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WEEKLY REPORT

Update: Influenza Activity — United States, 1998–99 Season

In collaboration with the World Health Organization (WHO), its 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 influenza surveillance in the United States from October 4, 1998, to January 9, 1999, which indicates that overall influenza activity was low.

As of January 9, the 110 WHO and National Respiratory Enteric Virus Surveillance System collaborating laboratories in the United States had tested 20,972 specimens (by culture or direct antigen-detection techniques) for respiratory viruses. Of these, 401 (2%) were positive for influenza viruses; 293 (73%) were influenza A, and 108 (27%) were type B. Of the 95 (32%) influenza A isolates that have been subtyped, 93 (98%) were influenza A(H3N2) and two (2%) were influenza A(H1N1). Since October 4, all of the influenza A(H3N2) viruses antigenically characterized by CDC were similar to A/Sydney/5/97, the H3N2 component of the 1998–99 influenza vaccine. One influenza A(H1N1) isolate was antigenically characterized as an A/Bayern/7/95-like virus that is antigenically distinct from A/Beijing/262/95, the H1N1 vaccine strain. However, the 1998–99 A(H1N1) vaccine strain produces high titers of antibodies that cross react with A/Bayern/7/95 (*1*). All 15 of the influenza B viruses antigenically characterized by CDC are similar to B/Beijing/184/93, the recommended type B vaccine strain.

Since October 4, 1998, 41 states have reported laboratory-confirmed influenza. Influenza A(H3N2) viruses were reported from 24 states, influenza A(H1N1) viruses from two states, influenza B viruses from 26 states, and influenza A (not subtyped) viruses from 32 states. For the week ending January 9, 1999, New York City reported widespread* influenza activity, 10 states reported regional activity, and 35 states reported sporadic activity. The overall percentage of patient visits to sentinel physicians for influenza-like illness remained within baseline levels (0–3%) during the entire period. The percentage of deaths attributed to pneumonia and influenza reported by the 122 Cities Pneumonia and Influenza Mortality Surveillance System ranged from 6% to

*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.

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7% and intermittently exceeded the epidemic threshold[†] for a combined total of 5 of 14 weeks, but has not remained above the epidemic threshold for >2 consecutive weeks.

Reported by: Participating state and territorial epidemiologists and state public health laboratory directors. World Health Organization collaborating laboratories, National Respiratory Enteric Virus Surveillance System collaborating laboratories. Sentinel Physicians Influenza Surveillance System. WHO Collaborating Center for Reference and Research on Influenza, Influenza Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The findings in this report indicate that, despite institutional outbreaks in several states, this influenza season has been relatively mild. However, influenza activity has increased since mid-December and may increase during subsequent weeks. Although the optimal time for influenza vaccination is October through mid-November, influenza vaccine should still be offered to unvaccinated high-risk persons, health-care providers, caregivers, and household contacts of high-risk persons even after influenza activity has been detected in the community.

All influenza A strains and most influenza B strains isolated in the United States that have been characterized by CDC are well matched by the 1998–99 influenza vaccine. A/Sydney/5/97-like (H3N2) viruses were the predominant influenza viruses isolated in the United States during the 1997–98 season and were isolated throughout 1998 (*2–4*). Even when the match between circulating strains and vaccine strains is good, outbreaks of influenza can still occur in vaccinated persons. Therefore, use of the antiviral agents amantadine and rimantadine in addition to influenza vaccination may help prevent and control influenza A but not influenza B, especially among persons at high risk for influenza-related complications and in institutions such as nursing homes (*5,6*). These drugs are 70%–90% effective in preventing influenza A infections and reduce the severity and duration of symptoms when administered within 48 hours of illness onset.

Commercially available point-of-care rapid diagnostic tests for influenza include one test that detects only influenza A virus and two tests that detect both influenza A and B viruses but do not distinguish between the infections. Rapid diagnostic tests for influenza in institutional outbreaks are most useful when used in conjunction with viral cultures. Rapid identification of influenza virus infection is important because prevention measures, such as cohorting and isolating infected and symptomatic persons, can be implemented more quickly.

Influenza surveillance data are updated weekly throughout the season. Summary reports are available through CDC's voice information system, (888) 232-3228, or fax information system, (888) 232-3299, by requesting document number 361100 and entering the telephone number to which the document should be transmitted, or through CDC's National Center for Infectious Diseases, Division of Viral and Rickettsial Diseases, Influenza Branch World-Wide Web site http://www.cdc.gov/ncidod/diseases/flu/weekly.htm.

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[†]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 percentage of deaths from pneumonia and influenza since 1983.

Influenza Activity — Continued

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Adult Lead Poisoning from an Asian Remedy for Menstrual Cramps — Connecticut, 1997

Follow-back procedures to determine the source of elevated blood lead levels (BLLs) are integral parts of the CDC's National Institute for Occupational Safety and Health Adult Blood Lead Epidemiology and Surveillance program (ABLES) in 27 states. Although an estimated 90%–95% of cases of elevated BLLs reported to the states in the ABLES program result from occupational exposures, nonoccupational exposures also are identified by this system. This report describes a case of adult lead poisoning attributed to an Asian remedy for menstrual cramps, "Koo Sar" pills, following an investigation by the Adult Lead Registry of the Connecticut Department of Public Health (CDPH), Division of Environmental Epidemiology and Occupational Health.

On February 19, 1997, a 33-year-old Cambodian woman, her husband, and their two children were screened at a free lead-screening event sponsored by a nursing school community health promotion center. The husband had a BLL of <10 μg/dL, and the children, aged 8 and 2 years, had BLLs of 2 μg/dL and 3 μg/dL, respectively. The woman, however, had a BLL of 44 μg/dL and a confirmatory BLL on March 3 of 42 μg/dL.* The woman reported no symptoms associated with lead poisoning (e.g., muscle pains or weakness, headaches, or loss of appetite).

On March 14, 1997, the director of the health promotion center notified the CDPH's case-management coordinator for the Adult Lead Registry; the coordinator interviewed the woman by telephone for follow-up. The CDPH coordinator requested samples of any medicines, teas, or cosmetics that the woman had used that might have been the source of the lead. All submitted materials (teas, medicinal herbs, cosmetics, and two of three bottles of red pills in their original containers) were sent to the CDPH State Laboratory for analysis. Lead was found only in the red pills, at concentrations of 3.5 ppm in pills from bottle A and 1.2 ppm in pills from bottle B.†

On April 1, 1997, a CDPH follow-up interview revealed that for 3–4 years the woman had taken six of these pills per day on 7 days of each month to treat menstrual cramps. She was advised to stop taking the pills and was asked to submit additional pills for

*CDPH regards adult BLLs <10 μg/dL as normal; the geometric mean blood lead level for adults aged 20–49 years in the Third National Health and Nutrition Examination Survey (1991–94) was 2.1 μg/dL (*1*).

†Laboratory analysis was performed using acid digestion and graphite flame absorption (EPA method 200.9).

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further investigation. After she stopped using the pills, follow-up BLLs were 28 μg/dL in April, 21 μg/dL in May, 19 μg/dL in June, and 12 μg/dL in September 1997.

Because the woman originally had reported purchasing the pills in New York City, samples were sent to the New York City Department of Health for confirmation and follow-up. On October 10, 1997, laboratory results from New York showed lead in amounts of 12.5 ppm in pills from bottle A and 4.5 ppm in pills from bottle B. Additional follow-up with the woman indicated that both bottles actually had been obtained in San Francisco, California.

