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Cluster of HIV-Positive Young Women — New York, 1997–1998

As of July 1997, six human immunodeficiency virus (HIV) infections in young women who reported sexual contact with the same HIV-infected man (putative index case-patient) were detected at health-service clinics in a rural county in upstate New York. During the next several months, other sexual contacts of the man were discovered by public health officials through routine voluntary partner notification interviews, interviews with exposed women, and after a public announcement resulted in counseling and testing of approximately 1400 persons in the county. This report presents epidemiologic and laboratory findings of the young women investigated as part of this cluster and suggests a common source of HIV infection for these women.*

For this investigation, female sex partners of the putative index case-patient were considered primary contacts, male sex partners of HIV-infected primary contacts were considered secondary contacts, and female sex partners of the HIV-infected male secondary contacts were considered tertiary contacts. Medical records of contacts were reviewed for demographic information, history of HIV counseling and testing, sexually transmitted diseases (STDs) (i.e., syphilis, gonorrhea, chlamydia, herpes, and trichomonas), and drug and alcohol use. Blood specimens from consenting persons were forwarded to CDC for HIV DNA sequence analysis and for blinded serologic testing of specimens for syphilis, *Chlamydia trachomatis*, and herpes simplex virus type 2 (HSV-2). No blood specimen was available from the putative index case-patient.

Forty-seven primary contacts were identified and reportedly had had vaginal sex with the index patient: 13 (31%) of 42 tested had HIV infection. From these 13 primary contacts, 84 secondary contacts were identified; one of 50 tested had HIV infection. Sixty secondary contacts had sexual exposure to the primary contacts during the same period or after the primary contacts had sexual exposure to the putative index case-patient; one of 39 tested had HIV infection. Three tertiary contacts of the one positive secondary contact were identified; the one tested was HIV negative. One of three infants born to HIV-infected women was positive by polymerase chain reaction (PCR) testing for HIV DNA. There was no evidence that the putative index case-patient or the HIV-infected primary contacts had had same-sex or needle-sharing contacts.

*Single copies of this document will be available until May 27, 2000, from the National Prevention Information Network (NPIN) (operators of the National AIDS Clearinghouse), P.O. Box 6003, Rockville, MD 20850; telephone (800) 458-5231 or (301) 519-0459.

HIV-Positive Young Women — Continued

Blood samples for HIV DNA sequence analysis were obtained from 10 of the 13 HIV-infected primary contacts, the one HIV-infected secondary contact, and two HIV-infected persons from the community who were not epidemiologically related to the cluster (community-comparison persons). A nested PCR procedure was used to amplify proviral HIV DNA sequences from peripheral blood mononuclear cells (PBMCs) from these 13 persons. A 345 nucleotide segment of the C2V3C3 region of the *env* gene and approximately 400 nucleotides of the p17 coding region of *gag* were sequenced and analyzed in a blinded fashion. Phylogenetic analysis of the 13 sequences was performed with reference sequences from HIV subtypes A-D, F, and G from the GenBank[†] database for both the *env* and *gag* gene regions. Bootstrapping, a technique used to assess the relatedness of the viruses, demonstrated that all 13 sequences were from subtype B viruses (*1*). Sequences from the 10 HIV-infected primary contacts—but not from the infected secondary contact, the two community-comparison persons, or subtype B reference strains—clustered strongly together in both gene regions. The phylogenetic analyses indicated a high degree of relatedness among the viruses infecting the 10 tested primary contacts and suggest that the infected secondary contact was probably infected by a source not related to this cluster.

The 13 HIV-infected primary contacts reportedly had their last sexual exposure to the putative index case-patient during February 1996–January 1997 (Figure 1); 25 of the 29 primary contacts who were not HIV infected had last contact with him during January 1995–August 1997; data were missing for four. The median number of vaginal sexual exposures to the putative index case-patient was higher, although not significantly, for the HIV-infected women (six exposures; range: two–190 exposures) than for the uninfected women (three exposures; range: one–90 exposures) (data were missing for six) (Wilcoxon rank sum test, p=0.07). Median ages at first exposure to the putative index case-patient were similar for HIV-infected women (17.8 years; range: 13–22 years) (data were missing for one) and uninfected women (17.7 years; range: 14–24 years) (data were missing for 14). Among exposed women, HIV infection was not associated significantly with a history of STDs (10 of 22), cocaine use (three of 22), alcohol use (two of 16), or serologic markers for STDs (15 of 25). When analyses were limited to seven HIV-infected and eight uninfected women with exposures only after September 1996 (Figure 1), HIV-infected women had significantly more exposures to the putative index case-patient (median: three exposures; range: two–six exposures) than the uninfected women (median: one exposure; range: one–two exposures (data were missing for two) (Wilcoxon rank sum test, p=0.005).

Reported by: FB Coles, DO, GS Birkhead, MD, P Johnson, PF Smith, MD, State Epidemiologist, New York State Dept of Health; R Berke, MD, P Allenson, M Clark, Chautauqua County Dept of Health, Mayville, New York. Div of HIV/AIDS Prevention–Surveillance and Epidemiology, and Intervention Research Svcs, National Center for HIV, STD, and TB Prevention; Div of AIDS, STD, and TB Laboratory Research, National Center for Infectious Diseases, CDC.

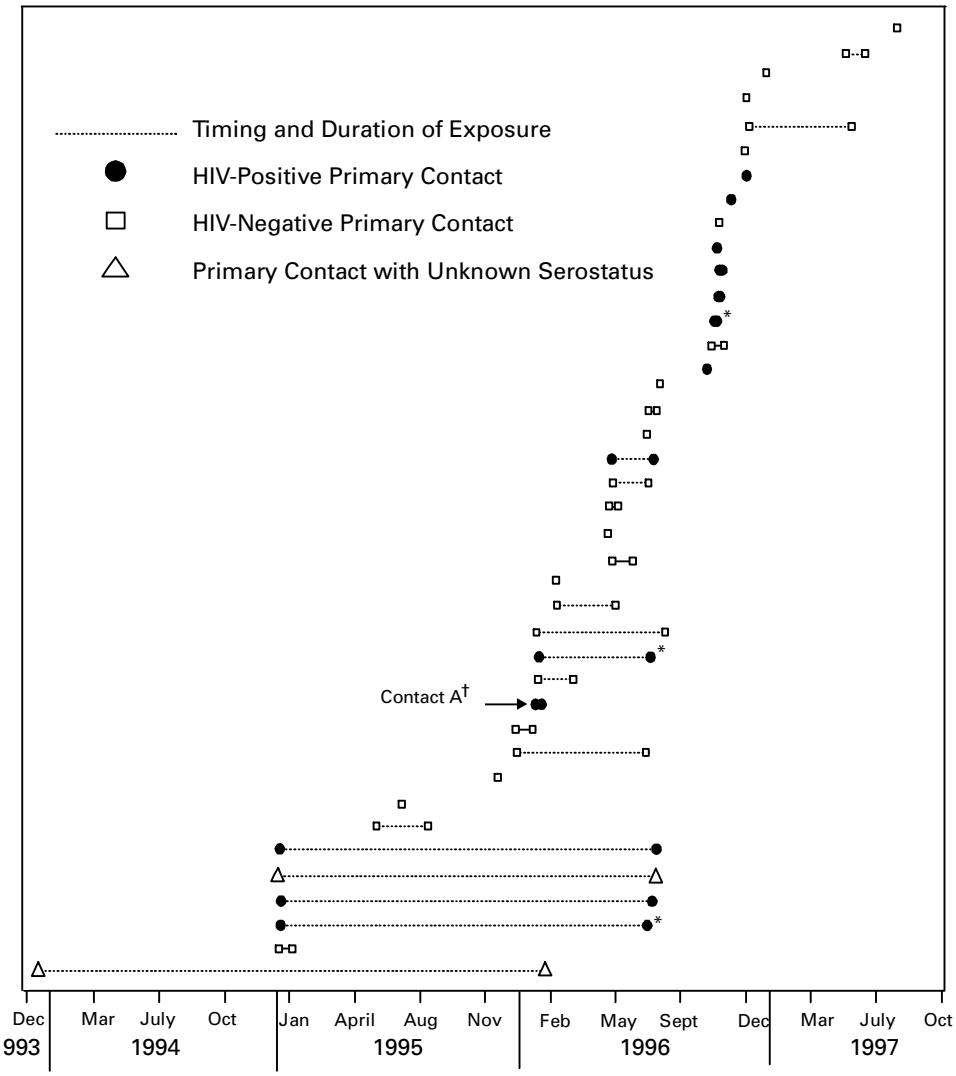
Editorial Note: The findings in this report suggest a common source of HIV infection for at least 10 of 13 HIV-infected women who independently reported contact with the same partner. The high rate of HIV infection among sexual contacts of the putative index case-patient over a period of many months raises the possibility that efficient transmitters of HIV exist and may contribute disproportionately to HIV transmission.

Reasons for the apparently high attack rate (31%) among primary sex contacts in this cluster are unclear. Persons with primary HIV infection (i.e., within several weeks

[†]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.

HIV-Positive Young Women — Continued

FIGURE 1. Timing of sexual exposure of HIV-infected and uninfected primary contacts to the putative index case-patient — New York, December 1993–October 1997



*Blood samples were not available for strain determination.
†The HIV-infected primary contact with the earliest date of last exposure.

after infection [*2,3*]) or those in the late stage of HIV infection (*4*) may be especially infectious because these periods are usually associated with high HIV viral loads (viremia). If the putative index case-patient was the common sex partner of these women, he probably was infected by or during February 1996 because the earliest date of last exposure for an HIV-infected primary contact was during February 1996. However, seven of 15 women whose first sexual exposure to the putative index case-patient was after September 1996 were HIV infected. These contacts probably would have been infected after the presumed period of primary HIV infection but before the late stage of HIV infection in the putative index case-patient (*4*). Thus, at least some HIV-infected

HIV-Positive Young Women — Continued

persons, such as the putative index case-patient, may be highly infectious at times other than the primary or late stage of HIV infection.

