. CENTRAL | 87 | 70 | - | 2 | 10 | 1 | 16 | 78 | - | - | 2 |
| Minn. | 25 | 5 | - | - | 4 | - | - | 41 | - | - | - |
| Iowa | 18 | 11 | - | 2 | 4 | - | 7 | 15 | - | - | - |
| Mo. | 30 | 31 | - | - | 1 | 1 | 7 | 11 | - | - | 1 |
| N. Dak. | - | - | - | - | 1 | - | - | - | - | - | - |
| S. Dak. | 5 | 5 | - | - | - | - | 2 | 2 | - | - | - |
| Nebr. | 2 | 3 | - | - | - | - | - | 3 | - | - | - |
| Kans. | 7 | 15 | - | - | - | - | - | 6 | - | - | 1 |
| S. ATLANTIC | 118 | 126 | - | 17 | 14 | 2 | 74 | 82 | - | 2 | 1 |
| Del. | 2 | 1 | - | - | - | - | - | - | - | - | - |
| Md. | 18 | 15 | - | 3 | - | 1 | 23 | 16 | - | 1 | - |
| D.C. | 1 | - | - | 1 | - | - | - | - | - | - | - |
| Va. | 16 | 15 | - | 2 | 3 | - | 7 | 6 | - | - | - |
| W. Va. | 1 | 4 | - | - | - | - | - | 1 | - | - | - |
| N.C. | 14 | 19 | - | 3 | 6 | - | 22 | 38 | - | 1 | 1 |
| S.C. | 15 | 15 | - | 2 | 3 | - | 6 | 6 | - | - | - |
| Ga. | 16 | 34 | - | - | - | 1 | 7 | - | - | - | - |
| Fla. | 35 | 23 | - | 6 | 2 | - | 9 | 15 | - | - | - |
| E.S. CENTRAL | 48 | 73 | - | 1 | 1 | - | 17 | 16 | - | - | - |
| Ky. | 10 | 13 | U | - | - | U | 1 | 2 | U | - | - |
| Tenn. | 20 | 25 | - | - | - | - | 12 | 5 | - | - | - |
| Ala. | 13 | 25 | - | 1 | 1 | - | 4 | 9 | - | - | - |
| Miss. | 5 | 10 | - | - | - | - | - | - | - | - | - |
| W.S. CENTRAL | 28 | 53 | 1 | 12 | 21 | 1 | 28 | 50 | - | 4 | 25 |
| Ark. | 11 | 9 | - | - | - | 1 | 5 | 5 | - | - | - |
| La. | 7 | 16 | - | - | - | - | - | - | - | - | - |
| Okla. | 8 | 17 | - | 1 | - | - | 2 | 6 | - | - | - |
| Tex. | 2 | 11 | 1 | 11 | 21 | - | 21 | 39 | - | 4 | 25 |
| MOUNTAIN | 56 | 59 | - | 7 | 8 | 2 | 158 | 187 | - | - | 5 |
| Mont. | - | 2 | - | - | - | - | 1 | 1 | - | - | - |
| Idaho | 7 | 3 | - | - | - | - | 81 | 71 | - | - | - |
| Wyo. | 2 | 3 | U | - | 1 | U | 1 | - | U | - | - |
| Colo. | 17 | 14 | - | 2 | 1 | 2 | 23 | 40 | - | - | - |
| N. Mex. | 7 | 9 | N | N | N | - | 10 | 47 | - | - | 1 |
| Ariz. | 17 | 21 | - | - | 2 | - | 20 | 18 | - | - | 1 |
| Utah | 4 | 6 | - | 4 | - | - | 20 | 6 | - | - | 2 |
| Nev. | 2 | 1 | - | 1 | 4 | - | 2 | 4 | - | - | 1 |
| PACIFIC | 135 | 201 | - | 28 | 34 | 39 | 365 | 187 | 1 | 1 | 2 |
| Wash. | 17 | 24 | - | - | 4 | 38 | 211 | 71 | - | - | - |
| Oreg. | 21 | 37 | N | N | N | 1 | 4 | 11 | - | - | - |
| Calif. | 90 | 136 | - | 24 | 20 | - | 149 | 102 | 1 | 1 | 1 |
| Alaska | 3 | 1 | - | 1 | 2 | - | 1 | - | - | - | - |
| Hawaii | 4 | 3 | - | 3 | 8 | - | - | 3 | - | - | 1 |
| Guam | - | - | U | - | 2 | U | - | - | U | - | - |
| P.R. | 2 | 2 | - | - | 1 | - | - | 2 | - | - | - |
| V.I. | U | U | U | U | U | U | U | U | U | U | U |
| Amer. Samoa | U | U | U | U | U | U | U | U | U | U | U |
| C.N.M.I. | - | - | U | - | 2 | U | - | 1 | U | - | - |

