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Anonymous or Confidential HIV Counseling and Voluntary Testing in Federally Funded Testing Sites — United States, 1995–1997

Human immunodeficiency virus (HIV) counseling and voluntary testing (CT) programs have been an important part of national HIV prevention efforts since the first HIV antibody tests became available in 1985 (*1*). In 1995, these programs accounted for approximately 15% of annual HIV antibody testing in the United States, excluding testing for blood donation (*1*). CT opportunities are offered to persons at risk for HIV infection at approximately 11,000 sites, including dedicated HIV CT sites, sexually transmitted disease (STD) clinics, drug-treatment centers, hospitals, and prisons. In 39 states, testing can be obtained anonymously, where persons do not have to give their name to get tested. All states provide confidential testing (by name) and have confidentiality laws and regulations to protect this information. This report compares patterns of anonymous and confidential testing in all federally funded CT programs from 1995 through 1997 and documents the importance of both types of testing opportunities.

In CT programs, demographic and HIV risk information is collected, combined with laboratory test results, and reported to CDC after removal of personal identifying information. Federally funded CT programs provided 2.5 million tests (40,605 HIV-positive) in 1995, 2.6 million (39,119 HIV-positive) in 1996, and 2.3 million (34,875 HIV-positive) in 1997. Of the 7.4 million federally funded HIV tests performed during 1995–1997, client information on 6.3 million tests was available for analysis. Because some persons had more than one HIV test in a year, the proportion of persons tested who had positive results could not be calculated. Thus, the proportion positive reflects the number of positive tests divided by the number of tests provided.

From 1995 to 1997, the number of anonymous tests declined 26.6% (from 636,069 to 466,560), and the number of confidential tests increased 2.9% (from 1,394,921 to 1,434,709). Although more tests were provided to women than men each year, more anonymous tests were provided to men than women. In each year, the highest numbers of positive anonymous tests were among white and black men, and the highest number of positive confidential tests were among blacks.

In 1997, the most recent year for which complete data were available, STD clinics provided more tests overall (551,838) and more confidential tests (494,414) than other sites, and dedicated HIV CT sites provided the largest number of anonymous tests (302,273). Overall, most HIV-positive tests were reported from specially designated

HIV Tests — Continued

HIV CT sites (10,523 [2.0%] of 538,574), STD clinics (8390 [1.5%] of 551,838), prisons (3120 [3.5%] of 88,183), community health centers (2941 [2.1%] of 139,331), and drug-treatment centers (2574 [2.4%] of 109,037).

In 1997, of tests provided to men who have sex with men (MSM), 55.3% were anonymous. Most anonymous tests were among MSM who were injecting-drug users (IDUs) (37.3%), followed by men whose only risk was heterosexual contact (24.7%) and male IDUs (22.1%).

Among men, the highest proportion of tests that were anonymous were among Asians/Pacific Islander (A/PI) MSM (71.6%) and among white MSM (61.9%) (Table 1). A lower proportion of anonymous tests were for American Indian/Alaskan Native (AI/AN) MSM (55.4%), Hispanic MSM (47.9%), and black MSM (32.5%).

Among women, the highest proportion of anonymous tests was among A/PI IDU (40.0%), A/PI with heterosexual contact (35.9%), whites with heterosexual contact (30.8%), AI/AN with heterosexual contact (29.7%), and AI/AN IDUs (29.2%) (Table 2).

Reported by: Div of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, CDC.

Editorial Note: The benefits of early HIV CT are greater now than at any time during the epidemic. For HIV-infected persons, highly active antiretroviral therapy (HAART) has improved dramatically the quality and duration of life (*2*). For public health, reduced HIV transmission may occur because many infected persons probably will reduce sexual risk behavior after HIV-infection diagnosis (*3*). In addition, HAART may reduce the risk for transmission by reducing the amount of infectious virus in body fluids of HIV-infected persons (*4,5*). For these reasons, public health programs should work to diagnose HIV infection in each of the approximately 200,000 infected persons (*6*) who do not know their HIV status, link them to care and prevention services, and assist them in adhering to treatment regimens and in sustaining risk-reduction behavior.

Both anonymous and confidential testing opportunities help to facilitate test seeking among persons at risk for HIV infection. The findings in this report indicate a decline in anonymous tests from 1995 through 1997. Reasons for this decline are unclear but may reflect changes in the characteristics of persons counseled and tested for HIV, a perception that HIV-infection is a treatable and less stigmatizing disease, and the impact of new laws (*7*) and regulations on the risk for confidentiality violations and other factors. However, anonymous testing continues to be of value; anonymous testing has been associated with entry into medical care earlier in disease (*8*). Among groups at risk for HIV infection, MSM—particularly A/PI and white MSM—most frequently choose anonymous testing over confidential in publicly funded facilities. These data are consistent with other studies indicating that MSM have high levels of concern about the confidentiality of their HIV test results (*9*). Because of the potential benefits of anonymous testing, CDC encourages states to include anonymous testing as an integral component of CT programs.

The low proportion of women and black men who choose anonymous testing may reflect a lack of awareness that these services exist, a greater willingness to test confidentially, preferentially receiving care in settings where provider practices favor confidential testing, or being tested because of the presence of HIV-related symptoms. A better understanding of the factors that contribute to differences in testing patterns may improve the effectiveness of voluntary testing programs. On the basis of recent

HIV Tests — Continued

TABLE 1. Number of men receiving federally funded anonymous or confidential HIV tests and number and percentage of positive tests, by race/ethnicity and mode of HIV transmission — United States, 1997

Characteristic	Anonymous			Confidential			Total
	No. tested*	Positive		No. tested*	Positive		
		No.	(%)		No.	(%)	
White							
Men who have sex with men (MSM)	50,529	1,951	(3.9)	27,313	1,727	(6.3)	**81,679**
MSM–injecting-drug user (IDU)	2,618	172	(6.6)	3,416	278	(8.1)	**6,319**
IDU	9,666	147	(1.5)	29,313	492	(1.7)	**40,884**
Heterosexual	81,670	283	(0.3)	144,424	594	(0.4)	**234,084**
Other	8,438	73	(0.9)	26,833	466	(1.7)	**40,158**
Black							
MSM	6,215	817	(13.1)	12,606	1,998	(15.8)	**19,136**
MSM–IDU	479	61	(12.7)	1,337	203	(15.2)	**1,852**
IDU	3,832	300	(7.8)	13,282	1,386	(10.4)	**17,436**
Heterosexual	33,587	733	(2.2)	191,393	4,017	(2.1)	**230,279**
Other	1,894	78	(4.1)	27,708	747	(2.7)	**30,313**
Hispanic							
MSM	9,580	655	(6.8)	10,077	932	(9.2)	**20,006**
MSM–IDU	538	36	(6.7)	1,070	125	(11.7)	**1,640**
IDU	3,000	89	(3.0)	13,667	1,042	(7.6)	**16,880**
Heterosexual	20,871	265	(1.3)	73,521	1,180	(1.6)	**95,812**
Other	2,445	38	(1.6)	10,529	271	(2.6)	**13,943**
Asian/ Pacific Islander							
MSM	1,850	55	(3.0)	629	19	(3.0)	**2,584**
MSM–IDU	32	2	(6.3)	27	3	(11.1)	**62**
IDU	119	3	(2.5)	175	3	(1.7)	**306**
Heterosexual	2,996	8	(0.3)	3,875	19	(0.5)	**7,056**
Other	281	1	(0.4)	985	15	(1.5)	**1,374**
American Indian/ Alaskan Native							
MSM	410	19	(4.6)	266	23	(8.6)	**740**
MSM–IDU	60	4	(6.7)	74	9	(12.2)	**151**
IDU	193	7	(3.6)	470	5	(1.1)	**801**
Heterosexual	875	4	(0.5)	1,659	11	(0.7)	**2,924**
Other	289	0	—	257	2	(0.8)	**835**

*Numbers may not add to total because of missing data.

trends, HIV-infection programs should assure the provision of voluntary HIV CT in settings that serve at-risk women and black men.

From 1995 through 1997, the number of federally funded confidential tests increased. Three quarters of publicly funded testing is confidential and accounts for nearly 25,000 positive tests each year. Confidential testing is offered in HIV CT sites,

HIV Tests — Continued

TABLE 2. Number of women receiving federally funded anonymous or confidential HIV tests and number and percentage of positive tests, by race/ethnicity and mode of HIV transmission — United States, 1997

Characteristic	Anonymous			Confidential			Total
	No. tested*	Positive		No. tested*	Positive		
		No.	(%)		No.	(%)	
White							
Injecting-drug user (IDU)	7,950	94	1.2	21,530	388	1.8	**31,098**
Heterosexual	114,383	309	0.3	243,806	810	0.3	**371,506**
Other	16,366	37	0.2	64,734	177	0.3	**88,503**
Black							
IDU	2,064	171	8.3	7,646	712	9.3	**9,940**
Heterosexual	34,729	716	2.1	237,105	4,065	1.7	**276,190**
Other	4,297	62	1.4	52,966	688	1.3	**58,250**
Hispanic							
IDU	1,481	40	2.7	5132	409	8.0	**6,784**
Heterosexual	24,324	215	0.9	139,933	1,297	0.9	**166,184**
Other	2,865	28	1.0	29,809	175	0.6	**34,391**
Asian/Pacific Islander							
IDU	106	0	—	145	1	0.7	**265**
Heterosexual	4,628	12	0.3	7,942	21	0.3	**12,882**
Other	612	2	0.3	2,818	3	0.1	**3,708**
American Indian/ Alaskan Native							
IDU	236	7	3.0	389	9	2.3	**808**
Heterosexual	1,498	10	0.7	2,652	16	0.6	**5,043**
Other	264	0	—	786	0	—	**1,330**

*Numbers may not add to total because of missing data.

prisons, and medical settings (e.g., clinics, community health centers, and hospitals). More than half of positive confidential tests were in federally funded clinical-care settings (e.g., STD, drug-treatment, and tuberculosis and community health centers). Data from emergency departments in hospitals in areas where the prevalence of HIV infection is high indicate that half of infected persons are unaware of their HIV infection (CDC, unpublished data, 1999). To increase the number of infected persons who are aware of their HIV status, voluntary testing will need to be increased in settings where persons at risk for HIV infection seek care for non–HIV-related conditions.

