

**MMWR**<sup>TM</sup>  
**MORBIDITY AND MORTALITY  
WEEKLY REPORT**

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**Prevalence and Health Consequences of Stalking — Louisiana, 1998–1999**

Stalking is a form of violence that may lead to physical injury or homicide and may have disabling social and psychological consequences (1,2). Although the legal definition varies among jurisdictions, all 50 states have antistalking laws (3). Louisiana defines stalking as the willful, malicious, and repeated following or harassing of another person with the intent to place that person in fear of death or serious bodily injury (4). Information is limited on the prevalence of stalking and its impact on the victim (3,5). To gather population-based surveillance data on stalking and other forms of interpersonal violence, the Louisiana Office of Public Health conducted a random-digit-dialed telephone survey among residents regarding experiences and perceptions related to safety and violence. This report summarizes the results of the survey, which indicate that 15% of the women surveyed reported being stalked during their lifetime.

Data were collected from Louisiana residents aged  $\geq 18$  years on a monthly basis from July 1, 1998, to June 30, 1999. Eligible households were selected randomly from a list of possible telephone numbers that had been filtered to eliminate unused and business exchanges. The respondent interviewed from each household was selected randomly. If an eligible household refused to participate or if the desired respondent could not be reached, a substitute number was selected randomly from the list. The survey ensured confidentiality, and respondents gave informed consent for participation.

Of 4763 eligible respondents, 1808 (38%) completed the interview; 1171 (65%) were women. This report describes the findings among women respondents. Age and race of survey participants matched the 1990 census data for Louisiana, except that women aged 18–24 years composed 8% of the survey sample and composed 14% of women in Louisiana. Participants ranged in age from 18 to 99 years (median: 46 years); 71% were white, and 28% were black, whereas among female Louisiana residents aged  $\geq 18$  years, 69% were white, and 29% were black. Participants were classified as having ever been stalked if they answered “yes” to the question, “Have you ever been stalked, harassed, or threatened with violence for more than one month by someone who would not leave you alone?” Women who reported having been stalked also were asked whether they had experienced physical injuries and stress-related problems and the level of fear invoked by stalking.

One hundred seventy-six (15%) women reported having been stalked during their lifetime, and 23 (2%) women reported currently being stalked. Of the 176, 132 (75%) women reported they believed the stalking to be somewhat dangerous or life threatening; of these, 89 (67%) indicated they had reported the situation to the police. Other

*Stalking — Continued*

measures reported to stop harassment included changing usual behavior (70%), moving (36%), purchasing a gun (11%), and obtaining a restraining order (11%) (Table 1). Forty-two (32%) of the 132 women reported injuries from being assaulted by their stalker, such as swelling, cuts, scratches, bruises, strains or sprains, burns, bites, broken teeth, or knife or gunshot wounds. Seventy-one (55%) women reported experiencing stress that interfered with their regular activities for >1 month.

Among the women who perceived their stalking to be dangerous or life threatening, 67 (51%) identified the perpetrators as someone with whom they had had an intimate relationship (i.e., boyfriend, former boyfriend, spouse, or former spouse); no stalking was reported among same sex partners. Forty-three (33%) women identified the perpetrator as someone known to them but other than an intimate partner (i.e., relative, acquaintance, friend, or other). Seventeen (13%) women were stalked by a stranger, and five (4%) were stalked by a perpetrator that they were unable to identify.

Those women who had been in an intimate relationship with their stalker were more than four times as likely to report that they had sustained an injury than those women who had not been in an intimate relationship with their stalker (35 of 67 versus seven of 60; relative risk=4.5; 95% confidence interval=2.2–9.3). None of the women who reported having been stalked by a stranger and who believed the stalking was somewhat dangerous or life threatening reported sustaining an injury.

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**Editorial Note:** The findings in this report indicate that 15% of women surveyed in Louisiana reported having been stalked during their lifetime. Social and psychological sequelae of stalking were more prevalent than physical sequelae. More women reported experiencing stress from being stalked than experiencing physical injury.

**TABLE 1. Characteristics of stalking among women reporting the experience as dangerous or life threatening — Louisiana, 1998–1999\***

<b>Characteristic</b>	<b>No.</b>	<b>(%)</b>
<b>Measures taken to stop stalking<sup>†</sup></b>		
Changed routine	93	(70.5)
Reported stalking to police	89	(67.4)
Moved	48	(36.4)
Purchased a gun	15	(11.4)
Obtained a restraining order	14	(10.6)
<b>Experienced physical injuries as a result of stalking</b>		
Experienced stress as a result of stalking <sup>‡</sup>	42	(31.8)
71		(55.5)
<b>Identity of stalker</b>		
Former or current intimate partner acting alone	62	(47.0)
Some other known person acting alone	43	(32.6)
Former or current intimate partner and another known person	5	( 3.8)
Stranger	17	(12.9)
Unable to identify stalker	5	( 3.8)

\* n=132.

<sup>†</sup> Numbers may exceed total because respondents could report taking multiple measures.

<sup>‡</sup> Four persons were excluded from this specific analysis because of interviewer error.

*Stalking — Continued*

The findings in this report are consistent with data from the National Violence Against Women Survey (NVAWS) (3); both surveys showed that stalking had adverse psychological and social consequences. NVAWS did not measure physical injuries resulting from stalking because their definition of stalking precluded physical contact; however, NVAWS separately measured physical violence and found that 81% of those reporting stalking also reported having been physically assaulted by the same person (4).

The findings in this report are subject to at least two limitations. First, quantifying the validity of self-reports of stalking is difficult because no "gold standard" exists for comparison. Additional research is needed on experiences of violence to determine the validity and reliability of different data collection methods (e.g., face-to-face interviews, telephone surveys, and paper and pencil surveys). Second, the population surveyed may not be representative of Louisiana. Because persons without telephones were not surveyed, and because of the low response rate, nonparticipants may differ from participants on study outcomes. However, the racial composition of survey participants was representative of the state.

The data in this report suggest that reliable estimates of stalking may be difficult to obtain using traditional data sources (e.g., health-care providers and law enforcement agencies) because 68% of the women who experienced stalking did not sustain a physical injury and 33% did not report the stalking to the police. A population-based survey may help characterize the burden of stalking and other types of interpersonal violence. However, the identification of victims in health-care and law enforcement settings also may help characterize persons at high risk for injury from stalking and enable referral of those persons for services and secondary prevention activities.

Surveillance is the basis for the epidemiologic approach to public health problems (6). If violence prevention is to be approached using the public health model, an accurate description of the problem is the first step (7). State- and local-level data on the prevalence of interpersonal violence can assist health departments in tailoring intervention programs to the specific needs and conditions in their communities.

*References*

1. Meloy JR. Stalking: an old behavior, a new crime. *Psychiatry Clin North Am* 1999;22:85–99.
2. Pathe M, Mullen PE. The impact of stalkers on their victims. *Br J Psychiatry* 1997;170:12–7.
3. Tjaden P, Thoennes N. Stalking in America: findings from the National Violence Against Women Survey. Washington, DC: National Institute of Justice, and US Department of Health and Human Services, CDC, April 1998; publication NCJ 169592.
4. The National Center for Victims of Crime. Stalking legislation: Louisiana: Rev. Stat. Section 14.40.2 Stalking. 1992. Amended 1997. Available <http://www.ncv.org/law/stlk.la.htm>. Accessed July 2000.
5. Fremouw WJ, Westrup D. Stalking on campus: the prevalence and strategies for coping with stalking. *J Forensic Sci* 1997;442:666–9.
6. Teutsch SM, Churchill RE, eds. Principles and practice of public health surveillance. New York, New York: Oxford University Press, 1994.
7. Foege WH, Rosenberg ML, Mercy JA. Public health and violence prevention. *Current Issues in Public Health* 1995;1:2–9.

## Progress Toward Poliomyelitis Eradication — European Region, 1998–June 2000

In 1988, the World Health Assembly resolved to eradicate poliomyelitis globally by 2000 (1). Substantial progress has been made since 1995, when the World Health Organization (WHO) European Region (EUR), comprising 51 member states (including Israel and the Central Asian Republics), accelerated efforts toward polio eradication (2–4). This report summarizes progress toward polio eradication during 1998–June 2000, and suggests that indigenous transmission of wild poliovirus has been interrupted in EUR.

**Routine vaccination coverage.** In 1999, 38 EUR countries routinely used oral poliovirus vaccine (OPV) for infant vaccination, seven used inactivated poliovirus vaccine (IPV), and six used sequential IPV–OPV schedules. In 1998, the regional average for coverage with a primary series of polio vaccination by age 1 year was 94% (range: 77%–100%, with 26 countries reporting), compared with 83% in 1993 (range: 45%–100%, with 46 countries reporting); coverage levels in many of the Newly Independent States of the Former Soviet Union improved to pre-independence levels after reaching their lowest points during the economic transitions of the early 1990s.

**Supplemental vaccination activities.** From 1995 to 1997, National Immunization Days (NIDs)\* were conducted in 18 contiguous countries of the WHO Eastern Mediterranean (Afghanistan, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Pakistan, Palestinian Authority, and Syrian Arab Republic) and European regions (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkey, Turkmenistan, and Uzbekistan) as part of “Operation MECACAR” (Eastern Mediterranean, Caucasus, and Central Asian Republics). Reported coverage with two doses of OPV was >95% in each year (2). Beginning in the fall of 1997 with “mopping-up” vaccination<sup>†</sup>, coordinated activities in countries of the two regions continued as “Operation MECACAR Plus”. In 1998, all MECACAR countries participated in NIDs. Since 1999, activities have been more limited; sub-NIDs or supplemental vaccination programs were not conducted in some MECACAR countries of EUR. NIDs were conducted during April–May 2000 in Tajikistan, Turkey, Turkmenistan, and Uzbekistan, and sub-NIDs in Armenia, Azerbaijan, and Russian Federation, with reported coverage  $\geq 93\%$  for each round, and sub-NIDs in Bosnia and Herzegovina, with coverage  $\geq 90\%$ . Since fall 1998, the quality of supplemental vaccination in high-risk eastern and southeastern provinces of Turkey has improved dramatically because of improved provincial planning, house-to-house vaccination, supervision, and social mobilization.

**Surveillance.** By 1997, all 17 countries where polio was recently endemic (i.e., polio cases reported since 1992) had established AFP surveillance (Table 1). In addition, 22 countries where polio is not endemic also routinely reported AFP surveillance data. From January 1999 through June 2000, all but three of the 17 countries where polio was recently endemic (Albania, Azerbaijan, and Bosnia and Herzegovina) have achieved the minimum AFP reporting rate indicative of sensitive surveillance ( $\geq 1$  nonpolio AFP case

\*Mass campaigns over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

<sup>†</sup> Focal mass campaign in high-risk areas over a short period (days to weeks) in which two doses of OPV are administered during house-to-house visits to all children in the target age group, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

## Poliomyelitis Eradication — Continued

**TABLE 1. Number of reported cases of acute flaccid paralysis (AFP), nonpolio AFP rate\*, and percentage of persons with reported AFP with two stool specimens in countries where polio was recently endemic, by year and country — European Region, World Health Organization, 1998–June 2000**

Country	1998			1999			2000		
	No. persons with AFP aged <15 years	Nonpolio AFP rate	% AFP with two fecal specimens†	No. persons with AFP aged <15 years	Nonpolio AFP rate	% AFP with two fecal specimens	No. persons with AFP aged <15 years	Nonpolio AFP rate	% AFP with two fecal specimens
Albania	6	0.57	78	9	0.86	67	0	0	0
Armenia	19	2.05	68	23	2.48	91	16	3.45	88
Azerbaijan	12	0.51	67	21	0.90	86	9	0.77	89
Bosnia and Herzegovina	2	0.24	0	7	0.86	57	2	0.49	100
Georgia	16	1.32	81	10	0.82	70	13	2.14	85
Kazakhstan	61	1.29	74	47	0.99	85	29	1.22	90
Kyrgyzstan	20	1.25	70	19	1.18	79	15	1.87	93
Republic of Moldova	15	1.40	60	12	1.12	58	5	0.93	80
Romania	32	0.75	84	35	0.82	83	23	1.08	83
Russian Federation	341	1.24	69	524	1.91	79	219	1.60	85
Tajikistan	19	0.75	63	39	1.55	87	16	1.27	75
Former Yugoslav Republic of Macedonia	3	0.60	100	14	2.78	86	1	0.45	100
Turkey	237	1.13	70	220	1.18	79	117	1.26	84
Turkmenistan	23	1.38	57	37	2.22	78	13	1.56	100
Ukraine	65	0.70	85	124	1.33	94	64	1.37	97
Uzbekistan	91	0.97	87	111	1.19	90	54	1.15	91
Federal Republic of Yugoslavia	39	1.85	77	27	1.28	81	9	0.85	100

\* Per 100,000 children aged <15 years. The rate for 2000 is annualized.