N: Not notifiable

U: Unavailable

-: no reported cases

**TABLE IV. Deaths in 122 U.S. cities,* week ending
April 3, 1999 (13th Week)**

| Reporting Area | All Causes, By Age (Years) | | | | | | P&J† | Total | Reporting Area | All Causes, By Age (Years) | | | | | | P&J† | Total |
|---------------------|----------------------------|-------|-------|-------|------|----|------|-----------------------|---------------------|----------------------------|-------|-------|-------|------|-------|------|-------|
| | All Ages | >65 | 45-64 | 25-44 | 1-24 | <1 | | | | All Ages | >65 | 45-64 | 25-44 | 1-24 | <1 | | |
| NEW ENGLAND | 609 | 441 | 89 | 54 | 14 | 11 | 66 | S. ATLANTIC | 1,223 | 831 | 249 | 89 | 29 | 23 | 102 | | |
| Boston, Mass. | 145 | 87 | 28 | 18 | 5 | 7 | 18 | Atlanta, Ga. | U | U | U | U | U | U | U | | |
| Bridgeport, Conn. | 38 | 24 | 9 | 4 | 1 | - | 7 | Baltimore, Md. | 247 | 162 | 52 | 18 | 4 | 10 | 30 | | |
| Cambridge, Mass. | 17 | 13 | 4 | - | - | - | 3 | Charlotte, N.C. | 83 | 62 | 11 | 6 | 2 | 2 | 12 | | |
| Fall River, Mass. | 29 | 26 | 3 | - | - | - | 3 | Jacksonville, Fla. | 134 | 93 | 22 | 14 | 1 | 3 | 6 | | |
| Hartford, Conn. | 51 | 39 | 9 | 3 | - | - | 4 | Miami, Fla. | 136 | 80 | 38 | 13 | 5 | - | 1 | | |
| Lowell, Mass. | 27 | 21 | 3 | 3 | - | - | 1 | Norfolk, Va. | 50 | 35 | 10 | 4 | 1 | - | 1 | | |
| Lynn, Mass. | 9 | 4 | 3 | 2 | - | - | - | Richmond, Va. | 70 | 36 | 18 | 10 | 4 | 2 | 4 | | |
| New Bedford, Mass. | 29 | 28 | - | 1 | - | - | 1 | Savannah, Ga. | 97 | 72 | 17 | 7 | - | 1 | 8 | | |
| New Haven, Conn. | 48 | 37 | 6 | 4 | 1 | - | 7 | St. Petersburg, Fla. | 87 | 69 | 11 | 5 | 2 | - | 9 | | |
| Providence, R.I. | 67 | 52 | 6 | 4 | 3 | 2 | - | Tampa, Fla. | 209 | 150 | 46 | 6 | 4 | 3 | 27 | | |
| Somerville, Mass. | 8 | 6 | 2 | - | - | - | 1 | Washington, D.C. | 88 | 57 | 17 | 6 | 6 | 2 | 4 | | |
| Springfield, Mass. | 46 | 33 | 3 | 10 | - | - | 5 | Wilmington, Del. | 22 | 15 | 7 | - | - | - | - | | |
| Waterbury, Conn. | 30 | 24 | 3 | 2 | - | 1 | 2 | E.S. CENTRAL | 950 | 693 | 161 | 61 | 15 | 19 | 101 | | |
| Worcester, Mass. | 65 | 47 | 10 | 3 | 4 | 1 | 14 | Birmingham, Ala. | 198 | 148 | 30 | 14 | 4 | 1 | 31 | | |
