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Identification of HIV-1 Group O Infection — Los Angeles County, California, 1996

The strains of HIV-1 that have caused the worldwide pandemic of acquired immunodeficiency syndrome (AIDS) have been designated as group M viruses. A group of HIV-1 viruses that also cause AIDS but that are characterized by extensive genetic divergence from group M strains have been identified recently and classified as group O viruses. Group O viruses or serologic evidence of group O infection have been reported in patients from West and Central Africa (Cameroon, Gabon, Niger, Nigeria, Senegal, and Togo), nationals of these countries living in Europe, and one French national (*1–4*). The antibody response elicited by group O strains is not consistently detected by enzyme immunoassay (EIA) kits commercially available in Europe and the United States (*4,5*). This report describes a patient in Los Angeles County, California, with recently confirmed HIV-1 group O infection in whom HIV infection was not detected consistently by standard HIV serology.*

Case Investigation

As part of CDC's national sentinel surveillance for unusual HIV variants, including group O infections, the Los Angeles County Department of Health Services (LACDHS) in April 1996 referred to CDC blood specimens obtained from a woman who had come to the United States from Africa and who had been reported to the LACDHS AIDS surveillance program in 1995. She was evaluated initially in November 1994 because of a 3-month history of generalized lymphadenopathy; lymph node biopsies obtained during March 1995–June 1995 indicated lymphoid hyperplasia. In addition, in February 1995, she was tested for HIV infection by an Abbott† HIV-1/2 enzyme immunoassay (EIA) for HIV antibody; the result was nonreactive.

In October 1995, she was evaluated again for persistent lymphadenopathy and for a 1-month history of menorrhagia. A platelet count was 7000 cells/μL, and findings of an examination of a bone marrow aspirate were consistent with idiopathic thrombocytopenic purpura. A test for antibody to HIV using an EIA from a different manufacturer (Genetic Systems HIV-1 EIA) was weakly reactive; however, the confirmatory Western blot was indeterminant (P17,P24,P31, equivocal gp41,P50,P66 bands pre-

*Single copies of this report will be available until July 5, 1997, from the CDC National AIDS Clearinghouse, P.O. Box 6003, Rockville, MD 20849-6003; telephone (800) 458-5231 or (301) 217-0023.

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sent), and an HIV-2 EIA was nonreactive. The patient's CD4+ T-lymphocyte count was 132 cells/μL. When repeated 5 weeks later, findings were the same for the HIV-1 EIA (Genetic Systems) and Western blot; the CD4+ T-lymphocyte count was 92. In December 1995, a polymerase chain reaction assay for HIV-1 DNA was negative.

The patient had come to the United States and to Los Angeles County in 1994. She reported sexual contact with three men during her lifetime, including two in her country of origin during 1991–1994, and one (a native of Africa) in Los Angeles County during 1994–1995. None of the partners was known to be HIV-infected, to be bisexual, or to inject drugs. The patient reported one pregnancy in 1993 and that during the pregnancy both she and the father of the child had tested HIV-negative. She denied other HIV tests before or at the time of her arrival in the United States. The patient's baby was delivered by emergency cesarean section, and the patient did not know the quality of the procedures used to assure sterility of surgical instruments. She reported that the child and father continue to reside in Africa and are in good health. She denied a history of intravenous or other illicit drug use, occupational risks for HIV infection, and receipt of a blood transfusion. She had undergone scarification of her chest and back by a folk healer in 1985 for treatment of fever, and in 1991 for treatment of menstrual cramps. She reported that a razor blade was used in both procedures but did not know if these blades were sterile. She denied donating blood while residing in the United States.

Laboratory Investigation

At CDC, laboratory evidence for group O infection was established by HIV subtype-specific peptide serology (*5,6*), by culturing the virus from peripheral blood mononuclear cells of the patient, and by nucleic acid sequencing of the viral isolate. HIV subtype-specific peptide serology demonstrated that serum specimens from the patient reacted with two prototypic group O strains—the V3 domain from ANT70 and the gp41 immunodominant region from MVP5180—but not with any peptides representing subtypes of the group M viruses. The nucleic acid sequences were analyzed by comparing the patient's viral nucleotide sequence with the sequences of prototype group O (ANT70 and MVP5180) and group M HIV viruses. When phylogenetic analysis was performed, sequences of the *env*, *gag,* and protease genes from the patient's isolate consistently and strongly clustered with the prototypic group O strains.

Commercially available diagnostic tests licensed by the Food and Drug Administration (FDA) were evaluated for their utility in detecting group O HIV infection in the patient. Serum samples obtained from the patient in April 1996 were tested using EIA assays from several manufacturers and by using reverse transcription-polymerase chain reaction (RT-PCR). Analyses performed at CDC and FDA laboratories indicated that antibodies to HIV-1 were detected by four of the five EIA kits tested (Table 1). Samples from the specimens obtained in October and November also were tested at CDC using the Genetic Systems HIV 1/2 EIA test; this kit failed to detect HIV infection in one sample (Table 1). HIV p24 antigen testing performed at CDC was negative on samples from specimens obtained in October 1995, November 1995, and April 1996. RT-PCR amplification to detect HIV RNA using standard HIV group M primers and probes (submitted to a commercial laboratory in May 1996) also was negative. However, a DNA PCR based on HIV-1 group O primers was positive at CDC.

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TABLE 1. Results of enzyme immunoassay (EIA)* antibody testing for HIV-1 in a patient infected with a group O variant of HIV-1 — Los Angeles County, California, 1996

Date of specimen collection	Test result (S/C ratio†, Manufacturer)
February 1995	Nonreactive (0.7, Abbott HIV-1/2 EIA†)
October 1995	Reactive(1.6, Genetic Systems HIV-1 EIA) Reactive (1.4, Genetic Systems HIV-1/2 EIA)
November 1995	Reactive (2.1, Genetic Systems HIV-1 EIA) Nonreactive (0.9, Genetic Systems HIV-1/2 EIA)
April 1996	Reactive (1.2, Abbott HIV-1/2 EIA) Nonreactive (0.7, Organon Teknika Corporation HIV-1 EIA) Reactive (4.2, Genetic Systems HIV-1 EIA) Reactive (3.4, Genetic Systems HIV-1/2 EIA) Reactive (3.1, Abbott HIV-1 EIA)

*Signal/cutoff (s/c) ratio is the ratio of the sample optical density (OD) to the minimum OD required for a positive test (e.g., an s/c ratio of >1.0 is required for a positive test).
†Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

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Editorial Note: This report documents the first recognized case of HIV-1 group O infection in the United States. Although the source of the patient's infection is not known, her relatively recent arrival in the United States and low CD4+ T-lymphocyte count at the time of presentation suggest that she was most likely infected in Africa. Of the <100 group O infections reported worldwide, nearly all have occurred among persons from countries in West and Central Africa (*7*). In Cameroon, where the first group O strains were identified, group O strains have accounted for an estimated 6% of HIV infections (*8*). The worldwide distribution of these divergent strains is not well defined, but based on surveillance data, group O infection in the United States is rare. Among the 590,788 AIDS and HIV cases reported to CDC through December 1995, only 91 have been reported as occurring in persons born in countries in West and Central Africa from which group O infections have been reported. In addition, stored serum samples obtained from persons in both high and low HIV-risk groups in the United States and Puerto Rico were analyzed by a peptide EIA specific for the prototypic group O strains (MVP5180 and ANT70) (*6*); however, group O infections were not detected.

The differences in HIV-1 antibody test results for blood samples collected from this patient on several dates and analyzed by multiple HIV-1 EIA kits underscore variations in the ability of FDA-licensed EIA test kits to detect HIV group O infection. For example, testing using the Abbott HIV 1/2 EIA kit was nonreactive for a serum sample obtained in February 1995 (signal/cutoff [s/c] ratio of 0.7) but reactive for a sample obtained in April 1996 (s/c ratio of 1.2). Variability in s/c ratios is expected in weakly reactive specimens and may reflect kit lot variation and temporal changes in antibody titers in the patient. In addition, standard PCR testing (DNA-PCR and RT-PCR) was consistently negative, probably because of the use of primer sets designed to amplify group M HIV-1 strains.