CDPH contacted the California Department of Health Services, and the matter was referred to the San Francisco Department of Public Health for investigation, including review of the package literature (written in Chinese) that accompanied the pills. The product or brand name listed on the outside of the package was "Koo So Pills," and on the package insert it was "Koo Sar Pills." The manufacturer, Tien Sau Tong, is in Hong Kong. Lead is not among the 11 listed ingredients. The insert states, "These medical pills are good for general debility." The directions for dosage are one pill taken with warm water two times daily. The lead content of pills from two packages of Koo Sar pills purchased at different shops in San Francisco was 2.7 ppm lead (0.9 μg/pill) and 4.3 ppm (1.5 μg/pill), respectively.

No additional cases of lead poisoning associated with Koo Sar pills have been reported to California, Connecticut, New York, or to any of the other state ABLES programs. Food and drug authorities at the state (California) and federal level were notified of this incident; no recall or other regulatory action has been initiated.

Reported by: BC Jung, MPH, Connecticut Dept of Public Health, Div of Environmental Epidemiology and Occupational Health; M Morrissey-Ross, MSN, Fairfield Univ School of Nursing Health Promotion Center, Fairfield, Connecticut. L Nicaj, New York City Dept of Health. D Lo, San Francisco Dept of Public Health; B Materna, PhD, R Fornes, MS, California Dept of Health Services. Div of Surveillance, Hazard Evaluations, and Field Studies, National Institute for Occupational Safety and Health, CDC.

Editorial Note: This report describes a previously unrecognized source of lead poisoning from a traditional or folk remedy. This is the only known case resulting from Koo Sar pills, but other cases may have occurred; elevated BLLs in persons who are asymptomatic may not be diagnosed (this case was identified serendipitously), and diagnosed cases may not have been reported. Because lead is not listed as an ingredient of Koo Sar pills, it is thought to be a constituent or contaminant of the red dye used to color the pills. The varying lead concentrations measured in different samples of the pills probably result from varying amounts of lead present during manufacture of the red dye.

Adulterants, including lead, have been noted in Asian traditional or folk medicines (*2,3*). Folk remedies and cosmetics from East Indian, Pakistani, Chinese, and Latin American cultures that have contained lead include alarcon, alkohl, azarcon, bali goli, coral, gliasard, greta, kohl, liga, pay-loo-ah, rueda, and surma (*4*). Other sources of lead ingestion have included contaminated ground paprika (*5*), ayurvedic metal-mineral tonics (*6*), Deshi Dewa (a fertility drug) (*7*), hai gen fen (clamshell powder) added to tea (*8*), and pigment used in plastic wire insulation (*9*).

Traditional or folk remedies taken by persons for various ailments should be considered by health-care providers as possible sources of adult lead poisoning—particularly when an occupational exposure cannot be identified. Educational interventions should be targeted toward ethnic communities known to use such folk reme-

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dies by state and municipal health departments and other community groups; educational materials should warn of the dangers of using folk remedies that might contain toxic ingredients that can lead to adverse health effects.

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Final Stages of Poliomyelitis Eradication — Western Pacific Region, 1997–1998

In 1988, the World Health Assembly resolved to eradicate poliomyelitis globally by 2000 (*1*). A plan of action for polio eradication in the Western Pacific Region (WPR) by 1995 was adopted in 1990. The plan was based on routine and supplemental vaccination activities with oral poliovirus vaccine (OPV) and acute flaccid paralysis (AFP) surveillance in the eight countries where polio was endemic (Cambodia, China, Laos, Malaysia, Mongolia, Papua New Guinea, Philippines, and Vietnam) (*2*). Regionwide, the number of reported polio cases decreased from approximately 6000 in 1990 to zero in 1998. This report describes the extensive efforts to eliminate the last chains of poliovirus transmission in the Mekong River area.

AFP surveillance was introduced in Cambodia, Laos, and Vietnam in 1992, and has improved steadily (during 1994–1997, the proportion of AFP cases with two adequate stool samples increased from 7% to 71% in Cambodia, 0 to 70% in Laos, and 49% to 84% in Vietnam). From 1992 to 1997, the number of confirmed polio cases decreased from 557 to one in Vietnam; from 146 to eight in Cambodia; and from seven to zero in Laos. In addition, analysis of 1996 data suggested that poliovirus transmission was limited to focal areas in Cambodia, Laos, and Vietnam. During 1996, 21 confirmed cases of polio were reported in WPR (17 cases from the Mekong River area of Cambodia, one from nearby southern Laos, and three imported into China from Myanmar) (*3*).

National Immunization Days (NIDs)* were conducted from 1993 through 1998 in Vietnam and Laos, and from 1995 through 1998 in Cambodia. A total of 12.5 million children were targeted in the three countries during each round of NIDs, and the re-

*Mass campaigns over a short period (days to weeks) in which two doses of OPV are administered to all children in the target group (usually aged 0–4 years) regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

TABLE 1. Coverage achieved during National Immunization Days (NIDs)* and proportion of "zero-dose" children† during mopping-up vaccination, by year — Cambodia, Laos, and Vietnam, 1996–1998

			Cambodia		Laos		Vietnam	
Year	Activity	Round	NIDs coverage	"Zero-dose" children	NIDs coverage	"Zero-dose" children§	NIDs coverage	"Zero-dose" children
1996	NIDs	1	89%		85%		99%	23%
		2	91%		84%		100%	
1997	NIDs	1	94%		87%		99%	
		2	96%		87%		99%	
	(Cambodia)	3	98%					
	(Cambodia)	4	96%					
1997	Mopping-up	1	98%	22%	105%		97%	11%
		2	100%		93%		98%	
1998	NIDs/SNIDs¶	1	96%**		93%		97%**	
		2			89%			
1998	Mopping-up	1	94%	1%	††		100%	10%
		2	96%				100%	

*Mass campaigns over a short period (days to weeks) in which two doses of oral poliovirus vaccine are administered to all children in the target group (usually aged 0–4 years) regardless of previous vaccination history, with an interval of 4–6 weeks between doses.
†The proportion of children for whom no vaccination dose was recorded previously.
§Information is not available for Laos.
¶Subnational Immunization Days.
**Preliminary reports.
††Mopping-up campaigns were not conducted.

ported coverage was generally high (Table 1). During January–March 1997, nine polio cases were reported from the Mekong River area. Analysis of data from supervisory teams and AFP surveillance indicated that a substantial proportion of undervaccinated children were residing on the extensive waterways of the Mekong River and many had been missed previously by both routine and supplemental vaccination activities. Therefore, to interrupt the transmission of wild poliovirus in 1997, additional rounds of supplemental vaccination focused on these unreached areas and populations. Cambodia, Laos, and Vietnam conducted two synchronized rounds of "mopping-up"† supplementary vaccination in high-risk areas in May and June 1997; the second two rounds in Cambodia and Vietnam occurred during February–April 1998 (Figure 1).

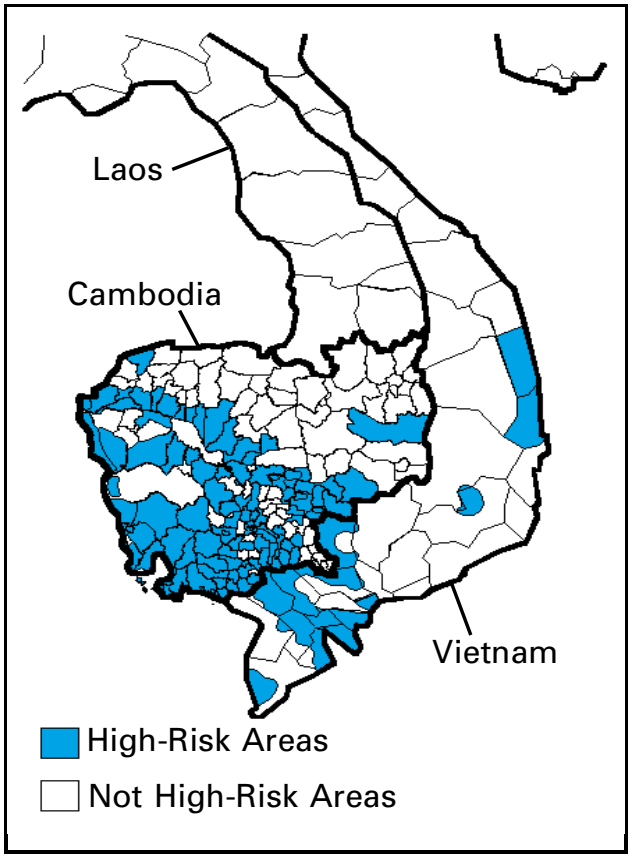
A combination of strategies, including fixed and mobile vaccination sites and mobile teams, were used to ensure that every child aged <5 years in the selected areas would receive two doses of OPV, regardless of vaccination history. In many areas, hundreds of mobile teams, using a ratio of one team for each 120 children, visited from house to house and boat to boat to reach the target population.