| MID. ATLANTIC | 2,157 | 1,499 | 434 | 152 | 32 | 40 | 103 | Chattanooga, Tenn. | 79 | 63 | 9 | 4 | 3 | - | 8 | | |
| Albany, N.Y. | 47 | 33 | 6 | 4 | 1 | 3 | 5 | Knoxville, Tenn. | 94 | 66 | 21 | 6 | - | 1 | 5 | | |
| Allentown, Pa. | 21 | 16 | 3 | 2 | - | - | - | Lexington, Ky. | 82 | 55 | 17 | 5 | 4 | 1 | 12 | | |
| Buffalo, N.Y. | U | U | U | U | U | U | U | Memphis, Tenn. | 210 | 163 | 31 | 13 | 2 | 1 | 19 | | |
| Camden, N.J. | 43 | 28 | 9 | 5 | - | 1 | 2 | Mobile, Ala. | 69 | 45 | 14 | 7 | - | 3 | 2 | | |
| Elizabeth, N.J. | 9 | 6 | 2 | 1 | - | - | - | Montgomery, Ala. | 38 | 22 | 12 | - | 1 | 3 | 8 | | |
| Erie, Pa. | 48 | 36 | 8 | 3 | - | 1 | 3 | Nashville, Tenn. | 180 | 131 | 27 | 12 | 1 | 9 | 16 | | |
| Jersey City, N.J. | 48 | 33 | 10 | 3 | 1 | 1 | - | W.S. CENTRAL | 1,559 | 1,033 | 304 | 141 | 50 | 29 | 121 | | |
| New York City, N.Y. | 1,188 | 780 | 276 | 89 | 21 | 22 | 31 | Austin, Tex. | 73 | 50 | 13 | 9 | 1 | - | 9 | | |
| Newark, N.J. | 44 | 11 | 17 | 8 | 1 | 7 | 3 | Baton Rouge, La. | 44 | 29 | 10 | 4 | - | 1 | 2 | | |
| Paterson, N.J. | 12 | 5 | 2 | 5 | - | - | - | Corpus Christi, Tex. | 58 | 42 | 9 | 3 | 4 | - | 6 | | |
| Philadelphia, Pa. | 299 | 227 | 45 | 19 | 6 | 2 | 20 | Dallas, Tex. | 186 | 114 | 45 | 17 | 7 | 3 | 8 | | |
| Pittsburgh, Pa.‡ | 50 | 39 | 6 | 3 | - | 2 | 6 | El Paso, Tex. | 99 | 69 | 17 | 7 | 5 | 1 | 7 | | |
| Reading, Pa. | 28 | 23 | 5 | - | - | - | 1 | Ft. Worth, Tex. | 141 | 93 | 33 | 14 | 1 | - | 16 | | |
| Rochester, N.Y. | 112 | 93 | 12 | 6 | 1 | - | 11 | Houston, Tex. | 505 | 317 | 106 | 56 | 16 | 10 | 36 | | |
| Schenectady, N.Y. | 21 | 17 | 4 | - | - | - | 1 | Little Rock, Ark. | 61 | 36 | 15 | 5 | 3 | - | 4 | | |
| Scranton, Pa. | 46 | 42 | 2 | 2 | - | - | 7 | New Orleans, La. | U | U | U | U | U | U | U | | |
| Syracuse, N.Y. | 89 | 69 | 16 | 2 | 1 | 1 | 12 | San Antonio, Tex. | 224 | 165 | 34 | 16 | 6 | 3 | 16 | | |
| Trenton, N.J. | 26 | 19 | 7 | - | - | - | - | Shreveport, La. | 82 | 56 | 11 | 7 | 4 | 4 | 11 | | |
| Utica, N.Y. | 26 | 22 | 4 | - | - | - | 1 | Tulsa, Okla. | 86 | 62 | 11 | 3 | 3 | 7 | 6 | | |
| Yonkers, N.Y. | U | U | U | U | U | U | U | MOUNTAIN | 952 | 669 | 176 | 63 | 25 | 18 | 76 | | |
