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Progress Toward Poliomyelitis Eradication — Africa, 1996

In 1988, the World Health Assembly established a goal of eradicating poliomyelitis worldwide by the year 2000 (*1*). The four strategies recommended by the World Health Organization (WHO) for polio eradication are 1) achieving and maintaining high routine vaccination coverage levels among children aged <1 year with at least three doses of oral poliovirus vaccine (OPV); 2) developing sensitive systems of epidemiologic and laboratory surveillance, including establishing acute flaccid paralysis (AFP) surveillance*; 3) administering supplementary doses of OPV to all young children (usually those aged <5 years) during National Immunization Days† (NIDs) to rapidly interrupt wild poliovirus transmission; and 4) conducting "mopping-up" vaccination campaigns—localized campaigns targeting high-risk areas where poliovirus transmission is most likely to persist at low levels. Eradicating polio from Africa remains one of the major challenges to global eradication by the target date. This report summarizes progress achieved in 1996 toward polio eradication in Africa with the implementation of supplemental vaccination activities; the reported OPV coverage during the NIDs or Subnational Immunization Days (SNIDs) was >80% in the target age group in most countries (Table 1), and the estimated cost was 50¢ per child vaccinated during NIDs.

In 1995, a total of 2192 polio cases were reported from the 46 countries in the African Region of WHO. During the same year, 16 countries, including four of the largest (Angola, Ethiopia, Nigeria, and Zaire), reported that <50% of children had received three doses of OPV through routine vaccination services.

The first round of NIDs and SNIDs in the African Region (Figure 1) were conducted from January 1996 through March 1997. In the largest series of vaccination days conducted in Africa during a single year, approximately 74 million children—approximately three fourths of all children aged <5 years in Africa—were targeted to receive supplemental doses of OPV. By March 1997, a total of 31 countries had finished or were completing these supplemental vaccination activities; NIDs were being

*A confirmed case of polio is defined as acute flaccid paralysis 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.

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or had been conducted in 27 (87%) countries, and SNIDs were conducted in four (13%)—Gabon (targeting 23% of all children aged <5 years), Zaire (21%), Mozambique (16%), and Ethiopia (3%). SNIDs in the larger countries with difficult circumstances (Ethiopia and Zaire) served a dual purpose of providing supplemental OPV doses to

TABLE 1. Reported coverage with oral poliovirus vaccine during each round of National Immunization Days (NIDs)* or Subnational Immunization Days (SNIDs), by country — African Region, World Health Organization, January 1996–March 1997

Supplemental activity/ Country	Reported coverage (%)†	
	First round	Second round
NIDs		
Algeria	89	90
Angola	71	80
Benin	103	91
Botswana	97	99
Burkina Faso	93	107
Cameroon	NA§	NA
Central African Republic¶	NA	NA
Chad**	83	NA
Congo	82	91
Côte d'Ivoire	80	97
Equatorial Guinea	89	105
Eritrea	61	72
Ghana	90	96
Kenya	79	81
Lesotho	51	52
Malawi	74	86
Mauritania	89	95
Namibia	88	101
Nigeria	47	64
Rwanda	53	62
South Africa	90	77
Swaziland	82	85
Tanzania	97	102
Togo	83	96
Uganda	95	94
Zambia	87	88
Zimbabwe	96	96
SNIDs		
Ethiopia	96	104
Gabon	78	82
Mozambique	81	81
Zaire	88	88

*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.

†Reported coverage may exceed 100% because of uncertainty about target population (denominator problem) or vaccination of children outside the target age (numerator problem).

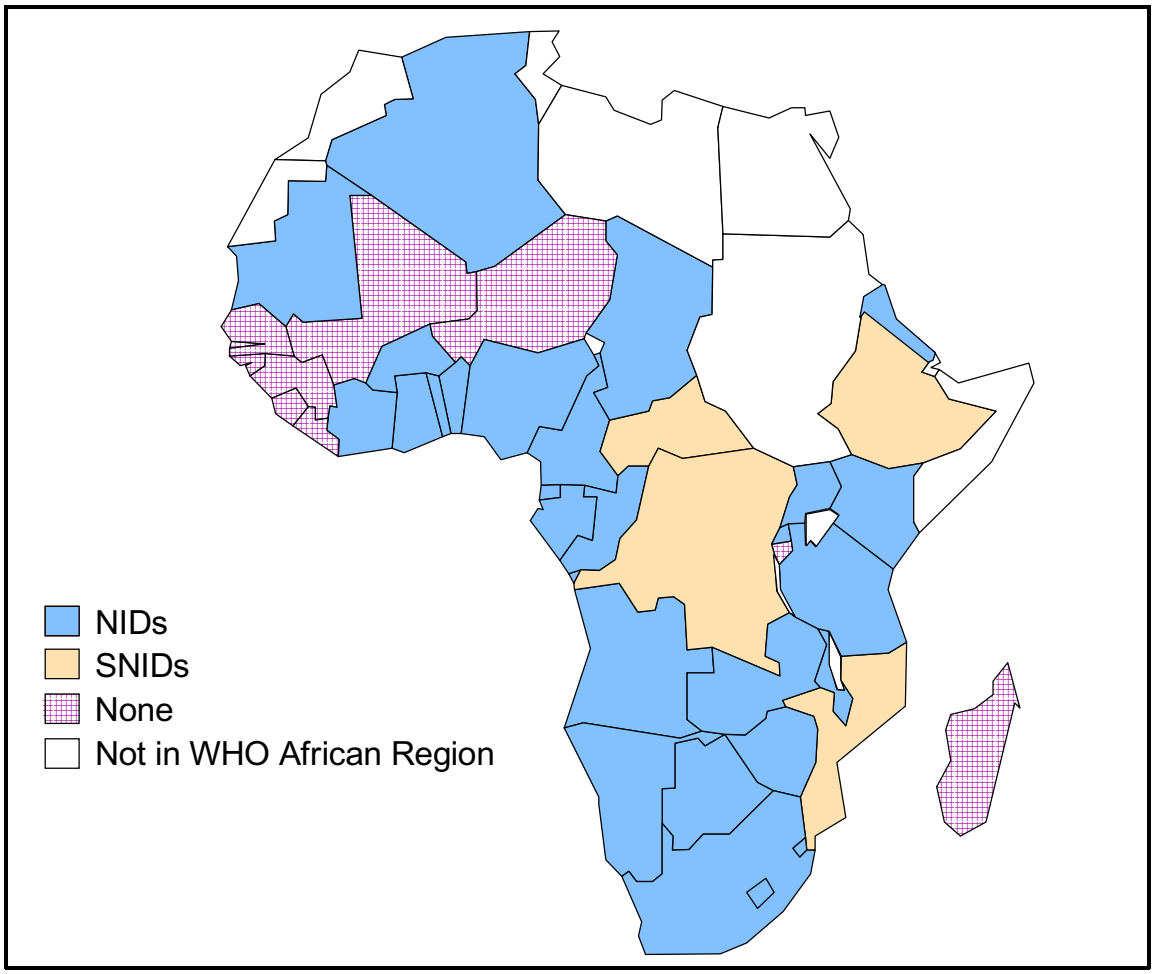
§Not available.

¶The first round of NIDs was March 25–27, 1997, and data are incomplete.

**The first round of NIDs was March 3–8, and the second was March 31–April 5, 1997.

Poliomyelitis — Continued

FIGURE 1. Countries conducting National Immunization Days* (NIDs) or Subnational Immunization Days (SNIDs) with oral poliovirus vaccine — African Region, World Health Organization, January 1996–March 1997



*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.

urban children at highest risk for polio and strengthening planning and logistics for the 1997 vaccination days.

Reported OPV coverage after each round of NIDs or SNIDs was ≥80% in the target age group in most countries (Table 1). OPV coverage of <80% during at least one round was reported from Angola, Eritrea, Gabon, Kenya, Lesotho, Malawi, Nigeria, Rwanda, and South Africa; coverage data were unavailable from Cameroon and Central African Republic.

The first round of vaccination days reached approximately 80% of the target children in most countries, and reported coverage was higher in the second round in almost every country. For 20 countries with information about the total number of children who were vaccinated in both rounds, 18 (90%) of 20 countries reached more children in the second round; in 10 (50%) of 20 countries, the coverage in the second

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round was at least 5% higher than in the first round. In Nigeria, OPV coverage increased by 17 percentage points in the second round (64%) compared with the first round (47%). Of the 32 states in Nigeria, 11 were selected and provided technical assistance by WHO and the United Nations Children's Fund (UNICEF). In these 11 states, coverage in the first round was 63% and in the second round was 93%.

During April–December 1997, supplemental vaccination activities for polio eradication will be conducted for the first time in Burundi, Gambia, Guinea, Guinea-Bissau, Liberia, Madagascar, Mali, Niger, Senegal, and Sierra Leone. This will bring the total number of countries participating to 41 of the 46 countries in the African Region. In addition, Ethiopia, Gabon, and Mozambique will conduct NIDs, and countries that conducted NIDs in 1996 plan to conduct NIDs in 1997. Zaire may extend SNIDs to target half the country.

Surveillance for AFP and wild poliovirus began in approximately half of the countries in 1996. Wild poliovirus genomic sequencing was performed on at least one poliovirus isolate from each of 14 countries, including the four countries with difficult circumstances—Angola, Ethiopia, Nigeria, and Zaire.

The preliminary estimate of direct external and in-country costs averaged approximately 50¢ per child vaccinated during the NIDs. Government in-kind contributions to NIDs, which were substantial in some countries, were not included in the cost calculations; therefore, the total cost per child vaccinated is an underestimate. Most external support was provided by Rotary International, UNICEF, WHO, and the U.S. government through the U.S. Agency for International Development and CDC. Cost data for SNIDs were not available.

Reported by: Regional Office for Africa, World Health Organization, Brazzaville, Congo; Global Program on Vaccines and Immunization, World Health Organization, Geneva, Switzerland. Respiratory and Enterovirus Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Polio Eradication Activity, National Immunization Program, CDC.