Other characteristics may be critical in determining the likelihood of HIV transmission. Host susceptibility or infectiousness may increase as a result of inflammation or ulceration associated with STDs (*5*). For the susceptible partner, genital ulcerative infections (e.g., syphilis and HSV-2) are cofactors that facilitate transmission (*5*), but STDs were not significantly associated with being HIV-infected among the primary contacts in this cluster.

This cluster occurred despite other prevention successes in the county among youth (*6*). Discovery and evaluation of this cluster were possible, in part, because of the low background prevalence of HIV infection in the county (*6*) (i.e., relatively few new cases of HIV infection could be detected and followed by public health personnel) and a coordinated response by health officials enabled prompt epidemiologic and laboratory investigations.

This cluster of infection has implications for HIV intervention and prevention. Unrecognized social and sexual networks of youth at high risk for HIV and other STDs exist even in rural areas where HIV prevalence is relatively low, and these networks can facilitate the rapid spread of HIV infection. It is important for public health programs to provide effective HIV prevention services to youth in rural areas.

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Progress Toward Global Poliomyelitis Eradication — 1997–1998

In 1988, the World Health Assembly resolved to eradicate poliomyelitis globally by 2000 (*1*). Since then, substantial progress has been reported by all countries where polio is endemic in implementing the recommended polio eradication strategies (i.e., achieving and maintaining high routine coverage with oral poliovirus vaccine [OPV]; conducting National Immunization Days [NIDs]* to rapidly decrease poliovirus circulation; establishing sensitive surveillance systems for polio cases and poliovirus; and carrying out mopping-up vaccination activities to eliminate the remaining reservoirs of poliovirus transmission) (*2,3*). Although much progress has been made in many countries, substantial obstacles remain, particularly in 14 priority countries (i.e., global

*Nationwide 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 (usually aged <5 years), regardless of vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

reservoir countries[†] or countries with ongoing armed internal strife or civil war) (Figure 1). This report updates progress during 1998 toward the global eradication target and describes accelerated activities to achieve the 2000 goal.

Progress in Implementing Polio Eradication Strategies

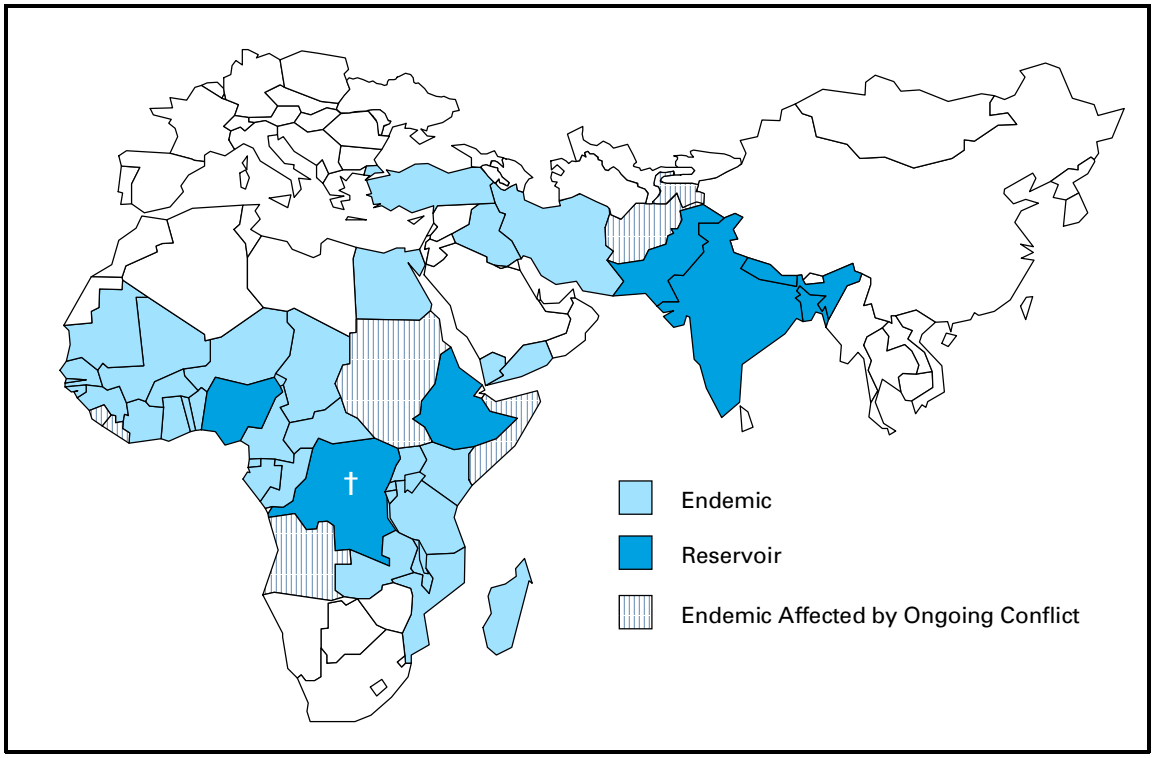
Routine vaccination. During 1990–1997, reported coverage with three doses of OPV (OPV3) remained at approximately 80% (82% in 1997). Among the World Health Organization (WHO) regions, OPV3 coverage ranged from 82% (Region of the Americas) to 93% (Western Pacific Region) except for the African Region (53%).

Supplementary vaccination. During 1998, approximately 470 million children received OPV during NIDs (in 74 countries) and Sub-National Immunization Days (SNIDs)[§] (in 16 countries). As of May 1999, only the Democratic Republic of Congo (DR Congo) and Sierra Leone have not conducted full NIDs but did conduct SNIDs in 1998. Liberia, Somalia, and Sudan, areas affected by armed conflict, particularly have been successful in conducting NIDs. In Liberia, approximately 580,000 children were vaccinated twice, in January and March 1999. In Somalia, NIDs covered all areas during

[†]Countries where polio is endemic that have large populations and that may export poliovirus to neighboring countries and elsewhere.

[§]Focal mass campaigns in high-risk areas 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 vaccination history, with an interval of 4–6 weeks between doses.

FIGURE 1. Countries where poliomyelitis is endemic, countries considered to be poliovirus reservoirs,* and countries with ongoing armed internal strife or civil war — 1998



*Countries where polio is endemic that have large populations and that may export poliovirus to neighboring countries and elsewhere.

[†]Reservoir country also affected by ongoing conflict.

Poliomyelitis Eradication — Continued

August–November 1998, reaching approximately 1.4 million children. In Sudan, NIDs in March and April 1998 and again in March and April 1999 in the conflict zone reached approximately 1 million children who had not been vaccinated during previous NIDs. During intensified NIDs in India in December 1998 and January 1999, 134 million children were vaccinated; door-to-door vaccination was used in high-risk areas (*4*).

Mopping-up. A mopping-up campaign was conducted in adjoining areas of southeastern Turkey, western Iran, northern Iraq, and northeastern Syria during the fall of 1998, reaching approximately 2 million children aged <5 years (*5*). The activity targeted a focus of wild poliovirus transmission in WHO's European and Eastern Mediterranean regions. Turkey is the only country in the European Region to report wild poliovirus in 1998.

Acute flaccid paralysis (AFP) surveillance. The objective of AFP surveillance is to detect poliovirus circulation and identify high-risk areas to target for supplementary vaccination; the data also will be used for certification of polio eradication. Two indicators determine the quality of AFP surveillance: 1) the reported rate of AFP not attributable to polio (i.e., nonpolio AFP rate) to assess the sensitivity of case detection and reporting (target: ≥1 nonpolio AFP case per 100,000 children aged <15 years annually); and 2) the proportion of AFP cases from which two adequate specimens¶ have been collected (target: two adequate stool specimens from ≥80% of AFP cases).

The number of AFP cases reported globally increased substantially from 18,062 cases in 1997 to 24,875 cases in 1998 (Table 1) mainly because of improved AFP surveillance in India. The global nonpolio AFP rate increased from 0.7 per 100,000 population in 1997 to 1.1 in 1998. In the African Region, the nonpolio AFP rate more than doubled from 0.16 in 1997 to 0.42 in 1998. The proportion of AFP cases with two adequate specimens increased globally from 63% in 1997 to 67% in 1998. Only the Western Pacific (86%) and European (78%) regions have reached the levels of stool specimen collection necessary for eradication certification.

AFP surveillance has been initiated in all countries where polio is endemic, but is in its early phases in DR Congo, Sudan, and Somalia. AFP reporting is incomplete in many African countries, and stool specimen collection is inadequate, with stool specimens collected for 38% of AFP cases. However, surveillance has improved substantially in many African countries; for example, the number of AFP cases reported in Nigeria increased from five in 1997 to 525 in 1998 (*6*). The improvement in surveillance indicators in the South-East Asian Region of WHO largely is due to improved reporting from India, where 59 surveillance officers were appointed in late 1997 (*4*).

Global Poliovirus Laboratory Network. By the end of 1998, the Global Poliovirus Laboratory Network expanded to include 117 national and subnational, 15 regional reference, and six global specialized laboratories. Laboratories in the network must be accredited each year by WHO. Overall, 80% of the network laboratories have been reviewed for accreditation, and 80% of these have been fully accredited. Most of the remaining laboratories were accredited provisionally pending subsequent review by the end of 1999.

