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WEEKLY REPORT

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).

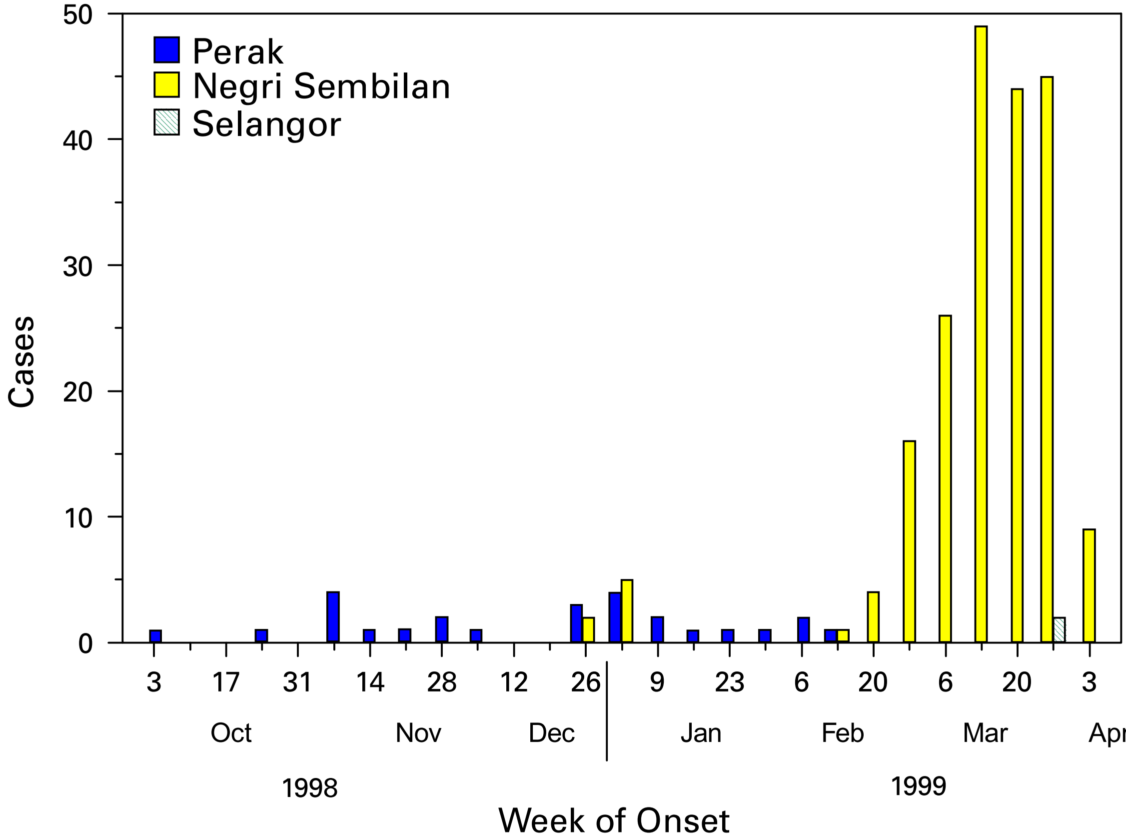
Cases have occurred primarily among adult men who had histories of close contact with swine. Concurrent with the human cases, illness and death occurred among swine from the same regions. Initially, Japanese encephalitis (JE) virus was considered the probable etiologic agent for this outbreak, and specimens 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 (presumedly 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; Institue 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.

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Hendra-Like Virus — Continued

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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 homemade 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

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*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.

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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

		Vaccination			Therapeutic		
Characteristic	**No. participants**	**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 Circiumaru, 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.