Editorial Note: During 1996, NIDs were implemented in all countries in Europe and Asia where polio is endemic (*2,3*) and, for the first time, in many countries in the African Region. The initial experience with NIDs, conducted through the combined efforts of local and national governments and international partners, indicates that NIDs can be undertaken at modest costs in the African Region. Through the polio-eradication initiative, resources have been mobilized in support of enhanced planning, management, social mobilization, surveillance, and national and local political action for national vaccination programs (*4,5*). The strengthening of surveillance and other support systems is facilitating the development of the capacity for enhanced reduction of measles mortality; acceleration of neonatal tetanus elimination; and enhanced control of yellow fever, hepatitis B, epidemic meningitis, and other emerging or re-emerging diseases (J.M. Okwo-Bele, Regional Office for Africa, World Health Organization, personal communication, 1997).

Because population densities in Benin, Cameroon, Chad, Niger, and Nigeria and along the West African coast may form a geographically contiguous epidemiologic block, interruption of wild poliovirus transmission in this block is dependent on progress in vaccinating susceptible populations in each of these areas. Zaire also is important in polio-eradication efforts because wild polioviruses isolated during 1993–1995 in the surrounding countries of Angola, Namibia, Tanzania, and Zambia have been linked to earlier wild polioviruses isolated in Zaire (J.M. Okwo-Bele, Regional

Poliomyelitis — Continued

Office for Africa, World Health Organization, personal communication, 1997). Zaire, where polio is endemic, is the only country in the region that does not plan to conduct NIDs in 1997.

Challenges in the African Region for 1997 are to ensure that all countries with endemic polio conduct NIDs (including those that experience internal strife and civil war), that routine vaccine coverage improves concurrently to approach or exceed the levels reported during the NIDs, and that sensitive surveillance systems for polio are implemented in all countries, including the approximately 4000 districts in the region. Surveillance for AFP and wild poliovirus will be used to monitor the progress in interrupting viral transmission and document the absence of wild poliovirus from the region and achieve polio eradication. The progress in the African Region suggests that, with continued efforts in implementing NIDs in all countries where polio is endemic, polio may be eradicated from the continent by the year 2000.

References

1. World Health Assembly. Global eradication of poliomyelitis by the year 2000: resolution of the 41st World Health Assembly. Geneva, Switzerland: World Health Organization, 1988 (Resolution no. WHA 41.28).
2. Hull HF, Ward NA, Hull BP, Milstien JB, de Quadros C. Paralytic poliomyelitis: seasoned strategies, disappearing disease. Lancet 1994;343:1331–7.
3. CDC. Progress toward global eradication of poliomyelitis, 1995. MMWR 1996;45:565–8.
4. World Health Organization. Summary of the Third Meeting of the Africa Regional Inter-Agency Coordination Committee, Dakar, Senegal, December 5–7, 1996. Brazzaville, Congo: Regional Office for Africa, World Health Organization, 1996.
5. Okwo-Bele JM, Lobanov A, Biellik RJ, et al. Overview of poliomyelitis in the African region and current regional plan of action. J Infect Dis 1997;175:S10–S15.

Update: Influenza Activity — United States and Worldwide, 1996–97 Season, and Composition of the 1997–98 Influenza Vaccine

In collaboration with the World Health Organization (WHO), its international network of collaborating laboratories, and state and local health departments, CDC conducts surveillance to monitor influenza activity and to detect antigenic changes in the circulating strains of influenza viruses. This report summarizes surveillance for influenza in the United States and worldwide during the 1996–97 influenza season and describes the composition of the 1997–98 influenza vaccine.

United States

Influenza activity began in October 1996, increased at the end of November, peaked during late December through early January 1997, and decreased slowly through March. The number of state and territorial epidemiologists who reported regional* or widespread activity peaked at 38 during the week ending January 4, 1997. Widespread activity was last reported for the week ending March 22; only two states (Alaska and Arizona) reported regional activity for the week ending April 5. The percentage of

*Levels of activity are 1) *no activity*; 2) *sporadic*—sporadically occurring influenza-like illness (ILI) or culture-confirmed influenza, with no outbreaks detected; 3) *regional*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of <50% of the state's total population; and 4) *widespread*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of ≥50% of the state's total population.

Influenza Activity — Continued

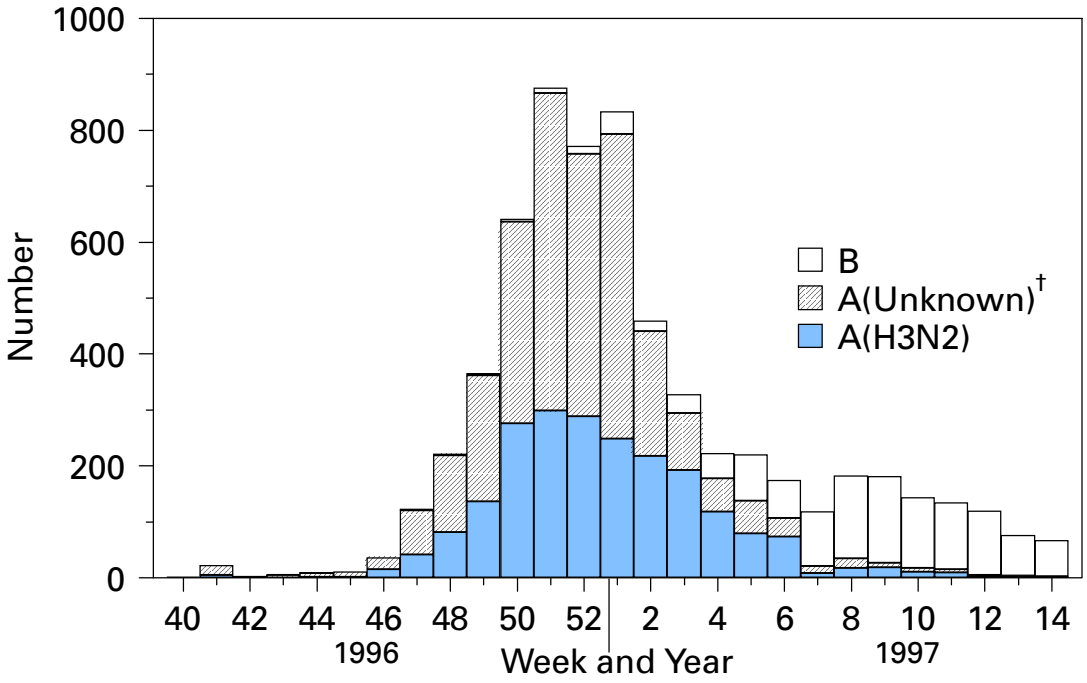
patient visits to sentinel physicians for influenza-like illness exceeded baseline levels (0–3%) for 5 consecutive weeks from December 1, 1996, through January 4, 1997, and peaked at 7% during the weeks ending December 14 and December 28.

From September 29, 1996, through April 5, 1997, WHO collaborating laboratories in the United States tested 35,623 specimens for respiratory viruses, and 6344 (18%) were positive for influenza. Of these, 5126 (81%) were influenza type A, and 1218 (19%) were type B (Figure 1). All of the subtyped influenza type A viruses were influenza A(H3N2). Influenza type A viruses predominated from October through the first week of February, but the number of influenza type B isolates began increasing during January and were more commonly reported than influenza type A after mid-February; 88% of all isolates during February 9–April 5, 1997, were influenza type B.

The proportion of deaths attributed to pneumonia and influenza (P&I) reported by 122 U.S. cities exceeded the epidemic threshold† for 10 consecutive weeks from December 8, 1996, through February 15, 1997, before returning to baseline (Figure 2). This was the earliest sustained increase in P&I mortality since at least the 1986–87 influenza season, the earliest season for which these data were reviewed.

†The epidemic threshold is 1.645 standard deviations above the seasonal baseline. The expected seasonal baseline is projected using a robust regression procedure in which a periodic regression model is applied to observed percentages of deaths from P&I since 1983.

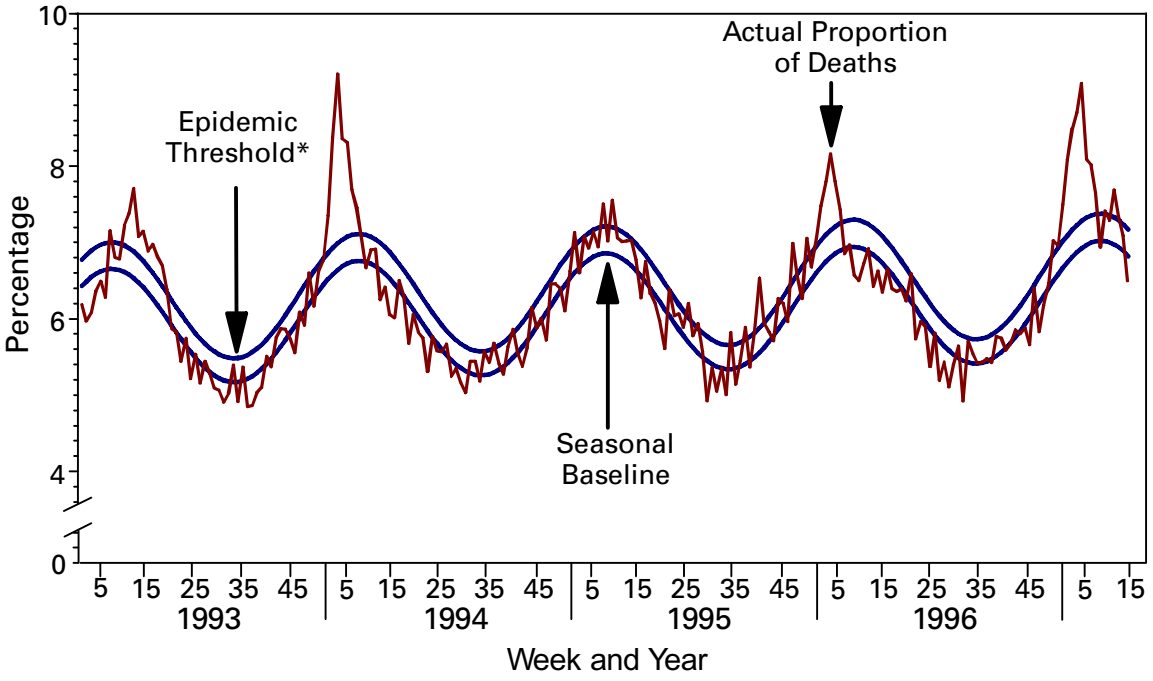
FIGURE 1. Number of influenza virus isolates reported by the World Health Organization collaborating laboratories — United States, September 29, 1996–April 5, 1997*



*n=6344. No influenza A(H1N1) isolates were identified.
†Data reported are preliminary. Many laboratories either do not perform influenza virus subtyping tests or delay performing these tests until the end of the influenza season.