Although the patient described in this report is the only known case of group O infection in the United States, the identification of HIV variants that are not detected

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consistently by all FDA-licensed HIV-EIA kits has important implications for medical diagnosis and blood safety. Current U.S. recommendations to prevent HIV transmission by blood and blood products include exclusion of donors with behavioral risk factors for HIV infection and screening of donated blood for HIV-1 and HIV-2 antibodies and for HIV-1 p24 antigen (*9,10*). The current practice of temporary exclusion of donors who have lived in or traveled through malaria-endemic regions may result in the exclusion of some donors at increased risk for infection with group O strains, which also are endemic in some malarious regions. In addition, FDA-licensed EIA test kits will identify many infections with group O HIV strains (*5*). Although manufacturers are working to reconfigure existing HIV-EIA tests to increase sensitivity for divergent HIV strains, modifications to increase sensitivity for group O variants must be monitored to assure that test accuracy for more prevalent HIV variants is not compromised. FDA and CDC are working with the manufacturers of HIV tests to ensure detection of all known HIV variants.

The recognition of this case of HIV-1 group O infection and the potential for emergence of other highly divergent strains underscore the importance of maintaining active surveillance for HIV variants at local, national, and global levels (*6,7*). To improve surveillance for and characterization of divergent HIV strains, CDC has established a domestic and global monitoring program for divergent HIV strains that are not reliably detected by the FDA-licensed tests.

Patients who present with clinical or laboratory findings suggestive of HIV disease, but for whom HIV screening tests are negative or equivocal, should be evaluated with further diagnostic tests to rule out HIV infection. Physicians evaluating such patients should consult with their state or local health department for assistance in characterizing risks for HIV exposure, defining prior history of blood donation, confirming the diagnosis of HIV infection, contacting sex partners, and, if necessary, characterizing the HIV strain.

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Progress Toward Global Eradication of Poliomyelitis, 1995

In 1988, the World Health Assembly established a target to eradicate poliomyelitis worldwide by the year 2000 (*1*). To achieve this goal, the World Health Organization (WHO) recommends four strategies: 1) achievement and maintenance of high routine vaccination coverage levels among children with at least three doses of oral poliovirus vaccine (OPV); 2) development of sensitive systems of epidemiologic and laboratory surveillance, including the use of the standard WHO case definition*; 3) administration of supplementary doses of OPV to all young children (usually those aged <5 years) during National Immunization Days (NIDs)† to rapidly interrupt poliovirus transmission; and 4) "mopping-up" vaccination campaigns—localized campaigns targeted at high-risk areas where poliovirus transmission is most likely to persist at low levels. This report updates progress toward global polio eradication based on information submitted to WHO as of April 15, 1996.

Worldwide. Routine vaccination coverage with three doses of OPV among children aged 1 year reached 83% in 1995, and ranged from 80% to 85% during 1990–1994. The provisional number of reported polio cases reached an all-time low of 6179 in 1995, representing a 28% decline from the 8635 cases reported in 1994, and an 82% decline from the 35,251 cases reported in 1988. In addition, the number of countries reporting zero cases of polio increased from 88 in 1988 to 150 in 1995 (Figure 1). The number of countries with endemic polio that conducted NIDs increased from 16 in 1988 to 62 in 1995. A total of 25 countries conducted their first NIDs during 1995, and 24 countries plan to conduct their first NIDs in 1996 (Figure 2).

A total of 120 countries have implemented surveillance for acute flaccid paralysis (AFP) to detect all cases of polio that meet the standard WHO case definition and to monitor the circulation of wild polioviruses. Of these, 35 (29%) countries currently meet one performance indicator (i.e., an annual rate of one case of AFP per 100,000 population aged <15 years). WHO has certified six specialized reference laboratories, 12 regional reference laboratories, and 60 national laboratories as members of the Global Polio Laboratory Network.

African Region. Polio remains endemic in most countries of West and Central Africa: in 1995, a total of 1512 cases of polio were reported, a decrease of 67% from 1988 (4564 cases). The number of countries reporting zero cases increased from eight in 1988 to 17 in 1995. Routine vaccination coverage increased to 58% in the region. During 1995, Algeria, Mauritania, and Namibia conducted NIDs, and Angola and South Africa conducted Sub-National Immunization Days (SNIDs). A total of 29 countries in the region plan to conduct either NIDs or SNIDs during 1996, and all polio-endemic countries intend to conduct NIDs during 1997.

*A confirmed case of polio is defined as acute flaccid paralysis (AFP) and at least one of the following: 1) laboratory-confirmed wild poliovirus infection, 2) residual paralysis at 60 days, 3) death, or 4) no follow-up investigation at 60 days.

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

Poliomyelitis — Continued

FIGURE 1. Reported cases of poliomyelitis — worldwide, 1995

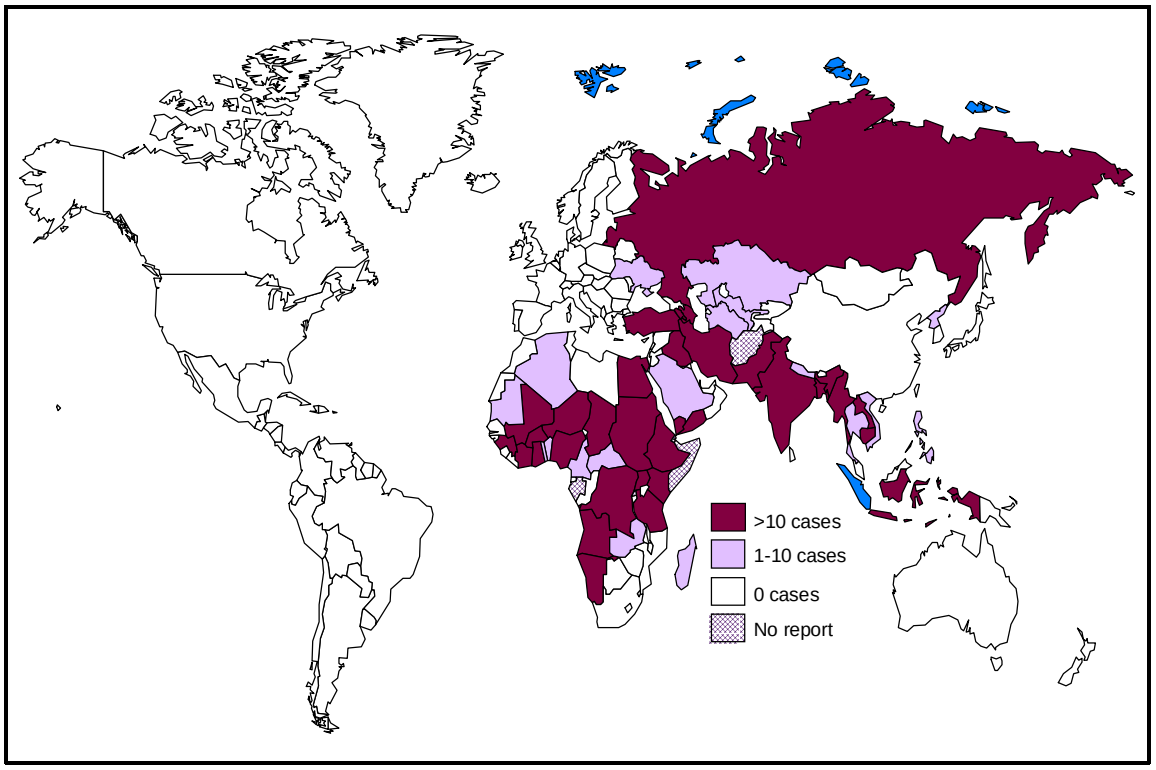
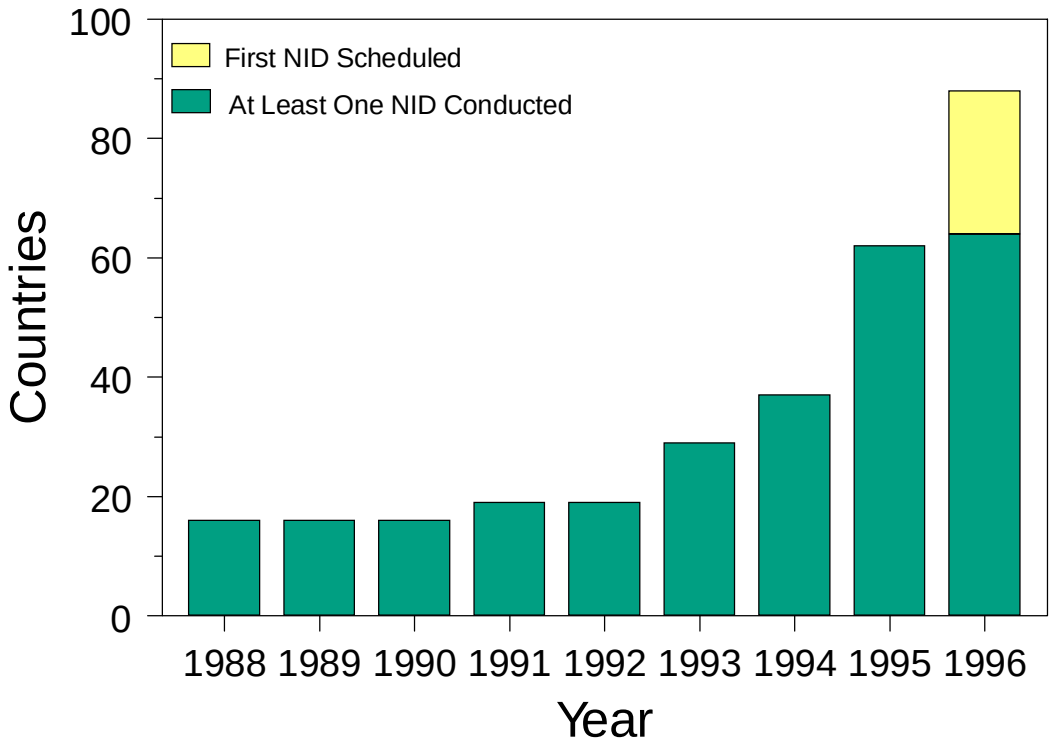