The findings in this report are subject to at least three limitations. First, the data are not representative of all persons tested for HIV during the observation period; the data include approximately 15% of annual nonblood donation tests in the United States. Second, the proportion of positive tests is not the same as the proportion of persons who tested positive. Some persons were tested multiple times; therefore, the proportion of persons who tested positive was not available. Finally, some test sites report summary data, which could not be used in this analysis, rather than individual client

HIV Tests — Continued

test records; the analyzed individual client record data represent 87% of all federally funded tests provided in 1997.

CDC encourages every adult and adolescent to assess their risk for HIV infection based on past behavior. Persons who believe they might have been exposed to HIV but who have not been tested should seek CT for HIV. Additional information about HIV CT is available on the World-Wide Web at http://www.hivtest.org* or from the National AIDS Hotline, telephone (800) 342-2437.

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*References to sites of nonfederal organizations on the World-Wide Web are provided 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.

Progress Toward Poliomyelitis Eradication — African Region, 1998–April 1999

In 1988, the World Health Assembly resolved to eradicate poliomyelitis globally by 2000 (*1*). To achieve this goal, the African Region (AFRO) of the World Health Organization (WHO) has accelerated polio eradication strategies (*2,3*), but the region remains one of the two major reservoirs for wild poliovirus transmission (*4,5*). This report summarizes progress toward polio eradication from 1998 through April 1999 in AFRO, highlights supplementary vaccination activities (National Immunization Days [NIDs])* and acute flaccid paralysis (AFP) surveillance conducted in the region, and

*Nationwide mass campaigns over a period (days to weeks), in which two doses of oral poliovirus vaccine (OPV) are administered to all children in the target age group (usually aged <5 years), regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

describes plans for program acceleration (intensified NIDs and mopping-up vaccinations[†]) to meet the 2000 eradication target.

Supplementary Vaccination Activities

From 1998 through April 1999, two rounds of NIDs or Subnational Immunization Days (SNIDs) were conducted in 34 countries where polio is endemic or was recently endemic in AFRO except in Sierra Leone (one round) and Guinea-Bissau (no rounds). Approximately 88 million children received two doses each of supplemental oral poliovirus vaccine (OPV) in 1998. Two countries reported NID coverage of <80% (Sierra Leone, 78%, and Gambia, 79%). Eighty-two percent of NID rounds had coverage of >90%. In the Democratic Republic of Congo (DR Congo), two rounds of supplemental vaccination (first round December 1998, second round January 1999) were conducted. The first round was in 125 of 307 health zones with 91% coverage. The second round was in 176 of 307 health zones with 92% coverage. In Angola in 1998, SNIDs were not conducted in 42 of 164 districts. However, coverage for the 122 districts reached by SNIDs was 91%.

Acute Flaccid Paralysis Surveillance

The number of reported AFP cases increased from 505 in 1997 to 1754 in 1998 (Table 1). In 1998, the nonpolio AFP rate was 0.3 cases per 100,000 children aged <15 years. Wild poliovirus was isolated from 96 AFP cases from many countries of central and western Africa and Angola (Figure 1). The largest number of wild poliovirus cases were in western Africa (Nigeria [n=42], Ghana [n=18], and Côte d'Ivoire [n=11]). Partial genomic sequencing of the viruses indicated intense transmission and rapid movement of polioviruses across countries in western and central Africa. A large outbreak of wild poliovirus type 3 is being investigated in Luanda, Angola (953 cases reported as of May 18, 1999) (*6*).

In 1998, no wild poliovirus was isolated from stool specimens from 209 of the 305 AFP cases in southern Africa and 235 of the 399 AFP cases in eastern Africa. Nonpolio AFP rates and/or adequate stool collection remained low (<0.5 per 100,000 children aged <15 years or <80% of AFP cases with two stool specimens collected within 14 days of onset of paralysis) in Kenya, Madagascar, Malawi, Mozambique, South Africa, Uganda, and Zambia. However, in 1999, AFP rates in Kenya, Uganda, and Zambia have increased considerably. No wild poliovirus was isolated from specimens submitted from Ethiopia and Mozambique, but in both countries the nonpolio AFP rate was ≤0.1.

Program Acceleration

To reach the 2000 target, AFRO recommends that Angola, Chad, DR Congo, Guinea-Bissau, Liberia, Niger, Nigeria, and Sierra Leone conduct intensified NIDs during 1999. Intensified NIDs occur when the vaccines are administered to all target-aged children in house-to-house outreach efforts and sometimes include a third round. DR Congo will be conducting three rounds from July through September 1999. Angola will be conducting three rounds, mostly house-to-house, from July through September 1999.

In 1999, mopping-up vaccinations already have been conducted in Bangui, Central African Republic, and have been conducted in Ougadougou, Burkina Faso, in May and

[†]Focal mass campaigns in high-risk areas during a period (days to weeks) in which two doses of OPV are administered during house-to-house visits to all children in the target age groups, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

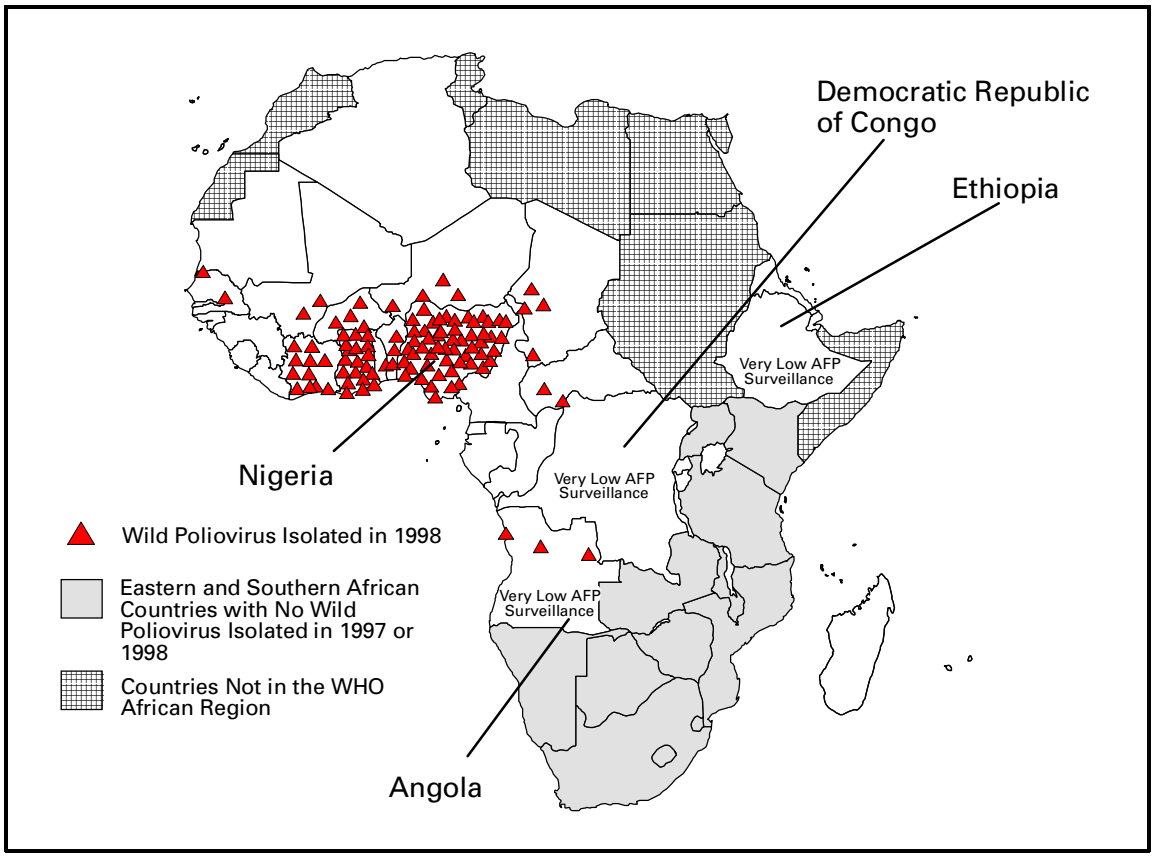
TABLE 1. Performance indicators for acute flaccid paralysis (AFP) surveillance, by country — African Region of the World Health Organization, 1997–1998

	1997				1998			
Region/Country	No. reported AFP cases	Nonpolio AFP rate*	% AFP cases with adequate specimens†	Confirmed polio (wild virus)	No. reported AFP cases	Nonpolio AFP rate	% AFP cases with adequate specimens	Confirmed polio (wild virus)
Central								
Angola	15	0.24	0	15 (0)	16	0.10	56%	7 (3)
Cameroon	11	0.17	18%	21 (0)	40	0.40	60%	16 (0)
Central African Republic	12	0.19	18%	10 (8)	59	3.30	41%	6 (2)
Congo	0	—	—	—	0	—	—	—
Democratic Republic of Congo	24	0.11	50%	82 (3)	21	0.10	52%	10 (0)
Equatorial Guinea	0	—	—	—	0	—	—	—
Gabon	0	—	—	—	1	0.20	100%	0 (0)
Western								
Algeria	65	0.50	0	0 (0)	88	0.83	75%	0 (0)
Benin	4	0.08	75%	3 (2)	15	0.30	67%	8 (3)
Burkina Faso	12	0.19	25%	3 (2)	12	0.10	50%	8 (4)
Chad	4	0.07	75%	326 (2)	12	0.30	83%	4 (4)
Gambia	1	0.20	0	1 (0)	0	—	—	—
Ghana	35	0.42	46%	17 (2)	154	0.50	30%	112 (18)
Guinea	3	0.09	33%	2 (0)	7	0.10	43%	4 (0)
Guinea-Bissau	1	0.20	100%	1 (0)	0	—	—	—
Côte d'Ivoire	11	0.11	36%	6 (3)	71	0.40	42%	38 (11)
Liberia	0	—	—	—	0	—	—	—
Mali	3	0	0	2 (0)	23	0.20	30%	14 (2)
Mauritania	5	0.50	0	5 (0)	0	—	—	—
Niger	12	0.14	33%	56 (5)	12	0.10	50%	8 (4)
Nigeria	5	0.01	20%	383 (1)	489	0.40	39%	312 (42)
Senegal	12	0.19	44%	5 (1)	17	0.20	53%	10 (2)
Sierra Leone	0	—	—	—	3	<0.10	0	3 (0)
Togo	4	0.13	75%	2 (1)	10	0.20	60%	5 (1)
Southern								
Botswana	4	0.57	75%	3 (0)	5	0.70	80%	0 (0)
Lesotho	1	0.11	100%	0 (0)	5	0.20	40%	3 (0)
Madagascar	12	0.17	25%	10 (1)	17	0.20	53%	6 (0)
Malawi	10	0.20	60%	2 (0)	28	0.50	79%	5 (0)
Mozambique	4	0.05	0	4 (0)	16	0.10	56%	7 (0)
Namibia	5	0.71	60%	2 (0)	11	1.30	64%	2 (0)
South Africa	63	0.28	55%	0 (0)	167	0.40	13%	104 (0)
Swaziland	2	0.50	100%	0 (0)	5	1.30	60%	0 (0)
Zimbabwe	42	0.82	21%	3 (0)	51	0.70	43%	17 (0)
Eastern								
Burundi	0	—	—	—	0	—	—	—
Eritrea	0	—	—	41 (0)	0	—	—	—
Ethiopia	13	0.05	23%	19 (0)	63	<0.10	13%	55 (0)
Kenya	22	0.16	36%	14 (0)	123	0.10	8%	109 (0)
Rwanda	1	0.03	0	0 (0)	2	<0.10	0	2 (0)
Tanzania	20	0.13	50%	10 (0)	127	0.40	48%	66 (0)
Uganda	60	0.48	29%	35 (0)	61	0.10	23%	46 (0)
Zambia	7	0.13	43%	5 (0)	23	0.40	39%	6 (0)
Total	**505**	**0.16**	**24%**	**1088 (31)**	**1754**	**0.30**	**39%**	**993 (96)**