Influenza Activity — Continued

FIGURE 2. Weekly pneumonia and influenza (P&I) mortality as a percentage of all deaths in 122 cities — United States, January 3, 1993–April 5, 1997



*The epidemic threshold is 1.645 standard deviations above the seasonal baseline. The expected seasonal baseline is projected using a robust regression procedure in which a periodic regression model is applied to observed percentages of deaths from P&I since 1983.

Worldwide

Influenza activity was moderate to severe in the northern hemisphere from October 1996 through March 1997. Overall, influenza A(H3N2) viruses predominated in North America and Europe, but influenza type B was isolated frequently. In many countries, influenza type A viruses predominated during the early part of the season, but influenza type B isolates became more commonly isolated than influenza type A by the end of the season. Influenza type B predominated in most Asian countries, but epidemic influenza in Japan was due predominantly to influenza A(H3N2) viruses. Few laboratory-confirmed cases of influenza A(H1N1) were reported worldwide.

Influenza A(H3N2) viruses predominated in Canada, Colombia, Finland, France, Japan, Netherlands, Russia, Slovakia, Spain, and the United Kingdom. In Colombia, an influenza A(H3N2) epidemic during August–November was the most severe influenza epidemic reported in that country since the pandemic of 1968–69. Influenza A(H3N2) was the only influenza virus type/subtype reported in Greece and Poland. Influenza A(H3N2) activity also was reported in Bulgaria, China, French Guiana and Guadeloupe, Germany, Guam, Hong Kong, Hungary, Ireland, Jamaica, Korea, Madagascar, Norway, Portugal, Reunion, Romania, Saudi Arabia, Senegal, Singapore, Sweden, Switzerland, Taiwan, Thailand, Uruguay, and Former Yugoslavia. In Israel, influenza A(H3N2) activity was preceded by influenza type B activity.

Sporadic influenza A(H1N1) cases were reported in Argentina during October, in Belarus and Italy during January, in the southern half of France and Germany during February, and in Romania during January and February; an outbreak of influenza

Influenza Activity — Continued

A(H1N1) occurred in a primary school in Romania during January. Other countries reporting isolation of influenza A(H1N1) viruses include Canada, China, Hungary, Russia, Singapore, Switzerland, and Taiwan. Influenza A(unsubtyped) activity was reported in Australia, Austria, Belarus, Belgium, Croatia, Czech Republic, Denmark, Iceland, Italy, Latvia, Malaysia, and New Zealand.

Influenza type B viruses were predominant in China, the Czech Republic, Denmark, Hong Kong, Iran, Israel, and Singapore. Increases in influenza type B activity followed earlier influenza A(H3N2) activity in Austria, Belgium, Canada, Finland, France, French Guiana and Guadeloupe, Netherlands, Portugal, Spain, the United Kingdom, and Former Yugoslavia. Both influenza type A and type B were reported in Belarus, Croatia, Germany, Hungary, Iceland, Italy, Latvia, Norway, Sweden, and Switzerland. Other countries reporting influenza type B activity included Australia, Chile, Fiji, Korea, Malaysia, Nepal, Romania, Russia, Senegal, Saudi Arabia, Slovakia, Taiwan, and Thailand.

Composition of the 1997–98 Vaccine

The Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee (VRBPAC) recommended that the 1997–98 trivalent influenza vaccine for the United States contain A/Wuhan/359/95-like (H3N2), A/Bayern/07/95-like (H1N1), and B/Beijing/184/93-like viruses. This recommendation was based on antigenic analyses of recently isolated influenza viruses and the antibody responses of persons vaccinated with the 1996–97 vaccine.

Although influenza A(H1N1) viruses were isolated only sporadically during the 1996–97 influenza season, during 1996 an increasing number of antigenically characterized isolates, represented by A/Bayern/07/95, demonstrated a reduction in titer to A/Texas/36/91 and A/Taiwan/01/86 ferret antisera (Table 1) (*1*). A second group of

TABLE 1. Hemmagglutination-inhibition titers of influenza A(H1N1) viruses with serum specimens from infected ferrets*

	Ferret antiserum			
Viral antigen	**A/Taiwan/01/86**	**A/Texas/36/91**	**A/Bayern/07/95**	**A/Wuhan/371/95**
Reference antigen				
A/Taiwan/01/86	**1280**	320	640	<40
A/Texas/36/91	640	**1280**	640	40
A/Bayern/7/95	640	640	**1280**	40
A/Wuhan/371/95	<40	<40	<40	**640**
Recent isolates				
A/Auckland/6/96	640	320	1280	40
A/Brazil/140/96	640	160	1280	40
A/Chile/2110/96	320	160	1280	40
A/Nagasaki/37/96	160	640	640	<40
A/Poiniers/191/96	320	320	640	<40
A/Zambia/546/96	320	320	640	80
A/Switzerland/6081/97	320	320	640	40
A/Beijing/262/95	40	<40	80	640
A/Singapore/15/96	<40	40	<40	640
A/Nanchang/1/96	<40	<40	80	320

* A fourfold difference in hemagglutination-inhibition titer between two viruses usually indicates antigenic variation between viruses.

Influenza Activity — Continued

antigenically distinct influenza A(H1N1) viruses, represented by A/Wuhan/371/95, has been identified in China and Hong Kong since 1995 and in a single isolate in Singapore during 1996. Vaccines containing A/Texas/36/91 induced a good antibody response to the vaccine strain but less frequent and reduced antibody responses to recent influenza A(H1N1) isolates such as A/Bayern/07/95. Therefore, VRBPAC recommended changing the influenza A(H1N1) component for the 1997–98 season to an A/Bayern/07/95-like virus. The antigenically equivalent strain that will be used by U.S. vaccine manufacturers is A/Johannesburg/82/96.

Most antigenically characterized influenza A(H3N2) viruses isolated worldwide were similar to the reference strain A/Wuhan/359/95 and the antigenically equivalent vaccine strain A/Nanchang/933/95. Vaccines containing A/Nanchang/933/95 induced antibodies with similar frequency and titer to the vaccine virus and to recently isolated influenza A(H3N2) strains. Therefore, VRBPAC recommended retaining A/Nanchang/933/95 in the 1997–98 influenza vaccine.

Most influenza type B viruses that have been antigenically characterized are similar to the reference strains B/Beijing/184/93 and B/Harbin/07/94. Although a small number are related to the antigenically distinct B/Victoria/02/87-like viruses, these viruses have not been isolated in the United States since 1991 and have circulated recently only in Asia. Vaccines containing B/Harbin/07/94 induced antibodies with similar frequency and titer to the vaccine virus and to influenza type B strains recently isolated in North America and Europe. Therefore, VRBPAC recommended retaining B/Harbin/07/94 in the 1997–98 vaccine.

Reported by: Participating state and territorial epidemiologists and state public health laboratory directors. World Health Organization collaborating laboratories. Sentinel Physicians Influenza Surveillance System. M Zambon, PhD, Central Public Health Laboratory, A Hay, PhD, National Institute for Medical Research, London; G Schild, DSc, J Wood, PhD, National Institute for Biological Standards and Control, Hertfordshire, England. I Gust, MD, A Hampson, Commonwealth Serum Laboratories, Parkville, Australia. K Nerome, PhD, National Institute of Health, Tokyo, Japan. Y Guo, Institute of Virology, National Center for Preventive Medicine, Beijing, People's Republic of China. Div of Emerging and Other Communicable Diseases Surveillance and Control, World Health Organization National Influenza Centers, Geneva, Switzerland. Div of Virology, Center for Biologics Evaluation and Research, Food and Drug Administration. Influenza Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: This was the fifth season since the 1986–87 season in which influenza A(H3N2) viruses have predominated; during the other 5 years, at least 7% of isolates were influenza A(H3N2). The pattern of influenza activity in the United States during the 1996–97 season was characterized by a sudden, sharp increase in morbidity followed by a sustained increase in P&I-related deaths. Although outbreaks were reported among all age groups, most outbreaks reported to CDC occurred among elderly nursing-home residents. Since mid-February, more influenza type B than influenza type A has been isolated (Figure 1), suggesting that type B viruses may circulate more widely next winter. Although no influenza A(H1N1) viruses have been isolated in the United States during the 1996–97 season, both influenza A(H1N1) and A(H3N2) viruses may circulate during the 1997–98 season.

Strains to be included in the influenza vaccine usually are selected during the preceding January through March because of scheduling requirements for production, quality control, packaging, and distribution of vaccine for administration before onset of the next influenza season. Recommendations of the Advisory Committee on

Influenza Activity — Continued

Immunization Practices for the use of vaccine and antiviral agents for prevention and control of influenza will be published in an *MMWR Recommendations and Reports* on April 25, 1997 (*2*).

References

1. World Health Organization. Recommended composition of influenza virus vaccines for use in the 1997–1998 season. Wkly Epidemiol Rec 1997;72:57–61.
2. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1997;46(no. RR-9) (in press).