¶Two stool specimens, collected 24–48 hours apart within 14 days of onset of paralysis, arriving in the laboratory with ice present.

TABLE 1. Acute flaccid paralysis (AFP) and confirmed poliomyelitis, by World Health Organization region — 1997–1998*

Region	AFP cases reported		Nonpolio AFP rate		% AFP cases with adequate specimens†		Confirmed polio cases (Wild virus confirmed)				Wild poliovirus strain detected in 1998
	1997	1998	1997	1998	1997	1998	1997		1998		
African	1,203	1,765	0.16	0.42	24%	38%	1,087	(31)	992	(96)	P1/P2/P3
American	1,894	1,608	1.04	0.88	74%	71%	0	(0)	0	(0)	—
Eastern Mediterranean	2,856	2,213	0.85	0.91	53%	66%	1,255	(264)	536	(224)	P1/P3
European	1,596	1,534	1.12	1.15	69%	78%	7	(6)	26	(26)	P1/P3
South-East Asian	4,550	11,358	0.32	1.24	39%	60%	2,827	(531)	4,673	(1,833)	P1/P2/P3
Western Pacific	5,963	6,397	1.35	1.43	83%	86%	9	(9)	0	(0)	—
Total	**18,062**	**24,875**	**0.72**	**1.10**	**63%**	**67%**	**5,185**	**(841)**	**6,227**	**(2,179)**	

*Data reported as of May 24, 1999.
†Two stool specimens, collected 24–48 hours apart within 14 days of onset of paralysis, arriving in the laboratory with ice present.

Poliomyelitis Eradication — Continued

Impact on Polio Incidence

As of May 24, 1999, 6227 polio cases with onset during 1998 were reported worldwide (Table 1). This number exceeds the 5185 cases reported in 1997 by 20%. Poliovirus transmission now is confined largely to the remaining major foci of transmission in southern Asia, western Africa, central Africa, and the Horn of Africa. At the end of 1998, poliovirus was suspected or known to circulate in 50 countries, including seven major reservoir countries (Bangladesh, DR Congo, Ethiopia, India, Nepal, Nigeria, and Pakistan), and eight countries in conflict (Afghanistan, Angola, DR Congo, Liberia, Sierra Leone, Somalia, Sudan, and Tajikistan) (Figure 1). The southern Asia reservoir countries reported ≥80% of all polio cases globally in 1998.

Plans for Acceleration of Polio Eradication

To achieve the goal of global polio eradication by 2000, a plan for accelerating polio eradication strategies has been developed by WHO in collaboration with other polio eradication partners. The most important additional activities are 1) in DR Congo and Angola, conducting three rounds of nationwide house-to-house OPV vaccination campaigns in 1999 and 2000 during July–September; 2) in India, carrying out four rounds of intensified NIDs incorporating extensive house-to-house vaccination (called pulse polio immunization) during October 1999–January 2000 and adding two extra rounds of SNIDs each year; and 3) in Pakistan, Bangladesh, Nigeria, and Ethiopia, in addition to NIDs, conducting two extra rounds of house-to-house SNIDs targeting 25%–50% of the target population.

Reported by: Vaccines and Other Biologicals Dept, World Health Organization, Geneva, Switzerland. Respiratory and Enterovirus Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Vaccine Preventable Disease Eradication Div, National Immunization Program, CDC.

Editorial Note: Three WHO regions have eliminated or are close to eliminating poliovirus—the Region of the Americas has been polio-free since 1991, the Western Pacific Region has not detected poliovirus since March 1997, and poliovirus transmission in the European Region is confined to southeastern Turkey. Reaching the global polio eradication goal will require accelerated activities in the remaining major foci of poliovirus transmission in southern Asia and in Africa.

AFP surveillance is not of sufficient quality, particularly in a number of African countries, to assess accurately the effect of supplementary vaccination or target mopping-up vaccination. Additional resources have been made available to African countries, where intense efforts are now under way to enhance surveillance rapidly. The reporting of AFP cases and isolation of wild poliovirus from Afghanistan, Somalia, and Sudan demonstrate the feasibility of AFP surveillance in war-torn countries.

Poliovirus transmission is most intense in the major global reservoir countries with large populations—Bangladesh, DR Congo, Ethiopia, India, Nigeria, and Pakistan. With the exception of DR Congo, NIDs have reduced substantially poliovirus circulation in the global reservoir countries. Virologic surveillance in both India and Pakistan demonstrated a large decrease in the biodiversity of circulating polioviruses, indicating a continued reduction in the number of independent chains of transmission. However, poliovirus type 2, usually the first serotype eliminated once effective supplementary vaccination begins, was isolated in 1998 in India, Nigeria, and Pakistan, indicating the continued presence of substantial nonimmune population subgroups in these countries.

Poliomyelitis Eradication — Continued

The observed increase in polio cases from 1997 to 1998 is caused primarily by improvements in AFP surveillance, particularly in India. As reporting becomes more complete, a higher percentage of polio cases is identified and reported, although the actual number of cases probably has decreased substantially.

Conflicts in priority countries hinder implementation of polio eradication strategies, particularly vaccination campaigns. Because further delays will endanger reaching the global eradication goal, the polio eradication initiative (PEI) is now focusing much of its resources on key countries in conflict—Afghanistan, Angola, and DR Congo—to assure comprehensive NIDs will be conducted in 1999 and that AFP surveillance systems will be expanded and improved. WHO and the United Nations Children's Fund (UNICEF) have requested that the United Nations assist in negotiating Days of Tranquility for vaccination in DR Congo.

Substantial external resources will be required to implement these activities, especially because the PEI focuses on countries that are least able to bear the additional cost. The plan to accelerate polio eradication activities in priority countries calls for increased house-to-house vaccination, which increases the cost per child vaccinated compared with conventional NIDs. Continued support from the polio partnership (Rotary International; CDC; U.S. Agency for International Development; UNICEF; WHO; and the governments of Japan, the United Kingdom, Denmark, and Germany) will be important. New partners, including the United Nations Foundation and the private sector, probably will enhance support in the near future.

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Cigarette Smoking During the Last 3 Months of Pregnancy Among Women Who Gave Birth to Live Infants — Maine, 1988–1997

Cigarette smoking during pregnancy is associated with adverse birth outcomes (e.g., low birthweight and preterm delivery) (*1*). The adverse effect of smoking on birthweight occurs primarily during the last trimester of pregnancy (*1*). To study smoking prevalence over time among women who gave birth to live infants in Maine, CDC and the Maine Department of Human Services (MDHS) analyzed self-reported data from the Pregnancy Risk Assessment Monitoring System (PRAMS) collected during 1988–1997. This report summarizes the results of this analysis, which indicate that despite the overall decline in smoking prevalence in Maine among women who gave birth to live infants, smoking prevalence remains high during the last 3 months of pregnancy among young women and low-income women, particularly those

Cigarette Smoking During Pregnancy — Continued

participating in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).*

Maine PRAMS surveys a sample of new mothers about pregnancy-related behaviors, including smoking during pregnancy. Each month, a stratified systematic sample of 125 new mothers is selected from recently processed live-born infants' birth certificates. Selected women are mailed a questionnaire 2–6 months postpartum; nonrespondents are mailed up to two additional questionnaires, followed by attempted telephone contact, if necessary.

From 1988 through 1997, the response rate to PRAMS in Maine was approximately 80%. The 10,770 women participating in the survey were representative of 138,668 women in Maine who gave birth to live infants during these years. PRAMS participants were asked whether they smoked during the last 3 months of pregnancy. SUDAAN was used to account for the sample design in estimating prevalence percentages and standard errors (*2*). Data were weighted to adjust for survey design, nonresponse, and sampling frame noncoverage.† To examine trends over time, logistic regression was performed using SUDAAN where the outcome was cigarette smoking during the last 3 months of pregnancy and the predictor variable was infant birth year. Data on smoking prevalence were examined by maternal age (<20 years and ≥20 years) and by WIC participation. Selected demographic characteristics and participation in WIC and Medicaid for 1988 and 1997 were examined to observe changes in the population participating in PRAMS.

The overall smoking prevalence during the last 3 months of pregnancy among women in Maine who gave birth to live infants declined from 30.7% (95% CI=26.3%–35.0%) in 1988 to 20.4% (95% CI=17.7%–23.2%) in 1997 ($p<0.01$). Smoking during the last 3 months of pregnancy among women aged ≥20 years declined from 30.0% (95% CI=25.4%–34.5%) in 1988 to 18.7% (95% CI=15.8%–21.6%) in 1997 ($p<0.01$); no significant change was observed for women aged <20 years, from 37.4% (95% CI=21.3%–53.5%) in 1988 to 37.9% (95% CI=26.9%–49.0%) in 1997 (Figure 1).

Smoking prevalence declined among WIC participants and nonparticipants. Among WIC participants, smoking prevalence declined from 53.1% (95% CI=42.9%–63.3%) in 1988 to 34.4% (95% CI=28.9%–39.8%) in 1997; among nonparticipants, smoking declined from 23.9% (95% CI=19.3%–28.5%) in 1988 to 12.6% (95% CI=9.8%–15.3%) in 1997 (Figure 2).

To examine demographic changes among women participating in PRAMS, selected population and program participation characteristics for 1988 and 1997 were analyzed. PRAMS participants who gave birth to live infants in 1997 were older and more educated than were participants in 1988. They also were more likely to have entered prenatal care during the first trimester, to have enrolled in Medicaid and/or WIC, and to have received advice about smoking from a health-care provider (Table 1).