FIGURE 2. Number of countries that conducted or plan to conduct National Immunization Days (NIDs), 1988–1996*



*1996 total is a projection based on country plans.

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Region of the Americas. The last case of indigenous polio in the Americas was reported in 1991 from Peru, and in 1994, an international commission certified that indigenous transmission of wild poliovirus had been interrupted in the Americas (*2*).

Eastern Mediterranean Region. From 1988 to 1995, the number of reported cases of polio decreased 68% (from 2339 to 738). In 1995, nine countries reported cases and 11 countries reported zero cases; three countries did not provide reports. Most (86%) cases in 1995 were reported by Pakistan (460 cases), Ir an (101), and Egypt (71). With the exception of Cyprus, Somalia, Sudan, and Yemen, all countries conducted NIDs in 1995 (*3*). In early 1996, a truce was declared in Sudan to facilitate NIDs; Yemen has scheduled NIDs for late 1996.

European Region. From 1988 through 1995, the number of annually reported polio cases has remained stable: during 1995, a total of 205 cases were reported, compared with 214 cases in 1988. During 1995, the Russian Federation reported an outbreak of 154 cases, primarily from a region (Chechnya) affected by civil war; these cases accounted for 75% of the cases in the region. In 1995, a total of 10 countries conducted NIDs (Armenia, Azerbaijan, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Tadjikistan, Turkmenistan, Turkey, and Uzbekistan) (*3*). NIDs were conducted in the Russian Federation during March and April 1996 and are planned for 1996 in Bosnia and Herzegovina, Moldova, and Ukraine; Romania and Yugoslavia (Serbia and Montenegro) plan to conduct SNIDs.

Southeast Asian Region. From 1988 to 1995, the number of reported polio cases decreased 87%, from 25,711 to 3398. During 1995, India reported 3142 cases, representing 92% of the regional total and 51% of the global total. In 1995, six countries conducted NIDs (Bangladesh, Bhutan, India, Indonesia, Sri Lanka, and Thailand). India vaccinated 87.8 million children during NIDs in December 1995 (first round) and 93.6 million children in January 1996 (second round) (*4*). During 1996, the first NIDs have been conducted or are planned in the Democratic People's Republic of Korea, Myanmar, and Nepal.

Western Pacific Region. From 1988 to 1995, the number of reported polio cases decreased 84%, from 2126 to 344. In 1995, polio was reported by five of the 35 countries in the region (Cambodia, People's Republic of China, Laos, Philippines, and Vietnam). The 91 cases in China represented a 98% decline from 1990 (5065 cases); all of the cases in 1995 were confirmed based on epidemiologic and clinical criteria, and no wild polioviruses were isolated despite substantial improvements in surveillance. However, one imported case of polio attributed to wild poliovirus was reported in the southwestern province of Yunnan, bordering Myanmar. Endemic polio confined to the Mekong Delta area was reported by Vietnam (133 cases) and Cambodia (105 cases). Philippines reported four cases that were confirmed on epidemiologic and clinical criteria; wild poliovirus was last isolated in Philippines in May 1993.

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Editorial Note: Major achievements in the global campaign to eradicate polio include the substantial reduction in the global incidence of polio, the complete elimination of

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polio from the Region of the Americas, and the widespread implementation of NIDs and other WHO-recommended strategies. In particular, during 1995, all polio-endemic countries in Europe and Asia, with the exception of the Democratic People's Republic of Korea, Myanmar, Nepal, and Yemen, conducted NIDs, which provided supplemental poliovirus vaccine to nearly half of the world's children aged <5 years. During 1996, the Democratic People's Republic of Korea and Myanmar have conducted NIDs, and Nepal and Yemen plan to conduct NIDs. Substantial progress also has been reported in Africa, where routine vaccination coverage was >50% for the first time ever. More than half of the countries in Africa are planning to conduct NIDs or SNIDs in 1996. Barriers to global eradication of polio include financial, managerial, political, and technical challenges, and the need to implement the polio eradication strategies in the remaining polio-endemic countries, including those with internal conflicts and civil war.

In 1995, countries of the Indian subcontinent accounted for approximately 60% of reported polio cases. In India, the next NIDs will be expanded to include children aged <5 years—encompassing 125 million children. Bangladesh, India, Nepal, Pakistan, and Sri Lanka have scheduled synchronized NIDs in December 1996 and January 1997 to correspond with the cool and dry season, which should further improve the effectiveness of NIDs in interrupting poliovirus circulation, decreasing the incidence of polio in these countries and reducing the potential for exportation of polioviruses to polio-free areas of the world. Two geographically contiguous countries (Myanmar and Thailand) also will conduct NIDs during these months.

In the African region, plans to conduct NIDs or SNIDs in 29 countries in 1996, and in all countries in the region by the end of 1997, pose exceptional challenges because of deficiencies in infrastructure for health, communications, and transportation. Substantial costs will be required to overcome these constraints. Most of the costs of polio eradication have been borne by individual countries; however, as the strategies for polio eradication are implemented in these poorest and least developed countries, a larger percentage of the costs will have to be procured through external sources. Rotary International, a major partner of the eradication initiative, is leading an international advocacy effort to expand the partnership of organizations and governments supporting the polio eradication initiative.

The global eradication of polio by the year 2000 also will require that surveillance be strengthened to closely monitor the decline in polio incidence following NIDs and to target supplemental vaccination activities (i.e., "mopping-up"). An effective AFP surveillance system may require several years to implement and must be able to 1) detect one or more cases of AFP per 100,000 children aged <15 years; 2) collect stool specimens from ≥80% of persons with AFP within 2 weeks of the onset of paralysis; 3) transport ≥90% of stool specimens to the laboratory in satisfactory condition; and 4) isolate nonpolio enteroviruses from ≥10% of stool specimens.

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Spontaneous Abortions Possibly Related to Ingestion of Nitrate-Contaminated Well Water — LaGrange County, Indiana, 1991–1994

Health effects associated with ingestion of nitrate-contaminated water have included methemoglobinemia (i.e., blue baby syndrome) in infants (*1*) and spontaneous abortions in laboratory animals and livestock (*2,3*); however, only one study in humans has reported an association between increased methemoglobin levels and spontaneous abortion (*4*). During March 1993, the LaGrange County (Indiana) Health Department (LCHD) identified three women who reported a total of six spontaneous abortions during 1991–1993 and who resided in proximity to each other; each had obtained drinking water from nitrate-contaminated private wells in LaGrange County (1995 population: 29,350). LCHD was subsequently notified about a fourth woman from another part of the county who had had two spontaneous abortions after she had moved into a new home with a nitrate-contaminated private well. This report summarizes the investigations of these reports by LCHD, which indicate the need for further assessment of a possible relation between ingesting nitrate-contaminated water and spontaneous abortion.