Respiratory Diphtheria Caused by *Corynebacterium ulcerans* — Terre Haute, Indiana, 1996

Diphtheria is a potentially severe illness; among unvaccinated persons, the case-fatality rate may be 5%–10%, even with appropriate treatment. During 1990–1995, approximately 4000 deaths resulted from the ongoing diphtheria epidemic in the former Soviet Union (*1*). In the United States, respiratory diphtheria is rare: during 1980–1995, only 41 cases were reported. Serologic studies in the 1970s and 1980s indicated that 20%–60% of U.S. adults aged ≥20 years lacked immunity to diphtheria (*2,3*). This report describes a recent case of respiratory diphtheria caused by a toxin-producing strain of *Corynebacterium ulcerans*. The case occurred in a resident of Indiana, and an investigation by public health authorities indicated that acquisition of the organism occurred locally in the state.

On October 24, 1996, a 54-year-old woman residing in Terre Haute, Indiana, had onset of fever, sore throat, and difficulty swallowing. On October 26, she was examined in an outpatient clinic and reported a gradual increase in symptoms and onset of neck swelling. Inflammation of the uvula and pharynx was noted, and acute pharyngitis was diagnosed. A rapid screening test for ß-hemolytic streptococcal infection was negative. The patient was administered 1 g of cefotaxime intramuscularly and was prescribed 300 mg of clindamycin orally three times a day.

On the morning of October 27, she was hospitalized with vomiting, inability to swallow, and difficulty breathing. On physical examination, her temperature was normal, but she had mild tachycardia, marked swelling of the uvula with a membranous exudate covering the uvula and both tonsils, bilateral cervical lymphadenopathy, and soft-tissue swelling. Both the patient and her mother reported that the patient had never received any vaccinations. Based on the history and physical findings, a preliminary diagnosis of acute membranous pharyngitis consistent with respiratory diphtheria was made, and 40,000 international units (IU) of equine diphtheria antitoxin was administered on the evening of October 27. The patient also received one dose of ceftriaxone intramuscularly, and therapy was initiated with 2 g of erythromycin intravenously per day. On October 28, her symptoms began to improve, and by October 29, the membrane and neck swelling had begun to recede. She was discharged November 1 on oral erythromycin. An electrocardiogram, echocardiogram, and neurologic examination performed during hospitalization were normal. In addition, during hospitalization, she was vaccinated with one dose of adult formulation tetanus and diphtheria toxoid (Td); she was to complete a three-dose primary series of Td as an outpatient.

Respiratory Diphtheria — Continued

The patient worked as a telephone sales operator, had not traveled outside the state during the previous month, and had no known contact with any international travelers. Although she had attended a large rural folk arts festival on October 20, she denied consumption of any unpasteurized milk products or exposure to farm animals. Close contacts in the household and in the hospital (n=18) were administered prophylactic antibiotics and were vaccinated with additional doses of diphtheria toxoid vaccine as indicated.

Initial specimens for diphtheria culture (throat swabs and fragments of membrane) were sent to a private laboratory and to CDC's Diphtheria Laboratory. The cultures at the private laboratory were reported as negative; however, a polymerase chain reaction (PCR) assay for the toxin gene performed directly on the clinical specimens at CDC on October 31 was positive. A strain of *Corynebacterium ulcerans* was subsequently isolated from the culture specimen at CDC, and toxin production by this strain was confirmed by a toxin-antitoxin precipitation assay (Elek test) and by PCR assay on the isolate.

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Editorial Note: Most cases of diphtheria result from infection with toxin-producing strains of *C. diphtheriae*; however *C. ulcerans,* a related species found more commonly in cattle than other animals, can carry the same bacteriophage that codes for the toxin elaborated by toxigenic strains of *C. diphtheriae*. Sporadic cases of diphtheria caused by *C. ulcerans* have been reported in humans, and at least two of these cases have been fatal. *C. ulcerans* infection in humans frequently has been associated with antecedent contact with farm animals or with consumption of unpasteurized dairy products; human-to-human transmission has not been documented (*4*). However, because of limited information about human-to-human transmission, cultures should be obtained from persons who have had close contact with cases of diphtheria caused by toxigenic *C. ulcerans*; in addition, such contacts should receive prophylactic antibiotics and diphtheria toxoid vaccinations as recommended for persons exposed to cases of diphtheria caused by *C. diphtheriae* (*5*).

The clinical presentation of the patient described in this report was characteristic of severe diphtheria; classic features include an extensive membrane, diffuse cervical lymphadenopathy and soft-tissue swelling ("bull-neck" appearance). Patients with severe diphtheria are at high risk for complications or death; therefore, to reduce morbidity and mortality, diphtheria antitoxin should be administered promptly based on the clinical presentation and presumptive diagnosis. Diphtheria antitoxin is the treatment of choice, and prompt administration is the most important factor in reducing morbidity and mortality associated with mild or severe diphtheria cases. Antibiotics are useful in eradicating the organism and thereby limiting both toxin production and transmissibility. Because clinical diphtheria may not confer protective immunity, patients with diphtheria must receive the complete series of diphtheria toxoid as appropriate for their age.

Most U.S. clinical laboratories lack the expertise and materials to reliably identify toxigenic *C. diphtheriae*. In the case described in this report, efforts to culture-confirm the diagnosis of diphtheria were complicated by the initiation of antibiotic treatment

Respiratory Diphtheria — Continued

before the culture specimen had been obtained. However, the diagnosis was confirmed by PCR, demonstrating the usefulness of this method for rapid laboratory confirmation despite previous antibiotic treatment. This assay is available at CDC through state health departments.

This case and two cases of diphtheria in U.S. citizens infected in the New Independent States of the former Soviet Union (*6*) underscore the need for U.S. clinicians to consider diphtheria in the differential diagnosis of cases of membranous pharyngitis. Suspected cases should be reported to local public health authorities; diphtheria antitoxin is available from CDC's Child Vaccine Preventable Disease Branch, Epidemiology and Surveillance Division, National Immunization Program, telephone (404) 639-8255, Monday–Friday, 8:00 a.m.–4:30 p.m. Eastern time, or (404) 639-2889 at other times.

The identification of toxigenic strains of *C. ulcerans* in the United States and the continued risk for importation of toxigenic *C. diphtheriae* emphasize the need for achieving and maintaining high levels of diphtheria immunity among children and adults in the United States. The Advisory Committee on Immunization Practices recommends that all children receive a routine series of five doses of diphtheria toxoid-containing vaccine at ages 2, 4, 6, and 12–18 months and at age 4–6 years; booster doses of diphtheria and tetanus toxoids should then be administered beginning at age 11–12 years (provided at least 5 years have passed since the last dose of diphtheria toxoid-containing vaccine) and every 10 years thereafter (*7–9*). Td is the preferred preparation for active tetanus vaccination in the management of wounds among adults; wider use of Td could decrease the proportion of adults susceptible to diphtheria. Persons planning travel to areas where diphtheria has been identified should review their vaccination status with a health-care provider and receive age-appropriate vaccinations.

References

1. CDC. Update: diphtheria epidemic—New Independent States of the former Soviet Union, January 1995–March 1996. MMWR 1996;45:693–7.
2. Crossley K, Irvine P, Warren JB, Lee BK, Mead K. Tetanus and diphtheria immunity in urban Minnesota adults. JAMA 1979;242:2298–300.
3. Koblin BA, Townsend TR. Immunity to diphtheria and tetanus in inner-city women of childbearing age. Am J Public Health 1989;79:1297–8.
4. Kisely SR, Price S, Ward T. '*Corynebacterium ulcerans*': a potential cause of diphtheria. Commun Dis Rep Rev 1994;4:R63–R64.
5. Farizo KM, Strebel PM, Chen RT, Kimbler A, Cleary TJ, Cochi SL. Fatal respiratory disease due to *Corynebacterium diphtheriae*: case report and review of guidelines for management, investigation, and control. Clin Infect Dis 1993;16:59–68.
6. CDC. Diphtheria acquired by U.S. citizens in the Russian Federation and Ukraine, 1994. MMWR 1995;44:237,243–4.
7. CDC. Diphtheria, tetanus, and pertussis: recommendations for vaccine use and other preventive measures: recommendations of the Immunization Practices Advisory Committee (ACIP). MMWR 1991;40(no. RR–10).
8. CDC. Recommended childhood immunization schedule—United States, July–December 1996. MMWR 1996;45:635–8.
9. CDC. Food and Drug Administration approval of an acellular pertussis vaccine for the initial four doses of the diphtheria, tetanus, and pertussis vaccination series. MMWR 1996;45:676–7.