Reported by: Office of Data, Research, and Vital Statistics, Bur of Health, Maine Dept of Human Svcs. Program Svcs and Development Br, Div of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

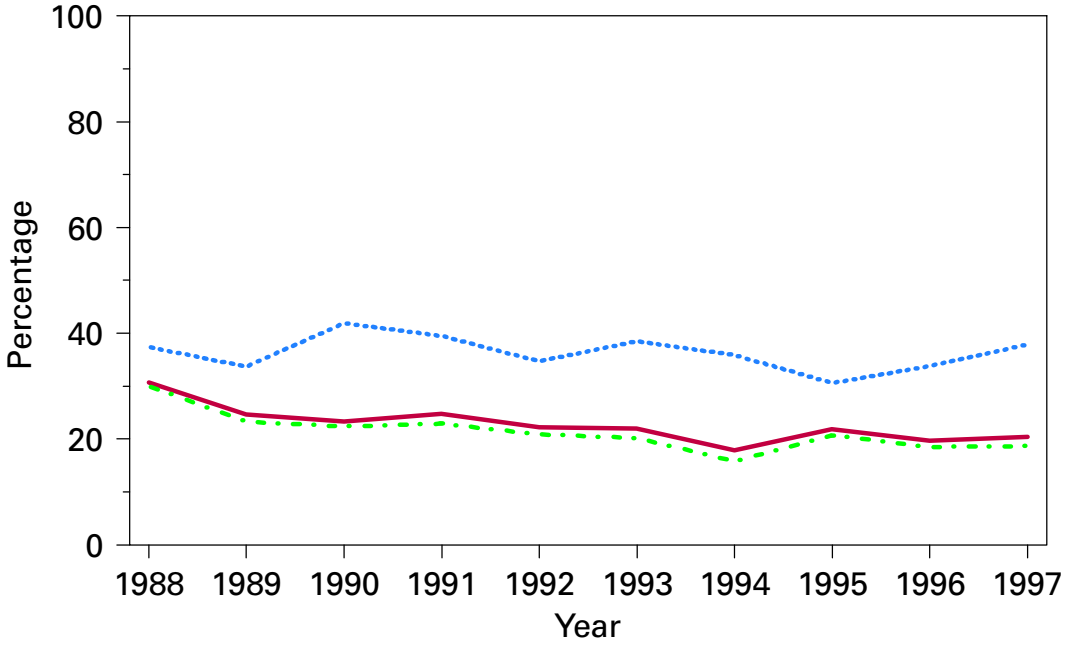
Editorial Note: The findings in this report indicate that during 1988–1997 smoking prevalence during the last 3 months of pregnancy decreased among women who

*WIC provides prenatal nutrition and health education services to low-income pregnant women.

†Noncoverage adjustment is performed to bring the totals estimated from sampled data in line with known population totals. The magnitude of the noncoverage is small, from 1% to 2% in Maine.

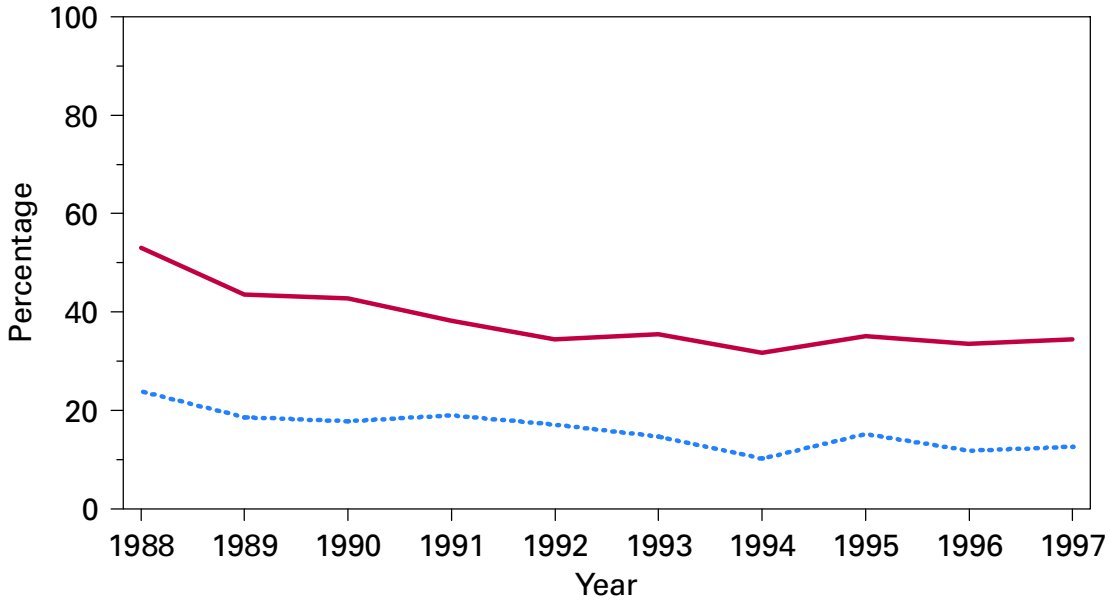
Cigarette Smoking During Pregnancy — Continued

FIGURE 1. Percentage of women who smoked during the last 3 months of pregnancy and gave birth to live infants, by age group and infant birth year — Maine, Pregnancy Risk Assessment Monitoring System, 1988–1997*



*Data for 1988 are for June–December.

FIGURE 2. Percentage of women who smoked during the last 3 months of pregnancy and gave birth to live infants, by WIC* participation and infant birth year — Maine, Pregnancy Risk Assessment Monitoring System, 1988–1997†



*Special Supplemental Nutrition Program for Women, Infants, and Children.
†Data for 1988 are for June–December.

Cigarette Smoking During Pregnancy — Continued

TABLE 1. Demographic characteristics of women who gave birth to live infants — Maine, 1988 and 1997

Characteristic	1988 (n=704) %*	1988 (n=704) (95% CI†)	1997 (n=1187) %	1997 (n=1187) (95% CI)
Parity				
0	41.1	(36.4%–45.7%)	43.3	(40.1%–46.5%)
1	35.8	(31.2%–40.3%)	35.5	(32.4%–38.7%)
2	18.0	(14.4%–21.6%)	16.3	(13.8%–18.7%)
≥3	5.2	(3.0%– 7.2%)	4.9	(3.5%– 6.2%)
Age (yrs)				
<20	9.1	(6.3%–11.9%)	9.1	(7.1%–11.1%)
20–24	32.3	(27.9%–36.8%)	21.5	(18.8%–24.2%)
25–29	32.7	(28.2%–37.2%)	32.9	(29.9%–35.9%)
30–34	18.9	(15.3%–22.5%)	23.3	(20.5%–25.9%)
≥35	7.0	(4.6%– 9.4%)	13.3	(11.1%–15.4%)
Married	82.2	(78.4%–86.0%)	71.1	(68.0%–74.2%)
Education				
Less than high school	12.3	(8.9%–15.7%)	9.6	(7.6%–11.6%)
High school	50.8	(46.1%–55.5%)	38.1	(34.8%–41.3%)
More than high school	36.9	(32.3%–41.4%)	52.3	(49.0%–55.6%)
Entered prenatal care				
First trimester	71.1	(66.8%–75.4%)	83.5	(81.0%–86.0%)
Later or no care	28.8	(24.5%–33.1%)	16.5	(14.0%–19.0%)
Enrolled in Medicaid	20.5	(16.6%–24.4%)	33.9	(30.7%–37.0%)
Enrolled in WIC§	22.9	(18.9%–27.0%)	36.4	(33.2%–39.6%)
Received smoking advice¶	74.1	(69.9%–78.2%)	82.0	(79.5%–84.5%)
Smoked during the last 3 months of pregnancy	30.7	(26.3%–35.0%)	20.4	(17.7%–23.2%)

*Data for 1988 were collected for June–December.
†Confidence interval.
§Special Supplemental Nutrition Program for Women, Infants, and Children.
¶During the 10-year period, questionnaire wording changed to ascertain information about smoking advice received from a health-care provider. The 1988–1995 questionnaire asked "Did a doctor or nurse talk with you about how smoking during pregnancy could affect your baby?" The 1995–1997 questionnaire asked "During any of your prenatal care visits, did a doctor, nurse, or other health-care worker talk with you about any of the things listed below?" The second item was "How smoking during pregnancy could affect your baby?"

gave birth to live infants in Maine. Consistent with these findings, the Maine Behavioral Risk Factor Surveillance System indicated that smoking prevalence among reproductive-aged women (18–44 years) declined from 34% in 1988 to 24% in 1997 (*3*; M. Henson, MDHS, personal communication, 1999). Among women aged <20 years participating in PRAMS, more than one third reported smoking during the last 3 months of pregnancy throughout this period.

Among WIC participants who gave birth to live infants, smoking prevalence during the last 3 months of pregnancy remained high. Because WIC is a prenatal nutrition and

Cigarette Smoking During Pregnancy — Continued

health education program serving low-income women and children, WIC provides opportunities for intervention and follow-up of women who are pregnant and smoke.

Declines in smoking prevalences observed in this survey may be attributed to statewide tobacco prevention and control efforts, changes in the programs serving pregnant women, demographic and societal changes, or a combination of these factors. Project ASSIST (American Stop Smoking Intervention Study for Cancer Prevention), which began in 1991, has built a geographically and programmatically diverse network of activities that focus on tobacco-use prevention in Maine (*4*). Beginning in 1993, MDHS sponsored a smoking cessation project for pregnant women. Shifts in demographic and social characteristics also occurred among women participating in PRAMS. Women who have more education were less likely to report smoking during pregnancy (*5*), and other factors (e.g., early prenatal care and increased access to health-care services) may have contributed to declines in smoking during pregnancy.