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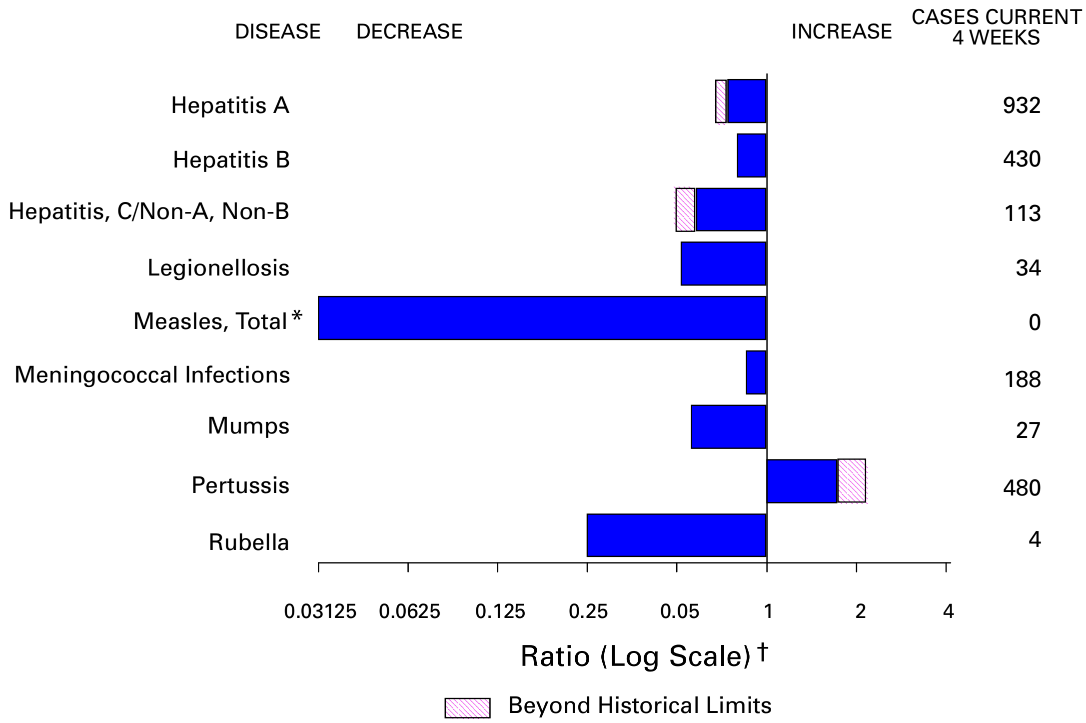
Erratum: Vol. 48, No. 11

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		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS§				
	Cum. 1999*	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1999	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
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	-	-
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.	-	-	N	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	-	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)

	H. influenzae, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
Reporting Area	Cum. 1999*	Cum. 1998	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	-	-	-	-	-	-
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)

	Meningococcal Disease		Mumps			Pertussis			Rubella		
Reporting Area	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&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	609	441	89	54	14	11	66
Boston, Mass.	145	87	28	18	5	7	18
Bridgeport, Conn.	38	24	9	4	1	-	7
Cambridge, Mass.	17	13	4	-	-	-	3
Fall River, Mass.	29	26	3	-	-	-	3
Hartford, Conn.	51	39	9	3	-	-	4
Lowell, Mass.	27	21	3	3	-	-	1
Lynn, Mass.	9	4	3	2	-	-	-
New Bedford, Mass.	29	28	-	1	-	-	1
New Haven, Conn.	48	37	6	4	1	-	7
Providence, R.I.	67	52	6	4	3	2	-
Somerville, Mass.	8	6	2	-	-	-	1
Springfield, Mass.	46	33	3	10	-	-	5
Waterbury, Conn.	30	24	3	2	-	1	2
Worcester, Mass.	65	47	10	3	4	1	14
MID. ATLANTIC	2,157	1,499	434	152	32	40	103
Albany, N.Y.	47	33	6	4	1	3	5
Allentown, Pa.	21	16	3	2	-	-	-
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	43	28	9	5	-	1	2
Elizabeth, N.J.	9	6	2	1	-	-	-
Erie, Pa.	48	36	8	3	-	1	3
Jersey City, N.J.	48	33	10	3	1	1	-
New York City, N.Y.	1,188	780	276	89	21	22	31
Newark, N.J.	44	11	17	8	1	7	3
Paterson, N.J.	12	5	2	5	-	-	-
Philadelphia, Pa.	299	227	45	19	6	2	20
Pittsburgh, Pa.§	50	39	6	3	-	2	6
Reading, Pa.	28	23	5	-	-	-	1
Rochester, N.Y.	112	93	12	6	1	-	11
Schenectady, N.Y.	21	17	4	-	-	-	1
Scranton, Pa.	46	42	2	2	-	-	7
Syracuse, N.Y.	89	69	16	2	1	1	12
Trenton, N.J.	26	19	7	-	-	-	-
Utica, N.Y.	26	22	4	-	-	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,322	1,636	412	158	62	51	188
Akron, Ohio	53	38	11	1	2	1	-
Canton, Ohio	44	32	7	4	-	1	4
Chicago, Ill.	465	307	96	38	10	11	36
Cincinnati, Ohio	125	96	19	3	4	3	19
Cleveland, Ohio	120	74	30	10	1	5	5
Columbus, Ohio	203	143	35	17	5	3	22
Dayton, Ohio	151	116	21	9	-	5	18
Detroit, Mich.	225	138	46	23	9	9	7
Evansville, Ind.	48	38	5	2	2	1	2
Fort Wayne, Ind.	88	63	18	5	1	1	3
Gary, Ind.	23	15	3	2	-	3	2
Grand Rapids, Mich.	70	48	15	3	3	1	13
Indianapolis, Ind.	167	111	28	15	9	4	5
Lansing, Mich.	59	47	9	2	-	1	3
Milwaukee, Wis.	127	92	23	6	5	1	18
Peoria, Ill.	54	46	5	1	2	-	8
Rockford, Ill.	66	49	11	4	2	-	10
South Bend, Ind.	58	48	4	5	1	-	4
Toledo, Ohio	97	75	15	3	4	-	5
Youngstown, Ohio	79	60	11	5	2	1	4
W.N. CENTRAL	770	565	125	43	15	22	86
Des Moines, Iowa	134	93	29	7	2	3	23
Duluth, Minn.	26	22	1	1	-	2	7
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	102	77	14	3	4	4	10
Lincoln, Nebr.	50	41	4	1	2	2	8
Minneapolis, Minn.	168	130	26	6	1	5	24
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