Because an accurate target denominator was unknown, coverage data were considered unreliable for monitoring the quality of mopping-up. Therefore, the total number of children reached by mobile teams and the proportion of children for whom no vaccination dose ("zero-dose" children) was recorded previously served as an alternative indicator of the quality of the mopping-up rounds. In Cambodia, the proportion of

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

Poliomyelitis Eradication — Continued

FIGURE 1. High-risk districts targeted for mopping-up vaccination* — Cambodia and Vietnam, February–April 1998



*Focal mass campaign in high-risk areas over a short period (days to weeks) in which two doses of oral poliovirus vaccine are administered during house-to-house and boat-to-boat visits to all children in the target age group, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

"zero-dose" children in selected areas decreased from 22% during the first round in May 1997 to 1% in 1998 (Table 1).

AFP surveillance data indicated that the last person reported with polio in WPR had onset of illness in Cambodia on March 19, 1997. No other cases of polio have been detected in WPR despite the reporting and investigation of >9000 AFP cases in 1998 (data as of December 10, 1998); two stool samples had been taken from 85% of persons with cases within 14 days of onset of paralysis. Vietnam reported 463 AFP cases (nonpolio AFP rate of 1.5 per 100,000 population aged <15 years) in 1997 and 492 cases (nonpolio AFP rate of 1.7) in 1998 (data as of December 10). In 1997, stool specimens were available from 83% of persons with AFP, and in 1998, from 95%.

Cambodia reported 178 AFP cases in 1997 and 142 cases in 1998, for nonpolio AFP rates of 3.2 and 2.8, respectively. Despite problems with transport and communication, adequate stool sampling rates of 71% in 1997 and 80% in 1998 were achieved in Cambodia. Laos reported 76 AFP cases in 1997, for a nonpolio AFP rate of 3.5. The

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number of AFP cases reported in 1998 was 75, and the nonpolio AFP rate was 3.7. Adequate stool collection rates for 1997 and 1998 were 75% and 77%, respectively.

Reported by: Expanded Program on Immunization, World Health Organization, Office for the Western Pacific Region, Manila, Philippines; Dept of Vaccines and Other Biologics, World Health Organization, Geneva, Switzerland. National Institute of Infectious Diseases, Tokyo, Japan. Respiratory and Enteric Viruses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Vaccine Preventable Disease Eradication Div, National Immunization Program, CDC.

Editorial Note: Countries in WPR have conducted polio eradication efforts since 1991, and WPR is now apparently polio-free. To complete eradication, Cambodia and Vietnam conducted eight supplementary vaccination rounds: four rounds of mopping-up and four rounds of NIDs in the high-risk areas along the waterways of the Mekong River and its tributaries from November 1996 through April 1998. These waterways support large populations, many of whom are highly mobile and not regularly reached by routine vaccination services. The supplemental vaccination efforts appear to have been successful in eliminating the last remaining reservoirs of wild poliovirus in WPR.

To reach a high proportion of the target groups for mopping-up vaccination, substantial efforts were devoted to planning, monitoring and supervision, and evaluation. The planning process used high-quality AFP and laboratory surveillance data to identify target areas. The timely availability of laboratory results from stool specimens enabled the precise location of wild polioviruses within 60 days of onset of paralysis for 85% of cases. The criteria for selecting high-risk districts included those with wild poliovirus during the preceding 24 months, clusters of clinically confirmed polio cases, poor surveillance performance, boat-dwelling populations, and borders with other countries where polio is endemic. In timing mopping-up, it was considered more important to choose the better access afforded by the hot, dry summer months rather than the low transmission for enteroviruses during the winter season.

Each district and subdistrict prepared logistic plans showing population, vaccine, staff and other requirements, and maps to locate the position of vaccination posts and routes to be taken by mobile teams. In certain areas, aerial photography was used over the waterways to locate boat-dwelling populations.

In Cambodia and Vietnam, 1 million children aged <5 years were included in both the 1997 and 1998 mopping-up, and Laos, which conducted mopping-up in 1997 only, targeted 50,000 children aged <5 years. In Cambodia, the mopping-up rounds were staggered over 12 days to allow time for supervisory teams to visit all areas; 14 days were used in Laos, and 3 days in Vietnam. Given the large amount of cross-border traffic between Cambodia and Vietnam, special efforts were made to coordinate the mopping-up by synchronizing the dates, and deploying mobile teams and fixed posts at border crossing points.

Despite initial concerns regarding a potential negative effect of polio eradication on routine vaccination, routine coverage with three doses of OPV among 1-year-old children increased substantially during 1993–1997 (Cambodia from 36% to 70%, Laos from 26% to 69%, and Vietnam from 91% to 95%).

The efforts needed to interrupt the final chains of poliovirus transmission in the last few remaining areas were far more intense than in the early stages when polio was widely endemic. Critical conditions for the success of the mopping-up were 1) availability of high-quality AFP and virological surveillance to identify high-risk areas;

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2) timely analysis of surveillance data to identify areas not reached by previous supplementary vaccination rounds; 3) timely availability of laboratory results to identify areas where wild poliovirus was circulating; 4) detailed local planning including the use of maps at the sub-district level; and 5) use of new vaccination approaches, including mobile teams to reach all target children.

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Notice to Readers

Update: Recommendations to Prevent Hepatitis B Virus Transmission — United States

In October 1997, the Advisory Committee on Immunization Practices (ACIP) expanded its hepatitis B vaccination recommendations to include all unvaccinated children aged 0–18 years and made hepatitis B vaccine available through the Vaccines for Children program (VFC) for persons aged 0–18 years who are eligible for VFC. ACIP priorities for hepatitis B vaccination of children remain unchanged and include all infants; children in populations at high risk for hepatitis B virus (HBV) infection (e.g., Alaska Natives, Pacific Islanders, and children who reside in households of first-generation immigrants from countries where HBV infection is moderately or highly endemic); previously unvaccinated children aged 11–12 years; and older adolescents and adults in defined risk groups.

In 1991, the ACIP recommended a comprehensive hepatitis B vaccination strategy to eliminate HBV transmission in the United States (*1*). Critical elements of this strategy include preventing perinatal HBV transmission by identifying and providing immunoprophylaxis to infants of hepatitis B surface antigen-positive mothers and universal hepatitis B vaccination of infants to interrupt transmission. In 1994, the ACIP expanded the recommendations to include previously unvaccinated children aged 11–12 years (*2*). The percentage of children aged 19–35 months who have received three doses of hepatitis B vaccine has increased substantially from <10% in 1991 to 84% in 1997 (*3*). No nationwide vaccine coverage data are available to assess vaccine coverage among children aged 11–12 years; however, vaccine coverage in this group is expected to increase in states that have implemented middle school entry requirements for hepatitis B vaccination (*4*).