† Two stool specimens collected at an interval of at least 24 hours within 14 days of onset of paralysis and adequately shipped to the laboratory.

*Poliomyelitis Eradication — Continued*

per 100,000 children aged <15 years annually). Although the quality of AFP surveillance has varied in some countries where polio was recently endemic, many have consistently reported rates  $\geq 1$  since 1998. The overall collection rate for two adequate stool samples<sup>5</sup> from AFP case-patients in countries where polio was recently endemic increased from 78% in 1998 to 88% by June 2000 (Table 1). During 1999–2000, most countries consistently achieved the WHO-recommended target of two adequate stool specimens collected from at least 80% of persons with AFP. Training and assessment programs have been conducted since 1997, with resources focused on improved monitoring, supervision, and active surveillance. Since 1999, emphasis has been placed on monitoring AFP surveillance performance of lower administrative levels within countries where polio was recently endemic, enabling more appropriate tailoring of corrective interventions. Since 1999, all 39 countries conducting AFP surveillance are reporting case-based AFP surveillance data weekly to the WHO regional office. By June 2000, completeness of reports received for weekly reporting was 86% and timeliness of reporting was 82%.

**EUR laboratory network.** The EUR polio laboratory network consists of 39 laboratories: 32 national, one subregional, and six regional reference laboratories (four serve also as national laboratories). Annual WHO accreditation of national laboratories is ongoing (4); 36 (92%) network laboratories have received full accreditation. All AFP cases reported in 2000 have been processed in fully accredited laboratories. The timeliness of specimen transport to national laboratories has been inadequate in nine countries where <50% of specimens reached a national laboratory within 3 days of collection.

**Incidence of polio.** From 1991 through 1996, the number of confirmed polio cases<sup>6</sup> reported annually in EUR ranged from 177 to 297; in 1997, seven cases from two countries (Tajikistan and Turkey) were reported. During February–November 1998, wild poliovirus type 1 was isolated in 24 cases and wild poliovirus type 3 in two cases in eight eastern and southeastern provinces of Turkey. The last reported case occurred in Agri province with paralysis onset on November 26, 1998.

**Certification process.** The European Regional Commission for the Certification of Poliomyelitis Eradication has begun reviewing documentation on the vaccination and surveillance activities of EUR countries. Forty-nine member states have formed national certification committees to review country vaccination, laboratory, and epidemiologic surveillance data and submit documentation to the regional commission. Documentation from 32 countries of Europe where no polio cases have been reported for >8 years was initially reviewed during 1998–1999; countries where polio was recently endemic will be reviewed during 2000–2001. In addition, a process was initiated in 1999 for registering, containing, and/or destroying any wild poliovirus isolates or potentially infectious material (5).

<sup>5</sup> Two stool specimens collected within 14 days of onset of paralysis at an interval of at least 24 hours. WHO recommends that  $\geq 80\%$  of patients with AFP have two adequate specimens collected.

<sup>6</sup> A confirmed case of polio is defined under the virologic scheme of classification as AFP with laboratory-confirmed wild poliovirus infection; in countries where virologic surveillance is inadequate, clinical cases have either residual paralysis at 60 days, death, or no follow-up investigation at 60 days. Since 1997, all countries in EUR but Tajikistan have used the virologic scheme of classification of AFP cases, for which some AFP cases with residual paralysis at 60 days, death, or no follow-up investigation may be considered as polio-compatible cases. Since 1999, the virologic classification scheme has been applied throughout EUR.

*Poliomyelitis Eradication — Continued*

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**Editorial Note:** Indigenous poliovirus transmission probably was interrupted in EUR countries in 1998; this status is attributed to improvements in routine vaccination coverage and the successful implementation of coordinated supplemental vaccination through Operation MECACAR and MECACAR Plus. In addition, AFP surveillance in nearly all EUR countries where polio was recently endemic has improved substantially. Along with continued observation, the quality of surveillance and timely transport of specimens in some areas of the region need further improvement to document that indigenous transmission has been interrupted and that any transmission secondary to imported poliovirus is detected promptly. Strengthening of surveillance and specimen transport is particularly important in some areas of Turkey.

Eastern and southeastern areas of Turkey adjacent to Syria, Iran, and Iraq remain at high risk for wild poliovirus transmission; wild polioviruses have been isolated from AFP cases in Iraq during 1999 and in early 2000 (4,6). Although cross-border travel is generally prohibited and tightly monitored, Tajikistan, Turkmenistan, and Uzbekistan remain at risk for polio because of ongoing poliovirus transmission in neighboring Afghanistan (7). Interregional and intercountry efforts are ongoing to coordinate surveillance and supplementary vaccination activities in key high-risk border areas. Supplemental vaccination activities will be needed at least through 2002 in Tajikistan, Turkey, Turkmenistan, and Uzbekistan under Operation MECACAR Plus. This activity will be coordinated with bordering Eastern Mediterranean Region (EMR) countries and include mopping-up campaigns in October and November 2000 to ensure interruption of any remaining chains of poliovirus transmission and to impede circulation in the case of reintroduction of virus.

EUR priorities include 1) maintaining and strengthening AFP surveillance systems, particularly in the Caucasus, Turkey, and the Central Asian Republics; 2) conducting high-quality NIDs or sub-NIDs through Operation MECACAR Plus in selected countries with persistent high risk for wild poliovirus circulation, in coordination with bordering EMR countries; 3) implementing coordinated house-to-house supplemental vaccination activities among key border area populations; 4) maintaining and strengthening the political commitment of governments for polio eradication and certification; 5) consolidating the support of donor governments and partner agencies to ensure sufficient financial and human resources\*\*; and 6) implementing laboratory containment of wild poliovirus and potentially infectious materials. These activities will ensure that the interruption of poliovirus transmission is maintained and that the region can be certified as polio-free by 2003.

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\*\* Polio eradication efforts in EUR have been supported by the governments of countries where polio was recently endemic, WHO, United Nations Children's Fund (UNICEF), Rotary International, U.S. Agency for International Development, the Japanese International Cooperation Agency, the United Nations Foundation, CDC, and other countries.

*Poliomyelitis Eradication — Continued**References*

1. World Health Assembly. Global eradication of poliomyelitis by the year 2000. Geneva, Switzerland: World Health Organization, 1988; resolution no. 41.28.
2. CDC. Progress toward poliomyelitis eradication—Europe and Central Asian Republics, 1997–May 1998. *MMWR* 1998;47:504–8.
3. CDC. Wild poliovirus transmission in bordering areas of Iran, Iraq, Syria, and Turkey, 1997–June 1998. *MMWR* 1998;47:588–92.
4. CDC. Progress toward global eradication of poliomyelitis, 1999. *MMWR* 2000;49:349–54.
5. World Health Organization. WHO global action plan for laboratory containment of wild polioviruses. Geneva, Switzerland: World Health Organization, 1999; WHO/V&B/99.32.
6. CDC. Progress toward poliomyelitis eradication—Eastern Mediterranean Region, 1998–October 1999. *MMWR* 1999;48:1057–71.
7. CDC. Progress toward poliomyelitis eradication—Afghanistan, 1994–1999. *MMWR* 1999;48:825–8.

### **Hepatitis C Virus Infection Among Firefighters, Emergency Medical Technicians, and Paramedics — Selected Locations, United States, 1991–2000**

First responders (e.g., firefighters, emergency medical technicians [EMTs], and paramedics) are at risk for occupational exposure to bloodborne pathogens. Recently, CDC has received inquiries from state and local health departments and occupational health services about the prevalence of hepatitis C virus (HCV) infection among first responders and the need for routine HCV testing among these workers. This report summarizes the findings of five studies of HCV infection among first responders. Although some of these workers may need HCV testing under certain circumstances, this report indicates that first responders are not at greater risk than the general population for HCV infection; therefore, routine HCV testing is not warranted. First responders should continue to follow standard precautions to reduce workplace exposure to bloodborne pathogens.

#### **Philadelphia, Pennsylvania**

During November–December 1999, Home Access Health Corporation (Hoffman Estates, Illinois)\* offered specimen collection kits (Hepatitis C Check™) to 4400 active and retired members of the Philadelphia firefighters union. Respondents telephoned a toll-free number to receive their test results and to answer questions anonymously about nonoccupational risk factors for HCV infection. According to Home Access®, serum was tested for antibody to HCV (anti-HCV) with an enzyme immunoassay (EIA 3.0; Ortho Diagnostic Systems, Inc., Raritan, New Jersey); repeatedly reactive samples were tested with a supplemental recombinant immunoblot assay (RIBA™ 3.0, Chiron Corporation, Emeryville, California). In February 2000, Home Access reported that of 2146 respondents, 97 (4.5%) screened positive for anti-HCV. The company indicated that this prevalence was 2.5 times higher than the national average of 1.8% (Home Access Health Corporation, personal communication, 2000).

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



*Hepatitis C Virus Infection — Continued*

In June 2000, CDC re-analyzed serologic and questionnaire data and found that of 2136 participants, 64 (3.0%) tested anti-HCV-positive (Table 1). The highest prevalence (4.9%) was among men aged 40–49 years (Figure 1). Risk factors associated with HCV infection were a history of blood transfusion before 1992 (age-adjusted prevalence ratio [PR]=2.2; 95% confidence interval [CI]=1.2–4.0) and illicit drug use (age-adjusted PR=4.0; 95% CI=2.2–7.1). On the basis of CDC's analysis, the 4.5% prevalence previously reported by Home Access was obtained by classifying as positive samples that tested EIA repeatedly reactive but indeterminate by RIBA, and those that tested EIA repeatedly reactive or EIA initially reactive for which no further testing was done (Table 2).

**Atlanta, Georgia**

In 1991, CDC conducted a voluntary, anonymous survey among metropolitan Atlanta uniformed fire department personnel to assess occupational and nonoccupational risk factors for hepatitis B virus (HBV) infection (1). In May 2000, stored serum samples were tested at CDC for anti-HCV using EIA 3.0; repeatedly reactive samples were tested by RIBA 3.0. Of the 437 firefighters tested, nine (2.1%) were anti-HCV-positive (Table 1); the highest prevalence (4.0%) was among men aged 35–39 years. HCV infection was not associated with duration of employment as a firefighter, occupational exposures to blood, history of blood transfusion, or illicit drug use; however, HCV infection was associated with a history of a sexually transmitted disease (PR=7.4; 95% CI=1.6–35.3).

**TABLE 1. Type of test, demographics, type of exposure history ascertained, and prevalence of antibody to hepatitis C virus (anti-HCV) among first responders in five studies — selected locations, United States, 1991–2000**

Year	Atlanta 1991	Connecticut 1992	Philadelphia 1999	Miami 2000	Pittsburgh 2000
EIA for anti-HCV	3.0*	3.0	3.0	3.0	2.0*
Supplemental test	RIBA™ 3.0†	RIBA 3.0	RIBA 3.0	TMA™§	None
No. participants	437	382	2,136	1,314	154
% male	98.6%	95.8%	98.3%	88.0%	88.3%
Race					
White	49.8%	83.3%	—	82.1%	—
Black	48.4%	10.3%	—	14.5%	—
Other	1.9%	6.3%	—	3.4%	—
Age (yrs)					
18–29	15.8%	19.6%	4.5%	10.8%	10.5%
30–49	67.4%¶	63.8%	47.3%	65.9%	84.2%
≥50	16.7%**	16.7%	48.2%	23.3%	5.3%
Exposure history ascertained					
Occupational††	Yes	No	No	Yes	Yes
Nonoccupational	Yes	No	Yes	No	No
Anti-HCV positive	2.1%	1.3%	3.0%	2.7%§§	3.2%§§

\* Ortho Diagnostic Systems, Inc., Raritan, New Jersey; Abbott Laboratories, Abbott Park, Illinois.