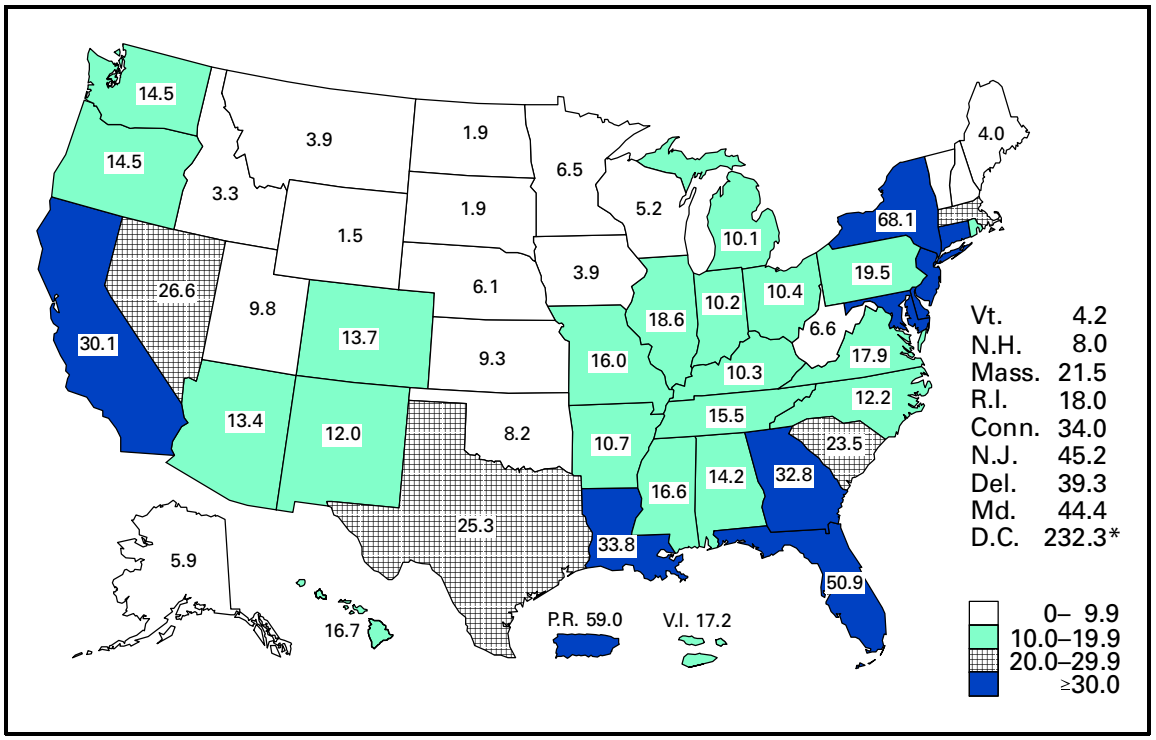
AIDS Rates

The following map provides the annual rates of acquired immunodeficiency syndrome (AIDS) per 100,000 population, by state of residence from January through December 1996. The accompanying table lists the metropolitan areas with the 50 highest annual rates of AIDS per 100,000 population.

More detailed information about AIDS cases is provided in the *HIV/AIDS Surveillance Report*, single copies of which are available from the CDC National AIDS Clearinghouse, P.O. Box 6003, Rockville, MD 20849-6003; telephone (800) 458-5231 or (301) 217-0023. Internet users can view an electronic copy of the report by accessing CDC's World-Wide Web home page (http://www.cdc.gov), then selecting "Publications & Products."

Additional information abstracted from AIDS cases reported in the United States through 1995 is available from the *AIDS Public Information Data Set*, computer software designed for use with an MS-DOS-based microcomputer. The software can be downloaded from the World-Wide Web site http://www.cdc.gov/nchstp/hiv_aids/software.htm. Copies are available from the CDC National AIDS Clearinghouse by requesting inventory number D206.

AIDS annual rates per 100,000 population — United States, January–December 1996



*This rate represents only persons residing within the geographic boundaries of the District and differs from the rate for the larger Washington, D.C., metropolitan area (see table).

AIDS Rates — Continued

Metropolitan areas* with the 50 highest AIDS annual rates per 100,000 population — United States, January–December 1996

Metropolitan area of residence	Rate	Metropolitan area of residence	Rate
New York, N.Y.	120.1	Las Vegas, Nev.	28.9
Miami, Fla.	99.4	Oakland, Calif.	28.5
Jersey City, N.J.	97.7	Norfolk, Va.	28.2
San Francisco, Calif.	95.0	Memphis, Tenn.	27.3
West Palm Beach, Fla.	85.4	Austin, Tex.	26.9
Fort Lauderdale, Fla.	83.6	Rochester, N.Y.	26.5
Newark, N.J.	73.9	Middlesex, N.J.	26.1
San Juan, Puerto Rico	70.4	Seattle, Wash.	26.1
Baltimore, Md.	61.6	San Antonio, Tex.	25.7
Baton Rouge, La.	58.5	Richmond, Va.	25.6
New Orleans, La.	58.2	Nassau-Suffolk, N.Y.	24.3
Washington, D.C.	47.3	Nashville, Tenn.	24.1
Atlanta, Ga.	46.4	Chicago, Ill.	23.8
Houston, Tex.	45.3	Louisville, Ky.	23.4
Wilmington, Del.	43.4	Birmingham, Ala.	22.7
Los Angeles, Calif.	40.7	Monmouth-Ocean, N.J.	22.7
New Haven, Conn.	37.3	Riverside-San Bernardino, Calif.	21.7
Orlando, Fla.	37.2	Denver, Colo.	20.9
San Diego, Calif.	37.1	Sarasota, Fla.	20.8
Jacksonville, Fla.	36.5	Albany-Schenectady, N.Y.	20.7
Bergen-Passaic, N.J.	36.1	Tucson, Ariz.	20.4
Tampa-Saint Petersburg, Fla.	36.1	Boston, Mass.	19.0
Hartford, Conn.	34.1	Saint Louis, Mo.	18.8
Philadelphia, Pa.	33.9	Portland, Ore.	18.5
Springfield, Mass.	33.5	Providence, R.I.	18.5
Dallas, Tex.	29.3		

*Includes only metropolitan areas with a population ≥500,000. Metropolitan areas are named for a central city or county, may include several cities and counties, and may cross state boundaries.

Notice to Readers

Public Health Research Institute on Minority Health

The third annual Summer Public Health Research Institute on Minority Health is June 22–27, 1997. Cosponsors are CDC, the University of North Carolina at Chapel Hill School of Public Health, and the Association of Schools for Public Health. This session is designed to improve research methods, decision making, policy development, and planning for minority health.

The institute will emphasize issues and solutions related to collecting and analyzing data for racial and ethnic populations, studying the relation between race and socioeconomic status, identifying and reducing barriers to conducting research in minority communities, and devising surveys to study minority populations and subpopulations.

Notices to Readers — Continued

Participants will receive continuing education units. A limited number of scholarships are available. Enrollment is limited to 150 participants, and applications postmarked by May 2 will receive first consideration.

Selected sessions from the institute will be available through videoconferencing, and some of the locations will be designated as interactive sites. Applications for prospective sites postmarked by May 2 will receive first consideration.

Additional information about the institute or the videoconference is available from the Minority Health Project, Department of Biostatistics, School of Public Health, 3104 McGavran-Greenberg Hall, University of North Carolina at Chapel Hill, CB# 7400, Chapel Hill, NC 27599; telephone (919) 966-7012; fax (919) 966-0119; e-mail: minority_health@unc.edu; World-Wide Web site: http://www.minority.unc.edu.

Notice to Readers

Courses on Physical Activity and Public Health

CDC, the University of South Carolina Prevention Center, and the South Carolina Department of Health and Environmental Control will cosponsor two courses for biomedical and behavioral researchers and public health professionals. The courses are designed to train health professionals to conduct community physical activity research and interventions and to promote physical activity initiatives and policies in communities. Both courses are scheduled for September 1997 in Hilton Head Island, South Carolina.

The first course, "A Postgraduate Course on Research Directions and Strategies," developed primarily for postdoctoral health professionals, is scheduled for September 16–23. The second course, "A Practitioners' Course on Community Interventions and Strategies," designed for public health practitioners, will be held September 16–20.

The deadline for applications is May 16. Participation in each course is limited. Additional information and application forms are available from the University of South Carolina, School of Public Health, Columbia, SC 29208; telephone (803) 777-7291; fax (803) 777-8422.

Erratum: Vol. 46, No. 3

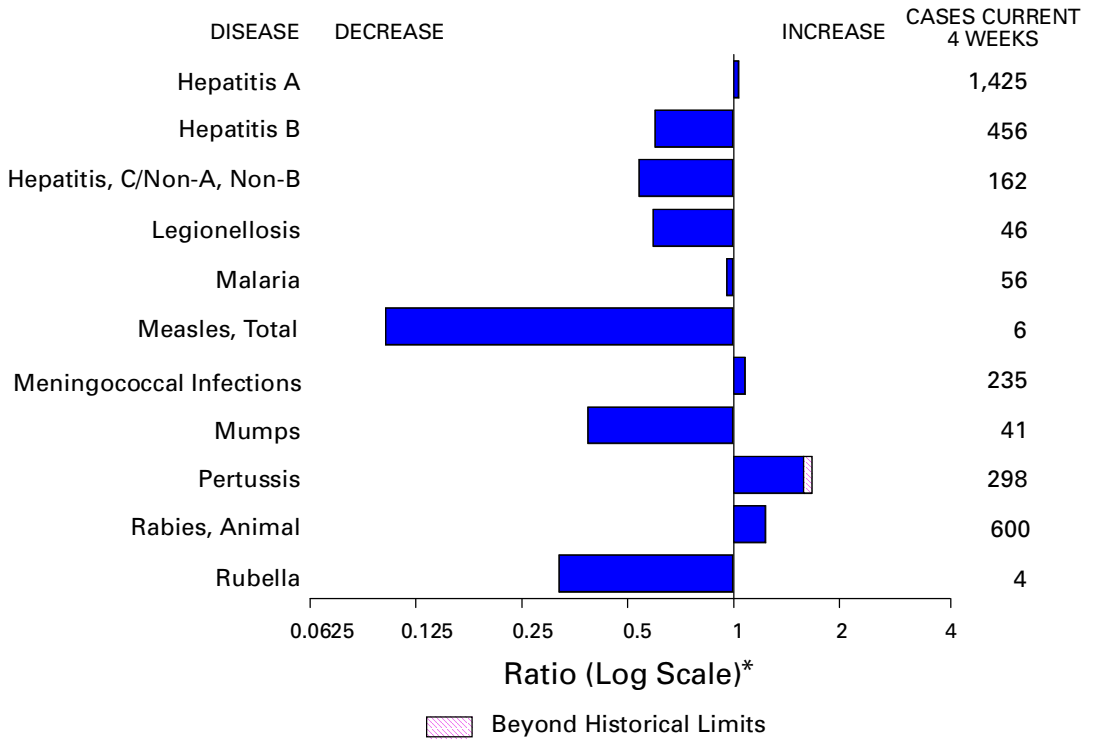
In the article "Antibiotic Resistance Among Nasopharyngeal Isolates of *Streptococcus pneumoniae* and *Haemophilus influenzae*—Bangui, Central African Republic, 1995," on page 63, a line of text was omitted. The second and third sentences in the first full paragraph should read, "Among HI isolates, 1.4% were resistant to ampicillin, and 12.3% were resistant to cotrimoxazole; no ß-lactamase was detected in the single ampicillin-resistant isolate. The rate of SP resistance to chloramphenicol was 9.2%, and no HI isolates were resistant to chloramphenicol."