To increase access to hepatitis B vaccine, the new recommendations encourage vaccination of previously unvaccinated children and adolescents aged 0–18 years whenever they are seen for routine medical visits. This expansion of the recommended age group for vaccination and for VFC eligibility simplifies previous recommendations and the eligibility criteria for VFC vaccine. Providers should ensure that

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vaccination records of children and adolescents presenting for vaccination are checked for receipt of previous doses.

Universal vaccination of infants and children aged 11–12 years will result in a highly immune population and is expected to eliminate HBV transmission in the United States. However, high rates of HBV infection continue to occur among Alaska Native and Pacific Islander children and among children residing in households of first-generation immigrants from countries where HBV infection is endemic (*5,6*). As a result, targeted programs are needed to achieve high vaccination coverage among these children. In addition, because most HBV infections in the United States occur among adults, vaccinating infants and adolescents aged 11–12 years alone will not substantially lower disease incidence for several years. Most HBV infections in adults occur among persons who have defined risk factors for HBV infection, including persons with multiple sex partners (more than one partner during the preceding 6 months); men who have sex with men; and injecting-drug users (*7*). The primary means to prevent these infections is to identify settings where adolescents and adults with high-risk drug and sexual practices can be routinely accessed and vaccinated (e.g., sexually transmitted disease clinics, family-planning clinics, drug-treatment clinics, community-based human immunodeficiency virus prevention sites, and correctional facilities).

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Notice to Readers

FDA Approval of Change in Pediatric Formulation for Recombivax HB®

Effective August 27, 1998, the Merck Vaccine Division (Merck & Co., Inc., West Point, Pennsylvania) discontinued distribution and production of the 2.5-μg dose of Recombivax HB®* pediatric hepatitis B vaccine, which was licensed by the Food and Drug Administration for infants of hepatitis B surface antigen (HBsAg)-negative moth-

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

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ers and children aged ≤10 years. The 2.5-μg dose was replaced with a 5.0-μg dose previously used for vaccination of adolescents and infants of HBsAg-positive mothers. To simplify the vaccination schedule for infants and children, the Advisory Committee on Immunization Practices recommends use of the 5.0-μg dose for all children and adolescents aged 0–19 years. Either the 2.5-μg dose or the 5.0-μg dose may be used to complete any vaccine series already started for children aged ≤10 years, regardless of the initiating dose of vaccine. Children who have completed the hepatitis B vaccination series with the 2.5-μg dose do not need to be revaccinated.

Notice to Readers

Availability of Lyme Disease Vaccine

On December 21, 1998, the Food and Drug Administration (FDA) licensed LYMErix™ (SmithKline Beecham Biologicals, Reixensart, Belgium),* a new vaccine against Lyme disease (LD). This report summarizes information about this vaccine and provides epidemiologic information about LD relevant to vaccine use.

Each dose of LYMErix™ contains 30 μg of lipidated recombinant outer surface protein A (OspA) of *Borrelia burgdorferi* sensu stricto, the causative agent of LD in North America, adsorbed onto aluminum adjuvant (*1*). It is indicated for use in persons aged 15–70 years (*1*). Three doses of the vaccine are administered by intramuscular injection. The initial dose is followed by a second dose 1 month later and a third dose 12 months after the first. Vaccine administration should be timed so the second dose and the third dose are given several weeks before the beginning of the *B. burgdorferi* transmission season (*1*), which usually begins in April. In a randomized, double-blind, multicenter trial involving 10,936 participants living in areas of the northeastern and upper north central United States where LD is endemic, the vaccine efficacy in preventing LD was 50% (95% confidence interval [CI]=14%–71%) after the first two doses and 78% (95% CI=59%–88%) after three doses (*1*). Efficacy against asymptomatic seroconversion was 83% (95% CI=25%–96%) after two doses and 100% (95% CI=30%–100%) after three doses (*1*). The duration of immunity following the three-dose vaccination series is unknown, and the need for booster doses has not been determined.

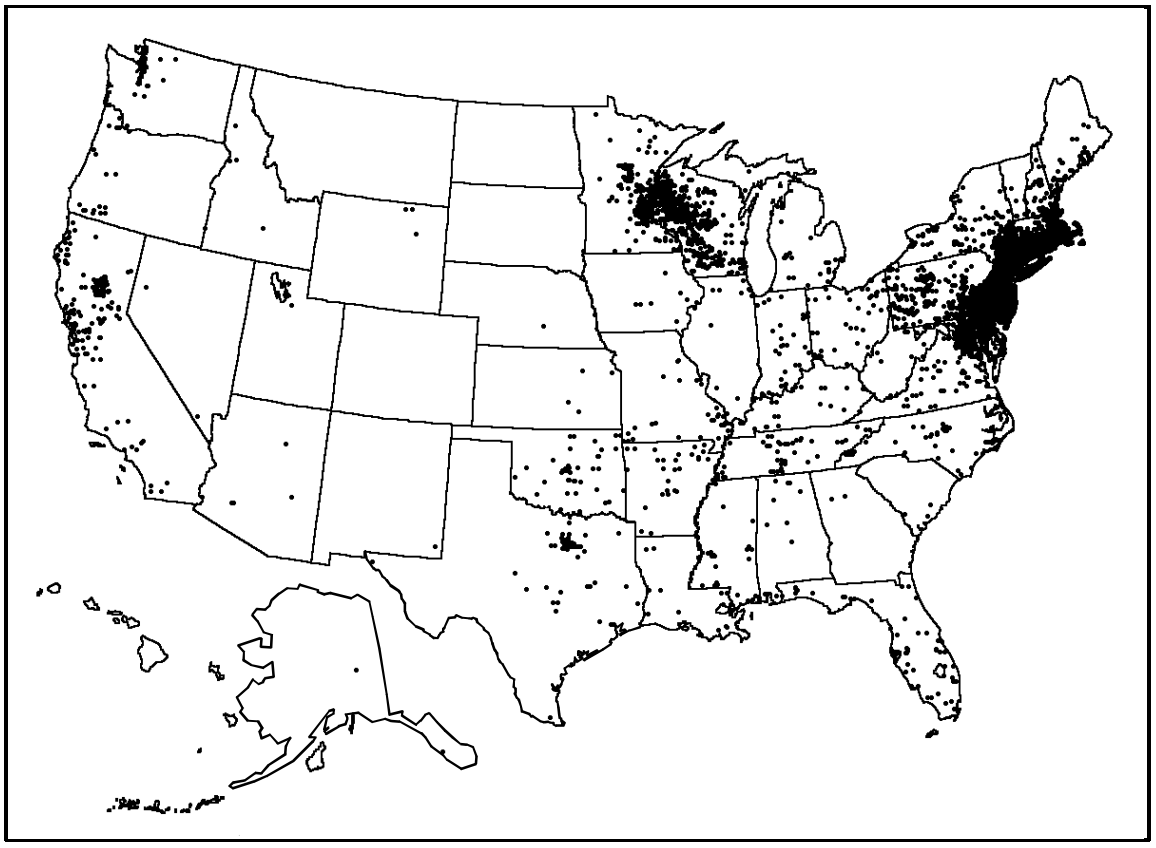
Local reactions at the site of injection were reported by significantly more vaccine recipients than placebo recipients (*1*). Unsolicited reports of myalgia, influenza-like illness, fever, and chills within 30 days after a dose were significantly more common among vaccine recipients than placebo recipients, but none of these were reported by >5% of either group (*1*). Reports of arthritis were not significantly different between vaccine and placebo recipients, but vaccine recipients reported significantly more transient arthralgia and myalgia following each dose of vaccine (*1*).