*Per 100,000 children aged <15 years.
†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

FIGURE 1. Acute flaccid paralysis (AFP) cases with wild poliovirus isolated — African Region of the World Health Organization (WHO), 1998



June. In Nigeria, 13 million children in 15 of 37 states were targeted to receive OPV during house-to-house vaccination campaigns from April through May. Preliminary data from the first round indicate that house-to-house vaccination is reaching 10%–40% more children than the previous NIDs (*7*). For 1999, AFRO is recommending that mopping-up vaccinations be conducted in one to four surrounding provinces if a single wild poliovirus is isolated in 1999 >60 days after the second round of the NIDs.

Reported by: Expanded Program on Immunization, Regional Office for Africa, World Health Organization, Harare, Zimbabwe. Vaccines and Other Biologicals Dept, World Health Organization, Geneva, Switzerland. Respiratory and Enteric Virus Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Vaccine Preventable Disease Eradication Div, National Immunization Program, CDC.

Editorial Note: During the past 12 months, accelerated efforts to achieve polio eradication have occurred in Africa. These efforts include the first attempt at large-scale urban and rural supplementary vaccination in DR Congo, the first NIDs with nationwide coverage of >80% for both rounds in Nigeria, and NIDs in all countries where polio is endemic except Guinea-Bissau. In addition, the number of reported AFP cases increased approximately 400% in 1998 over 1997, reflecting improved surveillance.

Intense wild poliovirus transmission continues to occur in Angola, DR Congo, and western and central Africa. Because high-quality house-to-house vaccination cam-

Poliomyelitis Eradication — Continued

paigns helped eliminate wild poliovirus transmission quickly in other WHO regions, AFRO is recommending more house-to-house NIDs and SNIDs in countries where wild poliovirus transmission persists. In DR Congo, three rounds of NIDs are planned during a cease-fire negotiated by the United Nations. In Nigeria, mopping-up vaccination efforts in April and May 1999 are substantially larger than the house-to-house vaccinations that were conducted in the Americas or Western Pacific Region. Most ministries of health have accepted WHO's recommendation for a more aggressive supplemental vaccination with house-to-house NIDs, mopping up, and extra rounds.

Indigenous wild poliovirus is virtually absent in southern and eastern Africa. The last wild poliovirus isolated in southern Africa was in 1993. The last wild polioviruses isolated in eastern Africa were in July 1996 in Tanzania, October 1996 in Uganda, and December 1995 in Zambia. AFP surveillance in Ethiopia and Mozambique is inadequate to determine wild poliovirus transmission. Although surveillance has improved within the last year, substantial progress is needed to increase the nonpolio AFP rate from 0.3 to the standard threshold rate of 1.0. Active surveillance methods are necessary for adequate surveillance, and infrastructure improvements in transportation and communications are necessary for better active surveillance. Ensuring adequate personnel and transport for the active surveillance teams in the remaining reservoir countries are essential to reach the target by 2000.

Civil conflict, economic decline, and the high burden of diseases related to human immunodeficiency virus in many countries have strained public health infrastructures, resulting in some countries in declining routine vaccination coverage and low health staff morale. In Angola, Chad, and DR Congo, poor roadways make house-to-house vaccination and surveillance difficult. In addition, low routine vaccination has resulted in low population immunity to poliovirus in Angola, DR Congo, Nigeria, and countries of western and central Africa. Establishing and maintaining AFP surveillance in Angola and DR Congo — countries in ongoing conflict — are especially difficult challenges. Unlike carrying out NIDs for which cease-fires have been negotiated for a week at a time twice a year, surveillance must take place throughout the year for several years. Despite these obstacles, an intensely focused effort to eliminate the last remaining reservoirs in Africa with extra rounds, house-to-house vaccination, and good surveillance, if adequately supported[§], can reach the goal of polio eradication by 2000.

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[§]The polio eradication efforts in AFRO are supported by member countries and a coalition of partners, including WHO; United Nations Children's Fund (UNICEF); Rotary International; U.S. Agency for International Development; CDC; United Nations Foundation; and the governments of Canada, Japan, and the United Kingdom.

Poliomyelitis Eradication — Continued

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Renal Insufficiency and Failure Associated with Immune Globulin Intravenous Therapy — United States, 1985–1998

Immune globulin intravenous (IGIV) is a sterile, highly purified immunoglobulin G (IgG) preparation made from pooled human plasma stabilized with glucose, maltose, glycine, sucrose, sorbitol, or albumin and is used as prophylaxis or therapy for various medical disorders. The Food and Drug Administration (FDA) first licensed IGIV in 1981 and has approved its use for six conditions: primary immunodeficiencies, immune-mediated thrombocytopenia, Kawasaki syndrome, recent bone marrow transplantation in patients aged ≥20 years, chronic B-cell lymphocytic leukemia, and pediatric human immunodeficiency virus type 1 (HIV-1) infection (Table 1). In clinical practice, IGIV has been known to be used to treat 50–60 unapproved conditions, including acute lymphoblastic leukemia, adult HIV infection, multiple sclerosis, Guillain-Barré syndrome, and chronic inflammatory demyelinating polyneuropathy (*1*). During June 1985–November 1998, FDA received approximately 120 reports worldwide of renal adverse events (RAEs) (i.e., acute renal failure or insufficiency) following IGIV administration. This report describes the epidemiology of IGIV-associated RAEs in the United States and emphasizes the importance of reviewing indications for IGIV use and implementing precautions during its administration.

In the United States, FDA received 88 reports of cases with clinical and/or laboratory findings consistent with a RAE (i.e., increased serum creatinine, oliguria, and acute renal failure) as determined by the treating health-care provider after IGIV administration. Among the 88 case-patients, the median age was 60.5 years (range: 3–91 years); 48 (55%) were male. Of the 54 case-patients that were reported with conditions associated with acute renal failure, 35 (65%) were aged >65 years, 30 (56%) had diabetes mellitus, and 14 (26%) had prior renal insufficiency; 32 (59%) case-patients had one of these conditions, 19 (35%) had two, and three (6%) had three. Indications for IGIV use were reported in 85 (97%) case-patients and included 39 (46%) hematologic, 20 (23%) immunologic, 17 (20%) neurologic, and nine (11%) infectious diseases. Seventy-nine (90%) case-patients received sucrose-containing IGIV products, seven received IGIV with maltose or glucose, and two received IGIV in which the stabilizer was undetermined.

Of the 33 (38%) case-patients for whom time of RAE onset was available, all occurred <7 days following IGIV administration. Baseline serum creatinine levels ranged from 0.3 mg/dL to 5.4 mg/dL (normal: <1.5 mg/dL; mean baseline: 1.6 mg/dL). Peak levels (range: 1.4 mg/dL to 14.3 mg/dL; mean peak: 6.2 mg/dL) of serum creatinine were reached on the fifth day (range: 3–8 days). Approximately 35 (40%) patients had severe symptoms requiring dialysis; no significant differences in baseline serum creatinines or other underlying risk factors were found between patients requiring and not requiring dialysis. The mean recovery time of renal function, with or without dialysis, was 10 days (range: 2–38 days) after RAE onset; however, 13 (15%) of the 88 pa-

TABLE 1. Number of reported cases of renal adverse events (RAE) associated with immune globulin intravenous (IGIV) preparations — United States, 1985–1999

No. (%) reported of RAE	Grams sucrose per gram of IgG	Stabilizing substance	Manufacturer*	Distributor	Product	Approved indications
59 (67%)	1.7	Sucrose	Central Laboratory, Blood Transfusion Service, Swiss Red Cross	Novartis Pharmaceuticals	Sandoglobulin®†	PID§ or ITP¶
19 (22%)	1.0	Sucrose or albumin	Centeon L.L.C.	Centeon L.L.C.	Gammar® –P I.V. and Gammar I.V.**	PID
4 (5%)	0	Maltose or glycine	Bayer Corporation	Bayer Corporation	Gamimune-N	PID, ITP, adult BMT††, or pediatric HIV
3 (3%)	0	Glucose, albumin, or glycine	Baxter Healthcare Corporation	Baxter	Gammagard S/D®§§	PID, ITP, or chronic B-cell lymphoblastic leukemia
2 (2%)			Undetermined¶¶			
1 (1%)	1.7	Sucrose	Central Laboratory, Blood Transfusion Service, Swiss Red Cross	American Red Cross	Panglobulin®†	PID or ITP
0 (0)	0	Sorbitol or aluminum	Alpha Therapeutic Corporation	Alpha Therapeutic Corporation	Venoglobulin-s® and Venoglobulin-I®	PID, ITP, or Kawasaki syndrome
0 (0)	0	Glucose, albumin, or glycine	Baxter Healthcare Corporation	American Red Cross	Polygam S/D®§§	PID, ITP, or chronic B-cell lymphoblastic leukemia
0 (0)	0	Glucose	Oesterreichisches Institut fuer Haemoderivative Ges.m.b.H (O.I.H.)	Immuno U.S. Inc.	Iveegam®	PID or Kawasaki syndrome

* Use of trade names and commercial sources is for identification only and does not imply endorsement by U.S. Department of Health and Human Services or CDC.
† Sandoglobulin® and Panglobulin® use the same formulation.
§ Primary immunodeficiency.
¶ Immune-mediated thrombocytopenia.
** Gammar I.V. was withdrawn from the market after the introduction of Gammar-P I.V.
†† Bone marrow transplantation.
§§ Gammagard S/D® and Polygam S/D® use the same formulation.
¶¶ Two reactions were associated with unspecified IGIV.