Erratum: Vol. 46, No. 4

In the article "Legionnaires Disease Associated with a Whirlpool Spa Display—Virginia, September–October, 1996," the publication date for reference 9 was incorrect. The correct reference is

9. National Center for Environmental Health/National Center for Infectious Diseases. Final recommendations to minimize transmission of Legionnaires' disease from whirlpool spas on cruise ships. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, 1997.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending April 12, 1997, 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 — provisional cases of selected notifiable diseases, United States, cumulative, week ending April 12, 1997 (15th Week)

	Cum. 1997		Cum. 1997
Anthrax	-	Plague	-
Brucellosis	11	Poliomyelitis, paralytic	-
Cholera	1	Psittacosis	14
Congenital rubella syndrome	2	Rabies, human	1
Cryptosporidiosis*	307	Rocky Mountain spotted fever (RMSF)	27
Diphtheria	2	Streptococcal disease, invasive Group A	309
Encephalitis: California*	4	Streptococcal toxic-shock syndrome*	7
eastern equine*	-	Syphilis, congenital¶	27
St. Louis*	-	Tetanus	10
western equine*	-	Toxic-shock syndrome	29
Hansen Disease	33	Trichinosis	3
Hantavirus pulmonary syndrome*†	1	Typhoid fever	76
Hemolytic uremic syndrome, post-diarrheal*	10	Yellow fever	-
HIV infection, pediatric*§	53		

-: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–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update March 25, 1997.
¶Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 12, 1997, and April 13, 1996 (15th Week)

Reporting Area	AIDS		Chlamydia		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS§				
	Cum. 1997*	Cum. 1996	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1996
UNITED STATES	15,582	18,023	99,089	110,715	267	119	65,737	84,860	774	834
NEW ENGLAND	465	746	4,622	5,355	20	10	1,725	2,189	11	22
Maine	18	10	284	-	1	-	14	13	-	-
N.H.	4	23	145	192	-	-	38	36	2	2
Vt.	10	7	120	142	1	1	15	17	-	10
Mass.	220	485	2,087	1,888	15	9	686	629	7	7
R.I.	43	38	610	620	1	-	155	161	2	3
Conn.	170	183	1,376	2,513	2	-	817	1,333	-	-
MID. ATLANTIC	5,146	4,649	6,146	14,998	17	4	4,226	7,496	76	67
Upstate N.Y.	833	541	N	N	9	3	942	22	57	58
N.Y. City	2,649	2,449	-	6,617	5	-	-	3,777	-	1
N.J.	1,098	1,015	1,614	2,671	3	-	1,011	661	-	-
Pa.	566	644	4,532	5,710	N	1	2,273	3,036	19	8
E.N. CENTRAL	1,088	1,493	17,237	25,918	50	18	10,716	17,276	166	145
Ohio	216	356	4,042	5,963	17	9	2,629	4,364	5	4
Ind.	286	264	2,541	2,454	11	2	1,748	1,835	4	4
Ill.	372	527	3,207	7,687	10	-	1,644	5,053	15	28
Mich.	158	254	5,425	6,590	12	2	3,766	4,618	142	109
Wis.	56	92	2,022	3,224	N	5	929	1,406	-	-
W.N. CENTRAL	313	402	5,940	9,433	37	27	2,613	3,763	32	18
Minn.	55	84	-	1,369	23	17	U	-	-	-
Iowa	52	31	1,424	943	8	4	364	274	15	7
Mo.	135	169	3,064	4,370	1	3	1,765	2,572	8	7
N. Dak.	4	1	81	300	3	2	5	9	2	-
S. Dak.	2	5	318	373	-	-	36	60	-	-
Nebr.	28	32	262	690	1	-	90	134	-	2
Kans.	37	80	791	1,388	1	1	353	714	7	2
S. ATLANTIC	3,895	4,940	22,718	15,619	37	5	23,778	29,910	69	50
Del.	51	93	-	-	1	1	299	416	-	-
Md.	425	643	1,936	1,710	2	1	3,739	3,877	4	-
D.C.	182	242	N	N	-	-	1,268	1,269	-	-
Va.	323	230	3,247	3,525	N	-	2,538	2,920	4	3
W. Va.	21	25	-	-	N	-	206	99	1	4
N.C.	217	196	4,963	U	7	3	4,545	5,367	17	14
S.C.	213	226	3,535	U	-	-	3,106	3,316	14	11
Ga.	528	681	2,402	3,697	13	-	3,378	7,191	U	-
Fla.	1,935	2,604	6,635	6,687	14	-	4,699	5,455	29	18
E.S. CENTRAL	473	540	9,101	8,166	23	7	9,174	8,752	106	155
Ky.	48	88	1,833	2,018	6	-	1,160	1,150	6	9
Tenn.	203	200	3,421	3,472	13	7	2,958	3,016	55	145
Ala.	127	157	2,148	2,534	2	-	2,987	3,905	5	1
Miss.	95	95	1,699	142	2	-	2,069	681	40	-
W.S. CENTRAL	1,459	1,732	10,817	6,912	3	1	7,554	6,584	68	84
Ark.	59	95	372	423	2	-	710	1,153	2	1
La.	219	492	1,798	1,951	1	1	1,781	2,299	47	33
Okla.	86	52	2,200	2,105	-	-	1,440	1,304	3	26
Tex.	1,095	1,093	6,447	2,433	-	-	3,623	1,828	16	24
MOUNTAIN	441	570	6,063	3,537	29	19	2,040	2,216	105	180
Mont.	12	5	254	386	2	-	13	10	3	8
Idaho	8	7	449	479	3	-	33	27	14	38
Wyo.	9	2	133	197	1	-	17	10	41	54
Colo.	114	150	100	7	13	8	431	563	19	18
N. Mex.	34	25	1,136	1,120	4	3	390	280	15	27
Ariz.	122	191	2,749	76	N	6	878	1,006	8	23
Utah	30	62	432	460	3	-	49	88	2	7
Nev.	112	128	810	812	3	2	229	232	3	5
PACIFIC	2,302	2,951	16,445	20,777	51	26	3,911	6,674	141	113
Wash.	176	217	2,653	2,810	8	4	612	712	7	24
Oreg.	97	173	894	1,533	14	10	120	143	3	3
Calif.	2,002	2,521	12,059	15,671	26	10	2,910	5,509	86	43
Alaska	12	3	393	228	3	-	143	159	-	2
Hawaii	15	37	446	535	N	2	126	151	45	41
Guam	-	3	-	99	N	-	-	22	-	1
P.R.	420	417	N	N	13	U	264	60	24	13
V.I.	17	3	N	N	N	U	-	-	-	-
Amer. Samoa	-	-	-	-	N	U	-	-	-	-
C.N.M.I.	-	-	N	N	N	U	10	11	2	-

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–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update March 25, 1997.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending April 12, 1997, and April 13, 1996 (15th Week)

Reporting Area	Legionellosis		Lyme Disease		Malaria		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal
	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1996	Cum. 1997
UNITED STATES	234	215	643	1,239	316	280	2,173	3,464	3,603	4,408	1,814
NEW ENGLAND	19	6	69	98	6	8	43	54	89	109	289
Maine	1	1	2	-	-	2	-	-	-	7	68
N.H.	3	-	4	2	-	1	-	1	1	3	11
Vt.	3	-	2	-	1	1	-	-	-	-	45
Mass.	7	3	34	10	4	3	19	22	48	40	56
R.I.	1	2	27	21	1	1	-	-	7	17	3
Conn.	4	N	-	65	-	-	24	31	33	42	106
MID. ATLANTIC	38	47	458	1,014	63	73	69	89	740	720	385
Upstate N.Y.	8	9	47	374	10	15	12	12	84	87	271
N.Y. City	-	1	2	227	34	34	-	45	410	368	-
N.J.	4	7	107	85	14	19	33	-	159	160	34
Pa.	26	30	302	328	5	5	24	32	87	105	80
E.N. CENTRAL	89	82	14	7	25	34	209	568	442	538	16
Ohio	50	30	11	5	3	5	71	225	107	83	12
Ind.	10	21	3	2	3	2	49	76	39	46	2
Ill.	-	10	-	-	5	13	19	153	202	332	1
Mich.	27	15	-	-	12	8	35	50	66	61	1
Wis.	2	6	U	U	2	6	35	64	28	16	-
W.N. CENTRAL	16	13	9	26	8	4	40	165	122	126	110
Minn.	-	-	7	1	4	1	-	36	34	33	13
Iowa	2	1	-	3	2	1	3	6	15	13	46
Mo.	4	3	-	7	2	1	26	108	46	51	6
N. Dak.	1	-	-	-	-	-	-	-	2	1	14
S. Dak.	1	2	-	-	-	-	-	-	2	9	17
Nebr.	5	6	2	-	-	-	-	6	4	5	-
Kans.	3	1	-	15	-	1	11	9	19	14	14
S. ATLANTIC	36	26	60	58	86	48	909	1,143	747	632	832
Del.	3	1	-	18	2	2	8	12	7	12	12
Md.	14	5	42	27	24	15	208	177	68	67	150
D.C.	1	1	4	-	5	2	35	46	22	27	1
Va.	3	9	-	-	18	6	96	139	86	43	169
W. Va.	-	1	-	3	-	-	-	1	15	19	22
N.C.	5	3	2	6	5	6	230	293	98	99	264
S.C.	2	1	1	1	4	2	111	139	87	90	42
Ga.	-	-	1	-	10	7	145	250	120	155	81
Fla.	8	5	10	3	18	8	76	86	244	120	91
E.S. CENTRAL	7	15	18	14	7	6	541	852	244	348	75
Ky.	-	3	1	5	1	2	51	47	55	64	8
Tenn.	3	7	4	3	2	3	222	283	34	96	51
Ala.	1	1	2	-	1	1	134	164	103	119	16
Miss.	3	4	11	6	3	-	134	358	52	69	-
W.S. CENTRAL	-	1	3	4	4	10	265	378	86	497	38
Ark.	-	-	-	3	1	-	23	82	59	43	10
La.	-	-	1	-	3	-	119	173	-	-	-
Okla.	-	1	1	1	-	-	37	49	27	46	28
Tex.	-	-	1	-	-	10	86	74	-	408	-
MOUNTAIN	16	10	-	-	18	18	41	43	119	145	11
Mont.	1	-	-	-	2	1	-	-	2	-	2
Idaho	1	-	-	-	-	-	-	1	2	3	-
Wyo.	1	-	-	-	1	2	-	1	1	1	-
Colo.	4	5	-	-	9	10	-	14	25	24	-
N. Mex.	-	-	-	-	2	1	-	-	8	21	1
Ariz.	4	2	-	-	1	1	34	24	49	59	7
Utah	4	-	-	-	-	2	1	-	4	10	-
Nev.	1	3	-	-	3	1	6	3	28	27	1
PACIFIC	13	15	12	18	99	79	56	172	1,014	1,293	58
Wash.	2	1	-	-	2	2	5	1	51	70	-
Oreg.	-	-	5	5	7	7	3	3	38	52	1
Calif.	10	14	7	12	88	67	47	167	843	1,100	49
Alaska	-	-	-	-	2	-	-	-	30	24	8
Hawaii	1	-	-	1	-	3	1	1	52	47	-
Guam	-	-	-	-	-	-	-	2	-	32	-
P.R.	-	-	-	-	2	-	82	37	-	47	16
V.I.	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	-	2	1	-	-	-