† Chiron Corporation, Emeryville, California.

§ Bayer Corporation, Tarrytown, New York.

¶ Grouped as age 30–44 years.

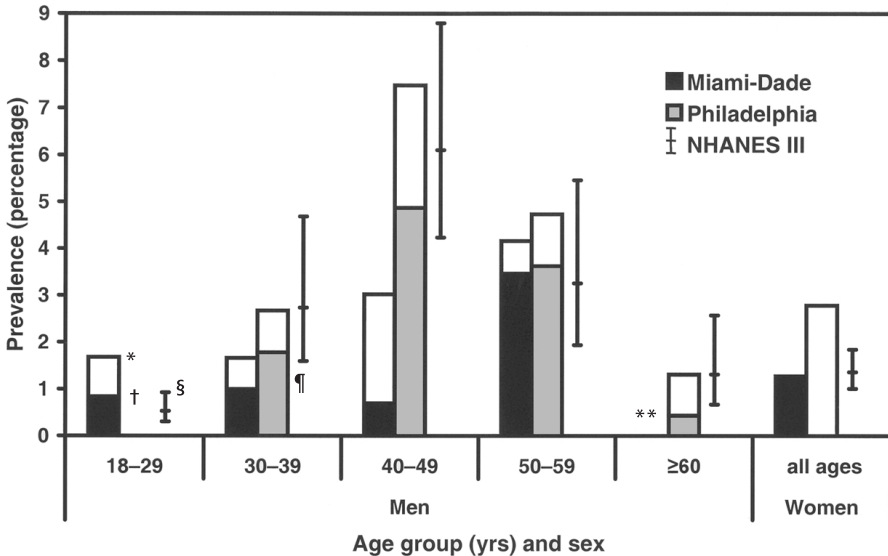
\*\* Grouped as age ≥45 years.

†† Needlestick, mucous membrane, and skin exposures to blood.

§§ Based on EIA results alone.

## Hepatitis C Virus Infection — Continued

**FIGURE 1. Prevalence of antibody to hepatitis C virus (anti-HCV) in first responders, by age and sex — Miami-Dade County, Florida, and Philadelphia, Pennsylvania, 2000, and the Third National Health and Nutrition Examination Survey (NHANES III), 1988–1994**



\* The white bars represent enzyme immunoassay (EIA) initially reactive or repeatedly reactive results for which no further antibody testing was done (Miami-Dade and Philadelphia) or recombinant immunoblot assay (RIBA™) indeterminate results (Philadelphia).

† The black bars represent hepatitis C virus (HCV) RNA-confirmed positives from the Miami-Dade study. Absence of HCV RNA in a person with a positive EIA result cannot distinguish between resolved infection, intermittent viremia, or a false positive EIA result.

‡ Sex and age-specific mean and 95% confidence interval estimated from NHANES III (3). Because the surveys of first responders were conducted approximately 8 years after the midpoint of NHANES III, 8 years were added to the ages of NHANES III participants before estimating the confidence intervals.

§ The gray bars represent RIBA-confirmed positives from the Philadelphia study.

\*\* In the Miami-Dade county study, prevalence could not be estimated in men aged ≥60 years because of the low number of participants in this age group.

## Connecticut

In 1992, Connecticut Department of Public Health and Addiction Services collected serum samples and demographic data on a voluntary basis from first responders in various regions in Connecticut for a study on the immune response to hepatitis B vaccine (2). In June 2000, stored serum samples from the 1992 study were tested anonymously at CDC for anti-HCV by EIA 3.0 and RIBA 3.0. Among 382 volunteer and professional firefighters and EMTs for whom serum samples were available, five (1.3%) tested anti-HCV-positive (Table 1); prevalence was highest (2.6%) among men aged 40–49 years.

*Hepatitis C Virus Infection — Continued***TABLE 2. Results of antibody to hepatitis C virus testing of Philadelphia firefighters, by type of testing performed, 1999**

Type of Testing and Result	No.	%	Cumulative No.	Cumulative %
EIA repeatedly reactive, RIBA™* positive	64	3.0%	64	3.0%
EIA repeatedly reactive, RIBA™ indeterminate	9	0.4%	73	3.4%
EIA repeatedly reactive, no confirmatory test	14	0.7%	87	4.1%
EIA initially reactive, no further testing	8	0.4%	95	4.4%
EIA or RIBA negative	2041	95.6%	2136	100%
<b>Total</b>	<b>2136</b>	<b>100%</b>		

\* Chiron Corporation, Emeryville, California. Use of trade names and commercial sources is for identification only and does not constitute endorsement by CDC or the U.S. Department of Health and Human Services.

**Miami-Dade County, Florida**

During March–April 2000, Hep-C ALERT, a patient advocacy organization, collaborating with University of Pittsburgh researchers, confidentially obtained serum samples and information on occupational risk factors from Miami-Dade County municipal fire department personnel. Serum samples were tested at a commercial laboratory for anti-HCV with EIA 3.0; repeatedly reactive samples were tested for HCV RNA by transcription mediated amplification (TMA™) (Bayer Corporation, Tarrytown, New York). Of the 1314 participants, 35 (2.7%) were anti-HCV–positive on the basis of EIA testing alone, and 20 (1.5%) were confirmed positive for HCV RNA (Table 1). Prevalence of anti-HCV was highest (3.7%) among men aged >50 years. Increased risk for HCV infection was not associated with occupational exposures to blood, type of job (firefighter, EMT, or paramedic), or duration of employment as a first responder.

**Pittsburgh, Pennsylvania**

During January–March 2000, University of Pittsburgh researchers collected serum samples and information on occupational exposures from paramedics working in Pittsburgh. Samples were tested for anti-HCV by EIA 2.0 (Abbott Laboratories, Abbott Park, Illinois) without supplemental or confirmatory testing. Five (3.2%) of 154 respondents tested anti-HCV–positive (Table 1); highest prevalence (5.2%) was among men aged 40–49 years. Anti-HCV positivity was not associated with occupational exposures to blood.

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**Editorial Note:** Data from the Third National Health and Nutrition Examination Survey (NHANES III), conducted during 1988–1994, indicated that 3.9 million (1.8%) persons living in the United States have been infected with HCV (3). Estimates indicate that three risk factors accounted for most infections: illicit drug use (60%), high-risk sexual behavior (15%), and blood transfusion (7%) (CDC, unpublished data, 1996; 3,4).

Health-care workers and first responders exposed to blood in the workplace are at risk for infection by bloodborne pathogens. However, their risk for acquiring HCV infection is low because HCV is not transmitted efficiently through occupational exposure (4–6). After an unintentional needlestick from an HCV-positive source, the average risk

*Hepatitis C Virus Infection — Continued*

for HCV infection is 1.8% (range: 0–7%); transmission rarely occurs from mucous membrane exposures to blood, and no transmission has been documented from intact or nonintact skin exposures to blood (4). Among first responders, HCV infection was associated primarily with nonoccupational factors, a finding similar to HBV (1), a bloodborne virus that is transmitted at a rate 10 times higher than HCV (7).

The initial interpretation of the results from the Philadelphia study was incorrect because 20.6% of the serum samples classified as positive were of insufficient volume to complete testing as required by the Food and Drug Administration (FDA). Manufacturer's instructions for performing EIA for anti-HCV require initially reactive samples to be repeated in duplicate; only samples that are repeatedly reactive are considered EIA-positive. For Hepatitis C Check, FDA-approved conditions for reporting a positive anti-HCV result require a repeatedly reactive EIA and a positive supplemental test. Samples with insufficient volume for supplemental testing are to be reported as "results not available — insufficient blood." In populations with an HCV-infection prevalence of 0–10%, 20%–50% of EIA repeatedly reactive results may be false positives (4,8).

HCV prevalence reported in studies in subpopulations should be compared with appropriate referent groups from the general population. In NHANES III, conducted during 1988–1994, overall prevalence of HCV infection among persons of both sexes aged >5 years was 1.8% but was substantially higher (4.9%) among men aged 30–49 years (3), the group that represents most of the first responders in the five studies. Because this group has aged almost 10 years since NHANES III was conducted, men currently aged 40–59 years would have the highest expected prevalence of infection (Figure 1).

Because of several limitations, the five studies could not exclude the possibility that some first responders had acquired HCV infection from job-related exposures. First, the small sample size and limited information on both occupational (percutaneous, mucosal, or skin exposures to blood) and nonoccupational risk factors may have affected the evaluation of potential sources for infection. Second, the findings do not necessarily represent all first responders in the selected locations or the United States. Third, if first responders are less likely to have nonoccupational risk factors for HCV infection than the general population, then the expected prevalence in these workers might be lower.

Routine HCV testing is not recommended for populations with a low prevalence of HCV infection, including first responders, unless they have a history indicating an increased risk for infection (e.g., transfusion before July 1992 or injecting-drug use) (4). Testing is recommended in first responders for postexposure management after a percutaneous or permucosal exposure to HCV-positive blood (4), and testing could be considered for these types of exposures when the HCV status of the source is unknown (9). To reduce workplace exposure to bloodborne pathogens, standard precautions continue to apply; first responders should be educated about transmission of bloodborne pathogens, trained in proper safety measures, and provided with appropriate protective equipment (10)<sup>†</sup>. First responders also should be vaccinated against HBV, and informed of protocols if percutaneous or permucosal exposures to blood occur (4,10).<sup>†</sup>

<sup>†</sup> Bloodborne pathogens, 29 CFR sect. 1910.1030 (1999).

*Hepatitis C Virus Infection — Continued**References*

1. Woodruff BA, Moyer LA, O'Rourke KM, Margolis HS. Blood exposure and the risk of hepatitis B virus infection in firefighters. *J Occup Med* 1993;35:1048–54.
2. Roome AJ, Walsh SJ, Cartter ML, Hadler JL. Hepatitis B vaccine responsiveness in Connecticut public safety personnel. *JAMA* 1993;270:2931–4.
3. Alter MJ, Kruszon-Moran D, Nainan OV, et al. The prevalence of hepatitis C virus infection in the United States, 1988 through 1994. *N Engl J Med* 1999;341:556–62.
4. CDC. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. *MMWR* 1998;47(no. RR-19).
5. Spitters C, Zenilman J, Yeagain J, Pardoe K. Prevalence of antibodies to hepatitis B and C among fire department personnel prior to implementation of a hepatitis B vaccination program. *J Occup Environ Med* 1995;37:663.
6. Werman HA, Gwinn R. Seroprevalence of hepatitis B and hepatitis C among rural emergency medical care personnel. *Am J Emerg Med* 1997;15:248–51.
7. Mast EE, Alter MJ. Prevention of hepatitis B virus infection among health care workers. In: Ellis RW, ed. *Vaccines in clinical practice*. New York: Marcel Dekker, 1993:295–307.
8. Gretch DR. Diagnostic tests for hepatitis C. *Hepatology* 1997;26(suppl 1):43S–47S.
9. Cardo DM, Bell DM. Bloodborne pathogen transmission in health care workers—risk and prevention strategies. *Infect Dis Clin North Am* 1997;11:331–46.
10. CDC. Guidelines for prevention of transmission of human immunodeficiency virus and hepatitis B virus to health-care and public-safety workers. *MMWR* 1989;38(suppl 6).