LD is the most commonly reported vectorborne disease in the United States. Since the implementation of a standardized surveillance case definition in 1991, >90% of cases have been reported from the northeast and north central states (Figure 1) (*2*). Persons of all ages are susceptible to infection, but the highest reported rates of LD occur in children aged <15 years and adults aged 30–59 years. Transmission peaks

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

Notices to Readers — Continued

FIGURE 1. Reported cases of Lyme disease — United States, 1997*



*One dot = one case, randomly placed within county of residence.

from April through July, when the nymphal stages of the tick vectors of LD, *Ixodes scapularis* and *I. pacificus*, are actively seeking hosts. These ticks are found primarily in leaf litter and low-lying vegetation in wooded, brushy, or overgrown grassy areas and can transmit other diseases such as babesiosis and ehrlichiosis (*3,4*).

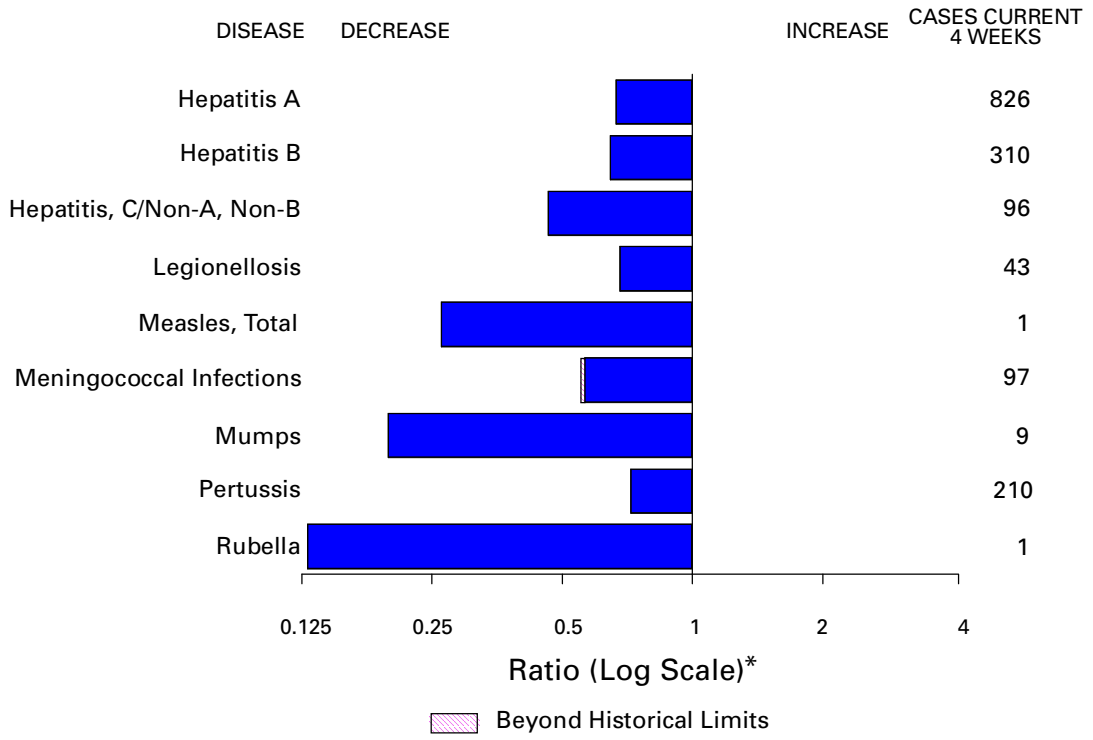
An estimated 85% of persons with symptomatic LD have the characteristic rash, erythema migrans (*5*). Untreated infection can cause arthritis or neurologic symptoms, such as radiculoneuropathy or encephalopathy. At any stage, the disease can usually be successfully treated with standard antibiotic regimens.

Strategies to prevent LD include avoiding tick habitats, wearing protective clothing, using repellents to avoid tick attachment, promptly removing attached ticks, and employing community measures to reduce tick abundance (*6*). Because the vaccine is <100% efficacious and does not provide protection against other tickborne illnesses, vaccination should not be considered a substitute for other preventive measures.

LD vaccine should be targeted to persons at risk for exposure to infected vector ticks. This risk can be assessed by considering the focal geography of LD and the extent to which a person's activities place him or her in contact with ticks (*2*). Vaccination of persons with frequent or prolonged exposure to ticks in areas endemic for LD is likely to be an important preventive strategy (*7*). For persons with only brief or intermittent exposure to tick habitat in areas where LD is endemic, the public health

(Continued on page 43)

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending January 16, 1999, 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 January 16, 1999 (2nd Week)

	Cum. 1999		Cum. 1999
Anthrax	-	Plague	-
Brucellosis	-	Poliomyelitis, paralytic	-
Cholera	-	Psittacosis	1
Congenital rubella syndrome	-	Rabies, human	-
Cryptosporidiosis*	16	Rocky Mountain spotted fever (RMSF)	3
Diphtheria	-	Streptococcal disease, invasive Group A	20
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*CK	-
eastern equine*	-	Syphilis, congenital¶	-
St. Louis*	-	Tetanus	-
western equine*	-	Toxic-shock syndrome	1
Hansen Disease	-	Trichinosis	-
Hantavirus pulmonary syndrome*†	-	Typhoid fever	2
Hemolytic uremic syndrome, post-diarrheal*	1	Yellow fever	-
HIV infection, pediatric*§	-		

-:no reported cases
*Not notifiable in all states.
† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§ Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update December 27, 1998.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending January 16, 1999, and January 17, 1998 (2nd Week)

Reporting Area	AIDS		Chlamydia		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS§				
	Cum. 1999*	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1999	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	-	-	9,884	20,836	25	5	6,107	13,254	45	90
NEW ENGLAND	-	-	106	858	1	1	26	299	-	4
Maine	-	-	-	2	-	-	-	1	-	-
N.H.	-	-	18	25	-	-	-	5	-	-
Vt.	-	-	6	13	-	-	3	-	-	-
Mass.	-	-	-	389	-	1	-	112	-	4
R.I.	-	-	81	116	-	-	22	18	-	-
Conn.	-	-	1	313	1	-	1	163	-	-
MID. ATLANTIC	-	-	1,180	2,754	1	-	628	1,784	-	2
Upstate N.Y.	-	-	N	N	1	-	-	118	-	2
N.Y. City	-	-	838	1,203	-	-	493	655	-	-
N.J.	-	-	70	389	-	-	51	363	-	-
Pa.	-	-	272	1,162	N	-	84	648	-	-
E.N. CENTRAL	-	-	1,293	4,023	12	-	853	2,833	11	28
Ohio	-	-	349	1,230	12	-	216	626	-	2
Ind.	-	-	-	301	-	-	123	220	-	1
Ill.	-	-	762	U	-	-	415	U	-	3
Mich.	-	-	175	1,161	-	-	81	865	11	22
Wis.	-	-	7	501	N	-	18	206	-	-
W.N. CENTRAL	-	-	85	1,263	4	1	34	528	-	10
Minn.	-	-	9	256	1	1	10	112	-	-
Iowa	-	-	-	39	3	-	-	13	-	1
Mo.	-	-	-	491	-	-	-	210	-	9
N. Dak.	-	-	-	34	-	-	-	2	-	-
S. Dak.	-	-	55	57	-	-	8	11	-	-
Nebr.	-	-	-	79	-	-	-	45	-	-
Kans.	-	-	21	307	-	-	16	135	-	-
S. ATLANTIC	-	-	3,996	3,475	3	-	2,805	3,071	4	4
Del.	-	-	83	40	-	-	58	63	-	-
Md.	-	-	338	295	1	-	221	177	2	2
D.C.	-	-	N	N	-	-	112	209	-	-
Va.	-	-	518	173	N	-	653	194	-	-
W. Va.	-	-	-	131	-	-	-	38	-	-
N.C.	-	-	763	578	2	-	704	489	-	2
S.C.	-	-	1,822	596	-	-	659	529	-	-
Ga.	-	-	-	1,062	-	-	-	857	-	-
Fla.	-	-	472	600	-	-	398	515	2	-
E.S. CENTRAL	-	-	522	1,394	1	-	503	1,575	1	1
Ky.	-	-	-	160	-	-	-	116	-	-
Tenn.	-	-	25	520	-	-	12	552	-	1
Ala.	-	-	497	404	1	-	491	597	1	-
Miss.	-	-	-	310	-	-	-	310	-	-
W.S. CENTRAL	-	-	975	2,439	-	-	827	1,809	-	-
Ark.	-	-	144	81	-	-	45	132	-	-
La.	-	-	691	399	-	-	697	423	-	-
Okla.	-	-	140	311	-	-	85	189	-	-
Tex.	-	-	-	1,648	-	-	-	1,065	-	-
MOUNTAIN	-	-	540	771	2	1	182	304	4	8
Mont.	-	-	-	6	-	-	-	-	-	-
Idaho	-	-	-	58	-	-	-	7	1	3
Wyo.	-	-	-	22	-	-	-	1	-	1
Colo.	-	-	221	157	2	1	56	147	1	1
N. Mex.	-	-	-	87	-	-	-	22	2	1
Ariz.	-	-	303	269	-	-	123	101	-	-
Utah	-	-	16	100	-	-	3	13	-	2
Nev.	-	-	-	72	-	-	-	13	-	-
PACIFIC	-	-	1,187	3,859	1	2	249	1,051	25	33
Wash.	-	-	-	391	-	1	-	61	-	-
Oreg.	-	-	-	308	-	1	-	49	-	-
Calif.	-	-	1,158	3,029	1	-	246	911	25	33
Alaska	-	-	28	46	-	-	3	10	-	-
Hawaii	-	-	1	85	N	-	-	20	-	-
Guam	-	-	-	7	N	-	-	1	-	-
P.R.	-	-	U	U	-	U	10	30	-	-
V.I.	-	-	N	N	N	U	U	U	U	U
Amer. Samoa	-	-	U	U	N	U	U	U	U	U
C.N.M.I.	-	-	N	N	N	U	-	5	-	-