Investigation 1

Patient 1. During May 1991–December 1992, a 35-year-old woman had four consecutive spontaneous abortions: the first three at 8 weeks' gestation, and the fourth at 11 weeks. Karyotyping of one fetus did not identify a genetic explanation for the spontaneous abortion. During the investigation of this case, a neighbor was identified who also had reported a spontaneous abortion (patient 2).

Patient 2. During March 1993, a 37-year-old woman who resided one half mile from patient 1 had spontaneous abortion of her second pregnancy at 8 weeks' gestation. Her first pregnancy (which occurred at age 34, before moving to the current home) had resulted in the birth of a full-term, live-born infant. During the investigation of patients 1 and 2, another neighbor reported to LCHD a history of a recent spontaneous abortion (patient 3).

Patient 3. During July 1993, a 20-year-old woman who resided approximately 1 mile from patient 1 had spontaneous abortion of her first pregnancy during the 8th week of gestation.

Environmental Investigation

To determine possible causes of this cluster of spontaneous abortions in the three women, LCHD conducted an environmental investigation during June–September 1993. A well located on a hog farm in the vicinity of the residences of patients 1–3 had been documented to be nitrate contaminated (>50 mg/L) in 1989; LCHD had been notified about this contamination in 1990. Because of the proximity of the residences of patients 1–3 and the hog-confinement facility, persons in all 19 residences within 3 miles down gradient (i.e., the direction the groundwater was moving) of the hog-confinement facility were interviewed regarding illness and reproductive histories. Nine women of childbearing age lived in these residences, including the three patients whose spontaneous abortions had been investigated by LCHD. Five other women each reported having a full-term birth during the preceding 2 years. Water samples from the 19 wells serving the residences were tested for bacteria and nitrates. For

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patients 2 and 3, water samples also were analyzed for volatile and semivolatile compounds, pesticides, metals, inorganic compounds, and coliform bacteria.

Nitrate was the only contaminant in well water present at elevated levels. In the wells serving the households of patients 1–3, nitrate levels were 19.0 mg/L, 26.0 mg/L, and 19.2 mg/L, respectively (Environmental Protection Agency [EPA] maximum contaminant level [MCL] for nitrate: 10.0 mg/L). In comparison, for the five households in which women reported giving birth to full-term, live-born infants, drinking water nitrate levels ranged from 1.6 mg/L to 8.4 mg/L (mean: 3.1 mg/L).

An LCHD investigation of potential sources of nitrate contamination of the household wells indicated that the probable source of groundwater contamination was animal waste from the hog-confinement facility. This facility was located approximately one half mile from the residence of patient 1, 1 mile from patient 2, three fourths mile from patient 3, and approximately 2 miles from the residences of women reporting full-term births.

Investigation 2

After completing the investigations of patients 1–3, LCHD investigated a fourth case of spontaneous abortion in a 35-year-old woman who lived approximately 10 miles from the other three women. She had had five live births during 1984–1992. The woman's doctor reported to LCHD that she had had two spontaneous abortions during April and August 1994, both at 8 weeks' gestation: the first occurred 24 months after the birth of her fifth child and 44 months after beginning use of a new well. A mean nitrate-N level of 28.7 mg/L was detected in water samples collected during August 1994 from the household's well, which had been used since 1990. A nitrate-N level of 1.2 mg/L was detected in a second well on the property, approximately 100 feet from the first well; this well had been the source of the woman's drinking water during her first four pregnancies. Nitrate-N levels of <1.5 mg/L were present in water samples in six other wells located up gradient from the family's well and within 1 mile of the household. The only nitrate source identified near the contaminated well was the family's septic system, which was installed in sandy soil approximately 70 feet up gradient from the contaminated well. Although the well probably became contaminated by effluent from the septic tank, it is unknown when contamination occurred.

Following these investigations, all four women changed to nitrate-free sources of drinking water (i.e., bottled or reverse-osmosis treated). Subsequently, each delivered one or more full-term, live-born infants.

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Editorial Note: The most widely recognized health problem associated with ingestion of nitrate-contaminated water is infant methemoglobinemia, and the EPA standard for nitrate in drinking water of 10 mg/L was established in 1977 to prevent this condition. Although the findings from studies of the influence of nitrate on the reproductive outcomes of laboratory animals and livestock have not been consistent, some studies have suggested a relation between nitrate consumption and spontaneous abortions (*2,3*). Epidemiologic studies of humans have suggested a possible relation between

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ingestion of drinking water containing elevated nitrate levels and an increased risk for neural tube defects (*5,6*) and, based on the findings of one study, a possible relation between methemoglobin levels in women during early pregnancy and subsequent spontaneous abortions (*7*).

An estimated 13.8 million households in the United States obtain drinking water from private wells (*8*). Based on recent studies, the EPA MCL for nitrates was exceeded by 13.4% of household wells in nine states in the Midwest (*9*) and 9% of household wells nationally (*10*). Because of the risks for potential adverse health effects, persons who use drinking water that contains nitrate levels >10 mg/L or other contaminants exceeding the EPA MCL should have alternative sources of water or appropriate treatment of existing supplies. Information regarding testing of well water may be obtained from city or county health departments.

Spontaneous abortions occur commonly, are directly associated with increasing maternal age, and may cluster by chance. Possible explanations for the cases of spontaneous abortion investigated by LCHD are that they may represent an otherwise unrelated cluster or that they may have been related to ingestion of nitrate-contaminated drinking water. Term births occurred before or after the period when each of the four women consumed contaminated water, and spontaneous abortions occurred coincident with the period of nitrate exposure. However, spontaneous abortions frequently are preceded or followed by live births, and this investigation did not compare the rate of spontaneous abortions in other residents of the community who either were or were not exposed to nitrate-contaminated water. Although this investigation did not establish a causal link between spontaneous abortion and nitrate exposure, the findings indicate the need for further assessment of the possible effects of this common groundwater contaminant on human reproduction.

Since 1971, EPA and CDC have maintained a surveillance system to monitor the occurrence of waterborne disease outbreaks. Illnesses related to exposures to pathogens and chemicals associated with recreational water use or ingestion of drinking water should be reported to the Epidemiology Branch, Division of Parasitic Diseases, National Center for Infectious Diseases, CDC, telephone (770) 488-7760.

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Notice to Readers

Publication of Updated Guide for Developing Policies For HIV-Infected Students and School Staff

The National Association of State Boards of Education (NASBE) is one of 30 national organizations that receive assistance from CDC to help schools provide effective health education to prevent the spread of human immunodeficiency virus (HIV). As part of its education mission, NASBE has published the second edition of its guide *Someone at School Has AIDS: A Complete Guide to Education Policies Concerning HIV Infection* (*1*).

To develop the guide, NASBE convened experts in medicine, public health, education, and law* who recommended scientifically and legally based policy statements that local and state departments of education can use in developing policies for students and staff who are infected with HIV. The guide addresses infection control, confidentiality, and HIV-antibody testing. The second edition includes sections on HIV prevention, counseling and testing, support services, HIV and athletics, and community relations and provides a legal context for policy recommendations within the parameters established by the Americans with Disabilities Act, the Individuals with Disabilities Education Act, the Occupational Safety and Health Administration's infection-control guidelines, and the Family Educational Rights and Privacy Act.