### **Use of FDA-Approved Pharmacologic Treatments for Tobacco Dependence — United States, 1984–1998**

Of the estimated 48 million adult smokers in the United States, approximately 16 million attempt to stop smoking cigarettes for at least 24 hours annually; another 2–3 million attempt to stop but cannot abstain for 24 hours (1). However, 1.2 million (2.5%) persons stop smoking each year (2). Although behavioral and pharmacologic methods increase abstinence rates (3), most cessation attempts are undertaken without the benefit of treatment (4). In 1984, the Food and Drug Administration (FDA) approved the first pharmacologic aid for smoking cessation, nicotine gum. Since then, other treatments have become available. This study estimates the number of quit attempts using FDA-approved pharmacologic aids during 1984–1998. The study results indicate that product use has changed over this period and that the availability of over-the-counter (OTC) products and the introduction of new products have increased pharmacologically assisted quit attempts.

Information about the sales of prescription smoking-cessation products was obtained from the National Data Corporation\* (NDC) by the Source Prescription Audit (SPA). By 1991, the pharmacy sample included approximately 25,000 pharmacies and 75 million prescriptions filled nationally each month; by 1998, sales data included 34,000 pharmacies and 150 million prescriptions covering approximately 66% of the total number of prescriptions in the United States. The total number of prescriptions was obtained through an agreement with PCS Health Systems, Inc., which provides electronic claims services for almost every retail pharmacy.

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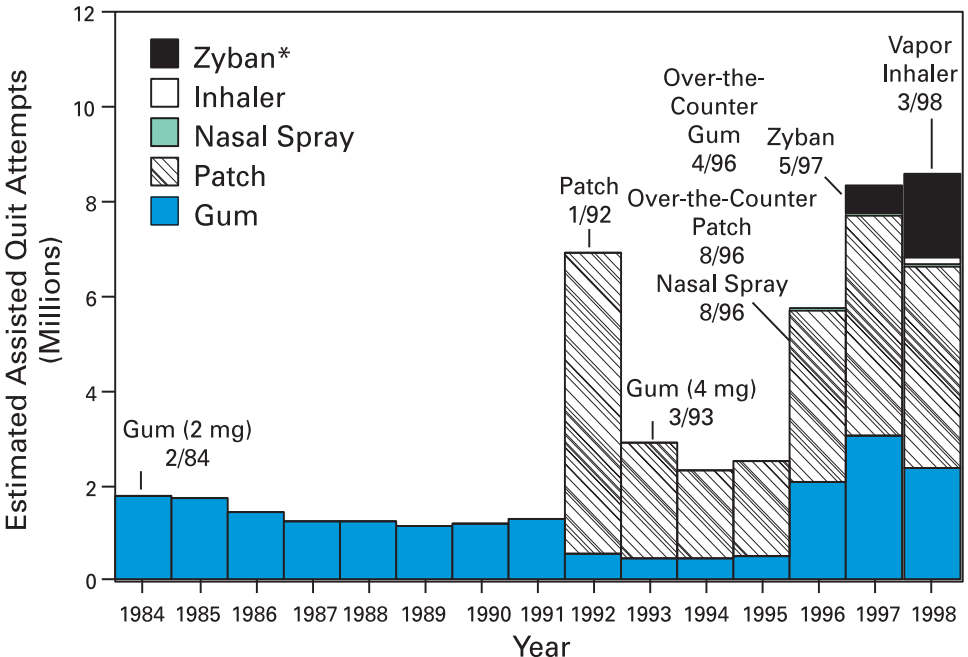
\*Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

Treatments for Tobacco Dependence — Continued

Information about the sale of OTC products was based on data gathered by ACNielsen, a marketing research organization, that tallied purchases using an electronic Universal Product Code (UPC) scanner. Scanner data were collected from a sample of 10,000 outlets located primarily in the top 50 U.S. markets. Purchases from retail outlets without scanner technology were estimated from a sample of those stores. The combined sample was weighted to estimate total purchases from all outlets. Purchase data from a representative panel of 40,000 households were used to estimate the proportion of unit sales of OTC nicotine replacement therapy (NRT) products representing new uses or quit attempts. The panel of households used a UPC scanner placed in their home to scan purchases after shopping. A new use or quit attempt was counted when an OTC product appeared for the first time in a household's data during a particular calendar year. ACNielsen retail volume estimates were adjusted to project the total number of new OTC uses based on these data.

In 1992, the availability of prescription nicotine patches increased the estimated number of pharmacologically assisted quit attempts per year from 1–2 million to approximately 7 million (Figure 1). The estimated number of quit attempts then decreased, ranging from 2 million to 3 million during 1993–1995, but increased to approximately 6 million in 1996, coinciding with the availability of nicotine gum and the nicotine patch as OTC products. The estimated number of pharmacologically assisted quit attempts

**FIGURE 1. Use of pharmacologic aids to smoking cessation, by year, and month aid was introduced — United States, 1984–1998**



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

*Treatments for Tobacco Dependence — Continued*

increased in 1997 and remained at that level in 1998. By 1998, the nicotine patch accounted for 49% of the pharmacologically assisted quit attempts, nicotine gum, 28%; Zyban, 21%; and nicotine inhaler and nasal spray, <3%. To examine the relation of use to medication availability, data were aggregated into periods marked by the introduction of new treatments and changes in the regulatory status of treatments. In general, use has increased over time as availability improved, and to a lesser extent as new products were introduced. For example, the number of average monthly estimated quit attempts was 642,000 during May 1996–May 1997 when nicotine gum and patches became available OTC, compared with 259,000 during January 1993–April 1996. The introduction of Zyban increased average monthly estimated quit attempts to 708,000.

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**Editorial Note:** This report suggests that providing more pharmacologic options to smokers can increase the number of treatment-assisted quit attempts. The two largest increases in medication use occurred when prescription patches were introduced in 1992 and when nicotine gum and patches became available without a prescription. The initial increase in use that followed patch introduction was not maintained. A peak in consumer demand outstripped supply, making patches difficult to purchase. The shortage combined with possible smoker and physician disappointment in the patch's efficacy may have caused a decline during the next 3 years to one third of the 1992 volume. The increased sales coinciding with OTC marketing of patches and gum have been sustained for several years. This volume may be attributable to smokers' more realistic expectations about the role of NRT in quit efforts. New NRT and non-NRT products have been approved since 1996. The introduction of the non-nicotine prescription medication, Zyban, appears to have increased modestly the number of pharmacologically assisted cessation attempts. The introduction of two new prescription forms of NRT (i.e., nicotine nasal spray and oral inhaler) have had almost no impact on treatment use. This lack of effect may have occurred because of poor acceptance of these forms, poor promotion, or limits on the demand for and penetration of prescription NRT products when NRT is available without a prescription.

Potential barriers to use of tobacco treatment medications include concerns about the safety and cost of the treatments. FDA has approved all of these treatments as safe and effective, and those approved for OTC availability were deemed sufficiently safe not to require physician screening or intervention. Treatment guidelines recommend that treatment of tobacco use be an insured medical benefit (3). A recent study in a health plan demonstrated that decreasing the costs of treatment increased use of treatment and the number of persons who quit smoking (5). This is important because the prevalence of smoking is higher among persons of low socioeconomic status; access to these treatments must be assured in these populations.

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<sup>1</sup> Pinney Associates provides consulting services to SmithKline Beecham, which develops and markets smoking cessation medications.

*Treatments for Tobacco Dependence — Continued*

The results of this study are subject to at least three limitations. First, estimates of use are based on sales data, prescription audits, and home scanning of purchases rather than direct questioning of users. It is not possible to determine whether a particular purchase represents a new quit attempt or the use of a product as a substitute for smoking in places where smoking is not allowed. In addition, the accuracy of pharmacy data may have improved over time as coverage increased, resulting in more accurate estimates for recent years. Second, prescription and OTC data are estimated by different methods and data sources. Prescription data may overestimate quit attempts because they may not adequately track successive prescriptions within a quit attempt. OTC data may underestimate quit attempts because they reflect only one quit attempt per household per year. Therefore, actual differences between prescription and OTC products may be greater than reported in these estimates. Finally, although shifts in use corresponded to major shifts in availability and marketing of medications, this study did not examine use in relation to concurrent events such as changes in smoking policies or legislation, higher cigarette prices, increased awareness of health issues, or shifts in population attitudes and beliefs.

The health benefits of quitting are substantial and are realized within a few years of quitting (6). Promotion of quitting is vital to reduce death and disease caused by tobacco, and recommended levels of resources to be applied to treatment of tobacco dependence have been developed and disseminated by CDC (7). In addition, increased cessation rates will be essential to achieve the *Healthy People 2010* objectives, (8) and the American Cancer Society's Challenge Goals for the Year 2015 (9). Public health authorities, including the World Health Organization, have called for an increased focus on the treatment of tobacco dependence to reduce tobacco-caused death and disease. Pharmacologic interventions double success rates (3); however, these interventions must be used for their effects to be observed. Data from this report suggest that increasing the number of treatment options and the availability of pharmacologic products increases use of these treatments.

*References*

1. Garvey A, Bliss RE, Hitchcock JL, Heinold JW. Predictors of smoking relapse among self-quitters: a report from the Normative Aging Study. *Addict Behav* 1992;17:367-77.
2. CDC. Smoking cessation during previous year among adults—United States, 1990 and 1991. *MMWR* 1993;42:504-7.
3. Fiore MC, Bailey WC, Cohen SJ, et al. Treating tobacco use and dependence. Clinical practice guideline. Rockville, Maryland: US Department of Health and Human Services, Public Health Service, June 2000.
4. Gallup Organization. Attitudes and behavior related to smoking cessation [Monograph]. New York: Gallup Organization, August 1998.
5. Curry SJ, Grothaus LC, McAfee T, Pabiniak C. Use and cost effectiveness of smoking-cessation services under four insurance plans in a health maintenance organization. *N Engl J Med* 1998;339:673-9.
6. US Department of Health and Human Services. Health benefits of smoking cessation: a report of the US Surgeon General. Washington, DC: US Department of Health and Human Services, Public Health Service, CDC, 1990.
7. CDC. Best practices of comprehensive tobacco control programs—August 1999. Atlanta, Georgia: US Department of Health and Human Services, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1999.
8. Green LW, Eriksen MP, Bailey L, Husten C. Achieving the implausible in the next decade's tobacco control objectives. *Am J Public Health* 2000;90:337-9.
9. Byers R, Mouchawa J, Marks J, et al. The American Cancer Society challenge goals: how far can cancer rates decline in the U.S. by the year 2015? *Cancer* 1999;86:715-27.



## **Outbreak of Aseptic Meningitis Associated with Multiple Enterovirus Serotypes — Romania, 1999**

In August 1999, the Ministry of Health of Romania (MOH) reported to the World Health Organization (WHO) an outbreak of aseptic meningitis that began in early July 1999. CDC and the Robert Koch-Institute in Berlin, Germany, were invited by WHO and MOH to assist in the investigation of this outbreak. Virologic findings of the investigation showed that the etiologic agents of the outbreak were three separate enterovirus serotypes. This report summarizes the epidemiologic findings of the investigation.

MOH defined a case of aseptic meningitis as fever, headache, other meningeal signs (e.g., vomiting, malaise, and stiff neck and back), increased cell counts in the cerebrospinal fluid (CSF) of up to 1000 cells/mm<sup>3</sup> that are mainly lymphocytes, and no bacterial etiology identified. During late June and early July, MOH received physician reports of increased numbers of hospital admissions for aseptic meningitis. In response to physician reports, on July 19, MOH began active surveillance for persons hospitalized with aseptic meningitis. From July 19 through September 8, physicians in Romania reported 4734 hospitalized persons with aseptic meningitis. The incidence of new cases peaked during August 17–20. By September 8, the incidence was declining steadily, and the investigation ended.