Renal Adverse Events — Continued

tients died despite therapy. These patients had severe underlying conditions (i.e., cardiac insufficiency, pneumonia, or systemic lupus erythematosis), and the extent to which RAEs contributed to their deaths was undetermined. In seven (47%) for whom data were available, renal histology indicated extensive vacuolization of the proximal tubules, with swelling and narrowing of the tubular lumina consistent with osmotic injury; six of these case-patients received sucrose-containing IGIV preparations. In the remaining eight, the histology findings did not indicate a pattern. In three additional case-patients, vacuolated renal tubular epithelial cells were detected on urinalysis, suggesting possible injury to the kidneys.

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Editorial Note: During 1985–1998, reports of RAEs associated with IGIV were infrequent; however, these events resulted in severe morbidity and mortality. Approximately 40% of the affected patients required dialysis, and the RAEs might have contributed to the death of 15% of patients who died despite therapy. Thus, healthcare providers need to be aware of these events as they develop treatment plans for their patients.

The incidence of adverse events that occur during IGIV administration is usually reported as ≤5% but ranges from 1% to 15% (*1*). Reactions (e.g., fever, headache, myalgia, chills, nausea, and vomiting) often are related to the rate of IGIV infusion and tend to be mild to moderate and self-limited (*2*). The cause of these reactions may in some cases involve formation of IgG aggregates during manufacture or storage of IGIV preparations. To avoid aggregation, the purified Ig product is stabilized with glucose, maltose, glycine, sucrose, sorbitol, or albumin. Less common and more severe reactions include hypersensitivity and anaphylactoid reactions, thromboembolic events, and aseptic meningitis syndrome; the causes of these reactions are unknown.

Several mechanisms have been proposed for RAEs associated with IGIV administration. As early as 1940, studies documented the development of renal lesions, similar to those in the case-patients in this report, that resulted from intravenous administration of sucrose (*3*). Similar renal lesions can occur with parenteral mannitol, sorbitol, dextran, or hydroxyethyl starches (*4*). Additional mechanisms have been proposed (*5*); however, the exact pathophysiology of RAE development following administration of various IGIV preparations remains unclear.

The findings in this report have several limitations. First, the incidence of IGIV-associated RAEs cannot be determined. The extent of underreporting of these events is unknown, and nonproprietary data were unavailable to estimate the number of IGIV recipients during 1985–1998; however, thousands of persons probably receive IGIV annually, and the number of reported cases suggests that the incidence of RAEs is low. Second, reports of an association between RAEs and IGIV therapy are not sufficient evidence to prove that IGIV was the cause of the renal insufficiency or renal failure in these patients; however, the timing and biologic plausibility of a causal association are cause for concern. Additional studies are necessary to further evaluate this relation.

Although 90% of IGIV-associated RAEs in the United States have occurred with sucrose-containing IGIV preparations, caution is advised during administration of any IGIV product. All patients receiving IGIV therapy, particularly high-risk patients with

Renal Adverse Events — Continued

pre-existing renal disease, diabetes mellitus, hypovolemia, sepsis, concomitant therapy with nephrotoxic agents, or aged ≥65 years, should be monitored carefully for RAEs during and after IGIV administration. To decrease the risk for RAEs, renal function should be assessed before IGIV therapy is initiated and periodically thereafter. Manufacturer-recommended IGIV doses, concentrations, and infusion rates should not be exceeded and approved indications for IGIV therapy should be reviewed. IGIV infusions should be discontinued if renal function deteriorates. In addition, IGIV should be used judiciously and alternatives used when appropriate because of recent shortages (*6*).

To alert health-care providers to the risk for RAEs associated with IGIV, FDA has posted an advisory on MedWatch and on the Center for Biologics Research and Review's (CBER) World-Wide Web sites, and FDA has published a drug warning in its summer 1999 issue of *FDA Medical Bulletin*. Manufacturers are revising package inserts with new dosing recommendations and a warning of the risk involved in IGIV administration. Health-care providers are encouraged to report any RAE associated with the use of IGIV to the manufacturer or to MedWatch, HF-2, FDA, 5600 Fishers Lane, Rockville, MD, 20852-9787; telephone (800) 322-1088; fax (800) 322-0178; World-Wide Web site http://www.fda.gov/medwatch, or to CDC's Hospital Infections Program, National Center for Infectious Diseases, (404) 639-6413.

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Update: Hantavirus Pulmonary Syndrome — United States, 1999

Hantavirus pulmonary syndrome (HPS) is a rodentborne viral disease characterized by severe pulmonary illness and a case-fatality ratio of 43%. Sin Nombre virus is the primary hantavirus that causes HPS in the United States, and the deer mouse (*Peromyscus maniculatus*) is its predominant carrier. CDC-sponsored studies of rodent populations since 1994 have yielded data that suggest an increased risk for infection for humans in some areas of the southwestern United States during the summer of 1999. This report describes increases in human cases during January–May 1999, current hantavirus prevalence in rodent populations, the need for renewed attention to reduce the risk for hantavirus exposure, and the importance of physician awareness and early detection in the treatment of HPS.

Hantavirus Pulmonary Syndrome — Continued

Human HPS

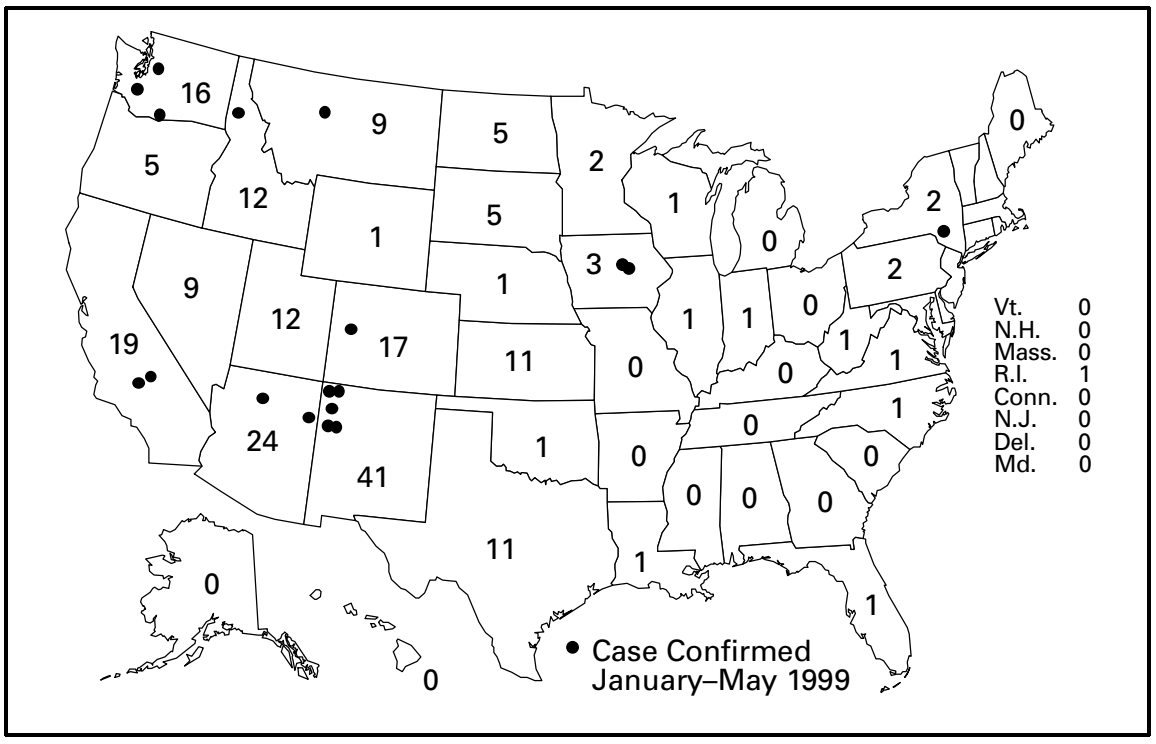
HPS is clinically defined as a febrile illness and the presence on a chest radiograph of bilateral infiltrates resembling acute respiratory distress syndrome (*1*). As of May 28, 1999, CDC had confirmed 217 cases of HPS in 30 states (Figure 1). From January through May 1999, seven cases of HPS were confirmed in Colorado, New Mexico, New York, and Washington. An additional 11 suspected cases with preliminary clinical and serologic evidence of HPS were reported in Arizona, California, Idaho, Iowa, Montana, New Mexico, and Washington. Eight of the confirmed and suspected cases are from Arizona, Colorado, and New Mexico. In the same 5-month period during each year from 1995 through 1998, this area averaged approximately two cases each year.

Rodent Monitoring

Since 1994, CDC has sponsored continuous monitoring studies of rodent populations at nine sites in Arizona, Colorado, and New Mexico (*2*). Population densities of deer mice at New Mexico monitoring sites during January–May 1999 were lower compared with densities during spring 1998; however, densities at one site in Colorado in May 1999 were >50% higher than 1 year earlier.

Hantavirus antibody prevalences in deer mouse populations surveyed during spring 1999 were 35%–45% in some populations in New Mexico and up to 40% in Colorado. In comparison, prevalences during the population peaks of spring 1998 were <10% in New Mexico and approximately 20% in Colorado. These figures were comparable with a prevalence of 10%–15% in deer mouse populations sampled throughout the United States since 1993; during the 1993 outbreak, prevalences of 30% were detected (*3*).

FIGURE 1. Total number of confirmed cases of hantavirus pulmonary syndrome ever identified, and location of cases identified during January–May 1999, by state — United States



Hantavirus Pulmonary Syndrome — Continued

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Editorial Note: Hantavirus infection can occur after inhaling infectious aerosols from rodent saliva or excreta. HPS typically begins as a prodrome of headache, fever, and myalgia soon followed by pulmonary edema, which often leads to severe respiratory compromise. Thrombocytopenia, presence of immunoblasts, and hemoconcentration are characteristic laboratory findings. Other than supportive care, no treatment exists for hantavirus infection. The probability of surviving HPS increases with early recognition, hospitalization, and aggressive pulmonary and hemodynamic support (*4*). The highest concentration of HPS cases has occurred in the western United States, and CDC rodent monitoring has focused on this area. However, hantavirus reservoir species occur throughout the United States, and cases of HPS have occurred nationwide. All primary health-care providers are strongly encouraged to become familiar with the signs and symptoms of HPS (*5*) and to immediately report suspected cases to their state health departments.