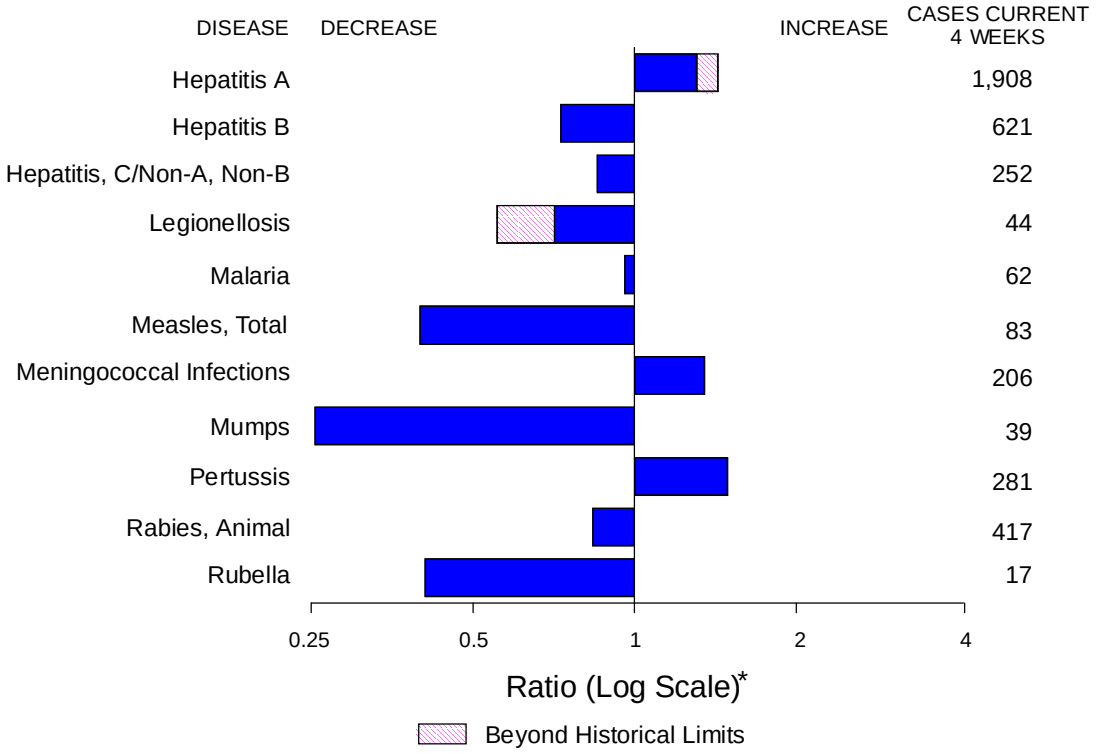
Copies of the guide are available from NASBE, 1012 Cameron Street, Alexandria, VA 22314; telephone (800) 220-5183 or (703) 684-4000.

Reference

1. National Association of State Boards of Education. Someone at school has AIDS: a complete guide to education policies concerning HIV infection. 2nd ed. Alexandria, Virginia: National Association of State Boards of Education, 1996.

*Representatives of the following organizations participated in developing and/or reviewing the guide: Advocates for Youth, Alabama Department of Education, American Academy of Pediatrics, American Medical Association, American Red Cross, Association of State and Territorial Health Officials, California State Board of Education, CDC, Council for Exceptional Children, Council of Chief State School Officers, Council of Great City Schools, Idaho Department of Health and Welfare, Indian Health Service, Kansas Board of Education, Maryland Department of Education, Massachusetts State Department of Education, National Alliance of State and Territorial AIDS Directors, National Association for Sport and Physical Education, National Association of People with AIDS, National Association of School Nurses, National Association of Secondary School Principals, National Association of State Directors of Special Education, National Catholic Educational Association, National Coalition of Advocates for Students, National Education Association, National Federation of State High School Associations, National Middle School Association, National PTA, National School Boards Association, National School Health Association, Nebraska Department of Education, Northside (San Antonio) Health Careers High School, Ryan White Foundation, South Carolina Department of Education, U.S. Department of Education, U.S. Department of Justice, Utah State Office of Education, Virginia Department of Education, Washington Department of Public Instruction, and West Virginia Department of Education.

FIGURE I. Selected notifiable disease reports, comparison of 4-week totals ending June 29, 1996, with historical data — United States



*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 — cases of selected notifiable diseases, United States, cumulative, week ending June 29, 1996 (26th Week)

	Cum. 1996		Cum. 1996
Anthrax	-	HIV infection, pediatric*§	138
Brucellosis	39	Plague	-
Cholera	2	Poliomyelitis, paralytic¶	-
Congenital rubella syndrome	1	Psittacosis	16
Cryptosporidiosis*	768	Rabies, human	-
Diphtheria	1	Rocky Mountain spotted fever (RMSF)	176
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*	10
eastern equine*	1	Syphilis, congenital**	-
St. Louis*	-	Tetanus	10
western equine*	-	Toxic-shock syndrome	63
Hansen Disease	50	Trichinosis	12
Hantavirus pulmonary syndrome*†	8	Typhoid fever	157

-: 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 to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention (NCHSTP), last update June 25, 1996.
¶ One suspected case of polio with onset in 1996 has been reported to date.
**Updated quarterly from reports to the Division of STD Prevention, NCHSTP. First quarter 1996 is not yet available.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending June 29, 1996, and July 1, 1995 (26th Week)

Reporting Area	AIDS*		Chlamydia	*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB		Legionellosis	
				NETSS†	PHLIS§						
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	34,213	35,320	140,863	596	250	133,773	194,974	1,761	1,979	341	584
NEW ENGLAND	1,391	1,762	8,508	74	18	3,657	2,314	58	61	18	10
Maine	22	72	-	3	-	21	40	-	-	1	3
N.H.	42	53	367	5	2	72	62	3	10	-	1
Vt.	10	13	-	6	6	29	24	24	6	2	-
Mass.	648	793	3,281	25	10	1,071	1,343	28	44	9	5
R.I.	94	134	1,012	5	-	260	251	3	1	6	1
Conn.	575	697	3,848	30	-	2,204	594	-	-	N	N
MID. ATLANTIC	9,450	9,096	19,768	57	23	14,842	22,259	180	201	68	80
Upstate N.Y.	1,164	1,118	N	39	12	2,974	4,644	155	102	20	23
N.Y. City	5,299	4,481	8,875	-	-	4,635	8,974	1	1	-	2
N.J.	1,796	2,208	2,166	18	5	2,388	1,702	-	83	7	16
Pa.	1,191	1,289	8,727	N	6	4,845	6,939	24	15	41	39
E.N. CENTRAL	2,777	2,871	23,607	179	74	23,533	39,560	237	162	102	187
Ohio	622	609	14,378	46	19	9,794	12,529	9	5	46	84
Ind.	393	257	5,067	25	13	3,435	4,390	7	-	25	42
Ill.	1,202	1,271	-	70	16	8,351	10,194	39	49	2	19
Mich.	407	562	-	38	26	-	9,168	182	108	23	21
Wis.	153	172	4,162	N	-	1,953	3,279	-	-	6	21
W.N. CENTRAL	820	844	10,229	91	65	5,558	9,881	53	32	19	44
Minn.	157	203	-	23	38	U	1,410	-	2	1	-
Iowa	57	44	73	8	11	160	716	21	3	1	13
Mo.	402	339	6,385	19	-	4,034	5,717	20	11	6	13
N. Dak.	8	4	2	8	6	1	15	-	3	-	2
S. Dak.	8	9	689	4	-	95	102	-	1	2	-
Nebr.	55	71	869	8	2	158	527	3	9	7	11
Kans.	133	174	2,211	21	8	1,110	1,394	9	3	2	5
S. ATLANTIC	8,571	9,004	25,335	34	9	48,034	53,777	122	140	55	98
Del.	167	163	-	-	1	714	1,025	1	-	1	1
Md.	1,026	1,297	3,090	N	1	6,331	6,232	-	6	8	17
D.C.	591	576	N	-	-	2,205	2,315	-	-	3	3
Va.	546	640	5,554	N	2	4,797	5,399	8	5	12	7
W. Va.	64	43	-	N	-	234	406	7	26	1	3
N.C.	464	491	-	8	2	9,398	12,019	26	27	5	18
S.C.	443	450	-	5	3	5,368	6,073	15	11	4	19
Ga.	1,288	1,094	6,172	8	-	10,747	10,175	-	15	1	12
Fla.	3,982	4,250	10,519	11	-	8,240	10,133	65	50	20	18
E.S. CENTRAL	1,136	1,105	14,819	19	13	15,578	21,815	355	600	27	31
Ky.	174	156	3,337	2	1	2,024	2,276	15	18	3	5
Tenn.	444	435	6,457	8	12	5,526	6,813	291	580	11	13
Ala.	325	296	4,215	4	-	6,488	10,056	2	2	2	4
Miss.	193	218	U	5	-	1,540	2,670	47	-	11	9
W.S. CENTRAL	3,320	3,104	6,642	25	4	9,805	26,554	229	129	2	11
Ark.	145	136	-	6	2	2,130	2,627	2	2	-	4
La.	787	496	3,572	4	2	3,903	5,884	97	87	-	2
Okla.	138	155	3,070	2	-	1,944	2,699	66	24	2	3
Tex.	2,250	2,317	-	13	-	1,828	15,344	64	16	-	2
MOUNTAIN	984	1,120	5,101	47	20	3,583	4,530	317	246	22	67
Mont.	14	9	-	4	-	13	38	10	9	1	4
Idaho	23	26	780	13	4	53	66	83	33	-	2
Wyo.	3	7	329	-	2	13	25	103	105	3	6
Colo.	301	373	-	17	5	899	1,500	29	34	6	26
N. Mex.	56	107	-	2	-	444	518	35	32	1	4
Ariz.	287	298	2,904	N	9	1,886	1,587	38	17	7	6
Utah	104	69	254	8	-	49	111	12	7	2	6
Nev.	196	231	834	3	-	226	685	7	9	2	13
PACIFIC	5,764	6,414	26,854	70	24	9,183	14,284	210	408	28	56
Wash.	383	490	4,795	18	5	1,061	1,271	32	110	1	7
Oreg.	266	223	2,711	21	14	259	202	4	26	-	-
Calif.	5,013	5,514	18,208	28	-	7,467	12,147	73	262	27	44
Alaska	14	46	515	3	-	223	350	2	1	-	-
Hawaii	88	141	625	N	5	173	314	99	9	-	5
Guam	4	-	114	N	-	26	62	1	4	-	1
P.R.	1,057	1,489	N	13	U	149	286	64	110	-	-
V.I.	14	21	N	N	U	-	21	-	-	-	-
Amer. Samoa	-	-	-	N	U	-	9	-	-	-	-
C.N.M.I.	-	-	N	N	U	11	13	-	-	-	-