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,223	831	249	89	29	23	102
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	247	162	52	18	4	10	30
Charlotte, N.C.	83	62	11	6	2	2	12
Jacksonville, Fla.	134	93	22	14	1	3	6
Miami, Fla.	136	80	38	13	5	-	1
Norfolk, Va.	50	35	10	4	1	-	1
Richmond, Va.	70	36	18	10	4	2	4
Savannah, Ga.	97	72	17	7	-	1	8
St. Petersburg, Fla.	87	69	11	5	2	-	9
Tampa, Fla.	209	150	46	6	4	3	27
Washington, D.C.	88	57	17	6	6	2	4
Wilmington, Del.	22	15	7	-	-	-	-
E.S. CENTRAL	950	693	161	61	15	19	101
Birmingham, Ala.	198	148	30	14	4	1	31
Chattanooga, Tenn.	79	63	9	4	3	-	8
Knoxville, Tenn.	94	66	21	6	-	1	5
Lexington, Ky.	82	55	17	5	4	1	12
Memphis, Tenn.	210	163	31	13	2	1	19
Mobile, Ala.	69	45	14	7	-	3	2
Montgomery, Ala.	38	22	12	-	1	3	8
Nashville, Tenn.	180	131	27	12	1	9	16
W.S. CENTRAL	1,559	1,033	304	141	50	29	121
Austin, Tex.	73	50	13	9	1	-	9
Baton Rouge, La.	44	29	10	4	-	1	2
Corpus Christi, Tex.	58	42	9	3	4	-	6
Dallas, Tex.	186	114	45	17	7	3	8
El Paso, Tex.	99	69	17	7	5	1	7
Ft. Worth, Tex.	141	93	33	14	1	-	16
Houston, Tex.	505	317	106	56	16	10	36
Little Rock, Ark.	61	36	15	5	3	-	4
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	224	165	34	16	6	3	16
Shreveport, La.	82	56	11	7	4	4	11
Tulsa, Okla.	86	62	11	3	3	7	6
MOUNTAIN	952	669	176	63	25	18	76
Albuquerque, N.M.	121	83	22	4	6	6	5
Boise, Idaho	47	36	4	2	3	2	4
Colo. Springs, Colo.	64	48	10	3	-	3	8
Denver, Colo.	112	85	17	9	1	-	11
Las Vegas, Nev.	175	120	37	10	4	3	10
Ogden, Utah	27	20	3	3	1	-	2
Phoenix, Ariz.	76	47	19	6	3	1	2
Pueblo, Colo.	40	32	6	2	-	-	7
Salt Lake City, Utah	105	62	24	12	6	1	12
Tucson, Ariz.	185	136	34	12	1	2	15
PACIFIC	1,884	1,391	316	117	24	32	185
Berkeley, Calif.	18	15	2	1	-	-	1
Fresno, Calif.	148	120	21	4	2	1	18
Glendale, Calif.	28	24	3	1	-	-	-
Honolulu, Hawaii	59	45	8	5	-	1	5
Long Beach, Calif.	70	51	11	4	3	1	11
Los Angeles, Calif.	365	264	68	22	4	7	23
Pasadena, Calif.	28	22	4	1	-	1	3
Portland, Oreg.	175	130	27	12	3	3	12
Sacramento, Calif.	222	160	40	10	6	6	42
San Diego, Calif.	131	93	21	12	1	3	15
San Francisco, Calif.	121	86	23	10	-	2	19
San Jose, Calif.	202	148	36	13	-	5	17
Santa Cruz, Calif.	23	20	3	-	-	-	3
Seattle, Wash.	144	99	27	13	4	1	7
Spokane, Wash.	65	51	9	4	-	1	7
Tacoma, Wash.	85	63	13	5	1	-	2
TOTAL	12,426¶	8,758	2,266	878	266	245	1,028

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

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