The findings in this report are subject to at least two limitations. First, data are self-reported and can be subject to recall bias. Second, although smoking during the last 3 months of pregnancy was analyzed, smoking behaviors may have changed during pregnancy.

These trends indicate that Maine programs targeting tobacco prevention and control may have reduced smoking. Targeted and appropriate efforts for young, low-income, and less educated women are needed to increase smoking cessation in these populations, and WIC programs may be one channel to accomplish this goal. Comprehensive tobacco prevention and control programs in other states have shown a decline in smoking after the campaigns were implemented (*6–8*). MDHS Partnership for a Tobacco Free Maine will design approaches to prevent young persons from starting to smoke, to protect citizens from environmental tobacco smoke, and to promote smoking cessation among adults. These activities might reduce smoking not only among adults in Maine but particularly among pregnant women, thereby reducing the adverse effects of smoking on mothers and infants.

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Laboratory Practices for Prenatal Group B Streptococcal Screening and Reporting — Connecticut, Georgia, and Minnesota, 1997–1998

Group B *Streptococcus* (GBS) is a leading cause of neonatal sepsis in the United States (*1*). CDC, in collaboration with the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics, recommends that laboratories adopt optimal screening practices* to identify GBS and to promptly report test results so that GBS-colonized pregnant women can receive antibiotics during labor (*1–7*). To assess GBS screening practices in clinical laboratories, state health departments surveyed laboratories in Connecticut, Georgia, and Minnesota, participants in the Emerging Infections Program. The survey found that the practices of some participating laboratories were suboptimal, particularly in their lack of use of selective broth media for culture of GBS.

During May 1997–February 1998, surveys were mailed to all microbiology laboratories in Connecticut (46) and Minnesota (153), and to all 59 laboratories in the 20-county metropolitan area of Atlanta, Georgia. The survey asked about the anatomical source of specimens, media used for culture, and methods of reporting GBS test results to health-care providers. Responses to the survey were received from 46 (100%) laboratories in Connecticut, 148 (97%) in Minnesota, and 52 (88%) in Georgia. Responses were analyzed from laboratories that processed GBS specimens (39 [85%] in Connecticut, 38 [73%] in Georgia, and 101 [68%] in Minnesota).

Selective broth media were used in 24 (62%) laboratories in Connecticut, 15 (39%) in Georgia, and 42 (42%) in Minnesota (Table 1). Some laboratories (4%–14% in each state) used antigen detection kits for detecting GBS directly from clinical specimens without culture back-up. Providers were notified when an inappropriate (other than vaginal/rectal) specimen was received in 20 (51%) laboratories in Connecticut and one (3%) in Georgia. In Minnesota, 17 (17%) laboratories informed providers that the specimen was inappropriate when a cervical specimen was submitted. In Connecticut, if specimens were not labeled for a GBS screen, 18 (51%) laboratories processed the specimens without specific steps for GBS identification, 13 (37%) processed specifically for GBS, and four (11%) processed specimens based on anatomical site. In 1998 in Georgia, 19 (58%) of 33 laboratories did not process for GBS when they received genital specimens without specific labeling for GBS. Laboratories used a variety of methods to report test results to health-care providers (Table 1).

During March–May 1998, each of the three state health departments provided the participating laboratories with survey results and recommendations designed to optimize identification of pregnant women colonized with GBS. Follow-up data indicated that in Connecticut, the use of selective broth media increased from 62% to 92%; in Georgia, it increased from 39% to 67%. Minnesota data were not available for this report.

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* Optimal detection of GBS depends on culture of combined vaginal/rectal swabs collected from women at 35 to 37 weeks' gestation and the use of selective broth media (Todd-Hewitt broth with either colistin and nalidixic acid or gentamicin and nalidixic acid). Prenatal screening is one of two strategies recommended for perinatal GBS disease prevention; the alternative is risk-based and identifies candidates for intrapartum antimicrobial prophylaxis based on risk factors present during labor (i.e., gestation at <37 weeks, duration of rupture of membranes ≥18 hours, and maternal fever) (*1*).

Group B Streptococcal Disease — Continued

TABLE 1. Microbiology laboratory practices for group B streptococcal specimen processing and feedback — Connecticut, Georgia, and Minnesota, 1997–1998

	Connecticut (n=39)		Georgia (n=38*)		Minnesota (n=101)	
Practice	**No.**	**(%)**	**No.**	**(%)**	**No.**	**(%)**
Receive combined vaginal/rectal specimens	27	(69)	18	(47)	55	(54)
Use selective broth media	24	(62)	15	(39)	42	(42)
Use antigen kits without culture backup	4	(10)	5	(14)	4	(4)
Method of reporting laboratory results to the provider†						
Electronic	29	(74)	30	(79)	40	(40)
Courier	26	(67)	13	(34)	57	(56)
Telephone	23	(59)	21	(55)	45	(45)
Fax	23	(59)	19	(50)	36	(36)
Mail	10	(26)	8	(21)	7	(7)
Other	2	(5)	4	(11)	26	(26)

*Denominator varied because of missing responses.
†More than one method could be used.

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Editorial Note: To prevent perinatal GBS disease, screening relies on cultures of vaginal/rectal swabs collected from women at 35 to 37 weeks' gestation followed by intrapartum antimicrobial prophylaxis if the culture is positive (*1*). When optimally executed, screening can decrease early-onset neonatal GBS disease by 78% (*8*). Geographic areas with a higher proportion of hospitals with neonatal GBS prevention policies have lower incidence rates of early-onset GBS disease than areas with fewer hospitals with these policies (*9*). However, screening requires appropriate and accurate specimen collection, labeling, and use of culture media, and effective reporting of results to the health-care providers present at the time of delivery.

Laboratories have a role to play at each step of the GBS screening process. First, specimens should be combined vaginal/rectal swabs. Because vaginal/rectal swabs improve GBS isolation rates by 40% over vaginal specimens alone (*2,3*), and cervical cultures yield 40% fewer positive cultures than do single vaginal swabs (*4*), laboratories that receive cervical or vaginal specimens should alert providers that vaginal/rectal specimens are recommended for GBS detection. Second, specimens must be clearly and correctly labeled to avoid inappropriate and potentially costly mistakes in culture methods. Third, laboratories must use an appropriate culture technique. Use of selective broth media can increase GBS isolation by 50% over nonselective media (*5–7*); of the laboratories surveyed, 38%–61% were not using selective broth media,

Group B Streptococcal Disease — Continued

and 4%–14% continued to use an antigen testing method without culture back-up even though this method has poor sensitivity (*10*). However, follow-up data from Connecticut and Georgia showed the feasibility for laboratories to switch to selective broth use. Fourth, culture results must be available to labor and delivery providers. From 40% to 79% of laboratories use electronic methods to report GBS test results to providers. Computerized methods of communicating culture results allow continuous, convenient access by multiple providers for individual patients.

The findings in this report are subject to at least two limitations. First, because the survey included only three states, the results might not be applicable to other states. Second, although the respondents provided direct information about laboratory practices, the survey could provide only indirect information on physician practices. Connecticut and Minnesota health departments are conducting studies of health-care provider GBS prevention practices.

Appropriate laboratory practices and cooperation among health-care providers, laboratories, and labor and delivery facilities are integral to effective perinatal GBS disease prevention. An example of a report sent to laboratories in this survey and results and recommendations are available on the World-Wide Web at http://www.health.state.mn.us/divs/dpc/ades/invasive.html† and from CDC. Copies of GBS prevention guidelines and other information for health-care providers and pregnant women are available at http://www.cdc.gov/ncidod/dbmd/gbs or from CDC's Respiratory Diseases Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, Mailstop C-23, 1600 Clifton Road, N.E., Atlanta, GA 30333.

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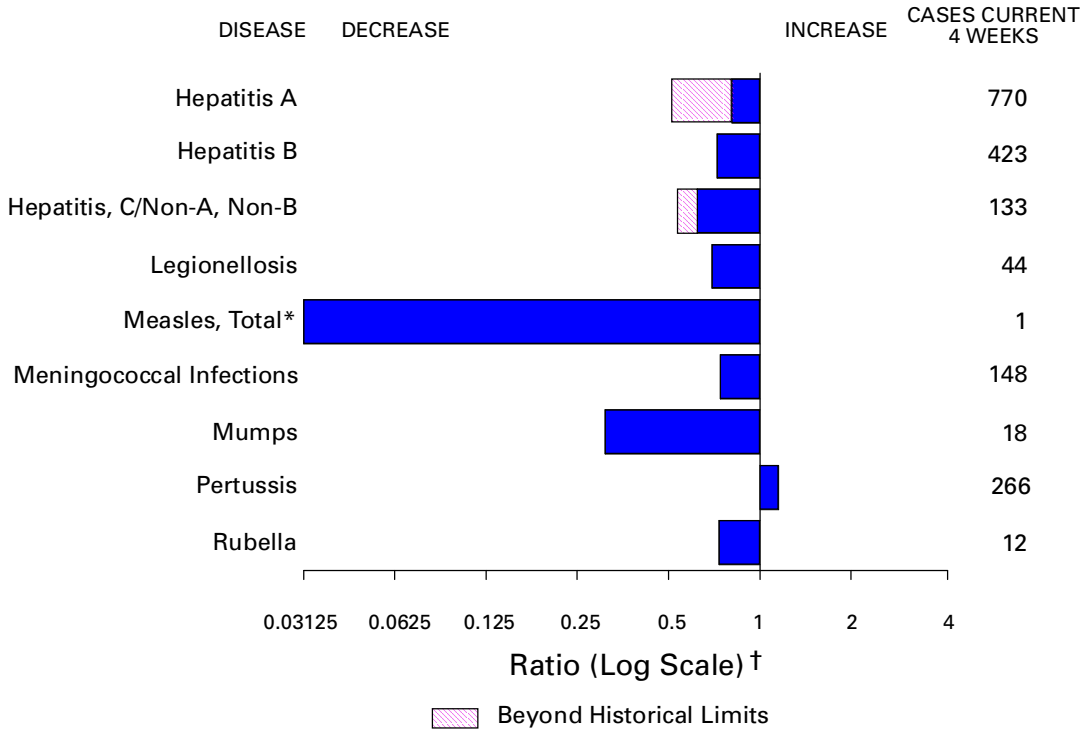
†References to sites of nonfederal organizations on the World-Wide Web are provided solely as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending May 22, 1999, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline. (Ratio [log scale] for week 20 measles [total] is 0.024233.)