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

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, last update June 25, 1996.
†National Electronic Telecommunications System for Surveillance.
§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 29, 1996, and July 1, 1995 (26th Week)

Reporting Area	Lyme Disease		Malaria		Meningococcal Disease		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995
UNITED STATES	2,137	3,072	514	522	1,859	1,796	5,502	8,039	8,300	9,349	2,570	3,668
NEW ENGLAND	329	449	24	22	74	87	77	96	194	219	305	830
Maine	6	3	3	2	11	6	-	2	4	-	-	-
N.H.	6	15	1	1	3	16	1	1	6	8	39	95
Vt.	2	5	2	-	3	6	-	-	1	2	88	112
Mass.	49	25	7	7	29	30	38	37	85	121	54	295
R.I.	48	79	3	2	-	2	1	1	21	22	26	143
Conn.	218	322	8	10	28	27	37	55	77	66	98	185
MID. ATLANTIC	1,549	2,098	124	135	161	236	229	436	1,478	2,076	421	1,060
Upstate N.Y.	904	1,080	36	25	52	65	36	45	164	240	241	613
N.Y. City	160	181	54	65	23	28	68	195	801	1,195	-	-
N.J.	90	372	28	32	45	59	73	87	347	344	74	194
Pa.	395	465	6	13	41	84	52	109	166	297	106	253
E.N. CENTRAL	26	117	45	78	244	271	933	1,353	995	952	30	20
Ohio	20	11	7	5	94	75	482	461	142	145	4	2
Ind.	6	7	7	10	37	38	122	150	97	75	1	3
Ill.	-	10	8	45	61	75	240	491	550	516	4	3
Mich.	-	1	15	10	28	51	-	151	156	186	12	11
Wis.	U	88	8	8	24	32	89	100	50	30	9	1
W.N. CENTRAL	34	45	10	12	118	105	181	415	188	297	144	186
Minn.	3	-	3	3	15	16	27	26	45	66	14	11
Iowa	4	5	-	2	4	20	-	27	1	39	13	63
Mo.	7	20	5	4	63	40	144	346	89	113	13	19
N. Dak.	-	-	-	-	2	1	-	-	3	1	29	18
S. Dak.	-	-	-	-	5	5	-	-	13	10	59	49
Nebr.	-	4	-	3	12	8	6	7	13	17	3	1
Kans.	20	16	2	-	17	15	4	9	24	51	13	25
S. ATLANTIC	109	244	119	102	424	286	1,890	2,108	1,332	1,465	1,300	1,106
Del.	19	23	2	1	2	3	19	8	20	27	38	64
Md.	41	154	26	25	39	24	293	208	150	200	308	218
D.C.	1	1	5	9	7	2	89	61	73	53	2	10
Va.	7	17	16	21	34	34	231	322	118	136	277	208
W. Va.	4	13	1	1	10	5	1	2	27	48	53	56
N.C.	25	22	10	8	49	49	539	588	238	192	347	227
S.C.	2	7	4	-	40	36	214	329	40	169	38	68
Ga.	-	5	8	12	96	58	327	388	332	16	149	149
Fla.	10	2	47	25	147	75	177	202	334	624	88	106
E.S. CENTRAL	29	29	13	10	110	111	1,313	1,574	687	694	98	135
Ky.	10	6	2	-	19	29	69	102	122	150	25	11
Tenn.	8	15	5	4	12	34	492	424	210	225	34	52
Ala.	1	1	3	5	40	26	276	308	232	194	37	69
Miss.	10	7	3	1	39	22	476	740	123	125	2	3
W.S. CENTRAL	23	47	12	8	220	217	597	1,610	946	1,180	34	72
Ark.	10	4	-	1	27	22	148	247	55	105	11	29
La.	-	-	2	1	36	31	294	536	U	105	13	22
Okla.	3	19	-	-	20	23	81	91	34	-	10	21
Tex.	10	24	10	6	137	141	74	736	798	970	-	-
MOUNTAIN	2	2	29	31	115	131	63	124	265	306	65	66
Mont.	-	-	3	2	4	2	-	3	7	3	10	25
Idaho	-	-	-	1	16	5	1	-	4	6	-	-
Wyo.	2	1	2	-	3	5	2	-	3	1	16	19
Colo.	-	-	14	16	20	35	21	71	44	25	18	-
N. Mex.	-	-	1	3	20	26	-	5	45	42	1	3
Ariz.	-	-	3	6	32	41	36	20	108	148	15	17
Utah	-	-	4	2	11	9	-	4	18	19	2	1
Nev.	-	1	2	1	9	8	3	21	36	62	3	1
PACIFIC	36	41	138	124	393	352	219	323	2,215	2,160	173	193
Wash.	2	2	9	11	56	58	3	9	114	137	-	4
Oreg.	7	4	11	7	72	62	5	6	47	23	-	-
Calif.	26	35	112	97	259	225	211	307	1,936	1,868	165	182
Alaska	-	-	2	1	4	5	-	1	35	42	8	7
Hawaii	1	-	4	8	2	2	-	-	83	90	-	-
Guam	-	-	-	1	1	2	3	3	35	63	-	-
P.R.	-	-	-	1	3	13	73	150	63	85	28	29
V.I.	-	-	-	-	-	-	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	3	-	-
C.N.M.I.	-	-	-	1	-	-	1	3	-	13	-	-

