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Knowledge and Use of Folic Acid by Women of Childbearing Age — United States, 1995 and 1998

In the United States, approximately 4000 pregnancies are affected by neural tube defects each year; 50%–70% of these developmental defects could be prevented with daily intake of 400 μg of the B vitamin folic acid throughout the periconceptional period (*1*). In 1992, the Public Health Service recommended that all women capable of becoming pregnant consume 400 μg of folic acid daily throughout their childbearing years to reduce their risk for having a pregnancy affected by neural tube defects (*2*). In 1998, the Institute of Medicine recommended that all women of childbearing potential consume 400 μg of synthetic folic acid per day from fortified foods and/or a supplement in addition to food folate from a varied diet (*3*). This report summarizes the findings of a survey conducted during July–August 1998 to assess folic acid knowledge and practices among women of childbearing age in the United States (*4*) and compares these results with those from a similar survey conducted in 1995. The findings indicate that 7% of women know folic acid should be taken before pregnancy to reduce the risk for neural tube defects.

In 1998, the March of Dimes Birth Defects Foundation contracted with the Gallup Organization to conduct a random-digit–dialed telephone survey of a stratified national sample of 2115 women aged 18–45 years. The response rate was 52%. The margin of error for estimates based on the total sample size was ±3%; for comparisons involving subsets of the sample, the margin of error was greater. Statistical estimates were weighted to reflect the total population of women aged 18–45 years in the contiguous United States who resided in households with telephones. The 1998 survey included many of the same questions asked in 1995, and the methods employed were essentially the same (*4*).

Overall, 68% of women reported having ever heard of or having ever read about folic acid, a 31% increase from 52% in 1995. Awareness of folic acid was lowest among women aged 18–24 years (50%) and women who had less than a high school education (40%). Of all women surveyed, 13% knew that folic acid helps prevent birth defects, and 7% knew that folic acid should be taken before pregnancy (Table 1), compared with 5% and 2%, respectively, in 1995.

In 1998, 32% of women reported taking a vitamin supplement containing folic acid on a daily basis, compared with 28% in 1995. Among women who reported being not pregnant at the time of the survey, 29% reported taking a vitamin supplement

Folic Acid — Continued

TABLE 1. Knowledge, behavior, and source of knowledge regarding folic acid among childbearing-aged women — United States, 1995 and 1998*

Characteristic	1995	1998
Knowledge		
Heard of folic acid	52%	68%
Knew folic acid can help prevent birth defects	5%	13%
Knew folic acid should be taken before pregnancy	2%	7%
Behavior		
Take folic acid daily (nonpregnant women)	25%	29%
Take folic acid daily (all women)	28%	32%
Source of knowledge		
Magazine/Newspaper	35%	31%
Radio/Television	10%	23%
Health-care provider	13%	19%

*The margin of error for estimates based on the total sample size was ±3%.

Source: March of Dimes Birth Defects Foundation.

containing folic acid, compared with 25% in 1995. The proportion of all women who took a vitamin containing folic acid less frequently than daily remained at 11%. Those who continued to be the most likely to take vitamin supplements containing folic acid on a daily basis include women aged 25–45 years (34%), college graduates (40%), and those with high incomes (e.g., 38% among women whose annual household income is ≥$50,000).

From 1995 to 1998, the proportion of women who reported obtaining information about folic acid from magazine or newspaper articles decreased from 35% to 31%. However, the proportions that reported learning about folic acid from radio or television and health-care providers increased from 10% to 23% and from 13% to 19%, respectively (Table 1).

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Editorial Note: Although the proportion of U.S. women who were aware that folic acid can prevent birth defects and that folic acid should be taken before pregnancy had increased since 1995, the findings in the 1998 survey indicate that only a small percentage of women were aware of the potential benefits of periconceptional intake of folic acid. Health-care providers, who were the source for information for only one in five women surveyed who had heard of folic acid, have an important role in promoting preconceptional health, including daily intake of 400 µg of folic acid throughout the childbearing years among women of childbearing potential.

An important limitation of the Gallup telephone survey is the low response rate (approximately 50%). In particular, knowledge and behavior patterns of nonparticipants may have been different from those of participants.