The highest attack rates were concentrated within six of the 40 counties in Romania (five of which are in the northeastern section of the country). The range of attack rates within these six counties was 43.5–126.4 per 100,000 population. On August 6, Romanian health authorities initiated a case series investigation to assess risk factors for illness and define disease characteristics; reports were received for 343 hospitalized persons who had illnesses that met the case definition from 18 counties. Of the 343 case-patients, 185 (54%) were male. The median age was 13 years (range: <1–72 years); 93% of case-patients were aged <30 years. Symptoms most commonly reported were fever (98%), headache (97%), vomiting (80%), eye pain (79%), nausea (52%), photophobia (38%), and myalgia (28%).

To determine risk factors for aseptic meningitis, a matched case-control study was conducted in four counties. For each case-patient, two control-patients matched for age and date of hospital admission were selected from noninfectious disease hospital wards. The case-control study included 241 case-patients and 480 controls. The number of participating case per county ranged from 34 to 106. The factors consistently associated with illness within all four participating counties were contact with a body of water (i.e., swimming, bathing, and working), contact with a confirmed case of viral meningitis, contact with a person displaying meningeal signs or symptoms (all  $p<0.01$ ), male sex ( $p=0.04$ ), and lack of organized household garbage disposal ( $p=0.02$ ). No association was found between illness and other possible risk factors such as household size, source of drinking water, or type of toilet facilities (all  $p>0.4$ ).

Lumbar punctures were performed on patients suspected to have aseptic meningitis. CSF or stool specimens or both were obtained for enteroviral isolation studies from approximately 100 hospitalized case-patients. Viral isolation studies have been completed for 114 specimens received from eight counties. Echovirus type 4 was isolated from eight CSF specimens and 12 stool specimens, echovirus type 7 was isolated from three CSF specimens and three stool specimens, and echovirus type 30 was isolated from 17 CSF specimens and 32 stool specimens. One case-patient was positive for both echovirus type 4 and type 7 from a single CSF specimen.

*Outbreak of Aseptic Meningitis — Continued*

In response to this outbreak, MOH initiated control measures that included a vigorous, nationwide education campaign that emphasized preventive measures. These measures included short-term closing of schools in the most affected counties, improved hygiene practices, and avoiding public swimming areas.

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**Editorial Note:** Aseptic meningitis is the most common infectious syndrome affecting the central nervous system (1,2). Nonpolio enteroviruses are the leading infectious cause of this syndrome in the United States, accounting for >80% of all cases in which a pathogen is identified (3). The etiologic agents identified in this outbreak were enteroviruses; three different echovirus serotypes (4, 7, and 30) were isolated from CSF specimens, indicating a possible multiserotype outbreak. Several enterovirus serotypes may co-circulate in the same community during the summer and fall months, but a large epidemic of aseptic meningitis associated with three different serotypes is unusual. This outbreak represents one of the largest focal aseptic meningitis outbreaks ever reported. In 1991, a nationwide epidemic of aseptic meningitis caused by echovirus 30 in Japan resulted in 4061 total cases, the largest number of cases ever attributed to a single virus type (4).

Enteroviruses are usually spread through the fecal-oral route, and children often play an important role in transmission. In temperate climates, the incidence of infection is higher during the summer and fall; in tropical climates, infections are more evenly distributed throughout the year (5). This outbreak occurred during the usual season of greatest enterovirus activity. Virologic surveillance data from Romania indicated that the last large outbreak of aseptic meningitis was in 1970 and was attributed to echovirus 4 (M. Popa, M.D., MOH, personal communication, 1999). The 1999 outbreak may have resulted from simultaneous circulation of three enterovirus serotypes that have not been present in this population for several years, resulting in high rates of susceptibility to at least one of the three serotypes.

Typically, enterovirus infections are either asymptomatic or result in mild disease, and fewer than one in 500 infections result in aseptic meningitis (5). Age is one of the most important determinants of infection, with illness often being more severe in older persons. Because of the low case-to-infection ratio, effective control measures should not be based on response to individual cases. Effective measures are aimed at interrupting transmission by encouraging strict adherence to hygienic practices (e.g., handwashing).

The findings from the case-control study are subject to at least three limitations. First, all control patients were chosen from noninfectious disease wards of hospitals and may not have had equal opportunity for exposure to enteroviruses. Although this may have protected them from infection, it was difficult to interpret disease associations with specific activities such as swimming. Second, cases were defined clinically rather than by serologic or virologic evidence of infection. Because of the low case-to-infection ratio, power to identify risk factors may have been reduced. For example, the investigation failed to identify known risk factors such as household size or toilet facilities. Finally, the

*Outbreak of Aseptic Meningitis — Continued*

case-control study was conducted late in the outbreak, when the primary mode of transmission may have changed.

This outbreak demonstrates the potential for enteroviruses to cause widespread community disease with substantial public health impact. A major component of the public health response to an enterovirus outbreak is public education that stresses the role of personal hygiene (e.g., handwashing and avoiding sharing of eating utensils and drinking containers) in interrupting virus transmission.

*References*

1. Nicolosi A, Hauser WA, Beghi E, Kruland LT. Epidemiology of central nervous system infections in Olmsted County, Minnesota, 1950–1981. *J Infect Dis* 1986;154:399–408.
2. Rantakallio P, Leskinen M, Von Wendt L. Incidence and prognosis of central nervous system infections in a birth cohort of 12,000 children. *Scand J Infect Dis* 1986;18:287–94.
3. Connolly KJ, Hammer SM. The acute aseptic meningitis syndrome. *Infect Dis Clin North Am* 1990;4:599–622.
4. Yamashita K, Miyamura K, Yamedera S, et al. Epidemics of aseptic meningitis due to ECHO virus 30 in Japan. *Jpn J Med Sci Biol* 1994;47:221–39.
5. Morens DM, Pallansch MA, Moore M. Polioviruses and other enteroviruses. In: Belshe RB, ed. *Textbook of human virology*. 2nd ed. St. Louis: Mosby Yearbook, 1991:427–97.

*Notice to Readers***Voluntary Recall of IMOVAX® Rabies I.D. (Rabies Vaccine)  
Used for Pre-Exposure Prophylaxis**

Through routine stability testing, Aventis Pasteur\* recently learned that the potency of one lot of IMOVAX® Rabies I.D. (Rabies Vaccine), used as an alternative to rabies vaccine administered intramuscularly for pre-exposure prophylaxis, had fallen below specification 24 months after manufacturing. Although this product met all specifications at the time of release, its potency fell below specification before the product's expiration date. Only lot P0313-2 was involved; however, lots P0030-2 and N1204-2 also are being recalled as a precautionary measure. All three lots were prepared from the same initial bulk lot.

To help ensure all persons who received a vaccination from one of the recalled lots are alerted, the company is contacting all customers who received a shipment of the recalled lots. A toll-free telephone number also has been set up for medical inquiries about the recall, (800) 752-9340. Persons who received pre-exposure vaccination for rabies should contact their health-care provider to determine whether they should be revaccinated.

As a precaution, patients who were vaccinated with one of these lots for pre-exposure prophylaxis—and who remain at risk for rabies exposure—should either be tested to measure the presence of antibodies and be vaccinated as needed (if the testing will not substantially delay vaccination), or be revaccinated. Aventis Pasteur recommends that patients being revaccinated receive one dose of IMOVAX® Rabies, Rabies Vaccine for intramuscular (IM) use.

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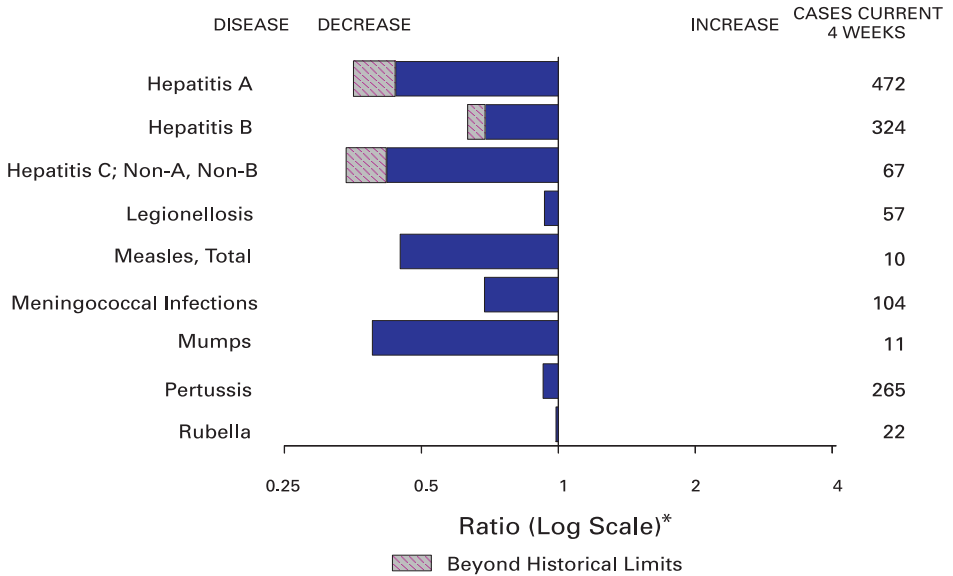
\*Use of trade names and commercial sources is for identification only and does not constitute endorsement by CDC or the U.S. Department of Health and Human Services.

**Errata: Vol. 49, No. 27**

In the article, "National and State-Specific Pregnancy Rates Among Adolescents—United States, 1995–1997," two errors occurred. On page 607, in the third sentence of the first paragraph, the number of reporting areas for which age-specific data were available was incorrect. The sentence should read: From 1995 to 1997, the pregnancy rate for 15–19-year-olds decreased in 41 of the 43 reporting areas....

In Table 2, the 1997 pregnancy rates by age for the District of Columbia [DC] are not comparable to those reported for 1995–1996 due to a change in abortion data reporting which included abortions to out-of-state residents in 1997. Rates for 1997 comparable to those published for 1995–1996 (restricted to DC residents only) should read: <15, 18.7; 15–17, 124.1; 18–19, 245.0; and 15–19, 178.0. Percent change in DC for 15–19-year-olds from 1995–1997 based on these rates was –22.5%.

**FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending July 22, 2000, with historical data**



\*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 of provisional cases of selected notifiable diseases, United States, cumulative, week ending July 22, 2000 (29th Week)**

	Cum. 2000		Cum. 2000
Anthrax	-	HIV infection, pediatric <sup>§</sup>	108
Brucellosis*	31	Plague	5
Cholera	2	Poliomyelitis, paralytic	-
Congenital rubella syndrome	4	Psittacosis*	8
Cyclosporiasis*	20	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	153
Encephalitis: California serogroup viral*	8	Streptococcal disease, invasive, group A	1,755
eastern equine*	-	Streptococcal toxic-shock syndrome*	57
St. Louis*	-	Syphilis, congenital <sup>¶</sup>	81
western equine*	-	Tetanus	14
Ehrlichiosis human granulocytic (HGE)*	66	Toxic-shock syndrome	93
human monocytic (HME)*	27	Trichinosis	4
Hansen disease (leprosy)*	30	Typhoid fever	173
Hantavirus pulmonary syndrome* <sup>†</sup>	13	Yellow fever	-
Hemolytic uremic syndrome, postdiarrheal*	53		

-: No reported cases.

\*Not notifiable in all states.

<sup>†</sup> Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).

<sup>‡</sup> 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 June 25, 2000.

<sup>¶</sup> Updated from reports to the Division of STD Prevention, NCHSTP.

**TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending July 22, 2000, and July 24, 1999 (29th Week)**

Reporting Area	AIDS		Chlamydia <sup>†</sup>		Cryptosporidiosis		<i>Escherichia coli</i> O157:H7*			
	Cum. 2000 <sup>‡</sup>	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	NETSS		PHLIS	
							Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	20,482	24,380	332,352	362,657	719	1,015	1,496	1,098	844	1,086
NEW ENGLAND	1,213	1,231	11,945	11,777	40	56	162	165	139	162
Maine	16	29	720	599	9	12	9	14	7	-
N.H.	18	30	531	546	6	7	15	17	14	18
Vt.	11	6	298	265	14	8	17	16	11	9
Mass.	776	824	5,468	5,027	9	24	67	78	61	79
R.I.	49	63	1,327	1,300	2	-	8	9	8	13
Conn.	343	279	3,601	4,040	-	5	46	31	38	43
MID. ATLANTIC	4,928	6,060	23,645	37,462	70	207	133	84	67	74
Upstate N.Y.	572	836	N	N	42	63	117	57	38	-
N.Y. City	2,620	3,008	8,080	15,811	7	119	7	5	5	7
N.J.	1,036	1,189	4,260	6,768	5	16	9	22	16	64
Pa.	700	1,027	11,305	14,883	16	9	N	N	8	3
E.N. CENTRAL	2,052	1,664	52,776	60,907	164	198	297	206	114	197
Ohio	306	258	13,784	16,706	24	21	59	68	25	72
Ind.	191	190	6,448	6,656	12	14	49	25	29	23
Ill.	1,198	779	13,678	17,807	7	34	74	74	-	49
Mich.	255	356	12,809	11,816	38	25	51	39	34	26
Wis.	102	81	6,057	7,922	83	104	64	N	26	27
W.N. CENTRAL	480	531	18,336	20,839	75	57	221	201	153	240
Minn.	87	82	3,635	4,194	11	13	52	61	51	80
Iowa	52	52	2,101	2,347	25	14	54	36	10	29
Mo.	223	260	6,331	7,596	14	11	62	19	49	28
N. Dak.	1	4	352	488	5	4	8	3	13	6
S. Dak.	4	11	986	821	8	3	14	15	12	27
Nebr.	31	37	1,857	1,884	9	10	20	52	9	66
Kans.	82	85	3,074	3,509	3	2	11	15	9	4
S. ATLANTIC	5,443	6,746	68,635	77,807	136	184	116	132	60	95
Del.	94	80	1,569	1,522	4	-	-	4	-	-
Md.	602	788	7,167	7,311	8	9	12	10	1	U
D.C.	388	240	1,814	N	7	7	-	-	U	U
Va.	385	366	8,978	8,297	4	10	22	34	19	32
W. Va.	33	32	753	976	3	-	8	5	4	2
N.C.	334	479	12,103	12,665	15	5	22	26	15	29
S.C.	434	579	6,067	9,981	-	-	8	13	2	12
Ga.	607	957	13,196	19,743	63	91	15	10	10	U
Fla.	2,566	3,225	16,988	17,312	32	62	29	30	9	20
E.S. CENTRAL	1,005	1,135	25,849	24,753	27	13	57	64	29	52
Ky.	114	173	4,418	4,246	2	4	21	14	15	13
Tenn.	407	439	7,917	7,592	7	4	23	28	12	22
Ala.	262	285	7,952	6,145	10	3	5	15	-	14
Miss.	222	238	5,562	6,770	8	2	8	7	2	3
W.S. CENTRAL	1,868	2,765	53,171	48,953	31	38	89	52	84	62
Ark.	103	107	2,876	3,293	1	-	36	5	3	5
La.	336	464	10,524	7,279	8	19	4	7	18	8
Okla.	156	74	4,420	4,568	4	2	9	13	7	10
Tex.	1,273	2,120	35,351	33,813	18	17	40	27	56	39
MOUNTAIN	755	902	20,769	19,321	44	46	186	84	86	74
Mont.	9	5	826	755	8	8	19	4	-	-
Idaho	13	15	1,031	964	3	3	22	5	2	7
Wyo.	6	4	377	420	3	-	9	3	2	5
Colo.	157	196	6,409	4,333	13	4	72	31	44	21
N. Mex.	86	46	2,540	2,862	3	18	9	5	3	2
Ariz.	244	422	6,339	7,127	3	9	30	14	20	12
Utah	67	84	1,260	1,146	9	N	21	15	17	20
Nev.	173	130	1,987	1,714	2	4	4	7	-	7
PACIFIC	2,738	3,346	57,226	60,838	132	216	235	110	112	130
Wash.	285	185	7,064	6,521	N	N	86	33	69	51
Oreg.	89	87	2,883	3,449	9	79	38	24	35	23
Calif.	2,275	3,011	44,711	48,069	123	137	101	46	-	50
Alaska	10	13	1,302	1,013	-	-	2	-	1	-
Hawaii	79	50	1,266	1,786	-	-	8	7	7	6
Guam	13	11	-	268	-	-	N	N	U	U
P.R.	518	737	596	U	-	-	4	5	U	U
V.I.	21	15	-	U	-	U	-	U	U	U
Amer. Samoa	-	-	-	U	-	U	-	U	U	U
C.N.M.I.	-	-	-	U	-	U	-	U	U	U

N: Not notifiable. U: Unavailable. -: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.  
 \* Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

<sup>†</sup> Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.

<sup>‡</sup> Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update June 25, 2000.

**TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending July 22, 2000, and July 24, 1999 (29th Week)**

Reporting Area	Gonorrhea		Hepatitis C; Non-A, Non-B		Legionellosis		Lyme Disease	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	172,696	192,198	1,633	1,544	406	490	3,909	6,152
NEW ENGLAND	3,340	3,548	27	13	23	33	964	1,890
Maine	41	29	1	2	2	3	-	1
N.H.	57	56	-	-	2	3	35	2
Vt.	32	32	3	5	2	8	6	4
Mass.	1,469	1,406	20	3	9	10	356	474
R.I.	330	336	3	3	3	3	80	176
Conn.	1,411	1,689	-	-	5	6	487	1,233
MID. ATLANTIC	15,341	21,862	301	80	79	113	2,223	3,067
Upstate N.Y.	3,738	3,460	37	37	33	29	1,101	1,322
N.Y. City	3,220	7,491	-	-	-	14	4	88
N.J.	3,079	4,076	246	-	4	11	448	732
Pa.	5,304	6,835	18	43	42	59	670	925
E.N. CENTRAL	32,251	37,295	132	555	103	148	129	398
Ohio	8,230	9,746	4	1	41	45	35	26
Ind.	2,966	3,564	1	1	26	20	11	7
Ill.	9,365	12,165	8	34	8	22	2	15
Mich.	9,386	8,294	119	503	21	36	-	9
Wis.	2,304	3,526	-	16	7	25	81	341
W.N. CENTRAL	7,939	8,978	370	105	30	27	81	75
Minn.	1,480	1,542	5	3	1	1	42	13
Iowa	465	558	1	-	6	8	5	11
Mo.	3,811	4,432	354	100	19	12	20	34
N. Dak.	15	47	-	-	-	-	-	1
S. Dak.	152	80	-	-	1	2	-	-
Nebr.	685	866	3	2	-	4	-	8
Kans.	1,331	1,453	7	-	3	-	14	8
S. ATLANTIC	50,327	56,339	70	99	86	64	421	533
Del.	903	930	-	-	5	7	53	43
Md.	4,762	5,342	9	15	29	11	261	389
D.C.	1,329	2,027	2	-	1	1	1	3
Va.	5,544	5,517	1	10	12	13	59	33
W. Va.	227	336	10	13	N	N	10	12
N.C.	9,829	10,875	13	26	8	12	20	40
S.C.	7,633	6,064	1	13	2	7	2	3
Ga.	8,336	12,882	2	1	4	-	-	-
Fla.	11,764	12,366	32	21	25	13	15	10
E.S. CENTRAL	18,758	19,293	248	190	13	30	18	88
Ky.	1,879	1,872	18	10	6	12	4	6
Tenn.	6,180	6,045	58	60	5	14	11	24
Ala.	6,343	5,342	7	1	2	2	2	12
Miss.	4,356	6,034	165	119	-	2	1	46
W.S. CENTRAL	27,673	27,409	277	282	11	5	10	23
Ark.	1,552	1,658	3	16	-	1	2	2
La.	7,438	5,987	172	192	8	2	1	3
Okla.	1,904	2,272	4	13	1	2	-	4
Tex.	16,779	17,492	98	61	2	-	7	14
MOUNTAIN	5,347	5,286	112	108	24	29	4	7
Mont.	26	22	2	4	1	-	-	-
Idaho	50	48	3	5	4	-	1	-
Wyo.	30	13	67	34	1	-	1	1
Colo.	1,736	1,319	14	17	7	8	1	1
N. Mex.	531	554	11	18	1	1	-	1
Ariz.	2,101	2,534	11	20	6	4	-	-
Utah	132	108	-	5	4	10	-	2
Nev.	741	688	4	5	-	6	1	2
PACIFIC	11,720	12,188	96	112	37	41	59	71
Wash.	1,219	1,146	15	10	12	9	3	3
Oreg.	383	488	19	11	N	N	3	6
Calif.	9,757	10,142	60	91	25	31	53	62
Alaska	176	168	-	-	-	1	-	-
Hawaii	185	244	2	-	-	-	N	N
Guam	-	34	-	1	-	-	-	-
P.R.	318	175	1	-	-	-	N	N
V.I.	-	U	-	U	-	U	-	U
Amer. Samoa	-	U	-	U	-	U	-	U
C.N.M.I.	-	U	-	U	-	U	-	U

N: Not notifiable.

U: Unavailable.

- : No reported cases.

**TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending July 22, 2000, and July 24, 1999 (29th Week)**

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	NETSS		PHLIS	
					Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	555	711	2,961	3,322	15,904	17,806	10,878	16,654
NEW ENGLAND	28	27	386	449	1,068	1,087	1,033	1,142
Maine	4	2	81	82	82	71	41	59
N.H.	1	2	8	26	72	66	73	74
Vt.	2	1	36	62	66	42	65	40
Mass.	7	11	127	99	596	608	572	621
R.I.	5	3	23	58	45	56	79	81
Conn.	9	8	111	122	207	244	203	267
MID. ATLANTIC	98	201	555	638	1,996	2,432	1,862	2,366
Upstate N.Y.	32	37	385	445	579	558	616	602
N.Y. City	34	96	U	U	470	728	560	740
N.J.	15	38	88	110	441	520	307	531
Pa.	17	30	82	83	506	626	379	493
E. N. CENTRAL	58	87	49	62	2,309	2,625	1,323	2,378
Ohio	12	12	13	17	601	537	423	509
Ind.	4	9	-	-	284	227	251	232
Ill.	19	39	8	2	642	879	1	838
Mich.	17	21	23	31	475	516	470	523
Wis.	6	6	5	12	307	466	178	276
W. N. CENTRAL	30	28	302	436	1,091	1,142	1,101	1,268
Minn.	13	5	51	61	201	288	290	388
Iowa	1	8	46	67	197	122	94	113
Mo.	5	11	14	14	374	397	443	450
N. Dak.	2	-	83	88	27	15	41	34
S. Dak.	-	-	48	129	45	52	48	77
Nebr.	3	-	-	3	74	104	44	90
Kans.	6	4	60	74	173	164	141	116
S. ATLANTIC	154	178	1,251	1,172	3,292	3,543	2,035	3,031
Del.	3	1	20	30	55	63	51	78
Md.	50	58	240	230	430	391	377	419
D.C.	12	11	-	-	31	51	U	U
Va.	31	39	314	295	462	606	364	564
W. Va.	2	1	69	68	81	83	76	80
N.C.	11	11	303	238	432	519	332	615
S.C.	1	3	78	91	304	205	218	191
Ga.	4	14	157	124	539	556	571	783
Fla.	40	40	70	96	958	1,069	46	301
E. S. CENTRAL	21	14	102	163	886	989	450	703
Ky.	5	4	15	24	181	204	129	150
Tenn.	5	5	53	60	213	246	194	282
Ala.	10	4	34	79	261	277	111	232
Miss.	1	1	-	-	231	262	16	39
W. S. CENTRAL	7	12	36	80	1,260	1,510	1,474	1,330
Ark.	1	2	-	14	280	209	105	76
La.	2	8	-	-	108	259	177	301
Okla.	4	2	36	66	179	187	113	148
Tex.	-	-	-	-	693	855	1,079	805
MOUNTAIN	29	22	125	113	1,456	1,584	961	1,415
Mont.	1	4	39	40	61	28	-	1
Idaho	2	1	1	-	76	48	-	52
Wyo.	-	1	26	31	32	25	14	25
Colo.	14	9	-	1	429	449	396	434
N. Mex.	-	2	13	4	119	235	83	186
Ariz.	5	2	43	33	384	445	287	399
Utah	3	2	2	3	216	249	181	269
Nev.	4	1	1	1	139	105	-	49
PACIFIC	130	142	155	209	2,546	2,894	639	3,021
Wash.	13	11	-	-	235	341	312	494
Oreg.	22	14	3	1	170	267	212	302
Calif.	92	107	132	201	2,008	2,032	-	2,031
Alaska	-	-	20	7	32	24	21	14
Hawaii	3	10	-	-	101	230	94	180
Guam	-	-	-	-	-	24	U	U
P.R.	-	-	37	51	139	294	U	U
V.I.	-	U	-	U	-	U	U	U
Amer. Samoa	-	U	-	U	-	U	U	U
C.N.M.I.	-	U	-	U	-	U	U	U

N: Not notifiable. U: Unavailable. -: No reported cases.