† 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 May 22, 1999 (20th Week)

	Cum. 1999		Cum. 1999
Anthrax	-	Plague	-
Brucellosis	15	Poliomyelitis, paralytic	-
Cholera	-	Psittacosis	12
Congenital rubella syndrome	2	Rabies, human	-
Cryptosporidiosis*	446	Rocky Mountain spotted fever (RMSF)	62
Diphtheria	-	Streptococcal disease, invasive Group A	893
Encephalitis: California*	2	Streptococcal toxic-shock syndrome*	19
eastern equine*	-	Syphilis, congenital¶	47
St. Louis*	-	Tetanus	7
western equine*	1	Toxic-shock syndrome	43
Hansen Disease	32	Trichinosis	6
Hantavirus pulmonary syndrome*†	7	Typhoid fever	100
Hemolytic uremic syndrome, post-diarrheal*	8	Yellow fever	-
HIV infection, pediatric*§	57		

-: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 April 25, 1999.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending May 22, 1999, and May 23, 1998 (20th 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	14,890	18,103	210,132	220,229	468	240	112,332	127,423	969	1,718
NEW ENGLAND	779	607	7,295	7,959	72	57	2,272	2,168	68	34
Maine	15	10	193	357	4	-	15	12	1	-
N.H.	23	12	349	373	6	7	23	34	-	-
Vt.	5	10	189	146	8	1	22	11	2	2
Mass.	500	271	3,330	3,271	32	29	967	781	62	31
R.I.	52	60	892	964	4	3	228	139	3	1
Conn.	184	244	2,342	2,848	18	17	1,017	1,191	-	-
MID. ATLANTIC	3,612	5,198	27,664	26,948	31	3	14,893	14,748	64	154
Upstate N.Y.	406	710	N	N	28	-	2,293	2,488	41	125
N.Y. City	1,894	2,919	14,560	13,996	-	2	6,115	5,899	-	-
N.J.	765	960	3,626	4,450	3	1	1,919	2,653	-	-
Pa.	547	609	9,478	8,502	N	-	4,566	3,708	23	29
E.N. CENTRAL	1,105	1,370	30,697	33,634	75	38	20,308	24,586	251	208
Ohio	183	267	8,765	10,273	33	8	5,232	6,189	-	5
Ind.	147	291	U	U	5	8	726	2,408	-	4
Ill.	505	488	10,838	9,811	19	7	7,676	7,695	8	23
Mich.	215	251	8,495	8,372	18	9	5,739	6,227	243	176
Wis.	55	73	2,599	5,178	N	6	935	2,067	-	-
W.N. CENTRAL	285	334	7,553	13,278	91	34	2,527	6,278	47	10
Minn.	44	55	2,456	2,736	30	21	925	935	2	-
Iowa	35	14	1,108	1,642	9	2	246	505	-	4
Mo.	102	174	U	4,606	9	7	-	3,378	42	4
N. Dak.	4	4	325	391	3	-	31	33	-	-
S. Dak.	12	8	653	614	3	4	63	101	-	-
Nebr.	26	31	1,153	1,132	30	-	519	434	-	2
Kans.	62	48	1,858	2,157	7	-	743	892	3	-
S. ATLANTIC	4,155	4,550	47,170	41,799	56	27	33,611	33,909	102	41
Del.	50	44	1,104	992	2	-	661	522	-	-
Md.	467	570	3,118	3,217	4	-	2,704	3,544	24	3
D.C.	160	359	N	N	-	-	1,006	1,365	-	-
Va.	231	286	4,912	3,500	16	8	3,351	2,346	8	1
W. Va.	24	41	827	941	1	1	230	329	11	3
N.C.	269	332	8,906	8,751	10	6	7,599	7,367	21	10
S.C.	402	275	7,547	7,320	6	3	4,087	4,725	12	-
Ga.	583	505	11,783	9,493	4	-	7,602	7,726	1	9
Fla.	1,969	2,138	8,973	7,585	13	9	6,371	5,985	25	15
E.S. CENTRAL	634	692	15,563	15,043	33	11	12,452	14,287	104	52
Ky.	104	101	2,634	2,328	11	-	1,185	1,298	6	9
Tenn.	286	221	5,460	4,904	12	7	4,210	4,133	38	40
Ala.	112	232	3,811	3,762	7	3	3,648	4,892	1	3
Miss.	132	138	3,658	4,049	3	1	3,409	3,964	59	-
W.S. CENTRAL	1,553	2,447	29,664	32,888	17	10	16,639	19,465	105	352
Ark.	56	81	2,199	1,366	5	2	1,031	1,529	2	3
La.	162	395	6,498	4,859	3	3	5,142	4,169	88	2
Okla.	46	134	3,265	4,033	4	5	1,649	2,168	2	1
Tex.	1,289	1,837	17,702	22,630	5	-	8,817	11,599	13	346
MOUNTAIN	545	699	12,318	11,886	38	19	3,403	3,207	62	205
Mont.	4	13	512	415	3	-	17	21	4	4
Idaho	8	14	501	715	1	2	26	63	4	77
Wyo.	3	1	305	268	2	3	11	11	20	48
Colo.	103	126	2,713	3,004	14	5	803	894	12	10
N. Mex.	21	111	1,499	1,455	2	1	264	286	4	36
Ariz.	274	282	4,993	4,108	9	4	1,832	1,493	14	2
Utah	54	51	747	878	6	2	75	85	2	14
Nev.	78	101	1,048	1,043	1	2	375	354	2	14
PACIFIC	2,222	2,206	32,208	36,794	55	41	6,227	8,775	166	662
Wash.	117	162	4,660	4,316	13	16	828	724	5	9
Oreg.	50	64	2,171	1,903	16	12	302	262	6	10
Calif.	2,016	1,928	23,797	28,921	26	12	4,857	7,473	155	589
Alaska	6	11	744	767	-	-	131	136	-	1
Hawaii	33	41	836	887	-	1	109	180	-	53
Guam	1	-	-	145	N	-	-	14	-	-
P.R.	493	806	U	U	5	U	124	152	-	-
V.I.	13	15	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	-	14	-	-

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 April 25, 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 May 22, 1999, and May 23, 1998 (20th 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	351	449	1,640	1,725	384	436	2,286	2,695	2,018	3,118	1,988
NEW ENGLAND	23	22	281	432	15	18	26	29	123	155	322
Maine	3	1	-	4	1	-	-	1	6	3	60
N.H.	2	2	-	7	-	3	-	1	-	2	17
Vt.	3	1	-	2	1	-	1	2	-	1	53
Mass.	7	8	135	101	5	13	16	20	59	85	65
R.I.	2	4	16	25	-	2	1	-	16	17	40
Conn.	6	6	130	293	8	-	8	5	42	47	87
MID. ATLANTIC	82	98	1,007	1,050	96	125	101	107	709	802	396
Upstate N.Y.	25	25	397	499	30	28	14	12	104	107	269
N.Y. City	5	22	5	29	30	66	44	21	453	491	U
N.J.	5	4	118	142	24	17	11	39	152	204	71
Pa.	47	47	487	380	12	14	32	35	U	U	56
E.N. CENTRAL	73	167	31	28	37	42	389	389	130	160	27
Ohio	29	57	24	17	8	2	35	66	U	U	8
Ind.	5	37	5	4	4	1	32	71	U	U	-
Ill.	10	21	1	2	14	19	248	149	U	U	-
Mich.	27	24	1	5	9	17	70	72	96	120	17
Wis.	2	28	U	U	2	3	4	31	34	40	2
W.N. CENTRAL	20	25	17	16	15	23	16	67	171	142	219
Minn.	1	3	8	3	2	8	5	5	75	47	39
Iowa	12	4	2	8	5	3	4	-	14	2	46
Mo.	6	8	-	3	7	9	-	49	62	60	8
N. Dak.	-	-	1	-	-	1	-	-	1	3	60
S. Dak.	1	-	-	-	-	-	-	1	3	9	25
Nebr.	-	8	-	-	-	-	4	4	6	4	1
Kans.	-	2	6	2	1	2	3	8	10	17	40
S. ATLANTIC	41	47	188	141	109	95	777	1,077	374	545	747
Del.	2	6	3	3	-	1	2	12	-	8	3
Md.	4	9	135	114	31	33	165	293	U	U	157
D.C.	-	3	1	4	9	7	14	31	17	43	-
Va.	9	4	10	6	19	15	56	72	83	89	188
W. Va.	N	N	4	4	1	-	2	2	19	21	45
N.C.	7	6	25	3	9	8	207	306	152	279	164
S.C.	6	4	2	1	-	3	104	130	103	105	56
Ga.	-	-	-	2	7	13	122	114	U	U	61
Fla.	13	14	8	4	33	15	105	117	U	U	73
E.S. CENTRAL	52	21	40	17	8	12	449	456	176	236	102
Ky.	44	11	16	3	2	1	43	46	U	U	19
Tenn.	6	4	12	7	4	6	238	225	U	U	34
Ala.	2	2	6	7	2	3	115	101	120	142	49
Miss.	-	4	6	-	-	2	53	84	56	94	-
W.S. CENTRAL	1	10	2	7	8	12	351	339	100	808	38
Ark.	-	-	-	4	-	1	27	51	56	41	-
La.	1	-	-	-	6	4	94	107	U	U	-
Okla.	-	4	2	-	1	1	89	20	44	46	38
Tex.	-	6	-	3	1	6	141	161	-	721	-
MOUNTAIN	23	26	5	1	18	23	72	91	59	92	71
Mont.	-	1	-	-	2	-	-	-	5	12	25
Idaho	-	-	1	-	1	2	-	-	-	4	-
Wyo.	-	1	1	-	-	-	-	-	1	2	26
Colo.	4	4	-	-	7	6	1	4	U	U	1
N. Mex.	1	2	1	-	2	6	-	10	22	24	-
Ariz.	3	5	-	-	5	4	68	69	U	U	19
Utah	9	11	1	-	-	1	1	3	16	21	-
Nev.	6	2	1	1	1	4	2	5	15	29	-
PACIFIC	36	33	69	33	78	86	105	140	176	178	66
Wash.	7	3	1	1	5	6	28	7	90	95	-
Oreg.	1	-	1	5	9	9	1	1	U	U	1
Calif.	27	30	67	27	59	70	73	132	U	U	60
Alaska	1	-	-	-	-	-	1	-	25	17	5
Hawaii	-	-	-	-	5	1	2	-	61	66	-
Guam	-	1	-	-	-	1	-	-	-	37	-
P.R.	-	-	-	-	-	-	78	89	41	46	29
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.	-	-	-	-	-	-	-	98	-	54	-