Risk for human disease is proportional to the frequency with which persons come into contact with infectious rodents, and rodent population density and the prevalence of infection in rodents may help to quantify risk for communities. Both population densities and prevalences vary from site to site and can change markedly from season to season and from year to year. Population densities may vary 10-fold within 2 or 3 months. Prevalences of hantavirus infection in deer mouse populations occasionally have been >60% at specific sites in the southwestern United States, California (*6*), and Montana. Infrequently, environmental conditions result in the simultaneous occurrence of high rodent population densities and a high prevalence of hantavirus infection among rodents. This combination, which appears to be occurring this year in some rodent populations in the southwestern United States, results in a greater number of infected mice and leads to a higher risk for transmission to humans. The increased number of HPS cases reported in the southwest this year supports this interpretation. Although increased physician awareness of HPS cannot be ruled out, the number of confirmed cases this year exceeds the average number identified during the same periods in 1995 through 1998 and suggests that the increase is real.

The importance of adherence to risk-reduction measures should be emphasized by increased efforts to educate the public, especially among residents of rural areas of the southwestern United States. The most effective way to decrease the risk for HPS is to limit exposure to rodents and their excreta. Most persons with HPS who had high-risk exposures are thought to have been infected in and around their homes; therefore, limiting opportunities for peridomestic exposure is particularly important. Measures to prevent HPS can be divided into four areas: eliminating rodent harborage (*7*), controlling rodent populations, properly cleaning up rodent infestation, and avoiding rodents in outdoor settings (see box).

Hantavirus Pulmonary Syndrome — Continued

Recommendations for Preventing Hantavirus Pulmonary Syndrome

1. Eliminate rodent harborage
   - Keep cooking, eating, and food storage areas clean
   - Cover human food and animal feed
   - Contain and elevate garbage
   - Seal holes and cracks in dwellings to prevent entrance by rodents
   - Clear brush and trash from around homes and outbuildings
2. Control rodent populations by maintaining snap traps and/or using rodenticides; in areas where plague occurs, control fleas with insecticides
3. Safely clean up rodent-infested areas
   - Air out infested spaces before cleanup
   - Spray areas of infestation and all excreta, nesting, and other materials with household disinfectant or 10% bleach solution, then clean up, seal in bags, and dispose
   - Avoid sweeping, vacuuming, or stirring dust until the area is thoroughly wet with disinfectant
   - Wear rubber gloves; disinfect gloves before removal, and wash hands afterwards
   - In areas where plague occurs, spray insecticide on trapped rodents and nesting materials to prevent fleas from abandoning rodents to find new hosts
4. Avoid rodents when outdoors
   - Do not disturb rodent droppings or camp or sleep near burrows or areas where trash is present
   - Avoid feeding or handling rodents, even if they appear friendly

No restriction of travel to areas where HPS has been reported is necessary. However, activities that may disrupt rodent burrows or result in contact with rodents or aerosolization of rodent excreta should be avoided.

Clinical principles of recognition and support for HPS were reviewed in a video conference in May 1999; a videotape of this conference is available through CDC's Special Pathogens Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, (404) 639-1510. Additional information on HPS is available from local or state health departments; through the hantavirus hotline, telephone (877) 232-3322; on the World-Wide Web at the "All About Hantavirus" web site, http://www.cdc.gov/ncidod/diseases/hanta/hps/index.htm; and by mail to CDC's Special Pathogens Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, Mailstop A-26, 1600 Clifton Road, N.E., Atlanta, GA 30333.

Hantavirus Pulmonary Syndrome — Continued

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Notice to Readers

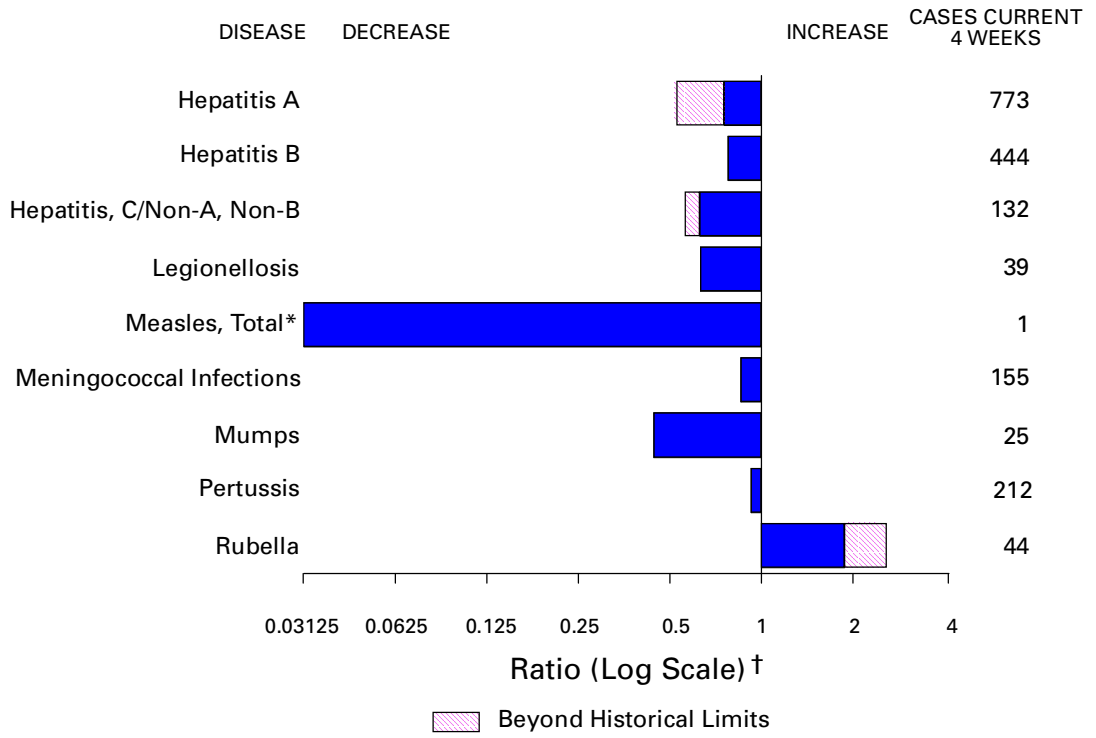
Availability of Applications for Public Health Leadership Institute

The CDC/University of California Public Health Leadership Institute (PHLI) is a 1-year scholars' program that includes an intensive on-site week, scheduled for March 11–17, 2000. The PHLI is conducted under a cooperative agreement between CDC's Public Health Practice Program Office and the University of California at Los Angeles. The purpose of the PHLI is to strengthen the nation's public health system by enhancing the leadership capacities of senior city, county, state, federal, and international public health officials.

The ninth year of the PHLI will begin on November 6, 1999, with an orientation for scholars at the American Public Health Association Annual Meeting in Washington, D.C. Approximately 35 senior public health officials from city, county, state, federal, or international health agencies will be selected to participate in the institute.

Senior state and local health officials, including "deputy" level staff nominated by state health directors or local health directors with a service population of >200,000, are eligible to apply. Applications must be submitted by August 10, 1999. Selections will be made and the scholars notified during the week of September 27, 1999. Additional information and applications are available from the Director, PHLI, telephone (510) 986-0140.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending June 19, 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 24 measles [total] is 0.024077.)
†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 June 19, 1999 (24th Week)

	Cum. 1999		Cum. 1999
Anthrax	-	HIV infection, pediatric*§	73
Brucellosis*	16	Plague	1
Cholera	2	Poliomyelitis, paralytic	-
Congenital rubella syndrome	3	Psittacosis*	15
Cyclosporiasis*	8	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	96
Encephalitis: California*	2	Streptococcal disease, invasive Group A	1,084
eastern equine*	2	Streptococcal toxic-shock syndrome*	21
St. Louis*	-	Syphilis, congenital¶	67
western equine*	1	Tetanus	9
Ehrlichiosis human granulocytic (HGE)*	30	Toxic-shock syndrome	57
human monocytic (HME)*	5	Trichinosis	5
Hansen Disease*	38	Typhoid fever	130
Hantavirus pulmonary syndrome*†	7	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	17		

-: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 May 23, 1999.
¶Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending June 19, 1999, and June 20, 1998 (24th Week)