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

*Updated monthly from reports to the Division of HIV/AIDS Prevention-Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update December 27, 1998.

†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 January 16, 1999, and January 17, 1998 (2nd Week)

Reporting Area	Legionellosis		Lyme Disease		Malaria		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999*	Cum. 1998	Cum. 1999
UNITED STATES	14	40	23	102	20	39	126	293	134	233	75
NEW ENGLAND	-	-	-	4	-	-	-	3	7	2	16
Maine	-	-	-	-	-	-	-	-	-	-	1
N.H.	-	-	-	-	-	-	-	1	-	-	-
Vt.	-	-	-	-	-	-	-	-	-	-	4
Mass.	-	-	-	4	-	-	-	2	-	-	-
R.I.	-	-	-	-	-	-	-	-	3	-	4
Conn.	-	-	-	-	-	-	-	-	4	2	7
MID. ATLANTIC	2	3	2	68	1	9	3	7	3	3	19
Upstate N.Y.	-	-	-	5	1	1	-	-	-	-	7
N.Y. City	-	1	-	1	-	6	3	-	3	3	U
N.J.	-	-	-	15	-	-	-	5	-	-	9
Pa.	2	2	2	47	-	2	-	2	-	-	3
E.N. CENTRAL	6	22	3	3	-	9	21	45	15	29	-
Ohio	3	9	3	2	-	1	4	11	-	5	-
Ind.	-	5	-	-	-	1	9	9	4	11	-
Ill.	-	5	-	-	-	4	8	U	11	12	-
Mich.	3	3	-	1	-	2	-	-	-	-	-
Wis.	-	-	U	U	-	1	-	7	-	1	-
W.N. CENTRAL	-	2	-	1	-	3	-	4	2	1	5
Minn.	-	-	-	-	-	-	-	-	2	1	3
Iowa	-	-	-	1	-	-	-	-	-	-	1
Mo.	-	-	-	-	-	3	-	2	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	2	-	-	-	-	-	-	-	-	-
Kans.	-	-	-	-	-	-	-	2	-	-	1
S. ATLANTIC	2	5	15	17	7	5	53	122	7	35	35
Del.	1	1	-	-	-	-	-	-	-	-	-
Md.	-	3	12	16	2	5	3	30	-	-	9
D.C.	-	1	-	1	4	-	-	1	-	5	-
Va.	-	-	-	-	-	-	4	10	-	-	5
W. Va.	N	N	-	-	-	-	-	-	-	3	-
N.C.	1	-	3	-	-	-	30	27	-	8	11
S.C.	-	-	-	-	-	-	9	18	7	19	-
Ga.	-	-	-	-	-	-	-	22	-	-	-
Fla.	-	-	-	-	1	-	7	14	-	-	10
E.S. CENTRAL	-	2	2	3	-	1	34	38	-	19	-
Ky.	-	2	-	-	-	-	-	7	-	4	-
Tenn.	-	-	-	3	-	-	11	18	-	6	-
Ala.	-	-	2	-	-	-	23	7	-	6	-
Miss.	-	-	-	-	-	1	-	6	-	3	-
W.S. CENTRAL	-	-	-	-	-	-	14	45	3	51	-
Ark.	-	-	-	-	-	-	1	8	-	-	-
La.	-	-	-	-	-	-	9	18	-	-	-
Okla.	-	-	-	-	-	-	4	1	3	2	-
Tex.	-	-	-	-	-	-	-	18	-	49	-
MOUNTAIN	-	2	-	-	1	2	-	3	2	16	-
Mont.	-	-	-	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	1	-	-	-	1	-	-	-	2	-
N. Mex.	-	-	-	-	-	1	-	-	-	-	-
Ariz.	-	-	-	-	1	-	-	-	-	3	-
Utah	-	1	-	-	-	-	-	2	2	-	-
Nev.	-	-	-	-	-	-	-	1	-	11	-
PACIFIC	4	4	1	6	11	10	1	26	95	77	-
Wash.	-	-	-	-	-	-	-	-	2	2	-
Oreg.	-	-	-	-	-	2	-	1	-	-	-
Calif.	4	4	1	6	11	8	1	25	84	74	-
Alaska	-	-	-	-	-	-	-	-	-	1	-
Hawaii	-	-	-	-	-	-	-	-	9	-	-
Guam	-	-	-	-	-	-	-	-	-	4	-
P.R.	-	-	-	-	-	-	4	9	-	-	1
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	-	-	-	-	-	1	-	2	-