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



**TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending July 22, 2000, and July 24, 1999 (29th Week)**

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS		Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999†
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999				
UNITED STATES	9,348	7,576	4,564	4,393	3,199	3,647	5,867	8,342
NEW ENGLAND	193	209	167	183	43	33	202	228
Maine	7	4	-	-	1	-	2	12
N.H.	4	7	6	6	1	1	4	4
Vt.	2	4	-	3	-	3	2	1
Mass.	133	148	113	130	33	20	124	126
R.I.	12	14	18	8	3	1	22	24
Conn.	35	32	30	36	5	8	48	61
MID. ATLANTIC	1,120	529	674	327	137	164	1,246	1,318
Upstate N.Y.	451	137	149	35	7	12	138	150
N.Y. City	452	177	366	130	53	70	682	719
N.J.	123	130	83	108	27	36	298	288
Pa.	94	85	76	54	50	46	128	161
E.N. CENTRAL	2,083	1,353	609	722	626	653	650	858
Ohio	159	273	95	69	42	54	142	131
Ind.	886	92	83	34	228	226	44	66
Ill.	464	538	2	426	171	236	32	424
Mich.	436	197	390	147	164	113	93	176
Wis.	138	253	39	46	21	24	49	59
W.N. CENTRAL	984	646	720	462	37	83	253	275
Minn.	189	114	256	158	3	7	84	110
Iowa	290	13	131	14	10	7	23	26
Mo.	374	441	276	232	19	55	100	96
N. Dak.	4	2	4	2	-	-	2	2
S. Dak.	4	9	1	5	-	-	11	9
Nebr.	32	39	9	29	2	4	10	12
Kans.	91	28	43	22	3	10	23	20
S. ATLANTIC	1,376	1,251	390	318	1,070	1,220	1,306	1,672
Del.	9	8	8	3	5	6	-	20
Md.	81	72	32	24	154	235	146	145
D.C.	20	34	U	U	30	29	11	29
Va.	231	53	174	32	69	95	136	121
W. Va.	3	6	3	3	1	2	19	26
N.C.	68	123	31	60	315	281	172	226
S.C.	66	66	52	36	105	161	54	189
Ga.	127	119	41	47	201	229	259	331
Fla.	771	770	49	113	190	182	509	585
E.S. CENTRAL	460	753	262	481	492	630	419	534
Ky.	110	146	48	109	53	53	58	101
Tenn.	223	477	200	328	303	349	190	167
Ala.	23	67	11	40	66	137	171	167
Miss.	104	63	3	4	70	91	-	99
W.S. CENTRAL	1,064	1,342	1,156	548	460	540	249	1,176
Ark.	120	53	24	20	56	39	106	89
La.	71	102	72	56	112	129	73	U
Okla.	68	346	20	108	77	120	70	94
Tex.	805	841	1,040	364	215	252	-	993
MOUNTAIN	529	392	216	263	117	131	259	252
Mont.	4	6	-	-	-	-	6	5
Idaho	37	9	-	6	1	1	5	7
Wyo.	1	2	2	1	1	-	1	1
Colo.	87	66	43	52	2	1	35	U
N. Mex.	56	50	22	33	17	6	29	36
Ariz.	227	200	110	135	93	117	119	121
Utah	38	29	39	30	-	2	22	26
Nev.	79	30	-	6	3	4	42	57
PACIFIC	1,539	1,101	370	1,089	217	193	1,283	2,029
Wash.	322	57	289	55	36	39	156	138
Oreg.	95	40	59	34	4	3	8	56
Calif.	1,089	980	-	977	176	149	993	1,707
Alaska	7	-	3	-	-	1	55	34
Hawaii	26	24	19	23	1	1	71	94
Guam	-	9	U	U	-	-	-	39
P.R.	3	61	U	U	74	95	-	103
V.I.	-	U	U	U	-	U	-	U
Amer. Samoa	-	U	U	U	-	U	-	U
C.N.M.I.	-	U	U	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.

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

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

**TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending July 22, 2000, and July 24, 1999 (29th Week)**

Reporting Area	<i>H. influenzae</i> , Invasive		Hepatitis (Viral), By Type				Measles (Rubeola)					
	Cum. 2000 <sup>1</sup>	Cum. 1999	A		B		Indigenous		Imported*		Total	
			Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	2000	Cum. 2000	2000	Cum. 2000	Cum. 2000	Cum. 1999
UNITED STATES	677	703	6,147	9,148	3,700	3,852	2	33	-	11	44	63
NEW ENGLAND	49	53	160	135	36	86	-	-	-	3	3	10
Maine	1	5	10	4	5	1	-	-	-	-	-	-
N.H.	9	10	17	8	11	8	-	-	-	-	-	1
Vt.	3	4	5	3	5	1	-	-	-	3	3	-
Mass.	23	21	69	53	6	30	-	-	-	-	-	7
R.I.	1	1	7	10	9	22	-	-	-	-	-	-
Conn.	12	12	52	57	-	24	-	-	-	-	-	2
MID. ATLANTIC	110	123	566	678	504	519	-	8	-	1	9	5
Upstate N.Y.	53	49	121	142	72	113	-	8	-	-	8	2
N.Y. City	26	38	186	183	224	152	-	-	-	-	-	3
N.J.	24	33	79	90	69	73	-	-	-	-	-	-
Pa.	7	3	180	273	139	181	-	-	-	1	1	-
E.N. CENTRAL	88	113	733	1,732	394	410	-	7	-	-	7	2
Ohio	36	39	156	404	69	52	-	2	-	-	2	-
Ind.	12	18	37	61	28	26	-	-	-	-	-	1
Ill.	35	48	258	373	63	38	-	4	-	-	4	-
Mich.	5	8	269	848	233	270	-	1	-	-	1	1
Wis.	-	-	13	46	1	24	-	-	-	-	-	-
W.N. CENTRAL	31	32	573	417	519	155	-	1	-	1	2	-
Minn.	16	17	135	42	20	25	-	-	-	1	1	-
Iowa	-	1	55	77	26	25	-	1	-	-	1	-
Mo.	8	4	298	249	441	88	-	-	-	-	-	-
N. Dak.	1	-	2	1	2	-	-	-	-	-	-	-
S. Dak.	-	2	-	8	-	1	-	-	-	-	-	-
Nebr.	4	4	18	30	18	12	-	-	-	-	-	-
Kans.	2	4	65	10	12	4	-	-	-	-	-	-
S. ATLANTIC	190	157	745	1,006	673	573	2	3	-	-	3	4
Del.	-	-	-	2	-	1	-	-	-	-	-	-
Md.	51	44	98	188	72	91	-	-	-	-	-	-
D.C.	-	4	14	37	17	14	-	-	-	-	-	-
Va.	29	12	84	90	84	53	2	2	-	-	2	3
W. Va.	5	5	45	24	6	15	-	-	-	-	-	-
N.C.	17	23	97	75	142	131	-	-	-	-	-	-
S.C.	11	3	31	23	5	38	-	-	-	-	-	-
Ga.	50	42	116	289	101	66	-	-	-	-	-	-
Fla.	27	24	260	278	246	164	-	1	-	-	1	1
E.S. CENTRAL	31	45	250	249	258	280	-	-	-	-	-	2
Ky.	12	6	30	49	51	20	-	-	-	-	-	2
Tenn.	14	23	93	103	117	132	-	-	-	-	-	-
Ala.	4	14	38	37	27	54	-	-	-	-	-	-
Miss.	1	2	89	60	63	74	-	-	-	-	-	-
W.S. CENTRAL	37	45	1,037	1,789	379	655	-	1	-	-	1	6
Ark.	-	2	94	26	62	46	-	1	-	-	1	-
La.	7	11	28	121	50	115	-	-	-	-	-	-
Okla.	28	29	165	327	83	87	-	-	-	-	-	-
Tex.	2	3	750	1,315	184	407	-	-	-	-	-	6
MOUNTAIN	70	61	511	778	274	351	-	11	-	1	12	1
Mont.	-	1	2	12	3	16	-	-	-	-	-	-
Idaho	3	1	18	29	4	20	-	-	-	-	-	-
Wyo.	1	1	10	4	2	8	-	-	-	-	-	-
Colo.	11	10	113	147	51	53	-	1	-	1	2	-
N. Mex.	15	15	45	31	72	113	-	-	-	-	-	-
Ariz.	33	28	253	444	104	87	-	-	-	-	-	1
Utah	6	3	37	31	14	20	-	3	-	-	3	-
Nev.	1	2	33	80	24	34	-	7	-	-	7	-
PACIFIC	71	74	1,572	2,364	663	823	-	2	-	5	7	33
Wash.	3	2	159	183	42	39	-	-	-	-	-	5
Oreg.	19	26	119	151	55	64	-	-	-	-	-	11
Calif.	26	37	1,283	2,013	554	699	-	1	-	3	4	16
Alaska	4	5	8	4	6	13	-	1	-	-	1	-
Hawaii	19	4	3	13	6	8	-	-	-	2	2	1
Guam	-	-	-	1	-	2	U	-	U	-	-	1
P.R.	1	2	60	185	64	136	-	-	-	-	-	-
V.I.	-	U	-	U	-	U	U	-	U	-	-	U
Amer. Samoa	-	U	-	U	-	U	U	-	U	-	-	U
C.N.M.I.	-	U	-	U	-	U	U	-	U	-	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

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

<sup>1</sup>Of 135 cases among children aged <5 years, serotype was reported for 61 and of those, 16 were type b.

**TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending July 22, 2000, and July 24, 1999 (29th Week)**

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999
UNITED STATES	1,299	1,523	3	209	232	72	2,812	3,215	-	78	171
NEW ENGLAND	82	73	-	2	6	5	708	372	-	6	7
Maine	6	5	-	-	-	-	14	-	-	-	-
N.H.	9	10	-	-	1	-	62	54	-	2	-
Vt.	2	4	-	-	1	3	153	30	-	-	-
Mass.	50	41	-	-	4	2	438	261	-	3	7
R.I.	6	3	-	1	-	-	11	17	-	-	-
Conn.	9	10	-	1	-	-	30	10	-	1	-
MID. ATLANTIC	123	149	-	9	32	2	201	614	-	2	25
Upstate N.Y.	39	40	-	6	6	2	124	505	-	2	17
N.Y. City	27	42	-	-	8	-	-	25	-	-	2
N.J.	25	34	-	-	1	-	-	15	-	-	3
Pa.	32	33	-	3	17	-	77	69	-	-	3
E.N. CENTRAL	229	264	-	24	28	6	334	271	-	1	2
Ohio	57	100	-	7	8	4	184	122	-	-	-
Ind.	35	31	-	-	3	-	36	14	-	-	1
Ill.	53	69	-	5	7	-	27	59	-	1	1
Mich.	64	39	-	12	8	2	38	26	-	-	-
Wis.	20	25	-	-	2	-	49	50	-	-	-
W.N. CENTRAL	106	146	2	14	9	15	161	117	-	-	90
Minn.	7	32	-	-	1	10	76	35	-	-	-
Iowa	21	27	-	5	4	1	28	25	-	-	26
Mo.	62	53	2	4	1	4	30	30	-	-	2
N. Dak.	2	3	-	-	-	-	1	-	-	-	-
S. Dak.	5	9	-	-	-	-	3	5	-	-	-
Nebr.	5	7	-	2	-	-	4	2	-	-	62
Kans.	4	15	-	3	3	-	19	20	-	-	-
S. ATLANTIC	214	247	-	32	35	20	238	180	-	51	21
Del.	-	5	-	-	-	-	5	-	-	-	-
Md.	19	38	-	7	3	11	61	60	-	-	1
D.C.	-	3	-	-	2	-	1	-	-	-	-
Va.	36	30	-	5	8	5	33	13	-	-	-
W. Va.	9	4	-	-	-	-	1	1	-	-	-
N.C.	30	29	-	5	8	-	51	52	-	42	20
S.C.	16	31	-	10	3	1	20	8	-	7	-
Ga.	36	44	-	2	1	-	20	18	-	-	-
Fla.	68	63	-	3	10	3	46	28	-	2	-
E.S. CENTRAL	94	113	-	6	12	4	51	58	-	4	3
Ky.	20	20	-	-	-	1	20	15	-	1	-
Tenn.	39	43	-	2	-	3	18	27	-	-	-
Ala.	27	29	-	2	7	-	12	13	-	3	2
Miss.	8	21	-	2	5	-	1	3	-	-	1
W.S. CENTRAL	87	169	1	21	31	1	125	96	-	4	4
Ark.	9	28	1	2	-	-	10	11	-	-	-
La.	27	50	-	3	7	-	3	5	-	-	-
Okla.	21	24	-	-	1	-	6	8	-	-	-
Tex.	30	67	-	16	23	1	106	72	-	4	4
MOUNTAIN	83	93	-	15	10	13	440	394	-	2	15
Mont.	4	2	-	1	-	1	12	2	-	-	-
Idaho	6	8	-	-	1	-	42	105	-	-	-
Wyo.	-	3	-	1	-	1	2	2	-	-	-
Colo.	24	24	-	1	3	7	238	140	-	1	-
N. Mex.	7	12	-	1	N	1	83	44	-	-	-
Ariz.	32	29	-	3	-	3	46	60	-	1	13
Utah	7	10	-	4	3	-	11	38	-	-	1
Nev.	3	5	-	4	3	-	6	3	-	-	1
PACIFIC	281	269	-	86	69	6	554	1,113	-	8	4
Wash.	34	43	-	4	2	5	191	520	-	-	-
Oreg.	40	51	N	N	N	-	58	23	-	-	-
Calif.	194	165	-	68	59	-	270	543	-	8	4
Alaska	5	6	-	7	1	1	13	3	-	-	-
Hawaii	8	4	-	7	7	-	22	24	-	-	-
Guam	-	1	U	-	1	U	-	1	U	-	-
P.R.	5	9	-	-	-	-	1	13	-	-	-
V.I.	-	U	U	-	U	U	-	U	U	-	U
Amer. Samoa	-	U	U	-	U	U	-	U	U	-	U
C.N.M.I.	-	U	U	-	U	U	-	U	U	-	U

N: Not notifiable.

U: Unavailable.

-: No reported cases.

**TABLE IV. Deaths in 122 U.S. cities,\* week ending  
July 22, 2000 (29th Week)**

Reporting Area	All Causes, By Age (Years)						P&I <sup>†</sup> Total	Reporting Area	All Causes, By Age (Years)						P&I <sup>†</sup> Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
<b>NEW ENGLAND</b>	612	453	95	39	13	12	52	<b>S. ATLANTIC</b>	1,026	669	213	90	31	23	87
Boston, Mass.	174	121	32	8	6	7	15	Atlanta, Ga.	U	U	U	U	U	U	U
Bridgeport, Conn.	45	35	5	3	1	1	2	Baltimore, Md.	165	90	42	26	7	-	11
Cambridge, Mass.	12	12	-	-	-	-	1	Charlotte, N.C.	89	60	20	6	1	2	13
Fall River, Mass.	36	30	4	2	-	-	4	Jacksonville, Fla.	158	107	30	13	5	3	16
Hartford, Conn.	54	32	13	6	1	2	3	Miami, Fla.	114	80	17	11	3	3	16
Lowell, Mass.	21	18	2	1	-	-	5	Norfolk, Va.	53	32	8	5	5	3	2
Lynn, Mass.	10	7	3	-	-	-	-	Richmond, Va.	56	35	10	4	4	3	5
New Bedford, Mass.	36	33	3	-	-	-	2	Savannah, Ga.	58	36	14	4	-	4	2
New Haven, Conn.	45	30	7	4	4	-	7	St. Petersburg, Fla.	61	46	12	2	1	-	1
Providence, R.I.	56	42	9	4	1	-	-	Tampa, Fla.	171	120	36	10	2	3	19
Somerville, Mass.	4	2	1	1	-	-	-	Washington, D.C.	101	63	24	9	3	2	2
Springfield, Mass.	40	31	4	5	-	-	4	Wilmington, Del.	U	U	U	U	U	U	U
Waterbury, Conn.	20	15	3	1	-	1	3	<b>E. S. CENTRAL</b>	942	600	201	74	29	36	54
Worcester, Mass.	59	45	9	4	-	1	5	Birmingham, Ala.	203	133	40	14	5	9	14
<b>MID. ATLANTIC</b>	2,222	1,535	433	170	41	34	106	Chattanooga, Tenn.	74	45	16	6	2	5	5
Albany, N.Y.	40	29	6	3	1	1	4	Knoxville, Tenn.	100	64	25	8	2	1	2
Allentown, Pa.	U	U	U	U	U	U	U	Lexington, Ky.	86	60	18	2	3	3	3
Buffalo, N.Y.	86	59	22	3	1	1	6	Memphis, Tenn.	194	118	47	17	6	6	12
Camden, N.J.	22	13	4	4	-	1	1	Mobile, Ala.	86	60	12	6	3	5	7
Elizabeth, N.J.	19	12	2	3	2	-	2	Montgomery, Ala.	52	35	4	8	5	-	2
Erie, Pa.§	39	33	4	1	1	-	1	Nashville, Tenn.	147	85	39	13	3	7	9
Jersey City, N.J.	48	33	8	6	1	-	-	<b>W. S. CENTRAL</b>	1,436	946	289	120	44	37	74
New York City, N.Y.	1,134	795	216	88	21	14	41	Austin, Tex.	95	62	21	9	3	-	5
Newark, N.J.	76	31	27	13	2	3	-	Baton Rouge, La.	49	32	11	4	1	1	-
Paterson, N.J.	21	12	2	6	1	-	-	Corpus Christi, Tex.	37	26	5	1	1	4	3
Philadelphia, Pa.	288	180	71	26	5	6	17	Dallas, Tex.	168	98	35	24	6	5	6
Pittsburgh, Pa.§	54	36	11	3	2	2	5	El Paso, Tex.	80	59	10	6	4	1	2
Reading, Pa.	32	27	3	2	-	2	2	Ft. Worth, Tex.	138	102	18	11	3	4	7
Rochester, N.Y.	139	104	30	4	1	-	6	Houston, Tex.	339	200	92	30	12	5	25
Schenectady, N.Y.	28	17	1	1	-	-	-	Little Rock, Ark.	73	44	15	8	3	3	2
Scranton, Pa.§	22	19	1	1	-	1	1	New Orleans, La.	U	U	U	U	U	U	U
Syracuse, N.Y.	102	77	14	3	3	5	14	San Antonio, Tex.	253	173	44	18	9	9	12
Trenton, N.J.	29	23	4	2	-	-	3	Shreveport, La.	72	46	15	7	1	3	6
Utica, N.Y.	20	15	5	-	-	-	1	Tulsa, Okla.	132	104	23	2	1	2	6
Yonkers, N.Y.	23	20	2	1	-	-	2	<b>MOUNTAIN</b>	925	602	182	85	34	22	62
<b>E. N. CENTRAL</b>	1,969	1,307	419	140	59	44	136	Albuquerque, N.M.	104	69	14	12	7	2	6
Akron, Ohio	43	29	10	1	1	2	2	Boise, Idaho	39	27	6	2	3	1	3
Canton, Ohio	45	29	15	1	-	-	3	Colo. Springs, Colo.	55	44	9	2	-	-	2
Chicago, Ill.	395	244	96	37	10	8	34	Denver, Colo.	110	64	26	11	3	6	8
Cincinnati, Ohio	102	65	23	7	3	4	7	Las Vegas, Nev.	211	147	44	11	9	-	17
Cleveland, Ohio	136	90	28	9	5	4	6	Ogden, Utah	18	11	2	3	2	-	2
Columbus, Ohio	181	127	30	14	5	5	14	Phoenix, Ariz.	156	88	35	18	5	10	10
Dayton, Ohio	115	85	20	5	2	3	4	Pueblo, Colo.	19	10	5	4	-	-	-
Detroit, Mich.	200	112	50	27	9	2	16	Salt Lake City, Utah	80	54	12	9	2	3	6
Evansville, Ind.	38	29	4	1	4	-	3	Tucson, Ariz.	133	88	29	13	3	-	8
Fort Wayne, Ind.	75	55	14	3	3	-	1	<b>PACIFIC</b>	1,721	1,215	328	104	40	32	117
Gary, Ind.	27	14	5	5	2	1	-	Berkeley, Calif.	9	6	2	1	-	-	1
Grand Rapids, Mich.	22	13	6	2	-	1	1	Fresno, Calif.	73	54	11	5	3	-	2
Indianapolis, Ind.	181	121	42	10	4	4	14	Glendale, Calif.	21	16	3	1	1	-	-
Lansing, Mich.	46	37	6	3	-	-	5	Honolulu, Hawaii	74	50	20	1	3	-	3
Milwaukee, Wis.	117	79	30	4	2	2	8	Long Beach, Calif.	66	51	12	2	1	-	10
Peoria, Ill.	55	40	8	2	2	3	3	Los Angeles, Calif.	356	249	66	27	11	3	14
Rockford, Ill.	57	39	10	3	2	3	7	Pasadena, Calif.	29	19	5	3	1	1	4
South Bend, Ind.	34	29	3	1	-	1	1	Portland, Ore.	176	129	30	9	4	4	7
Toledo, Ohio	100	70	19	5	5	1	7	Sacramento, Calif.	235	159	49	15	5	6	27
Youngstown, Ohio	U	U	U	U	U	U	U	San Diego, Calif.	201	128	46	11	4	12	22
<b>W. N. CENTRAL</b>	841	586	148	63	26	18	48	San Francisco, Calif.	U	U	U	U	U	U	U
Des Moines, Iowa	60	46	9	2	1	2	8	San Jose, Calif.	167	127	28	8	2	2	10
Duluth, Minn.	15	10	2	3	-	-	2	Santa Cruz, Calif.	25	18	3	3	1	-	3
Kansas City, Kans.	49	30	11	6	2	-	3	Seattle, Wash.	142	88	38	9	3	4	7
Kansas City, Mo.	89	59	21	7	2	-	5	Spokane, Wash.	44	40	2	2	-	-	5
Lincoln, Nebr.	41	35	3	3	-	-	7	Tacoma, Wash.	103	81	13	7	1	-	2
Minneapolis, Minn.	175	123	28	14	5	5	8	<b>TOTAL</b>	11,694 <sup>†</sup>	7,913	2,308	885	317	258	736
Omaha, Nebr.	97	76	11	4	2	4	6								
St. Louis, Mo.	124	79	30	8	3	4	-								
St. Paul, Minn.	70	49	15	3	3	-	5								
Wichita, Kans.	121	79	18	13	8	3	4								

U: Unavailable. -: No reported cases.

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

<sup>†</sup>Pneumonia and influenza.

<sup>‡</sup>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.

<sup>§</sup>Total includes unknown ages.





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