Reporting Area	AIDS		Chlamydia		Cryptosporidiosis		*Escherichia coli* O157:H7*			
							NETSS		PHLIS	
	Cum. 1999†	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	18,649	21,341	256,170	265,691	624	891	632	635	330	548
NEW ENGLAND	953	688	8,895	9,397	33	67	94	93	72	85
Maine	22	13	193	413	10	15	6	6	-	-
N.H.	24	15	438	450	5	3	12	12	7	17
Vt.	6	10	230	179	6	8	9	3	2	4
Mass.	627	266	4,127	3,849	12	37	40	53	36	46
R.I.	60	60	1,082	1,153	-	4	6	3	6	1
Conn.	214	324	2,825	3,353	-	-	21	16	21	17
MID. ATLANTIC	4,463	5,952	32,246	27,889	93	275	37	63	8	20
Upstate N.Y.	531	845	N	N	52	171	31	36	-	-
N.Y. City	2,110	3,168	16,966	12,313	22	94	-	7	3	6
N.J.	967	1,058	4,263	5,376	9	10	6	20	5	11
Pa.	855	881	11,017	10,200	10	-	N	N	-	3
E.N. CENTRAL	1,289	1,619	38,048	45,168	53	97	110	129	55	114
Ohio	209	338	10,223	12,306	16	37	41	25	8	20
Ind.	169	292	4,679	4,933	9	20	17	30	11	24
Ill.	594	599	12,979	11,863	11	26	28	47	12	25
Mich.	252	305	10,167	9,898	17	14	24	27	14	21
Wis.	65	85	U	6,168	-	-	N	N	10	24
W.N. CENTRAL	389	368	13,983	15,837	46	88	120	73	48	65
Minn.	69	63	3,022	3,211	14	29	37	25	27	25
Iowa	44	20	1,225	2,013	9	18	15	16	4	13
Mo.	154	177	5,099	5,530	6	7	14	12	12	20
N. Dak.	4	4	325	466	4	11	3	1	-	3
S. Dak.	11	9	755	755	3	10	4	1	4	2
Nebr.	34	34	1,244	1,352	9	12	39	9	-	-
Kans.	73	61	2,313	2,510	1	1	8	9	1	2
S. ATLANTIC	5,239	5,462	59,188	50,371	142	83	82	33	41	49
Del.	72	57	1,292	1,172	-	-	2	-	-	1
Md.	560	716	4,620	3,796	6	8	6	11	-	6
D.C.	208	415	N	N	4	3	-	-	-	-
Va.	266	424	6,963	4,721	6	1	24	-	16	22
W. Va.	26	44	955	1,103	-	1	4	1	1	2
N.C.	356	334	10,263	10,322	4	-	16	11	12	10
S.C.	485	352	8,467	8,652	-	-	10	1	3	-
Ga.	826	611	13,887	11,202	75	24	6	4	-	-
Fla.	2,440	2,509	12,741	9,403	47	46	14	5	9	8
E.S. CENTRAL	844	876	18,222	18,165	8	15	50	44	19	29
Ky.	128	101	3,333	2,833	2	5	14	12	-	-
Tenn.	339	299	6,455	5,933	4	6	22	20	12	19
Ala.	214	274	4,526	4,691	1	-	11	9	6	9
Miss.	163	202	3,908	4,708	1	4	3	3	1	1
W.S. CENTRAL	2,091	2,814	32,752	39,685	32	15	20	21	11	37
Ark.	70	104	2,534	1,643	-	3	5	1	3	4
La.	410	432	7,726	6,120	21	6	3	-	3	1
Okla.	54	170	3,388	4,631	2	3	7	5	5	4
Tex.	1,557	2,108	19,104	27,291	9	3	5	15	-	28
MOUNTAIN	723	771	14,807	14,677	37	62	46	69	24	47
Mont.	4	15	654	556	7	3	3	4	-	-
Idaho	11	14	589	874	2	14	1	6	2	1
Wyo.	3	1	333	301	-	-	3	1	4	2
Colo.	144	146	3,547	3,807	4	2	20	19	9	12
N. Mex.	37	129	1,731	1,772	15	26	2	9	1	6
Ariz.	355	284	5,776	4,950	7	10	7	10	4	10
Utah	70	65	855	1,040	-	1	8	14	2	10
Nev.	99	117	1,322	1,377	2	6	2	6	2	6
PACIFIC	2,658	2,791	38,029	44,502	180	189	73	110	52	102
Wash.	153	196	5,481	4,965	-	-	24	23	26	34
Oreg.	63	87	2,690	2,352	73	19	18	27	12	27
Calif.	2,394	2,429	27,987	35,212	107	169	31	58	13	38
Alaska	6	12	873	897	-	-	-	2	-	-
Hawaii	42	67	998	1,076	-	1	-	-	1	3
Guam	1	-	149	168	-	-	N	N	-	-
P.R.	625	921	U	U	-	-	6	4	U	U
V.I.	13	17	N	N	-	-	N	N	U	U
Amer. Samoa	-	-	U	U	-	-	N	N	U	U
C.N.M.I.	-	-	N	N	-	-	N	N	U	U

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

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

†Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update May 23, 1999.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending June 19, 1999, and June 20, 1998 (24th Week)

Reporting Area	Gonorrhea		Hepatitis C/NA,NB		Legionellosis		Lyme Disease	
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	136,923	152,310	1,170	1,831	421	508	2,286	2,762
NEW ENGLAND	2,682	2,612	75	39	28	25	434	825
Maine	15	22	1	-	4	1	-	11
N.H.	34	44	-	-	3	2	-	12
Vt.	26	13	2	2	3	1	-	3
Mass.	1,167	909	69	36	9	11	254	221
R.I.	277	172	3	1	3	4	42	30
Conn.	1,163	1,452	-	-	6	6	138	548
MID. ATLANTIC	17,544	16,511	77	106	90	112	1,383	1,474
Upstate N.Y.	2,696	3,063	48	50	25	28	607	649
N.Y. City	7,165	5,551	-	-	7	24	6	61
N.J.	2,315	3,246	-	-	5	4	118	242
Pa.	5,368	4,651	29	56	53	56	652	522
E.N. CENTRAL	24,992	29,897	355	260	113	180	47	140
Ohio	6,066	7,465	-	6	35	63	27	19
Ind.	2,763	2,890	-	4	35	31	17	8
Ill.	9,121	9,661	10	26	10	24	2	5
Mich.	7,042	7,324	345	224	30	30	1	7
Wis.	U	2,557	-	-	3	32	U	101
W.N. CENTRAL	5,673	7,430	62	17	22	29	38	27
Minn.	1,132	1,123	2	5	1	3	13	9
Iowa	306	639	-	5	11	5	11	10
Mo.	2,625	3,954	53	5	7	8	-	4
N. Dak.	31	40	-	-	-	-	1	-
S. Dak.	72	123	-	-	1	-	-	-
Nebr.	552	515	3	2	2	11	6	2
Kans.	955	1,036	4	-	-	2	7	2
S. ATLANTIC	42,082	40,636	115	53	48	58	257	218
Del.	758	637	-	-	4	7	9	12
Md.	4,092	4,357	27	5	5	12	177	167
D.C.	1,042	1,629	-	-	-	4	1	4
Va.	4,498	2,789	9	5	11	5	17	14
W. Va.	258	378	12	4	N	N	7	5
N.C.	8,742	8,625	23	12	8	6	28	9
S.C.	4,553	5,586	12	1	7	5	3	1
Ga.	9,109	9,107	1	9	-	2	-	2
Fla.	9,030	7,528	31	17	13	16	15	4
E.S. CENTRAL	14,286	17,146	118	72	55	26	44	25
Ky.	1,494	1,610	7	12	44	14	19	9
Tenn.	5,035	5,003	43	57	9	5	13	7
Ala.	4,114	5,953	1	3	2	3	6	9
Miss.	3,643	4,580	67	-	-	4	6	-
W.S. CENTRAL	18,456	23,649	123	270	1	10	2	8
Ark.	1,216	1,812	2	10	-	1	-	5
La.	6,054	5,029	100	9	1	1	-	-
Okla.	1,717	2,513	2	2	-	6	2	-
Tex.	9,469	14,295	19	249	-	2	-	3
MOUNTAIN	4,052	3,842	71	246	25	29	5	3
Mont.	21	23	4	4	-	1	-	-
Idaho	29	78	4	84	-	-	1	1
Wyo.	11	15	24	58	-	1	1	1
Colo.	978	958	14	12	5	5	-	-
N. Mex.	311	347	4	51	1	2	1	-
Ariz.	2,117	1,792	16	4	3	3	-	-
Utah	80	101	2	17	10	15	1	-
Nev.	505	528	3	16	6	2	1	1
PACIFIC	7,156	10,587	174	768	39	39	76	42
Wash.	964	858	8	10	8	4	1	1
Oreg.	377	319	7	10	N	N	2	8
Calif.	5,540	9,040	159	693	30	34	73	33
Alaska	147	155	-	1	1	-	-	-
Hawaii	128	215	-	54	-	1	-	-
Guam	22	20	-	-	-	2	-	-
P.R.	141	181	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	16	-	-	-	-	-	-

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

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending June 19, 1999, and June 20, 1998 (24th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
					NETSS		PHLIS	
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	487	542	2,424	3,430	11,819	13,539	8,636	12,423
NEW ENGLAND	20	21	381	635	746	903	626	823
Maine	2	2	72	115	55	67	32	26
N.H.	-	3	26	33	38	58	21	88
Vt.	1	-	58	30	26	36	26	26
Mass.	9	14	80	201	438	484	351	467
R.I.	-	2	46	35	38	53	48	37
Conn.	8	-	99	221	151	205	148	179
MID. ATLANTIC	117	157	435	710	1,542	2,301	1,005	2,184
Upstate N.Y.	34	32	286	488	404	505	425	462
N.Y. City	38	90	U	U	377	755	368	703
N.J.	27	20	85	86	307	488	212	390
Pa.	18	15	64	136	454	553	-	629
E.N. CENTRAL	52	55	34	50	1,508	2,414	1,170	1,614
Ohio	9	3	10	34	349	539	117	441
Ind.	8	2	-	4	166	269	106	253
Ill.	18	23	-	4	558	736	399	348
Mich.	15	24	22	6	397	478	380	353
Wis.	2	3	2	2	38	392	168	219
W.N. CENTRAL	21	32	289	359	773	814	657	913
Minn.	5	13	47	62	219	216	222	257
Iowa	6	3	65	73	88	142	58	125
Mo.	9	10	9	19	236	221	279	318
N. Dak.	-	2	76	62	15	19	-	40
S. Dak.	-	-	44	87	43	28	26	46
Nebr.	-	1	2	2	86	71	-	17
Kans.	1	3	46	54	86	117	72	110
S. ATLANTIC	137	112	934	1,166	2,592	2,260	1,747	1,833
Del.	1	1	29	17	43	28	51	42
Md.	42	41	198	245	306	315	276	348
D.C.	9	7	-	-	35	43	-	-
Va.	22	19	240	317	458	348	318	340
W. Va.	1	-	52	41	43	60	37	60
N.C.	10	8	191	302	404	340	364	372
S.C.	1	4	70	72	143	142	130	128
Ga.	12	15	71	82	385	341	419	369
Fla.	39	17	83	90	775	643	152	174
E.S. CENTRAL	9	15	130	135	633	621	263	547
Ky.	2	1	22	18	151	141	-	77
Tenn.	4	8	44	76	165	186	139	294
Ala.	2	4	64	39	193	163	107	144
Miss.	1	2	-	2	124	131	17	32
W.S. CENTRAL	8	11	49	101	815	1,082	643	1,356
Ark.	-	1	-	19	128	107	75	82
La.	6	4	-	-	159	190	66	256
Okla.	1	1	49	82	119	130	79	58
Tex.	1	5	-	-	409	655	423	960
MOUNTAIN	22	29	85	87	1,132	831	767	794
Mont.	3	-	32	26	25	37	1	19
Idaho	1	3	-	-	39	48	35	38
Wyo.	1	-	27	39	11	31	17	27
Colo.	8	7	1	2	354	210	332	207
N. Mex.	2	9	2	-	132	76	79	73
Ariz.	5	4	23	19	335	227	250	235
Utah	1	1	-	1	166	131	-	120
Nev.	1	5	-	-	70	71	53	75
PACIFIC	101	110	87	187	2,078	2,313	1,758	2,359
Wash.	5	9	-	-	190	169	279	279
Oreg.	13	9	1	-	149	131	189	169
Calif.	78	90	80	170	1,563	1,905	1,169	1,797
Alaska	-	-	6	17	18	16	6	12
Hawaii	5	2	-	-	158	92	115	102
Guam	-	1	-	-	18	11	-	-
P.R.	-	-	37	26	176	269	-	-
V.I.	U	U	U	U	-	-	-	-
Amer. Samoa	U	U	U	U	-	-	-	-
C.N.M.I.	-	-	-	-	-	10	-	-