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

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending January 16, 1999, and January 17, 1998 (2nd Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1999*	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	1999	Cum. 1999	1999	Cum. 1999	Cum. 1999	Cum. 1998
UNITED STATES	21	35	263	580	96	282	-	1	-	-	1	-
NEW ENGLAND	-	3	3	16	-	2	-	-	-	-	-	-
Maine	-	-	1	5	-	-	-	-	-	-	-	-
N.H.	-	1	-	1	-	-	-	-	-	-	-	-
Vt.	-	-	-	1	-	-	-	-	-	-	-	-
Mass.	-	2	-	2	-	-	U	-	U	-	-	-
R.I.	-	-	-	-	-	-	-	-	-	-	-	-
Conn.	-	-	2	7	-	2	-	-	-	-	-	-
MID. ATLANTIC	3	3	2	29	3	37	-	-	-	-	-	-
Upstate N.Y.	2	1	1	3	-	4	-	-	-	-	-	-
N.Y. City	-	1	-	14	-	7	-	-	-	-	-	-
N.J.	1	1	-	7	-	15	-	-	-	-	-	-
Pa.	-	-	1	5	3	11	-	-	-	-	-	-
E.N. CENTRAL	7	2	75	150	6	115	-	-	-	-	-	-
Ohio	6	2	28	24	5	5	-	-	-	-	-	-
Ind.	-	-	-	16	-	62	-	-	-	-	-	-
Ill.	1	-	-	40	-	10	-	-	-	-	-	-
Mich.	-	-	47	63	1	30	U	-	U	-	-	-
Wis.	-	-	-	7	-	8	-	-	-	-	-	-
W.N. CENTRAL	-	-	-	38	1	13	-	-	-	-	-	-
Minn.	-	-	-	-	-	-	-	-	-	-	-	-
Iowa	-	-	-	15	-	1	-	-	-	-	-	-
Mo.	-	-	-	20	-	11	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	-	1	1	-	U	-	U	-	-	-
Kans.	-	-	-	2	-	1	U	-	U	-	-	-
S. ATLANTIC	8	7	22	14	22	9	-	-	-	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-	-
Md.	7	6	7	7	5	8	-	-	-	-	-	-
D.C.	1	-	2	-	-	-	-	-	-	-	-	-
Va.	-	-	-	-	-	-	-	-	-	-	-	-
W. Va.	-	-	-	-	-	-	U	-	U	-	-	-
N.C.	-	-	4	1	16	-	-	-	-	-	-	-
S.C.	-	-	-	-	-	-	-	-	-	-	-	-
Ga.	-	1	7	6	-	1	U	-	U	-	-	-
Fla.	-	-	2	-	1	-	-	-	-	-	-	-
E.S. CENTRAL	-	2	5	17	2	10	-	-	-	-	-	-
Ky.	-	-	-	1	-	-	U	-	U	-	-	-
Tenn.	-	-	-	6	-	7	-	-	-	-	-	-
Ala.	-	2	4	4	2	3	-	-	-	-	-	-
Miss.	-	-	1	6	-	-	-	-	-	-	-	-
W.S. CENTRAL	2	1	4	17	1	5	-	-	-	-	-	-
Ark.	-	-	2	1	1	1	-	-	-	-	-	-
La.	-	-	-	-	-	-	-	-	-	-	-	-
Okla.	1	-	2	5	-	-	-	-	-	-	-	-
Tex.	1	1	-	11	-	4	U	-	U	-	-	-
MOUNTAIN	1	9	29	147	14	32	-	1	-	-	1	-
Mont.	-	-	-	2	-	-	-	-	-	-	-	-
Idaho	-	-	1	2	3	3	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	U	-	U	-	-	-
Colo.	-	1	14	12	6	3	-	1	-	-	1	-
N. Mex.	1	-	3	7	5	11	-	-	-	-	-	-
Ariz.	-	3	8	97	-	8	U	-	U	-	-	-
Utah	-	-	3	7	-	2	-	-	-	-	-	-
Nev.	-	5	-	20	-	5	U	-	U	-	-	-
PACIFIC	-	8	123	152	47	59	-	-	-	-	-	-
Wash.	-	-	2	-	-	-	-	-	-	-	-	-
Oreg.	-	6	-	10	-	4	-	-	-	-	-	-
Calif.	-	2	121	140	46	55	-	-	-	-	-	-
Alaska	-	-	-	-	1	-	-	-	-	-	-	-
Hawaii	-	-	-	2	-	-	-	-	-	-	-	-
Guam	-	-	-	-	-	-	U	-	U	-	-	-
P.R.	-	1	-	-	-	4	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	-	-	-	1	U	-	U	-	-	-

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

*Of 1 case among children aged <5 years, serotype was reported for 0.

†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 January 16, 1999, and January 17, 1998 (2nd Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998
UNITED STATES	41	113	2	3	10	15	39	145	1	1	1
NEW ENGLAND	3	7	-	-	-	4	5	32	-	-	-
Maine	2	1	-	-	-	-	-	1	-	-	-
N.H.	-	1	-	-	-	-	-	1	-	-	-
Vt.	1	-	-	-	-	4	5	8	-	-	-
Mass.	-	3	U	-	-	U	-	22	U	-	-
R.I.	-	-	-	-	-	-	-	-	-	-	-
Conn.	-	2	-	-	-	-	-	-	-	-	-
MID. ATLANTIC	2	11	-	-	-	-	2	4	-	-	-
Upstate N.Y.	-	1	-	-	-	-	2	2	-	-	-
N.Y. City	-	2	-	-	-	-	-	-	-	-	-
N.J.	1	6	-	-	-	-	-	2	-	-	-
Pa.	1	2	-	-	-	-	-	-	-	-	-
E.N. CENTRAL	9	12	-	-	-	-	-	18	-	-	-
Ohio	8	9	-	-	-	-	-	10	-	-	-
Ind.	-	1	-	-	-	-	-	-	-	-	-
Ill.	1	1	-	-	-	-	-	-	-	-	-
Mich.	-	-	U	-	-	U	-	4	U	-	-
Wis.	-	1	-	-	-	-	-	4	-	-	-
W.N. CENTRAL	-	7	1	1	-	-	-	7	-	-	-
Minn.	-	-	-	-	-	-	-	-	-	-	-
Iowa	-	-	1	1	-	-	-	3	-	-	-
Mo.	-	5	-	-	-	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	U	-	-	U	-	2	U	-	-
Kans.	-	2	U	-	-	U	-	2	U	-	-
S. ATLANTIC	11	19	1	1	5	6	8	23	-	-	1
Del.	-	-	-	-	-	-	-	-	-	-	-
Md.	3	7	-	-	-	2	4	2	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-
Va.	-	-	-	-	-	-	-	-	-	-	-
W. Va.	-	2	U	-	-	U	-	-	U	-	-
N.C.	2	2	-	-	3	4	4	21	-	-	1
S.C.	1	3	-	-	2	-	-	-	-	-	-
Ga.	-	5	U	-	-	U	-	-	U	-	-
Fla.	5	-	1	1	-	-	-	-	-	-	-
E.S. CENTRAL	3	12	-	-	-	-	3	1	1	1	-
Ky.	-	4	U	-	-	U	-	-	U	-	-
Tenn.	-	2	-	-	-	-	-	-	-	-	-
Ala.	3	6	-	-	-	-	3	1	-	-	-
Miss.	-	-	-	-	-	-	-	-	1	1	-
W.S. CENTRAL	-	6	-	-	1	-	-	-	-	-	-
Ark.	-	1	-	-	-	-	-	-	-	-	-
La.	-	-	-	-	-	-	-	-	-	-	-
Okla.	-	5	-	-	-	-	-	-	-	-	-
Tex.	-	-	U	-	1	U	-	-	U	-	-
MOUNTAIN	5	10	-	-	2	5	21	39	-	-	-
Mont.	-	1	-	-	-	-	-	-	-	-	-
Idaho	1	-	-	-	-	4	13	19	-	-	-
Wyo.	-	1	U	-	-	U	-	-	U	-	-
Colo.	1	4	-	-	-	-	-	6	-	-	-
N. Mex.	1	2	N	N	N	-	2	12	-	-	-
Ariz.	1	1	U	-	1	U	1	-	U	-	-
Utah	1	1	-	-	-	1	5	1	-	-	-
Nev.	-	-	U	-	1	U	-	1	U	-	-
PACIFIC	8	29	-	1	2	-	-	21	-	-	-
Wash.	-	-	-	-	-	-	-	-	-	-	-
Oreg.	-	13	N	N	N	-	-	3	-	-	-
Calif.	8	16	-	1	-	-	-	18	-	-	-
Alaska	-	-	-	-	-	-	-	-	-	-	-
Hawaii	-	-	-	-	2	-	-	-	-	-	-
Guam	-	-	U	-	-	U	-	-	U	-	-
P.R.	-	-	-	-	-	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	-	-	U	-	-	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending January 16, 1999 (2nd Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	626	451	106	44	10	15	88
Boston, Mass.	176	119	29	21	3	4	29
Bridgeport, Conn.	54	36	12	2	1	3	3
Cambridge, Mass.	16	12	4	-	-	-	1
Fall River, Mass.	24	20	2	2	-	-	3
Hartford, Conn.	65	42	13	8	-	2	9
Lowell, Mass.	25	18	6	1	-	-	1
Lynn, Mass.	13	6	6	1	-	-	-
New Bedford, Mass.	32	29	1	2	-	-	4
New Haven, Conn.	46	33	6	3	-	4	6
Providence, R.I.	U	U	U	U	U	U	U
Somerville, Mass.	U	U	U	U	U	U	U
Springfield, Mass.	71	52	13	2	2	2	11
Waterbury, Conn.	38	34	2	1	1	-	5
Worcester, Mass.	66	50	12	1	3	-	16
MID. ATLANTIC	2,497	1,832	442	151	36	36	103
Albany, N.Y.	65	53	7	2	1	2	6
Allentown, Pa.	31	27	3	-	1	-	4
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	53	35	8	7	1	2	8
Elizabeth, N.J.	15	13	-	2	-	-	-
Erie, Pa.	55	43	11	-	1	-	2
Jersey City, N.J.	61	41	11	7	1	1	-
New York City, N.Y.	1,390	1,004	268	83	16	19	7
Newark, N.J.	47	18	15	9	3	2	4
Paterson, N.J.	25	17	4	2	2	-	2
Philadelphia, Pa.	299	221	47	23	8	-	22
Pittsburgh, Pa.§	53	38	11	3	-	1	2
Reading, Pa.	44	37	3	3	-	1	6
Rochester, N.Y.	127	103	16	4	-	4	15
Schenectady, N.Y.	20	19	1	-	-	-	2
Scranton, Pa.	40	32	6	1	1	-	3
Syracuse, N.Y.	116	87	24	1	1	3	14
Trenton, N.J.	35	26	5	3	-	1	5
Utica, N.Y.	21	18	2	1	-	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,331	1,601	457	164	47	60	136
Akron, Ohio	49	36	11	-	-	2	-
Canton, Ohio	40	32	7	1	-	-	7
Chicago, Ill.	360	208	83	36	14	17	24
Cincinnati, Ohio	130	89	25	11	2	3	12
Cleveland, Ohio	163	107	33	14	2	7	8
Columbus, Ohio	261	171	65	17	3	5	15
Dayton, Ohio	163	123	33	6	1	-	10
Detroit, Mich.	263	159	62	26	9	7	7
Evansville, Ind.	57	40	10	4	1	2	4
Fort Wayne, Ind.	80	55	17	5	1	2	5
Gary, Ind.	28	15	8	2	3	-	4
Grand Rapids, Mich.	77	59	8	5	3	2	10
Indianapolis, Ind.	119	87	22	5	1	4	2
Lansing, Mich.	59	38	16	5	-	-	4
Milwaukee, Wis.	146	105	22	10	5	4	5
Peoria, Ill.	59	49	4	5	1	-	3
Rockford, Ill.	55	46	7	2	-	-	5
South Bend, Ind.	44	36	5	2	-	1	3
Toledo, Ohio	130	107	14	6	1	2	6
Youngstown, Ohio	48	39	5	2	-	2	2
W.N. CENTRAL	836	645	126	33	12	18	57
Des Moines, Iowa	186	137	37	7	3	2	9
Duluth, Minn.	32	24	6	1	1	-	1
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	45	28	6	7	-	2	6
Lincoln, Nebr.	52	45	6	1	-	-	1
Minneapolis, Minn.	254	198	37	8	4	7	18
Omaha, Nebr.	92	77	9	3	2	1	9
St. Louis, Mo.	63	45	12	3	1	2	4
St. Paul, Minn.	112	91	13	3	1	4	9
Wichita, Kans.	U	U	U	U	U	U	U