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 May 22, 1999, and May 23, 1998 (20th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1999*	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	1999	Cum. 1999	1999	Cum. 1999	Cum. 1999	Cum. 1998
UNITED STATES	468	473	6,119	8,769	2,304	3,329	-	21	-	11	32	24
NEW ENGLAND	34	32	69	123	35	57	-	1	-	2	3	1
Maine	4	2	2	12	-	-	-	-	-	-	-	-
N.H.	6	1	7	6	4	7	U	-	U	1	1	-
Vt.	4	2	3	8	1	2	-	-	-	-	-	-
Mass.	14	25	19	39	18	28	U	-	U	-	-	1
R.I.	-	2	9	8	12	9	-	-	-	-	-	-
Conn.	6	-	29	50	-	11	-	1	-	1	2	-
MID. ATLANTIC	57	68	378	625	290	494	-	-	-	2	2	9
Upstate N.Y.	33	24	96	128	79	116	-	-	-	2	2	-
N.Y. City	7	17	62	223	61	146	-	-	-	-	-	-
N.J.	17	25	42	114	33	86	U	-	U	-	-	8
Pa.	-	2	178	160	117	146	-	-	-	-	-	1
E.N. CENTRAL	53	72	1,255	1,237	196	644	-	-	-	-	-	4
Ohio	25	29	319	134	41	27	-	-	-	-	-	-
Ind.	1	14	29	119	4	300	-	-	-	-	-	3
Ill.	20	27	181	307	-	101	-	-	-	-	-	-
Mich.	7	-	700	576	150	176	-	-	-	-	-	1
Wis.	-	2	26	101	1	40	-	-	-	-	-	-
W.N. CENTRAL	39	31	286	693	126	148	-	-	-	-	-	-
Minn.	12	17	25	28	16	11	-	-	-	-	-	-
Iowa	10	1	65	322	23	19	-	-	-	-	-	-
Mo.	11	8	156	279	71	99	-	-	-	-	-	-
N. Dak.	-	-	1	2	-	2	-	-	-	-	-	-
S. Dak.	1	-	8	8	-	1	-	-	-	-	-	-
Nebr.	3	-	16	9	7	6	-	-	-	-	-	-
Kans.	2	5	15	45	9	10	-	-	-	-	-	-
S. ATLANTIC	116	87	710	579	451	305	-	1	-	3	4	6
Del.	-	-	1	3	-	-	-	-	-	-	-	1
Md.	30	27	132	144	70	68	-	-	-	-	-	1
D.C.	3	-	30	25	10	6	-	-	-	-	-	-
Va.	10	11	54	110	39	40	-	1	-	2	3	2
W. Va.	2	3	7	1	11	3	-	-	-	-	-	-
N.C.	20	12	51	41	93	81	-	-	-	-	-	-
S.C.	2	3	11	12	36	-	-	-	-	-	-	-
Ga.	23	19	181	125	51	58	-	-	-	-	-	1
Fla.	26	12	243	118	141	49	-	-	-	1	1	1
E.S. CENTRAL	39	29	196	179	194	165	-	-	-	-	-	-
Ky.	6	5	31	10	22	19	-	-	-	-	-	-
Tenn.	20	17	98	107	86	117	-	-	-	-	-	-
Ala.	11	6	32	36	42	29	-	-	-	-	-	-
Miss.	2	1	35	26	44	-	-	-	-	-	-	-
W.S. CENTRAL	30	26	1,123	1,605	187	482	-	1	-	2	3	-
Ark.	1	-	18	23	20	31	-	-	-	-	-	-
La.	7	12	46	13	57	11	-	-	-	-	-	-
Okla.	20	12	194	230	40	25	-	-	-	-	-	-
Tex.	2	2	865	1,339	70	415	-	1	-	2	3	-
MOUNTAIN	52	71	641	1,354	245	326	-	-	-	-	-	-
Mont.	1	-	12	30	15	3	-	-	-	-	-	-
Idaho	1	-	24	90	12	15	-	-	-	-	-	-
Wyo.	1	-	3	21	3	2	-	-	-	-	-	-
Colo.	6	12	108	102	38	42	-	-	-	-	-	-
N. Mex.	10	3	20	73	85	120	-	-	-	-	-	-
Ariz.	28	36	400	848	53	82	-	-	-	-	-	-
Utah	4	3	24	89	14	28	-	-	-	-	-	-
Nev.	1	17	50	101	25	34	-	-	-	-	-	-
PACIFIC	48	57	1,461	2,374	580	708	-	18	-	2	20	4
Wash.	1	3	102	379	21	48	-	-	-	-	-	1
Oreg.	18	27	112	176	40	73	-	8	-	-	8	-
Calif.	24	24	1,239	1,781	507	574	-	10	-	2	12	3
Alaska	4	1	3	12	7	7	-	-	-	-	-	-
Hawaii	1	2	5	26	5	6	-	-	-	-	-	-
Guam	-	-	-	-	-	1	U	-	U	-	-	-
P.R.	1	2	63	19	60	230	-	-	-	-	-	-
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.	-	-	-	1	-	28	U	-	U	-	-	-