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

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

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending June 19, 1999, and June 20, 1998 (24th Week)

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS					
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999†	Cum. 1998†
UNITED STATES	5,315	7,909	1,908	4,863	2,837	3,165	3,349	4,038
NEW ENGLAND	144	202	113	181	28	36	169	207
Maine	2	6	-	-	-	1	8	3
N.H.	7	7	5	8	-	1	3	2
Vt.	4	4	3	-	2	3	-	1
Mass.	90	124	70	121	17	22	92	116
R.I.	14	15	9	12	1	-	19	24
Conn.	27	46	26	40	8	9	47	61
MID. ATLANTIC	363	1,223	167	1,026	113	105	899	1,008
Upstate N.Y.	96	220	30	64	15	16	131	134
N.Y. City	98	400	81	439	50	23	596	610
N.J.	103	387	56	356	13	50	172	264
Pa.	66	216	-	167	35	16	U	U
E.N. CENTRAL	797	1,190	332	609	560	489	158	199
Ohio	249	276	14	66	41	72	U	U
Ind.	39	78	10	22	157	86	U	U
Ill.	312	620	218	501	267	204	U	U
Mich.	149	119	73	4	95	89	123	149
Wis.	48	97	17	16	U	38	35	50
W.N. CENTRAL	459	406	270	180	52	74	229	182
Minn.	76	75	53	78	5	5	88	60
Iowa	7	28	8	26	5	-	26	2
Mo.	322	46	191	36	34	56	82	78
N. Dak.	2	4	-	2	-	-	2	3
S. Dak.	8	19	4	15	-	1	3	13
Nebr.	25	220	-	13	4	4	9	5
Kans.	19	14	14	10	4	8	19	21
S. ATLANTIC	1,030	1,436	226	483	920	1,216	637	734
Del.	7	7	2	2	4	15	12	16
Md.	58	90	15	29	187	342	U	U
D.C.	25	10	-	-	14	36	19	53
Va.	36	66	8	24	75	84	104	118
W. Va.	5	7	2	5	2	2	19	24
N.C.	107	124	51	78	236	340	187	193
S.C.	47	71	17	29	123	148	124	138
Ga.	95	373	27	115	136	133	172	192
Fla.	650	688	104	201	143	116	U	U
E.S. CENTRAL	551	393	217	236	532	547	223	369
Ky.	100	76	-	38	46	58	31	89
Tenn.	361	63	197	84	301	265	U	U
Ala.	51	225	19	112	125	124	136	173
Miss.	39	29	1	2	60	100	56	107
W.S. CENTRAL	744	1,583	332	1,731	400	416	740	963
Ark.	44	73	21	16	27	58	71	53
La.	76	128	29	144	121	134	U	U
Okla.	219	104	70	30	95	24	60	55
Tex.	405	1,278	212	1,541	157	200	609	855
MOUNTAIN	316	494	152	285	96	106	62	102
Mont.	6	3	-	3	-	-	5	12
Idaho	6	11	3	6	-	-	-	4
Wyo.	2	1	1	-	-	1	1	2
Colo.	50	62	37	47	1	7	U	U
N. Mex.	40	114	13	44	-	12	23	27
Ariz.	168	268	92	165	89	74	U	U
Utah	24	16	-	13	2	3	18	28
Nev.	20	19	6	7	4	9	15	29
PACIFIC	911	982	99	132	136	176	232	274
Wash.	47	52	51	55	35	9	74	115
Oreg.	34	57	29	55	2	1	53	53
Calif.	808	853	-	-	96	166	U	U
Alaska	-	3	-	2	1	-	29	23
Hawaii	22	17	19	20	2	-	76	83
Guam	3	19	-	-	-	-	-	37
P.R.	22	26	-	-	82	109	41	65
V.I.	-	-	-	-	U	U	U	U
Amer. Samoa	-	-	-	-	U	U	U	U
C.N.M.I.	-	11	-	-	-	127	-	55

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

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

†Cumulative reports of provisional tuberculosis cases for 1998 and 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 June 19, 1999, and June 20, 1998 (24th 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	563	571	7,227	10,528	2,906	3,771	-	27	-	13	40	38
NEW ENGLAND	41	41	91	142	46	82	-	5	-	4	9	2
Maine	5	2	4	13	-	-	-	-	-	-	-	-
N.H.	7	6	7	7	7	9	-	-	-	1	1	-
Vt.	4	2	3	11	1	3	-	-	-	-	-	-
Mass.	18	29	30	46	22	32	-	4	-	2	6	2
R.I.	-	2	9	9	16	20	-	-	-	-	-	-
Conn.	7	-	38	56	-	18	U	1	U	1	2	-
MID. ATLANTIC	75	81	481	786	370	588	-	-	-	2	2	11
Upstate N.Y.	43	25	111	152	92	112	-	-	-	2	2	2
N.Y. City	11	24	80	293	89	200	-	-	-	-	-	-
N.J.	21	27	57	145	40	102	U	-	U	-	-	8
Pa.	-	5	233	196	149	174	-	-	-	-	-	1
E.N. CENTRAL	76	92	1,451	1,440	277	460	-	1	-	-	1	14
Ohio	29	34	345	159	44	33	-	-	-	-	-	1
Ind.	13	21	94	87	23	50	-	1	-	-	1	3
Ill.	27	33	220	361	-	121	-	-	-	-	-	-
Mich.	7	-	766	720	209	212	-	-	-	-	-	10
Wis.	-	4	26	113	1	44	U	-	U	-	-	-
W.N. CENTRAL	47	39	347	818	245	193	-	-	-	-	-	-
Minn.	12	25	33	60	19	16	-	-	-	-	-	-
Iowa	13	1	75	347	112	29	-	-	-	-	-	-
Mo.	16	8	182	338	88	121	-	-	-	-	-	-
N. Dak.	-	-	1	3	-	4	U	-	U	-	-	-
S. Dak.	1	-	8	8	1	1	-	-	-	-	-	-
Nebr.	3	-	28	12	10	9	-	-	-	-	-	-
Kans.	2	5	20	50	15	13	-	-	-	-	-	-
S. ATLANTIC	130	104	851	763	513	390	-	1	-	3	4	6
Del.	-	-	2	3	-	-	-	-	-	-	-	1
Md.	31	35	147	159	74	83	-	-	-	-	-	1
D.C.	3	-	32	28	11	6	U	-	U	-	-	-
Va.	12	12	68	124	45	51	-	1	-	2	3	2
W. Va.	4	4	15	1	11	3	-	-	-	-	-	-
N.C.	21	13	58	48	100	81	-	-	-	-	-	-
S.C.	2	3	17	16	38	3	-	-	-	-	-	-
Ga.	30	21	217	230	60	80	-	-	-	-	-	1
Fla.	27	16	295	154	174	83	-	-	-	1	1	1
E.S. CENTRAL	45	36	225	201	212	190	-	-	-	-	-	-
Ky.	6	5	36	12	24	23	-	-	-	-	-	-
Tenn.	24	22	114	114	96	133	-	-	-	-	-	-
Ala.	13	7	36	44	47	34	-	-	-	-	-	-
Miss.	2	2	39	31	45	-	U	-	U	-	-	-
W.S. CENTRAL	33	29	1,299	1,907	266	633	-	1	-	2	3	-
Ark.	1	-	25	39	21	38	U	-	U	-	-	-
La.	7	13	59	40	72	47	-	-	-	-	-	-
Okla.	23	14	244	269	58	31	-	-	-	-	-	-
Tex.	2	2	971	1,559	115	517	U	1	U	2	3	-
MOUNTAIN	56	76	712	1,599	301	386	-	1	-	-	1	-
Mont.	1	-	12	51	15	3	-	-	-	-	-	-
Idaho	1	-	27	125	15	16	-	-	-	-	-	-
Wyo.	1	-	4	23	5	2	U	-	U	-	-	-
Colo.	6	14	122	120	43	46	-	-	-	-	-	-
N. Mex.	11	4	26	82	105	147	-	-	-	-	-	-
Ariz.	30	38	443	981	78	95	-	1	-	-	1	-
Utah	4	3	25	106	15	37	-	-	-	-	-	-
Nev.	2	17	53	111	25	40	U	-	U	-	-	-
PACIFIC	60	73	1,770	2,872	676	849	-	18	-	2	20	5
Wash.	1	3	141	553	31	50	-	-	-	-	-	1
Oreg.	24	30	131	225	43	83	-	8	-	-	8	-
Calif.	29	33	1,488	2,053	587	702	-	10	-	2	12	4
Alaska	4	1	3	12	9	7	-	-	-	-	-	-
Hawaii	2	6	7	29	6	7	-	-	-	-	-	-
Guam	-	-	2	-	2	1	U	1	U	-	1	-
P.R.	1	2	79	29	73	272	-	-	-	-	-	-
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	-	31	U	-	U	-	-	-