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,258	837	266	93	29	31	78
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	236	143	55	24	5	9	29
Charlotte, N.C.	92	64	20	4	1	3	12
Jacksonville, Fla.	204	136	50	10	6	1	5
Miami, Fla.	100	59	28	9	3	1	1
Norfolk, Va.	54	37	12	4	1	-	-
Richmond, Va.	89	54	21	6	1	7	5
Savannah, Ga.	47	38	6	2	-	1	3
St. Petersburg, Fla.	75	59	10	5	1	-	5
Tampa, Fla.	257	191	40	13	3	9	13
Washington, D.C.	84	44	21	15	4	-	2
Wilmington, Del.	20	12	3	1	4	-	3
E.S. CENTRAL	1,064	742	204	62	27	27	67
Birmingham, Ala.	217	156	38	9	7	6	15
Chattanooga, Tenn.	118	93	16	6	2	1	13
Knoxville, Tenn.	108	77	20	10	1	-	2
Lexington, Ky.	100	68	25	3	1	2	11
Memphis, Tenn.	240	148	53	18	7	14	16
Mobile, Ala.	55	42	8	3	1	1	-
Montgomery, Ala.	58	42	9	4	3	-	3
Nashville, Tenn.	168	116	35	9	5	3	7
W.S. CENTRAL	1,515	1,046	286	107	43	32	104
Austin, Tex.	114	79	19	8	5	3	11
Baton Rouge, La.	59	42	6	7	3	1	4
Corpus Christi, Tex.	80	57	16	3	2	2	5
Dallas, Tex.	259	167	61	21	7	3	5
El Paso, Tex.	133	90	30	7	2	3	12
Ft. Worth, Tex.	131	86	28	12	3	2	9
Houston, Tex.	U	U	U	U	U	U	U
Little Rock, Ark.	97	70	15	6	2	4	8
New Orleans, La.	135	80	29	14	9	3	-
San Antonio, Tex.	292	212	48	16	9	7	26
Shreveport, La.	46	28	9	7	1	1	4
Tulsa, Okla.	169	135	25	6	-	3	20
MOUNTAIN	1,123	794	188	76	33	31	86
Albuquerque, N.M.	120	86	21	8	4	1	11
Boise, Idaho	50	39	5	2	3	1	6
Colo. Springs, Colo.	56	44	7	3	2	-	3
Denver, Colo.	149	100	22	15	3	9	19
Las Vegas, Nev.	250	180	43	16	7	4	14
Ogden, Utah	29	24	3	-	2	-	4
Phoenix, Ariz.	109	67	23	10	6	3	8
Pueblo, Colo.	30	24	4	2	-	-	5
Salt Lake City, Utah	123	80	24	7	3	9	8
Tucson, Ariz.	207	150	36	13	3	4	8
PACIFIC	2,101	1,521	376	141	31	28	184
Berkeley, Calif.	18	13	4	1	-	-	4
Fresno, Calif.	108	76	25	4	2	1	15
Glendale, Calif.	34	28	4	2	-	-	3
Honolulu, Hawaii	81	65	12	4	-	-	9
Long Beach, Calif.	112	74	25	10	-	3	23
Los Angeles, Calif.	648	480	114	37	10	7	25
Pasadena, Calif.	27	21	4	1	-	1	3
Portland, Oreg.	264	190	42	21	8	3	22
Sacramento, Calif.	177	127	32	10	1	7	24
San Diego, Calif.	136	97	28	6	2	3	17
San Francisco, Calif.	133	93	19	20	-	1	11
San Jose, Calif.	U	U	U	U	U	U	U
Santa Cruz, Calif.	51	39	9	2	-	1	10
Seattle, Wash.	134	88	26	13	6	1	4
Spokane, Wash.	65	50	11	3	1	-	6
Tacoma, Wash.	113	80	21	7	1	-	8
TOTAL	13,351¶	9,469	2,451	871	268	278	903

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.

Notices to Readers — Continued

benefits of vaccination, compared with early diagnosis and treatment of LD, are not clear (*7*) . Recommendations for use of LD vaccine are being developed by the Advisory Committee for Immunization Practices.

Reported by: Div of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, CDC.

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