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

TABLE III. Cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 29, 1996, and July 1, 1995 (26th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (viral), by type				Measles (Rubeola)			
			A		B		Indigenous		Imported†	
	Cum. 1996*	Cum. 1995	Cum. 1996	Cum. 1995	Cum. 1996	Cum. 1995	1996	Cum. 1996	1996	Cum. 1996
UNITED STATES	616	677	12,873	13,243	4,431	4,923	3	241	1	20
NEW ENGLAND	13	36	158	124	92	116	-	7	-	2
Maine	2	3	12	16	2	6	-	-	-	-
N.H.	7	7	7	7	6	12	-	-	-	-
Vt.	-	1	3	4	5	2	-	1	-	-
Mass.	4	7	80	48	26	39	-	5	-	2
R.I.	-	2	6	15	6	8	-	-	-	-
Conn.	-	16	50	34	47	49	-	1	-	-
MID. ATLANTIC	94	89	735	865	636	691	-	12	-	5
Upstate N.Y.	30	21	207	194	179	171	-	-	-	-
N.Y. City	14	22	307	430	303	232	-	4	-	3
N.J.	32	12	133	115	98	169	-	-	-	-
Pa.	18	34	88	126	56	119	-	8	-	2
E.N. CENTRAL	93	121	1,091	1,688	465	551	-	6	-	3
Ohio	53	59	462	964	62	65	-	2	-	-
Ind.	7	17	159	79	85	108	-	-	-	-
Ill.	22	28	201	332	99	147	-	2	-	1
Mich.	6	15	189	192	191	194	-	1	-	2
Wis.	5	2	80	121	28	37	-	1	-	-
W.N. CENTRAL	17	37	833	863	188	307	-	16	-	1
Minn.	10	14	50	88	19	26	-	13	-	1
Iowa	-	1	14	52	17	21	-	-	-	-
Mo.	4	16	479	607	118	221	-	2	-	-
N. Dak.	-	-	28	13	-	3	-	-	-	-
S. Dak.	1	-	37	21	-	2	-	-	-	-
Nebr.	1	3	117	21	11	16	-	-	-	-
Kans.	1	3	108	61	23	18	-	1	-	-
S. ATLANTIC	149	162	594	566	711	681	-	3	1	3
Del.	1	-	6	8	3	6	-	1	-	-
Md.	37	46	106	95	157	135	-	2	-	-
D.C.	5	-	15	9	27	12	-	-	-	-
Va.	4	18	82	96	73	47	-	-	-	2
W. Va.	4	6	11	11	14	29	-	-	-	-
N.C.	18	20	68	59	182	153	-	-	-	-
S.C.	3	-	30	19	40	28	-	-	-	-
Ga.	65	37	41	50	7	62	-	-	1	1
Fla.	12	35	235	219	208	209	-	-	-	-
E.S. CENTRAL	12	5	820	799	387	492	-	-	-	-
Ky.	3	1	15	30	31	48	-	-	-	-
Tenn.	3	-	565	676	239	379	-	-	-	-
Ala.	5	4	101	48	27	65	-	-	-	-
Miss.	1	-	139	45	90	-	-	-	-	-
W.S. CENTRAL	27	31	2,613	1,441	569	541	-	-	-	2
Ark.	-	4	258	131	41	25	-	-	-	-
La.	1	1	76	46	57	97	-	-	-	-
Okla.	24	17	1,049	352	58	80	-	-	-	-
Tex.	2	9	1,230	912	413	339	-	-	-	2
MOUNTAIN	68	73	2,108	2,043	549	418	3	70	-	1
Mont.	-	-	63	43	6	12	-	-	-	-
Idaho	1	2	134	202	62	47	-	1	-	-
Wyo.	33	4	21	67	19	12	-	-	-	-
Colo.	6	9	201	249	66	66	-	5	-	1
N. Mex.	8	11	245	400	178	166	2	4	-	-
Ariz.	9	17	835	575	136	57	-	8	-	-
Utah	6	9	492	439	61	40	-	47	-	-
Nev.	5	21	117	68	21	18	1	5	-	-
PACIFIC	143	123	3,921	4,854	834	1,126	-	127	-	3
Wash.	2	5	283	359	54	89	-	45	-	-
Oreg.	20	15	527	1,015	37	60	-	2	-	-
Calif.	118	101	3,039	3,366	732	960	-	16	-	2
Alaska	1	-	27	19	5	7	-	63	-	-
Hawaii	2	2	45	95	6	10	-	1	-	1
Guam	-	-	2	3	-	4	U	-	U	-
P.R.	1	2	47	48	137	279	-	6	-	-
V.I.	-	-	-	-	-	2	U	-	U	-
Amer. Samoa	-	-	-	5	-	-	U	-	U	-
C.N.M.I.	10	8	1	15	5	7	U	-	U	-

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

*Of 139 cases among children aged <5 years, serotype was reported for 31 and of those, 8 were type b.

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

TABLE III. (Cont'd.) Cases of selected notifiable diseases preventable by vaccination, United States, weeks ending June 29, 1996, and July 1, 1995 (26th Week)

Reporting Area	Measles (Rubeola), cont'd. Total		Mumps			Pertussis			Rubella		
	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995	1996	Cum. 1996	Cum. 1995
UNITED STATES	261	228	6	325	495	93	1,524	1,380	-	93	83
NEW ENGLAND	9	5	-	-	9	28	287	235	-	11	31
Maine	-	-	-	-	4	-	8	20	-	-	1
N.H.	-	-	-	-	-	-	20	20	-	-	1
Vt.	1	-	-	-	-	-	7	19	-	2	-
Mass.	7	2	-	-	2	28	249	166	-	7	6
R.I.	-	2	-	-	-	-	-	-	-	-	-
Conn.	1	1	-	-	3	-	3	10	-	2	23
MID. ATLANTIC	17	4	-	49	73	5	116	128	-	4	9
Upstate N.Y.	-	-	-	13	16	5	64	63	-	3	2
N.Y. City	7	-	-	13	8	-	17	27	-	1	6
N.J.	-	4	-	-	12	-	-	6	-	-	1
Pa.	10	-	-	23	37	-	35	32	-	-	-
E.N. CENTRAL	9	8	2	65	83	3	169	146	-	3	1
Ohio	2	1	-	27	26	1	76	51	-	-	-
Ind.	-	-	-	5	5	1	15	18	-	-	-
Ill.	3	-	-	17	24	-	58	31	-	1	-
Mich.	3	5	2	15	28	1	15	34	-	2	1
Wis.	1	2	-	1	-	-	5	12	-	-	-
W.N. CENTRAL	17	1	-	4	30	1	64	79	-	-	-
Minn.	14	-	-	1	2	-	42	27	-	-	-
Iowa	-	-	-	-	8	-	-	2	-	-	-
Mo.	2	1	-	1	17	-	14	22	-	-	-
N. Dak.	-	-	-	2	-	-	-	6	-	-	-
S. Dak.	-	-	-	-	-	1	2	7	-	-	-
Nebr.	-	-	-	-	3	-	2	5	-	-	-
Kans.	1	-	-	-	-	-	4	10	-	-	-
S. ATLANTIC	6	5	-	45	72	3	168	120	-	23	17
Del.	1	-	-	-	-	-	9	6	-	-	-
Md.	2	-	-	13	24	-	58	16	-	-	1
D.C.	-	-	-	-	-	-	-	3	-	1	-
Va.	2	-	-	4	14	1	21	8	-	2	-
W. Va.	-	-	-	-	-	-	2	-	-	-	-
N.C.	-	-	-	10	16	-	36	55	-	9	-
S.C.	-	-	-	5	7	-	10	13	-	1	-
Ga.	1	2	-	2	3	2	9	4	-	-	-
Fla.	-	3	-	11	8	-	23	15	-	10	16
E.S. CENTRAL	-	-	-	16	7	1	47	39	-	2	-
Ky.	-	-	-	-	-	-	24	7	-	-	-
Tenn.	-	-	-	2	-	-	14	7	-	-	-
Ala.	-	-	-	3	4	-	4	25	-	2	-
Miss.	-	-	-	11	3	1	5	-	N	N	N
W.S. CENTRAL	2	19	-	14	35	5	42	81	-	2	3
Ark.	-	2	-	-	5	-	3	11	-	-	-
La.	-	17	-	10	8	-	4	7	-	1	-
Okla.	-	-	-	-	-	1	5	10	-	-	-
Tex.	2	-	-	4	22	4	30	53	-	1	3
MOUNTAIN	71	66	-	20	23	5	172	314	-	6	4
Mont.	-	-	-	-	1	1	6	3	-	-	-
Idaho	1	-	-	-	2	-	69	78	-	2	-
Wyo.	-	-	-	-	-	-	1	1	-	-	-
Colo.	6	26	-	2	-	3	27	53	-	2	-
N. Mex.	4	29	N	N	N	1	31	41	-	-	-
Ariz.	8	10	-	1	2	-	11	114	-	1	3
Utah	47	-	-	2	10	-	6	13	-	-	1
Nev.	5	1	-	15	8	-	21	11	-	1	-
PACIFIC	130	120	4	112	163	42	459	238	-	42	18
Wash.	45	17	4	17	10	20	189	44	-	1	-
Oreg.	2	1	N	N	N	-	27	16	-	1	1
Calif.	18	100	-	78	137	22	232	156	-	37	14
Alaska	63	-	-	2	12	-	2	-	-	-	-
Hawaii	2	2	-	15	4	-	9	22	-	3	3
Guam	-	-	U	3	3	U	-	2	U	-	1
P.R.	6	2	-	1	2	-	1	1	-	-	-
V.I.	-	-	U	-	2	U	-	-	U	-	-
Amer. Samoa	-	-	U	-	-	U	-	-	U	-	-
C.N.M.I.	-	-	U	-	-	U	-	-	U	-	-