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

*Of 96 cases among children aged <5 years, serotype was reported for 39 and of those, 5 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 May 22, 1999, and May 23, 1998 (20th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998
UNITED STATES	1,033	1,254	2	137	351	84	1,988	1,696	2	34	224
NEW ENGLAND	46	63	-	1	-	-	150	317	-	3	34
Maine	4	4	-	-	-	-	-	5	-	-	-
N.H.	-	4	U	1	-	U	32	21	U	-	-
Vt.	4	1	-	-	-	-	10	30	-	-	-
Mass.	30	28	U	-	-	U	97	255	U	3	7
R.I.	2	3	-	-	-	-	3	-	-	-	-
Conn.	6	23	-	-	-	-	8	6	-	-	27
MID. ATLANTIC	91	125	-	18	162	30	497	207	2	8	99
Upstate N.Y.	23	30	-	3	3	30	448	101	2	5	89
N.Y. City	24	14	-	3	153	-	10	11	-	-	6
N.J.	17	34	U	-	2	U	-	8	U	-	4
Pa.	27	47	-	12	4	-	39	87	-	3	-
E.N. CENTRAL	146	194	-	15	39	11	148	181	-	-	-
Ohio	75	68	-	6	16	1	95	61	-	-	-
Ind.	7	26	-	-	3	-	2	46	-	-	-
Ill.	43	58	-	3	6	10	33	13	-	-	-
Mich.	20	22	-	6	14	-	18	23	-	-	-
Wis.	1	20	-	-	-	-	-	38	-	-	-
W.N. CENTRAL	121	104	-	5	19	-	44	130	-	2	11
Minn.	26	16	-	1	10	-	18	76	-	-	-
Iowa	29	14	-	3	6	-	13	29	-	2	-
Mo.	43	45	-	1	2	-	10	9	-	-	2
N. Dak.	3	-	-	-	1	-	-	-	-	-	-
S. Dak.	5	6	-	-	-	-	2	4	-	-	-
Nebr.	4	4	-	-	-	-	1	5	-	-	-
Kans.	11	19	-	-	-	-	-	7	-	-	9
S. ATLANTIC	186	185	1	30	25	4	113	99	-	2	4
Del.	3	1	-	-	-	-	-	-	-	-	-
Md.	27	20	-	3	-	-	33	20	-	1	-
D.C.	1	-	-	2	-	-	-	1	-	-	-
Va.	22	20	-	8	4	-	13	6	-	-	-
W. Va.	3	5	-	-	-	-	1	1	-	-	-
N.C.	22	27	-	5	7	1	26	42	-	1	3
S.C.	22	28	1	3	4	-	8	12	-	-	-
Ga.	29	38	-	-	1	3	12	1	-	-	-
Fla.	57	46	-	9	9	-	20	16	-	-	1
E.S. CENTRAL	88	95	-	1	4	3	38	47	-	1	-
Ky.	24	15	-	-	-	-	3	18	-	-	-
Tenn.	29	35	-	-	-	2	24	14	-	-	-
Ala.	18	29	-	1	1	-	7	13	-	1	-
Miss.	17	16	-	-	3	1	4	2	-	-	-
W.S. CENTRAL	68	146	-	17	26	-	52	99	-	5	58
Ark.	17	18	-	-	-	-	4	13	-	-	-
La.	31	25	-	2	2	-	3	-	-	-	-
Okla.	14	23	-	1	-	-	7	13	-	-	-
Tex.	6	80	-	14	24	-	38	73	-	5	58
MOUNTAIN	79	75	1	9	18	12	208	329	-	11	5
Mont.	1	2	-	-	-	-	1	1	-	-	-
Idaho	8	3	-	-	1	1	87	116	-	-	-
Wyo.	3	3	-	-	1	-	2	7	-	-	-
Colo.	20	17	-	3	1	5	47	75	-	-	-
N. Mex.	10	11	N	N	N	3	18	56	-	-	1
Ariz.	27	27	-	-	4	2	24	47	-	10	1
Utah	5	8	1	5	3	1	27	14	-	-	2
Nev.	5	4	-	1	8	-	2	13	-	1	1
PACIFIC	208	267	-	41	58	24	738	287	-	2	13
Wash.	28	28	-	1	5	22	437	113	-	-	9
Oreg.	38	46	N	N	N	1	12	20	-	-	-
Calif.	134	188	-	34	38	1	281	150	-	2	2
Alaska	4	1	-	1	2	-	3	-	-	-	-
Hawaii	4	4	-	5	13	-	5	4	-	-	2
Guam	-	1	U	-	2	U	-	-	U	-	-
P.R.	2	4	-	-	1	1	6	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 May 22, 1999 (20th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	549	404	100	28	5	12	40
Boston, Mass.	144	105	28	4	1	6	8
Bridgeport, Conn.	40	28	9	2	1	-	2
Cambridge, Mass.	13	11	1	1	-	-	1
Fall River, Mass.	15	13	1	-	-	1	1
Hartford, Conn.	51	40	7	3	1	-	3
Lowell, Mass.	19	14	2	3	-	-	2
Lynn, Mass.	13	8	2	3	-	-	1
New Bedford, Mass.	22	19	2	1	-	-	3
New Haven, Conn.	32	21	4	3	1	3	3
Providence, R.I.	52	36	13	1	1	1	1
Somerville, Mass.	8	6	2	-	-	-	2
Springfield, Mass.	41	30	8	2	-	1	7
Waterbury, Conn.	40	31	8	1	-	-	1
Worcester, Mass.	59	42	13	4	-	-	5
MID. ATLANTIC	2,341	1,605	469	167	61	39	76
Albany, N.Y.	41	29	7	4	1	-	5
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	81	52	17	2	8	2	2
Camden, N.J.	27	18	6	2	-	1	-
Elizabeth, N.J.	U	U	U	U	U	U	U
Erie, Pa.	42	32	10	-	-	-	2
Jersey City, N.J.	42	21	14	5	-	2	-
New York City, N.Y.	1,161	780	254	91	21	15	21
Newark, N.J.	68	39	13	11	1	4	1
Paterson, N.J.	17	6	5	5	1	-	-
Philadelphia, Pa.	399	272	77	22	20	8	22
Pittsburgh, Pa.§	95	68	18	6	1	2	3
Reading, Pa.	25	17	3	4	1	-	-
Rochester, N.Y.	144	118	16	8	1	1	10
Schenectady, N.Y.	21	17	2	1	1	-	2
Scranton, Pa.	47	36	9	-	-	2	2
Syracuse, N.Y.	92	68	15	5	3	1	6
Trenton, N.J.	29	23	2	1	2	1	-
Utica, N.Y.	10	9	1	-	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,015	1,387	377	131	47	71	121
Akron, Ohio	53	41	6	5	-	1	-
Canton, Ohio	39	25	10	2	2	-	3
Chicago, Ill.	403	245	86	45	13	12	31
Cincinnati, Ohio	100	74	17	-	2	7	10
Cleveland, Ohio	127	89	23	7	2	6	2
Columbus, Ohio	188	127	34	14	4	9	16
Dayton, Ohio	111	68	27	6	4	6	3
Detroit, Mich.	217	127	57	18	8	7	7
Evansville, Ind.	49	44	1	2	-	2	2
Fort Wayne, Ind.	60	50	9	1	-	-	6
Gary, Ind.	19	11	3	3	1	1	1
Grand Rapids, Mich.	47	34	3	4	1	5	3
Indianapolis, Ind.	165	114	35	8	3	5	5
Lansing, Mich.	60	39	12	5	1	3	2
Milwaukee, Wis.	98	77	15	3	2	1	7
Peoria, Ill.	46	29	12	2	1	2	4
Rockford, Ill.	38	28	8	1	-	1	3
South Bend, Ind.	56	45	6	3	-	2	6
Toledo, Ohio	98	83	10	2	2	1	5
Youngstown, Ohio	41	37	3	-	1	-	5
W.N. CENTRAL	448	301	87	22	18	14	17
Des Moines, Iowa	U	U	U	U	U	U	U
Duluth, Minn.	26	15	8	3	-	-	1
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	106	71	24	3	4	4	6
Lincoln, Nebr.	31	24	6	-	1	-	1
Minneapolis, Minn.	U	U	U	U	U	U	U
Omaha, Nebr.	68	53	11	1	2	1	3
St. Louis, Mo.	129	70	26	11	9	7	-
St. Paul, Minn.	88	68	12	4	2	2	6
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	1,213	814	227	117	32	21	40
Atlanta, Ga.	147	92	33	14	5	3	-
Baltimore, Md.	186	110	37	35	4	-	8
Charlotte, N.C.	94	71	14	6	1	1	9
Jacksonville, Fla.	152	101	33	13	3	2	6
Miami, Fla.	119	77	27	11	3	1	2
Norfolk, Va.	56	38	2	8	1	7	1
Richmond, Va.	61	39	13	7	2	-	2
Savannah, Ga.	39	30	7	1	-	1	2
St. Petersburg, Fla.	41	31	6	4	-	-	2
Tampa, Fla.	194	140	26	14	10	4	5
Washington, D.C.	99	68	21	4	3	2	3
Wilmington, Del.	25	17	8	-	-	-	-
E.S. CENTRAL	821	548	168	58	21	19	45
Birmingham, Ala.	184	121	37	13	4	3	19
Chattanooga, Tenn.	65	42	15	5	2	1	4
Knoxville, Tenn.	86	69	10	5	2	-	2
Lexington, Ky.	87	59	21	4	2	1	8
Memphis, Tenn.	130	79	26	12	5	8	7
Mobile, Ala.	74	53	11	6	2	2	-
Montgomery, Ala.	50	34	12	1	1	2	-
Nashville, Tenn.	145	91	36	12	3	2	5
W.S. CENTRAL	1,485	1,022	307	107	22	27	106
Austin, Tex.	89	58	25	4	2	-	6
Baton Rouge, La.	76	59	14	1	2	-	4
Corpus Christi, Tex.	51	39	4	6	-	2	5
Dallas, Tex.	180	120	42	14	1	3	2
El Paso, Tex.	84	63	10	10	1	-	2
Ft. Worth, Tex.	116	80	26	8	2	-	15
Houston, Tex.	410	269	98	32	10	1	37
Little Rock, Ark.	74	46	16	8	-	4	6
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	241	172	43	14	2	10	13
Shreveport, La.	58	47	7	2	-	2	11
Tulsa, Okla.	106	69	22	8	2	5	5
MOUNTAIN	847	575	164	55	33	18	49
Albuquerque, N.M.	90	60	16	7	5	2	1
Boise, Idaho	31	22	7	1	-	1	2
Colo. Springs, Colo.	50	38	5	4	-	3	3
Denver, Colo.	116	72	29	6	5	4	7
Las Vegas, Nev.	235	149	56	18	6	5	14
Ogden, Utah	32	29	2	-	1	-	2
Phoenix, Ariz.	44	27	11	3	2	1	3
Pueblo, Colo.	29	22	3	1	2	-	3
Salt Lake City, Utah	89	63	11	5	8	2	7
Tucson, Ariz.	131	93	24	10	4	-	7
PACIFIC	1,599	1,121	285	126	31	34	137
Berkeley, Calif.	13	8	4	1	-	-	1
Fresno, Calif.	107	70	19	11	4	3	13
Glendale, Calif.	23	15	5	2	-	1	2
Honolulu, Hawaii	81	61	15	3	1	1	7
Long Beach, Calif.	84	53	16	10	2	3	8
Los Angeles, Calif.	308	226	45	25	6	6	34
Pasadena, Calif.	27	17	9	-	1	-	3
Portland, Oreg.	151	103	29	14	2	3	5
Sacramento, Calif.	181	118	41	18	3	1	21
San Diego, Calif.	137	96	24	8	5	4	12
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	175	120	31	18	1	5	9
Santa Cruz, Calif.	30	25	4	1	-	-	4
Seattle, Wash.	148	100	26	10	6	6	7
Spokane, Wash.	58	48	7	2	-	1	7
Tacoma, Wash.	76	61	10	3	-	-	4
TOTAL	11,318¶	7,777	2,184	811	270	255	631

U: Unavailable -: no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

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

¶Total includes unknown ages.

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