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

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 12, 1997, and April 13, 1996 (15th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1997*	Cum. 1996	Cum. 1997	Cum. 1996	Cum. 1997	Cum. 1996	1997	Cum. 1997	1997	Cum. 1997	Cum. 1997	Cum. 1996
UNITED STATES	318	353	7,119	7,655	2,153	2,508	2	17	1	8	25	84
NEW ENGLAND	11	9	142	83	44	54	-	-	-	-	-	6
Maine	2	-	17	9	3	2	-	-	-	-	-	-
N.H.	1	7	9	3	5	3	-	-	-	-	-	-
Vt.	-	-	4	1	1	2	-	-	-	-	-	1
Mass.	7	2	58	41	27	12	-	-	-	-	-	4
R.I.	1	-	11	3	6	4	-	-	-	-	-	-
Conn.	-	-	43	26	2	31	-	-	-	-	-	1
MID. ATLANTIC	34	54	466	561	310	415	-	6	-	3	9	5
Upstate N.Y.	2	5	45	100	56	80	-	1	-	3	4	2
N.Y. City	12	9	171	264	103	191	-	4	-	-	4	3
N.J.	13	21	102	114	75	88	-	-	-	-	-	-
Pa.	7	19	148	83	76	56	-	1	-	-	1	-
E.N. CENTRAL	44	66	615	706	244	320	1	4	1	2	6	4
Ohio	25	38	137	292	28	39	-	-	-	-	-	2
Ind.	4	2	89	106	25	36	-	-	-	-	-	-
Ill.	9	18	121	154	41	97	1	4	1	1	5	-
Mich.	5	3	229	96	147	119	-	-	-	1	1	-
Wis.	1	5	39	58	3	29	-	-	-	-	-	2
W.N. CENTRAL	10	14	515	568	107	125	1	4	-	-	4	3
Minn.	2	7	35	22	5	3	-	-	-	-	-	2
Iowa	3	3	78	136	36	18	-	-	-	-	-	-
Mo.	1	3	269	274	47	81	1	4	-	-	4	1
N. Dak.	-	-	5	9	1	-	-	-	-	-	-	-
S. Dak.	2	1	6	27	-	-	-	-	-	-	-	-
Nebr.	1	-	35	57	6	7	-	-	-	-	-	-
Kans.	1	-	87	43	12	16	-	-	-	-	-	-
S. ATLANTIC	86	69	453	266	305	378	-	-	-	-	-	2
Del.	-	1	10	5	1	1	-	-	-	-	-	1
Md.	26	21	103	56	50	88	-	-	-	-	-	-
D.C.	2	-	11	7	18	5	-	-	-	-	-	-
Va.	5	3	52	44	32	43	-	-	-	-	-	-
W. Va.	1	2	5	6	6	9	-	-	-	-	-	-
N.C.	12	13	62	33	63	103	-	-	-	-	-	-
S.C.	4	3	35	25	28	28	-	-	-	-	-	-
Ga.	16	23	40	2	14	3	-	-	-	-	-	-
Fla.	20	3	135	88	93	98	-	-	-	-	-	1
E.S. CENTRAL	20	11	225	554	214	199	-	-	-	-	-	-
Ky.	1	3	21	9	10	24	-	-	-	-	-	-
Tenn.	14	3	138	413	130	158	-	-	-	-	-	-
Ala.	5	4	35	75	23	17	-	-	-	-	-	-
Miss.	-	1	31	57	51	U	-	-	-	-	-	-
W.S. CENTRAL	17	10	1,202	1,204	163	212	-	-	-	-	-	1
Ark.	1	-	90	149	17	27	-	-	-	-	-	-
La.	-	-	61	20	36	13	-	-	-	-	-	-
Okla.	13	10	508	549	8	16	-	-	-	-	-	-
Tex.	3	-	543	486	102	156	-	-	-	-	-	1
MOUNTAIN	35	20	1,232	1,170	260	303	-	-	-	-	-	5
Mont.	-	-	35	39	2	2	-	-	-	-	-	-
Idaho	-	1	54	106	9	29	-	-	-	-	-	-
Wyo.	-	-	14	8	12	7	-	-	-	-	-	-
Colo.	2	4	144	115	54	43	-	-	-	-	-	1
N. Mex.	2	7	77	160	82	116	-	-	-	-	-	-
Ariz.	12	5	561	363	55	52	-	-	-	-	-	-
Utah	3	2	250	286	31	38	-	-	-	-	-	-
Nev.	16	1	97	93	15	16	-	-	-	-	-	4
PACIFIC	61	100	2,269	2,543	506	502	-	3	-	3	6	58
Wash.	1	1	154	144	16	27	-	-	-	-	-	4
Oreg.	14	12	118	376	39	39	-	-	-	-	-	-
Calif.	43	85	1,940	1,976	439	433	-	-	-	3	3	-
Alaska	1	-	13	23	8	1	-	-	-	-	-	53
Hawaii	2	2	44	24	4	2	-	3	-	-	3	1
Guam	-	-	-	2	-	-	U	-	U	-	-	-
P.R.	-	-	134	20	434	49	-	-	-	-	-	1
V.I.	-	-	-	-	-	-	U	-	U	-	-	-
Amer. Samoa	-	-	-	-	-	-	U	-	U	-	-	-
C.N.M.I.	4	10	1	1	16	5	U	1	U	-	1	-

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

*Of 66 cases among children aged <5 years, serotype was reported for 31 and of those, 13 were type b.