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

TABLE IV. Deaths in 121 U.S. cities,* week ending June 29, 1996 (26th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	548	353	106	61	13	15	20
Boston, Mass.	158	88	36	22	5	7	1
Bridgeport, Conn.	41	27	9	2	1	2	5
Cambridge, Mass.	23	19	4	-	-	-	-
Fall River, Mass.	27	20	5	1	1	-	-
Hartford, Conn.	49	27	10	9	2	1	1
Lowell, Mass.	14	9	3	1	1	-	2
Lynn, Mass.	14	11	2	1	-	-	-
New Bedford, Mass.	20	17	2	1	-	-	1
New Haven, Conn.	38	21	10	6	-	1	2
Providence, R.I.	48	29	8	7	1	3	-
Somerville, Mass.	5	3	1	1	-	-	1
Springfield, Mass.	41	30	7	3	1	-	3
Waterbury, Conn.	22	18	1	3	-	-	1
Worcester, Mass.	48	34	8	4	1	1	3
MID. ATLANTIC	2,207	1,515	392	202	61	36	90
Albany, N.Y.	35	23	7	3	1	1	4
Allentown, Pa.	17	9	4	4	-	-	-
Buffalo, N.Y.	84	57	14	10	2	1	3
Camden, N.J.	30	17	7	1	2	3	-
Elizabeth, N.J.	24	15	4	4	1	-	-
Erie, Pa.§	43	31	7	4	1	-	2
Jersey City, N.J.	37	19	8	5	1	4	1
New York City, N.Y.	1,187	809	224	116	26	12	37
Newark, N.J.	68	25	19	12	8	3	6
Paterson, N.J.	21	15	5	1	-	-	2
Philadelphia, Pa.	300	211	44	23	15	7	14
Pittsburgh, Pa.§	50	42	5	2	1	-	4
Reading, Pa.	11	8	-	3	-	-	1
Rochester, N.Y.	114	92	18	2	1	1	5
Schenectady, N.Y.	U	U	U	U	U	U	U
Scranton, Pa.§	26	22	2	2	-	-	-
Syracuse, N.Y.	83	62	10	6	2	3	7
Trenton, N.J.	32	21	7	3	-	1	3
Utica, N.Y.	21	17	4	-	-	-	-
Yonkers, N.Y.	24	20	3	1	-	-	1
E.N. CENTRAL	1,943	1,278	374	175	62	53	110
Akron, Ohio	74	57	10	5	1	1	-
Canton, Ohio	32	22	5	2	2	1	3
Chicago, Ill.	451	264	106	53	12	15	39
Cincinnati, Ohio	89	58	12	10	5	4	5
Cleveland, Ohio	160	101	36	16	2	5	1
Columbus, Ohio	149	93	29	18	6	3	9
Dayton, Ohio	125	98	13	8	4	2	6
Detroit, Mich.	200	114	46	23	11	6	8
Evansville, Ind.	38	28	7	2	-	1	3
Fort Wayne, Ind.	65	43	16	3	1	2	3
Gary, Ind.	11	6	2	-	3	-	-
Grand Rapids, Mich.	64	47	13	2	-	2	4
Indianapolis, Ind.	162	104	29	16	9	4	5
Madison, Wis.	U	U	U	U	U	U	U
Milwaukee, Wis.	130	102	16	7	-	5	10
Peoria, Ill.	41	31	7	3	-	-	3
Rockford, Ill.	60	41	10	6	3	-	6
South Bend, Ind.	32	23	6	-	1	2	3
Toledo, Ohio	U	U	U	U	U	U	U
Youngstown, Ohio	60	46	11	1	2	-	2
W.N. CENTRAL	790	534	138	66	25	19	40
Des Moines, Iowa	88	61	17	4	3	3	8
Duluth, Minn.	20	15	3	1	1	-	-
Kansas City, Kans.	34	21	9	4	-	-	1
Kansas City, Mo.	103	59	18	11	5	2	5
Lincoln, Nebr.	40	31	7	1	-	1	2
Minneapolis, Minn.	179	127	32	13	4	3	12
Omaha, Nebr.	84	53	16	11	2	2	5
St. Louis, Mo.	118	83	19	10	2	4	2
St. Paul, Minn.	44	33	6	2	1	2	2
Wichita, Kans.	80	51	11	9	7	2	3

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,185	718	244	139	47	35	56
Atlanta, Ga.	179	107	43	20	5	4	6
Baltimore, Md.	201	121	42	21	11	6	17
Charlotte, N.C.	86	62	11	9	2	2	2
Jacksonville, Fla.	100	58	27	10	4	1	6
Miami, Fla.	104	61	14	21	4	4	1
Norfolk, Va.	52	29	14	4	3	2	4
Richmond, Va.	66	42	15	4	4	1	4
Savannah, Ga.	U	U	U	U	U	U	U
St. Petersburg, Fla.	58	37	12	4	2	3	2
Tampa, Fla.	189	133	32	15	3	6	12
Washington, D.C.	128	62	34	21	5	6	2
Wilmington, Del.	22	6	-	10	4	-	-
E.S. CENTRAL	734	458	153	69	27	26	38
Birmingham, Ala.	85	52	17	11	2	2	1
Chattanooga, Tenn.	88	64	15	5	3	1	5
Knoxville, Tenn.	51	31	11	5	1	3	4
Lexington, Ky.	81	53	16	4	7	1	2
Memphis, Tenn.	164	90	38	19	5	12	18
Mobile, Ala.	90	56	17	10	2	5	2
Montgomery, Ala.	41	27	13	-	1	-	2
Nashville, Tenn.	134	85	26	15	6	2	4
W.S. CENTRAL	1,464	929	296	160	51	27	83
Austin, Tex.	58	37	12	7	2	-	4
Baton Rouge, La.	29	23	3	2	1	-	-
Corpus Christi, Tex.	53	43	8	2	-	-	4
Dallas, Tex.	180	119	26	21	10	4	4
El Paso, Tex.	69	48	16	4	1	-	5
Ft. Worth, Tex.	114	69	29	13	2	1	4
Houston, Tex.	367	204	86	50	17	9	32
Little Rock, Ark.	60	35	17	2	1	5	1
New Orleans, La.	185	117	36	26	3	3	-
San Antonio, Tex.	187	131	29	18	7	2	12
Shreveport, La.	57	33	14	8	2	-	4
Tulsa, Okla.	105	70	20	7	5	3	13
MOUNTAIN	855	571	168	76	22	18	42
Albuquerque, N.M.	100	62	18	13	5	2	3
Colo. Springs, Colo.	41	31	9	-	1	-	2
Denver, Colo.	93	67	9	11	2	4	8
Las Vegas, Nev.	180	113	44	15	5	3	7
Ogden, Utah	11	5	3	2	1	-	-
Phoenix, Ariz.	177	109	42	14	5	7	8
Pueblo, Colo.	20	15	4	1	-	-	-
Salt Lake City, Utah	92	62	17	10	2	1	3
Tucson, Ariz.	141	107	22	10	1	1	11
PACIFIC	1,110	758	209	90	33	19	79
Berkeley, Calif.	15	9	5	1	-	-	2
Fresno, Calif.	90	65	15	5	3	2	3
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	80	57	15	4	1	3	2
Long Beach, Calif.	66	43	16	3	2	2	11
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	37	30	5	1	1	-	7
Portland, Oreg.	113	70	24	15	4	-	6
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	124	79	25	10	5	4	12
San Francisco, Calif.	119	78	23	13	3	2	9
San Jose, Calif.	164	118	28	7	7	4	12
Santa Cruz, Calif.	27	22	3	2	-	-	4
Seattle, Wash.	133	81	29	17	5	1	-
Spokane, Wash.	59	46	8	4	1	-	6
Tacoma, Wash.	83	60	13	8	1	1	5
TOTAL	10,836¶	7,114	2,080	1,038	341	248	558

U: Unavailable -: no reported cases

*Mortality data in this table are voluntarily reported from 121 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 these 3 Pennsylvania cities, 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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