Results from two surveys (CDC, unpublished data, 1998; March of Dimes Birth Defects Foundation, unpublished data, 1998) suggest that professional education is needed to increase the proportion of health-care providers who recommend their

Folic Acid — Continued

patients of childbearing age consume 400 μg of folic acid daily. Health-care providers need to be aware that each encounter with a woman of childbearing age represents an opportunity to promote preconceptional health. Because approximately half of all pregnancies in the United States are unintended, both the Public Health Service and the Institute of Medicine recommendations emphasize the importance of periconceptional folic acid consumption for all women of childbearing potential (*5*).

During April and May 1998, CDC conducted focus groups that included 58 health-care providers (physicians, nurses, nutritionists, and pharmacists) who spend at least half of their time providing care to women aged 18–35 years (CDC, unpublished data, 1998). These providers reported gaps in knowledge about the benefits of folic acid, pressures from the health-care delivery system that limit patient contact time, a lack of educational materials (e.g., handouts and daily reminders on intake and health assessment forms) to teach and counsel women about the benefits of periconceptional folic acid intake, and the importance of professional education for all members of multidisciplinary health teams.

In 1998, the March of Dimes conducted a study of attendees of departmental grand rounds at 19 nonrandomly selected academic centers with residencies in obstetrics and gynecology (March of Dimes Birth Defects Foundation, unpublished data, 1998); 463 attendees completed questionnaires about their knowledge and behavior related to folic acid. This informal survey indicated that 30% of the attendees did not know the recommended daily amount of folic acid, and 36% reported that they "rarely" or "sometimes" recommended folic acid to their patients.

To help prevent neural tube defects, the March of Dimes will invest up to $10 million for a 3-year national folic acid education campaign. In addition, under the leadership of CDC and the March of Dimes, the National Council on Folic Acid was formed in 1997 as a coalition of organizations working to reduce the rate of neural tube defects through folic acid education. In January 1999, the council launched a major initiative to use media, new public and professional education materials, and community programs to promote neural tube defect prevention activities in the United States.

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Outbreak of Poliomyelitis — Angola, 1999

On March 23, 1999, the Pediatric Hospital in Luanda, Angola, reported 21 cases (three deaths) of acute flaccid paralysis (AFP). By April 3, 102 AFP cases had been reported in Luanda and neighboring areas of Bengo province. A preliminary investigation by the Ministry of Health (MOH) indicated that these cases primarily occurred among children aged <5 years; 90% had received two or fewer doses of oral poliovirus

Outbreak of Poliomyelitis — Continued

vaccine (OPV), 4% had received three doses, and 6% had received four doses. Many case-patients resided in overcrowded municipalities where families displaced by civil war had settled. On the basis of preliminary data, MOH suspected the outbreak was poliomyelitis and began planning a vaccination campaign to control the epidemic. Surveillance was strengthened to identify and rapidly investigate reports of AFP cases to determine the extent of the outbreak.

On April 8, the National Institute of Virology in South Africa isolated wild poliovirus type 3 from 11 (50%) of 22 stool specimens from AFP cases submitted by MOH. By April 11, the number of AFP cases increased to 276 (19 deaths). By April 25, 634 AFP cases (39 deaths) were reported. Field investigations confirmed two cases of AFP in children aged <5 years in Benguela, a city approximately 300 miles (480 km) south of Luanda. On April 17 and 18, a mass vaccination campaign was carried out targeting 526,036 children. OPV was administered to 634,368 children aged <5 years in Luanda and the rest of the province. A World Health Organization (WHO) team is assisting with the investigation of the outbreak. Three rounds of National Immunization Days (NIDs)* at monthly intervals are planned to begin in July.

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Editorial Note: The outbreak in Angola represents one of the largest epidemics of poliovirus type 3 in the vaccine era and one of the largest polio epidemics recorded in Africa (*1*). Preliminary data from the investigation suggest that the outbreak primarily resulted from failure to vaccinate, with a high proportion (approximately 90%) of case-patients being unvaccinated or partially vaccinated (three or fewer doses of OPV).

With the intensification of civil war at the end of 1998, large groups of displaced persons moved from areas where vaccination services had been suboptimal to the capital, Luanda, and other cities. Sub-National Immunization Days (SNIDs)† were conducted in national and provincial capitals of Angola in 1996, and NIDs were conducted in districts under government control: 147 (89%) of 165 districts in 1997, and 121 (73%) of 165 districts in 1998 (*2,3*). Excluding districts not under government control from the denominator, ≥90% coverage was obtained in each round of NIDs. Estimated vaccination coverage for the 1998 NIDs was <50% in three of Angola's 18 provinces.