| E.N. CENTRAL | 2,322 | 1,636 | 412 | 158 | 62 | 51 | 188 | Albuquerque, N.M. | 121 | 83 | 22 | 4 | 6 | 6 | 5 | | |
| Akron, Ohio | 53 | 38 | 11 | 1 | 2 | 1 | - | Boise, Idaho | 47 | 36 | 4 | 2 | 3 | 2 | 4 | | |
| Canton, Ohio | 44 | 32 | 7 | 4 | - | 1 | 4 | Colo. Springs, Colo. | 64 | 48 | 10 | 3 | - | 3 | 8 | | |
| Chicago, Ill. | 465 | 307 | 96 | 38 | 10 | 11 | 36 | Denver, Colo. | 112 | 85 | 17 | 9 | 1 | - | 11 | | |
| Cincinnati, Ohio | 125 | 96 | 19 | 3 | 4 | 3 | 19 | Las Vegas, Nev. | 175 | 120 | 37 | 10 | 4 | 3 | 10 | | |
| Cleveland, Ohio | 120 | 74 | 30 | 10 | 1 | 5 | 5 | Ogden, Utah | 27 | 20 | 3 | 3 | 1 | - | 2 | | |
| Columbus, Ohio | 203 | 143 | 35 | 17 | 5 | 3 | 22 | Phoenix, Ariz. | 76 | 47 | 19 | 6 | 3 | 1 | 2 | | |
| Dayton, Ohio | 151 | 116 | 21 | 9 | - | 5 | 18 | Pueblo, Colo. | 40 | 32 | 6 | 2 | - | - | 7 | | |
| Detroit, Mich. | 225 | 138 | 46 | 23 | 9 | 9 | 7 | Salt Lake City, Utah | 105 | 62 | 24 | 12 | 6 | 1 | 12 | | |
| Evansville, Ind. | 48 | 38 | 5 | 2 | 2 | 1 | 2 | Tucson, Ariz. | 185 | 136 | 34 | 12 | 1 | 2 | 15 | | |
| Fort Wayne, Ind. | 88 | 63 | 18 | 5 | 1 | 1 | 3 | PACIFIC | 1,884 | 1,391 | 316 | 117 | 24 | 32 | 185 | | |
| Gary, Ind. | 23 | 15 | 3 | 2 | - | 3 | 2 | Berkeley, Calif. | 18 | 15 | 2 | 1 | - | - | 1 | | |
| Grand Rapids, Mich. | 70 | 48 | 15 | 3 | 3 | 1 | 13 | Fresno, Calif. | 148 | 120 | 21 | 4 | 2 | 1 | 18 | | |
| Indianapolis, Ind. | 167 | 111 | 28 | 15 | 9 | 4 | 5 | Glendale, Calif. | 28 | 24 | 3 | 1 | - | - | - | | |
| Lansing, Mich. | 59 | 47 | 9 | 2 | - | 1 | 3 | Honolulu, Hawaii | 59 | 45 | 8 | 5 | - | 1 | 5 | | |
| Milwaukee, Wis. | 127 | 92 | 23 | 6 | 5 | 1 | 18 | Long Beach, Calif. | 70 | 51 | 11 | 4 | 3 | 1 | 11 | | |
| Peoria, Ill. | 54 | 46 | 5 | 1 | 2 | - | 8 | Los Angeles, Calif. | 365 | 264 | 68 | 22 | 4 | 7 | 23 | | |
| Rockford, Ill. | 66 | 49 | 11 | 4 | 2 | - | 10 | Pasadena, Calif. | 28 | 22 | 4 | 1 | - | 1 | 3 | | |
| South Bend, Ind. | 58 | 48 | 4 | 5 | 1 | - | 4 | Portland, Oreg. | 175 | 130 | 27 | 12 | 3 | 3 | 12 | | |
| Toledo, Ohio | 97 | 75 | 15 | 3 | 4 | - | 5 | Sacramento, Calif. | 222 | 160 | 40 | 10 | 6 | 6 | 42 | | |
| Youngstown, Ohio | 79 | 60 | 11 | 5 | 2 | 1 | 4 | San Diego, Calif. | 131 | 93 | 21 | 12 | 1 | 3 | 15 | | |