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

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 12, 1997, and April 13, 1996 (15th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1997	Cum. 1996	1997	Cum. 1997	Cum. 1996	1997	Cum. 1997	Cum. 1996	1997	Cum. 1997	Cum. 1996
UNITED STATES	1,202	1,143	16	166	170	59	1,262	770	1	9	54
NEW ENGLAND	77	47	-	6	-	8	326	181	-	-	7
Maine	9	6	-	-	-	-	6	8	-	-	-
N.H.	6	1	-	-	-	1	41	17	-	-	-
Vt.	2	1	-	-	-	5	126	6	-	-	1
Mass.	44	18	-	1	-	2	138	147	-	-	4
R.I.	4	5	-	4	-	-	11	-	-	-	-
Conn.	12	16	-	1	-	-	4	3	-	-	2
MID. ATLANTIC	101	106	2	16	22	6	90	74	-	2	4
Upstate N.Y.	24	23	-	3	6	-	42	40	-	1	2
N.Y. City	17	19	-	-	4	-	6	13	-	1	1
N.J.	25	24	-	-	2	-	-	3	-	-	1
Pa.	35	40	2	13	10	6	42	18	-	-	-
E.N. CENTRAL	147	159	1	23	48	2	122	153	-	2	3
Ohio	63	50	1	8	17	1	54	51	-	-	-
Ind.	15	15	-	4	5	-	11	9	-	-	-
Ill.	45	56	-	7	9	-	16	47	-	-	1
Mich.	11	17	-	4	17	1	23	9	-	-	2
Wis.	13	21	-	-	-	-	18	37	-	2	-
W.N. CENTRAL	86	94	1	8	2	4	80	33	-	-	-
Minn.	2	9	-	3	-	-	45	22	-	-	-
Iowa	22	16	-	3	-	2	14	2	-	-	-
Mo.	44	43	-	-	-	2	12	4	-	-	-
N. Dak.	-	2	-	-	2	-	1	-	-	-	-
S. Dak.	3	3	-	-	-	-	1	1	-	-	-
Nebr.	5	9	1	2	-	-	2	1	-	-	-
Kans.	10	12	-	-	-	-	5	3	-	-	-
S. ATLANTIC	223	168	3	24	19	10	139	63	1	2	10
Del.	4	2	-	-	-	-	-	7	-	-	-
Md.	25	20	2	4	9	4	53	29	-	-	-
D.C.	1	4	-	-	-	-	2	-	-	-	-
Va.	17	16	1	2	3	-	17	3	1	1	-
W. Va.	4	6	-	-	-	-	3	2	-	-	-
N.C.	39	29	-	5	-	3	30	8	-	-	-
S.C.	34	25	-	1	3	3	6	-	-	1	-
Ga.	38	56	-	2	1	-	2	2	-	-	-
Fla.	61	10	-	10	3	-	26	12	-	-	10
E.S. CENTRAL	96	96	-	12	7	-	28	32	-	-	-
Ky.	20	13	-	-	-	-	1	23	-	-	-
Tenn.	37	28	-	4	1	-	13	6	-	-	-
Ala.	25	30	-	4	3	-	7	1	-	-	-
Miss.	14	25	-	4	3	-	7	2	-	-	N
W.S. CENTRAL	114	127	4	20	7	2	19	11	-	-	-
Ark.	22	16	-	-	-	-	3	2	-	-	-
La.	21	25	-	5	7	1	7	2	-	-	-
Okla.	13	9	-	-	-	1	1	1	-	-	-
Tex.	58	77	4	15	-	-	8	6	-	-	-
MOUNTAIN	74	72	1	8	11	14	263	108	-	-	1
Mont.	4	1	-	-	-	-	3	4	-	-	-
Idaho	5	8	-	2	-	8	164	33	-	-	-
Wyo.	-	3	-	-	-	-	3	-	-	-	-
Colo.	20	11	-	2	-	6	70	21	-	-	-
N. Mex.	13	14	N	N	N	-	12	22	-	-	-
Ariz.	16	20	-	-	1	-	9	5	-	-	1
Utah	10	8	1	2	1	-	1	2	-	-	-
Nev.	6	7	-	2	9	-	1	21	-	-	-
PACIFIC	284	274	4	49	54	13	195	115	-	3	29
Wash.	28	31	-	3	5	-	98	42	-	-	1
Oreg.	61	51	-	-	-	1	7	21	-	-	-
Calif.	194	186	4	36	39	12	85	44	-	1	26
Alaska	-	4	-	1	2	-	1	-	-	-	-
Hawaii	1	2	-	9	8	-	4	8	-	2	2
Guam	-	1	U	-	3	U	-	-	U	-	-
P.R.	2	2	-	-	1	-	-	-	-	-	-
V.I.	-	-	U	-	-	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 122 U.S. cities,* week ending April 12, 1997 (15th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	587	436	93	38	15	5	59
Boston, Mass.	162	113	31	10	6	2	24
Bridgeport, Conn.	38	26	5	5	1	1	3
Cambridge, Mass.	24	19	2	2	1	-	4
Fall River, Mass.	42	38	3	1	-	-	2
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	26	18	5	2	1	-	-
Lynn, Mass.	18	14	4	-	-	-	1
New Bedford, Mass.	29	23	5	1	-	-	2
New Haven, Conn.	47	31	13	2	-	1	1
Providence, R.I.	59	41	10	4	3	1	6
Somerville, Mass.	1	1	-	-	-	-	-
Springfield, Mass.	51	38	5	7	1	-	5
Waterbury, Conn.	22	17	1	3	1	-	3
Worcester, Mass.	68	57	9	1	1	-	8
MID. ATLANTIC	2,321	1,615	404	208	48	45	129
Albany, N.Y.	38	26	7	3	1	1	1
Allentown, Pa.	18	14	2	2	-	-	1
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	32	21	2	4	2	3	2
Elizabeth, N.J.	17	10	1	3	-	3	-
Erie, Pa.	43	32	7	4	-	-	5
Jersey City, N.J.	45	28	10	6	-	1	2
New York City, N.Y.	1,234	853	220	114	24	23	52
Newark, N.J.	68	40	14	13	1	-	4
Paterson, N.J.	32	18	7	5	2	-	-
Philadelphia, Pa.	410	268	90	30	13	8	23
Pittsburgh, Pa.§	53	44	4	5	-	-	5
Reading, Pa.	7	7	-	-	-	-	-
Rochester, N.Y.	133	105	13	7	4	4	14
Schenectady, N.Y.	24	19	2	3	-	-	2
Scranton, Pa.	31	27	4	-	-	-	-
Syracuse, N.Y.	84	63	15	4	1	1	12
Trenton, N.J.	35	26	5	3	-	1	4
Utica, N.Y.	17	14	1	2	-	-	2
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,101	1,476	387	135	49	53	124
Akron, Ohio	61	45	12	1	2	1	-
Canton, Ohio	40	36	2	1	1	-	4
Chicago, Ill.	419	270	91	39	10	9	40
Cincinnati, Ohio	U	U	U	U	U	U	U
Cleveland, Ohio	141	113	15	4	5	4	1
Columbus, Ohio	172	115	33	11	6	7	6
Dayton, Ohio	136	113	17	4	1	1	9
Detroit, Mich.	224	132	55	22	9	5	6
Evansville, Ind.	57	49	7	1	-	-	5
Fort Wayne, Ind.	66	47	10	7	1	1	5
Gary, Ind.	U	U	U	U	U	U	U
Grand Rapids, Mich.	72	48	13	4	1	6	7
Indianapolis, Ind.	238	153	50	18	7	10	15
Lansing, Mich.	24	18	5	-	1	-	-
Milwaukee, Wis.	107	78	21	3	2	3	8
Peoria, Ill.	38	25	9	1	1	2	1
Rockford, Ill.	50	39	8	3	-	-	3
South Bend, Ind.	64	46	11	5	1	1	4
Toledo, Ohio	109	81	19	7	1	1	7
Youngstown, Ohio	83	68	9	4	-	2	3
W.N. CENTRAL	908	665	141	53	15	22	62
Des Moines, Iowa	115	91	14	5	1	4	15
Duluth, Minn.	29	19	8	-	1	1	3
Kansas City, Kans.	47	31	10	5	1	-	1
Kansas City, Mo.	120	76	18	10	1	3	10
Lincoln, Nebr.	31	25	5	1	-	-	3
Minneapolis, Minn.	197	146	30	10	5	6	17
Omaha, Nebr.	94	73	12	5	1	3	7
St. Louis, Mo.	125	87	21	10	4	3	-
St. Paul, Minn.	63	48	11	3	-	1	5
Wichita, Kans.	87	69	12	4	1	1	1
S. ATLANTIC	1,275	810	267	129	46	20	86
Atlanta, Ga.	114	72	21	12	3	6	7
Baltimore, Md.	227	136	57	27	7	-	25
Charlotte, N.C.	46	25	11	5	4	1	8
Jacksonville, Fla.	131	97	24	6	2	1	4
Miami, Fla.	104	60	24	18	1	1	3
Norfolk, Va.	51	37	7	2	2	3	2
Richmond, Va.	68	36	20	6	6	-	-
Savannah, Ga.	46	33	5	6	2	-	3
St. Petersburg, Fla.	51	38	7	2	2	2	2
Tampa, Fla.	190	135	25	19	8	2	27
Washington, D.C.	229	131	61	24	8	4	5
Wilmington, Del.	18	10	5	2	1	-	-
E.S. CENTRAL	683	455	139	52	15	21	49
Birmingham, Ala.	U	U	U	U	U	U	U
Chattanooga, Tenn.	66	45	12	5	3	-	6
Knoxville, Tenn.	108	79	18	8	1	2	16
Lexington, Ky.	91	60	17	6	3	5	3
Memphis, Tenn.	160	99	36	15	4	6	13
Mobile, Ala.	56	36	14	6	-	-	2
Montgomery, Ala.	70	51	11	5	1	2	5
Nashville, Tenn.	132	85	31	7	3	6	4
W.S. CENTRAL	1,462	999	254	132	42	35	85
Austin, Tex.	64	45	12	2	1	4	6
Baton Rouge, La.	41	28	9	2	1	1	-
Corpus Christi, Tex.	74	57	8	3	3	3	5
Dallas, Tex.	217	143	41	22	9	2	11
El Paso, Tex.	85	67	8	7	2	1	8
Ft. Worth, Tex.	U	U	U	U	U	U	U
Houston, Tex.	399	250	86	43	10	10	21
Little Rock, Ark.	80	50	15	9	4	2	6
New Orleans, La.	83	53	12	13	4	1	-
San Antonio, Tex.	217	152	37	16	3	9	13
Shreveport, La.	74	50	14	6	3	1	8
Tulsa, Okla.	128	104	12	9	2	1	7
MOUNTAIN	870	613	148	65	23	21	66
Albuquerque, N.M.	89	55	22	10	1	1	2
Boise, Idaho	24	13	5	3	2	1	2
Colo. Springs, Colo.	53	44	4	1	3	1	2
Denver, Colo.	119	86	18	8	5	2	11
Las Vegas, Nev.	169	115	33	13	3	5	9
Ogden, Utah	28	21	3	2	1	1	1
Phoenix, Ariz.	115	80	23	7	1	4	9
Pueblo, Colo.	27	20	4	1	1	1	2
Salt Lake City, Utah	93	61	17	11	3	1	12
Tucson, Ariz.	153	118	19	9	3	4	16
PACIFIC	1,237	911	199	84	20	23	112
Berkeley, Calif.	15	14	1	-	-	-	1
Fresno, Calif.	79	57	13	6	3	-	6
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	102	74	20	6	-	2	5
Long Beach, Calif.	80	57	14	6	2	1	9
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	U	U	U	U	U	U	U
Portland, Oreg.	163	129	21	8	4	1	9
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	115	81	17	10	3	4	8
San Francisco, Calif.	137	102	22	12	1	-	23
San Jose, Calif.	198	146	28	13	5	6	25
Santa Cruz, Calif.	33	27	4	1	-	1	5
Seattle, Wash.	163	114	32	12	2	3	10
Spokane, Wash.	48	32	12	2	-	2	3
Tacoma, Wash.	104	78	15	8	-	3	8
TOTAL	11,444¶	7,980	2,032	896	273	245	772

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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