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

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

†Of 118 cases among children aged <5 years, serotype was reported for 52 and of those, 12 were type b.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 19, 1999, and June 20, 1998 (24th 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	1,258	1,507	5	171	390	30	2,372	2,124	13	130	282
NEW ENGLAND	69	68	-	3	1	-	253	395	-	5	36
Maine	4	4	-	-	-	-	-	5	-	-	-
N.H.	9	8	-	1	-	-	53	28	-	-	-
Vt.	4	1	-	-	-	-	10	32	-	-	-
Mass.	43	29	-	2	1	-	179	314	-	5	8
R.I.	2	3	-	-	-	-	3	3	-	-	-
Conn.	7	23	U	-	-	U	8	13	U	-	28
MID. ATLANTIC	112	155	1	21	167	6	552	269	1	14	129
Upstate N.Y.	33	39	-	5	2	4	491	128	1	11	107
N.Y. City	27	18	-	3	153	-	10	13	-	-	9
N.J.	23	36	U	-	5	U	-	8	U	-	12
Pa.	29	62	1	13	7	2	51	120	-	3	1
E.N. CENTRAL	195	244	1	22	46	3	167	207	-	-	-
Ohio	83	82	1	7	19	2	101	71	-	-	-
Ind.	36	42	-	2	4	1	11	49	-	-	-
Ill.	50	70	-	6	6	-	35	17	-	-	-
Mich.	25	26	-	7	17	-	20	32	-	-	-
Wis.	1	24	U	-	-	U	-	38	U	-	-
W.N. CENTRAL	145	123	-	5	20	3	61	158	12	71	27
Minn.	28	19	-	1	10	-	25	86	-	-	-
Iowa	28	17	-	3	6	1	18	42	3	21	-
Mo.	57	52	-	1	3	2	15	12	2	2	2
N. Dak.	3	-	U	-	1	U	-	-	U	-	-
S. Dak.	8	6	-	-	-	-	2	4	-	-	-
Nebr.	9	6	-	-	-	-	1	6	7	48	-
Kans.	12	23	-	-	-	-	-	8	-	-	25
S. ATLANTIC	214	226	2	34	24	11	136	114	-	17	4
Del.	3	1	-	-	-	-	-	1	-	-	-
Md.	33	22	-	3	-	-	36	25	-	1	-
D.C.	1	-	U	2	-	U	-	1	U	-	-
Va.	26	22	-	8	4	-	13	6	-	-	-
W. Va.	4	7	-	-	-	-	1	1	-	-	-
N.C.	25	33	2	7	7	5	33	42	-	16	3
S.C.	25	35	-	3	4	1	9	13	-	-	-
Ga.	36	53	-	1	1	-	16	5	-	-	-
Fla.	61	53	-	10	8	5	28	20	-	-	1
E.S. CENTRAL	104	112	-	1	8	1	43	50	-	1	-
Ky.	29	16	-	-	-	-	3	18	-	-	-
Tenn.	34	40	-	-	1	-	25	16	-	-	-
Ala.	24	37	-	1	4	1	11	14	-	1	-
Miss.	17	19	U	-	3	U	4	2	U	-	-
W.S. CENTRAL	92	183	-	21	31	-	59	134	-	5	68
Ark.	19	22	U	-	-	U	4	14	U	-	-
La.	34	35	-	3	2	-	3	1	-	-	-
Okla.	16	26	-	1	-	-	7	15	-	-	-
Tex.	23	100	U	17	29	U	45	104	U	5	68
MOUNTAIN	87	81	-	12	23	4	242	422	-	14	5
Mont.	2	2	-	-	-	-	2	1	-	-	-
Idaho	8	4	-	1	3	1	93	135	-	-	-
Wyo.	3	3	U	-	1	U	2	7	U	-	-
Colo.	23	17	-	3	3	2	60	106	-	-	-
N. Mex.	10	15	N	N	N	1	21	64	-	-	1
Ariz.	28	28	-	-	4	-	29	69	-	13	1
Utah	8	8	-	5	3	-	33	22	-	-	2
Nev.	5	4	U	3	9	U	2	18	U	1	1
PACIFIC	240	315	1	52	70	2	859	375	-	3	13
Wash.	37	38	-	2	5	-	479	136	-	-	9
Oreg.	40	54	N	N	N	-	17	27	-	-	-
Calif.	155	218	1	44	49	2	353	205	-	3	2
Alaska	4	1	-	1	2	-	3	2	-	-	-
Hawaii	4	4	-	5	14	-	7	5	-	-	2
Guam	-	2	U	1	2	U	1	-	U	-	-
P.R.	5	6	-	-	1	-	8	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 June 19, 1999 (24th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	518	370	87	36	8	17	38
Boston, Mass.	129	82	28	10	1	8	15
Bridgeport, Conn.	37	27	5	4	1	-	2
Cambridge, Mass.	11	8	2	1	-	-	1
Fall River, Mass.	31	24	5	2	-	-	2
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	19	15	1	2	1	-	-
Lynn, Mass.	14	11	2	1	-	-	1
New Bedford, Mass.	22	19	2	1	-	-	1
New Haven, Conn.	34	23	6	5	-	-	2
Providence, R.I.	57	42	11	2	1	1	-
Somerville, Mass.	2	2	-	-	-	-	-
Springfield, Mass.	65	42	13	3	2	5	3
Waterbury, Conn.	31	23	4	2	1	1	2
Worcester, Mass.	66	52	8	3	1	2	9
MID. ATLANTIC	2,050	1,427	395	146	41	41	64
Albany, N.Y.	46	31	7	5	2	1	2
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	91	71	16	4	-	-	3
Camden, N.J.	42	21	17	2	2	-	4
Elizabeth, N.J.	U	U	U	U	U	U	U
Erie, Pa.	45	36	5	3	-	1	1
Jersey City, N.J.	56	39	8	7	1	1	-
New York City, N.Y.	1,043	727	200	78	23	15	18
Newark, N.J.	U	U	U	U	U	U	U
Paterson, N.J.	25	16	8	1	-	-	-
Philadelphia, Pa.	331	211	75	28	6	11	15
Pittsburgh, Pa.§	77	55	10	3	3	6	5
Reading, Pa.	29	23	3	2	-	1	1
Rochester, N.Y.	120	91	21	4	3	1	10
Schenectady, N.Y.	U	U	U	U	U	U	U
Scranton, Pa.	18	16	2	-	-	-	1
Syracuse, N.Y.	92	66	15	6	1	4	3
Trenton, N.J.	18	8	7	3	-	-	1
Utica, N.Y.	17	16	1	-	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,996	1,358	389	153	44	50	127
Akron, Ohio	44	32	4	5	-	3	-
Canton, Ohio	45	38	6	-	1	-	1
Chicago, Ill.	408	244	94	49	15	5	35
Cincinnati, Ohio	145	108	24	8	5	-	14
Cleveland, Ohio	136	88	22	21	2	3	3
Columbus, Ohio	215	152	44	10	4	5	16
Dayton, Ohio	104	81	21	2	-	-	11
Detroit, Mich.	196	115	36	24	7	14	4
Evansville, Ind.	28	24	3	-	-	1	1
Fort Wayne, Ind.	67	47	16	2	-	1	2
Gary, Ind.	16	8	3	2	1	2	1
Grand Rapids, Mich.	68	50	9	4	2	3	5
Indianapolis, Ind.	176	121	36	11	3	5	11
Lansing, Mich.	36	18	11	5	1	1	2
Milwaukee, Wis.	104	80	20	2	1	1	13
Peoria, Ill.	48	36	9	-	-	3	1
Rockford, Ill.	38	24	10	2	-	2	-
South Bend, Ind.	U	U	U	U	U	U	U
Toledo, Ohio	70	52	14	2	1	1	3
Youngstown, Ohio	52	40	7	4	1	-	4
W.N. CENTRAL	718	545	114	34	12	13	41
Des Moines, Iowa	50	38	7	2	1	2	5
Duluth, Minn.	24	23	1	-	-	-	-
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	98	65	21	8	2	2	7
Lincoln, Nebr.	37	27	6	3	1	-	4
Minneapolis, Minn.	211	172	29	7	1	2	13
Omaha, Nebr.	95	70	16	4	3	2	9
St. Louis, Mo.	103	71	19	7	3	3	-
St. Paul, Minn.	100	79	15	3	1	2	3
Wichita, Kans.	U	U	U	U	U	U	U
S. ATLANTIC	1,061	692	209	95	37	28	69
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	150	82	39	22	5	2	13
Charlotte, N.C.	88	67	12	4	2	3	6
Jacksonville, Fla.	179	110	44	13	4	8	7
Miami, Fla.	102	70	19	9	2	2	-
Norfolk, Va.	48	30	11	4	2	1	8
Richmond, Va.	64	43	8	6	4	3	1
Savannah, Ga.	53	38	10	1	4	-	5
St. Petersburg, Fla.	69	48	8	7	2	4	5
Tampa, Fla.	185	128	29	19	6	3	17
Washington, D.C.	102	56	28	10	6	2	7
Wilmington, Del.	21	20	1	-	-	-	-
E.S. CENTRAL	898	585	173	83	31	24	58
Birmingham, Ala.	202	134	31	19	5	11	11
Chattanooga, Tenn.	62	40	13	6	2	1	5
Knoxville, Tenn.	62	38	15	7	1	1	2
Lexington, Ky.	79	49	23	5	2	-	12
Memphis, Tenn.	213	143	36	20	7	7	20
Mobile, Ala.	71	45	15	7	2	2	2
Montgomery, Ala.	62	43	12	4	3	-	4
Nashville, Tenn.	147	93	28	15	9	2	2
W.S. CENTRAL	1,450	986	280	109	45	30	92
Austin, Tex.	76	50	16	5	3	2	2
Baton Rouge, La.	64	42	12	6	4	-	1
Corpus Christi, Tex.	64	47	11	3	2	1	6
Dallas, Tex.	198	137	30	23	5	3	4
El Paso, Tex.	81	48	15	11	1	6	5
Ft. Worth, Tex.	92	55	25	8	2	2	6
Houston, Tex.	355	227	80	30	13	5	27
Little Rock, Ark.	84	60	13	6	1	4	9
New Orleans, La.	63	38	20	2	2	1	7
San Antonio, Tex.	212	157	36	5	11	3	19
Shreveport, La.	17	15	2	-	-	-	2
Tulsa, Okla.	144	110	20	10	1	3	4
MOUNTAIN	882	596	172	74	17	23	57
Albuquerque, N.M.	141	89	31	16	4	1	4
Boise, Idaho	40	28	9	3	-	-	4
Colo. Springs, Colo.	47	37	5	3	-	2	3
Denver, Colo.	88	53	20	8	1	6	7
Las Vegas, Nev.	200	126	50	16	3	5	9
Ogden, Utah	18	10	7	-	1	-	2
Phoenix, Ariz.	62	46	7	5	2	2	2
Pueblo, Colo.	24	19	3	2	-	-	2
Salt Lake City, Utah	96	61	17	8	5	5	12
Tucson, Ariz.	166	127	23	13	1	2	12
PACIFIC	1,690	1,230	283	96	36	41	132
Berkeley, Calif.	16	11	4	-	-	1	1
Fresno, Calif.	111	80	22	5	1	3	9
Glendale, Calif.	28	21	4	3	-	-	3
Honolulu, Hawaii	75	58	14	3	-	-	6
Long Beach, Calif.	58	49	4	4	-	1	10
Los Angeles, Calif.	371	270	59	26	8	8	29
Pasadena, Calif.	24	20	3	-	-	1	3
Portland, Oreg.	110	84	12	4	5	5	2
Sacramento, Calif.	181	131	28	12	3	7	17
San Diego, Calif.	194	141	31	14	5	3	20
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	185	129	36	12	3	5	12
Santa Cruz, Calif.	35	25	9	-	-	1	6
Seattle, Wash.	150	96	35	7	8	4	5
Spokane, Wash.	53	40	7	3	1	2	4
Tacoma, Wash.	99	75	15	3	2	-	5
TOTAL	11,263¶	7,789	2,102	826	271	267	678

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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