| W.N. CENTRAL | 770 | 565 | 125 | 43 | 15 | 22 | 86 | San Francisco, Calif. | 121 | 86 | 23 | 10 | - | 2 | 19 | | |
| Des Moines, Iowa | 134 | 93 | 29 | 7 | 2 | 3 | 23 | San Jose, Calif. | 202 | 148 | 36 | 13 | - | 5 | 17 | | |
| Duluth, Minn. | 26 | 22 | 1 | 1 | - | 2 | 7 | Santa Cruz, Calif. | 23 | 20 | 3 | - | - | - | 3 | | |
| Kansas City, Kans. | U | U | U | U | U | U | U | Seattle, Wash. | 144 | 99 | 27 | 13 | 4 | 1 | 7 | | |
| Kansas City, Mo. | 102 | 77 | 14 | 3 | 4 | 4 | 10 | Spokane, Wash. | 65 | 51 | 9 | 4 | - | 1 | 7 | | |
| Lincoln, Nebr. | 50 | 41 | 4 | 1 | 2 | 2 | 8 | Tacoma, Wash. | 85 | 63 | 13 | 5 | 1 | - | 2 | | |
| Minneapolis, Minn. | 168 | 130 | 26 | 6 | 1 | 5 | 24 | TOTAL | 12,426 [§] | 8,758 | 2,266 | 878 | 266 | 245 | 1,028 | | |
| Omaha, Nebr. | 95 | 70 | 21 | 4 | - | - | 6 | | | | | | | | | | |
| St. Louis, Mo. | 116 | 73 | 21 | 14 | 4 | 4 | 1 | | | | | | | | | | |
| St. Paul, Minn. | 79 | 59 | 9 | 7 | 2 | 2 | 7 | | | | | | | | | | |
| Wichita, Kans. | U | U | U | U | U | U | U | | | | | | | | | | |

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.

**Contributors to the Production of the *MMWR* (Weekly)
Weekly Notifiable Disease Morbidity Data and 122 Cities Mortality Data**

Samuel L. Groseclose, D.V.M., M.P.H.

State Support Team

Robert Fagan
Scott Connolly
Gerald Jones
David Nitschke
Carol A. Worsham

CDC Operations Team

Carol M. Knowles
Deborah A. Adams
Willie J. Anderson
Patsy A. Hall
Amy K. Henion

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

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to: Editor, *MMWR* Series, Mailstop C-08, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone (888) 232-3228.

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

Director, Centers for Disease Control
and Prevention
Jeffrey P. Koplan, M.D., M.P.H.
Deputy Director, Centers for Disease
Control and Prevention
Claire V. Broome, M.D.

Director, Epidemiology Program Office
Stephen B. Thacker, M.D., M.Sc.
Editor, *MMWR* Series
John W. Ward, M.D.
Managing Editor,
MMWR (weekly)
Karen L. Foster, M.A.

Writers-Editors,
MMWR (weekly)
Jill Crane
David C. Johnson
Teresa F. Rutledge
Caran R. Wilbanks
Desktop Publishing
Morie M. Higgins
Peter M. Jenkins