Displaced persons settled in crowded areas where sanitation is poor and water supply inadequate and created an ideal environment for the spread of poliovirus. Movement of refugees out of the country increases the probability that the epidemic will spread into neighboring countries, some of which have been reporting no cases of polio. These countries have been informed and are increasing surveillance in border zones and developing plans to vaccinate refugee children from Angola.

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

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

Outbreak of Poliomyelitis — Continued

Travelers to Angola are advised to review their polio vaccination history to ensure that they have received a complete primary series of three doses before initiating travel (*4*). In addition, travelers who already have received a complete primary series should receive an additional dose of either inactivated poliovirus vaccine (IPV) or OPV before leaving for Angola. If there is insufficient time before travel to administer a three-dose primary vaccination series, then travelers should receive a minimum of a dose of either IPV or OPV, depending on age and vaccination history (*4*).

To achieve the target of polio eradication by 2000, implementation of polio eradication strategies in Angola needs to be accelerated and to reach all areas of the country, including those not under government control. The planned three rounds of NIDs during July–September are a significant step in this direction, but success will depend on achieving high vaccination coverage levels in all areas of the country. In Angola and other countries in conflict, reaching agreements for cease fires to carry out vaccination campaigns for polio eradication are becoming increasingly urgent.

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Playground Safety — United States, 1998–1999

Each year approximately 211,000 U.S. children receive emergency department care for injuries sustained on playground equipment (*1*), making the use of this equipment the leading cause of injuries to children in school and child care environments (*2,3*). In response to the problem, the National Program for Playground Safety (NPPS) at the University of Northern Iowa (UNI) developed a national action plan (*4*) that focuses on four areas of playground injury prevention: supervision, age-appropriateness of equipment, suitable fall surfaces, and equipment maintenance. During 1998–1999, NPPS surveyed a sample of the nation's child care, elementary school, and park playgrounds. This report summarizes the survey results, which indicate that playground injuries could be reduced by measures such as resilient surfacing below equipment, better equipment maintenance, improved supervision, and use of age-appropriate equipment.

To monitor progress in achieving the national plan, UNI developed and tested a questionnaire in 1997, and during 1998, universities and colleges with leisure and recreation service departments in each of the 50 states were solicited by phone and letter to administer the survey. Once an institution agreed to participate, a contact person received a manual with instructions for selecting the sample and conducting the survey. Eighty percent of the surveys were conducted by university professors, the remainder by undergraduate and graduate students.

Playground Safety — Continued

Playgrounds were selected using multistage sampling. First, communities in each state were stratified by population: <25,000; 25,000–75,000; and >75,000. Parks, schools, and child care centers in three communities from each stratum then were selected randomly, resulting in 27 survey sites. Next, a list of elementary schools in that community was drawn from local directories (i.e., state departments of public education, chambers of commerce, and telephone directories). From this list, elementary schools were selected using a table of random numbers provided in the instruction manual. The same process was repeated for parks and child care centers. A total of 1353 playgrounds in 31 states (average: 44 per state) were surveyed.

Most playgrounds comprised stand-alone and composite equipment; the two most common pieces were slides (89% of playgrounds) and swings (73% of playgrounds) (Table 1). Although a wide age range of children used the playgrounds, 42% of playgrounds had a clear separation of equipment intended for ages 2–5 years and ages 5–12 years. In addition, 9% of playgrounds had signs to indicate the age group for which the equipment was designed. While 31% of the surveys were being conducted, children were playing on the equipment. In 23% of these instances, they were playing without adult supervision; 14% of the playgrounds had posted rules emphasizing the importance of supervision.

Appropriate surface materials were found in 75% of the playgrounds; however, 56% had insufficient depths of materials to protect from serious head injury, 38% had failed to provide material in adequate use zones around the equipment, and 20% had exposed concrete footings. Of the playgrounds surveyed, one out of four playgrounds had equipment with missing or broken parts or had equipment that was rusted (37%), splintered (36%), or cracked (11%).

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Editorial Note: Although >80% of the playground equipment surveyed was installed in 1981 or after, and therefore should comply with standards set by the U.S. Consumer Product Safety Commission (CPSC) (*5*), survey results indicated that school, child care, and park playgrounds are deficient in supervision, age-appropriateness of equipment, suitable fall surfaces, and equipment maintenance. Inadequate supervision contributes to playground injuries (*6*); children need the attention of an adult as they play. CPSC advises that children ages 2–5 and 5–12 years are safer when equipment is separated and grouped for each age category (*7*). Children who play on equipment inappropriate for their size, strength, and decision-making ability increase their injury risk. Because 70% of playground injuries involves falls to the ground (*8*), the amount of area covered beneath equipment, and the type and depth of the surface material, are critical. Hard surfaces, such as asphalt, concrete, dirt, and grass, should be replaced by shock-absorbent surfaces, such as sand, wood chips, small round gravel, and rubber. Once an adequate zone of material is installed, it must be maintained at a sufficient depth to cushion a child's fall (*7,8*). Poor equipment maintenance also contributes to playground injuries (*6*). Continual inspection and regular maintenance and repair of all equipment and surfaces are essential to playground safety. The NPPS plan outlines strategies at local, state, and federal levels for achieving improvements in all of these areas (*4*).

TABLE 1. Number and percentage of safety-related factors in playgrounds, by locale — United States, 1998–1999

Factor	Child care center (n=486)			Park (n=412)			School (n=454)			Total (n=1353)*		
	No.	(%)	(95% CI†)	No.	(%)	(95% CI)	No.	(%)	(95% CI)	No.	(%)	(95% CI)
Layout												
Installed 1981 or later	450	(93%)	(90%–95%)	324	(79%)	(75%–83%)	380	(84%)	(80%–87%)	**1153**	**(85%)**	**(83%–87%)**
Combination of equipment	368	(76%)	(72%–80%)	329	(80%)	(76%–84%)	336	(74%)	(70%–78%)	**1033**	**(76%)**	**(74%–79%)**
Slides present	431	(91%)	(89%–94%)	374	(91%)	(88%–94%)	378	(87%)	(83%–90%)	**1178**	**(89%)**	**(88%–91%)**
Swings present	324	(69%)	(64%–73%)	361	(89%)	(85%–92%)	276	(63%)	(58%–67%)	**962**	**(73%)**	**(70%–75%)**
Fall surfaces												
Appropriate surface material present	331	(71%)	(66%–75%)	309	(75%)	(71%–79%)	353	(79%)	(76%–83%)	**992**	**(75%)**	**(73%–77%)**
Inappropriate surface depth	256	(56%)	(52%–61%)	223	(56%)	(51%–61%)	241	(55%)	(51%–60%)	**721**	**(56%)**	**(53%–59%)**
Inadequate use zone	183	(39%)	(35%–44%)	161	(39%)	(34%–44%)	150	(34%)	(29%–38%)	**495**	**(38%)**	**(35%–40%)**
Exposed concrete footings	82	(20%)	(16%–24%)	85	(21%)	(17%–25%)	82	(19%)	(15%–23%)	**251**	**(20%)**	**(18%–22%)**
Equipment maintenance												
Missing parts	97	(21%)	(17%–24%)	116	(29%)	(24%–33%)	111	(25%)	(21%–29%)	**325**	**(25%)**	**(22%–27%)**
Broken parts	98	(21%)	(17%–24%)	109	(27%)	(22%–31%)	105	(24%)	(20%–28%)	**314**	**(24%)**	**(21%–26%)**
Rusted equipment	117	(33%)	(28%–38%)	157	(40%)	(35%–44%)	159	(37%)	(33%–42%)	**435**	**(37%)**	**(34%–40%)**
Splinters	87	(30%)	(25%–35%)	67	(38%)	(31%–45%)	88	(41%)	(34%–47%)	**242**	**(36%)**	**(32%–39%)**
Cracked equipment	40	(10%)	(7%–13%)	34	(12%)	(8%–16%)	28	(10%)	(7%–14%)	**102**	**(11%)**	**(9%–13%)**
Supervision												
Children playing	96	(21%)	(17%–24%)	186	(46%)	(41%–50%)	127	(29%)	(25%–33%)	**410**	**(31%)**	**(29%–34%)**
No adult supervision	12	(12%)	(6%–18%)	41	(22%)	(16%–28%)	42	(33%)	(25%–41%)	**96**	**(23%)**	**(19%–27%)**
Supervision rules posted	46	(10%)	(7%–13%)	82	(20%)	(16%–24%)	56	(13%)	(10%–16%)	**184**	**(14%)**	**(12%–16%)**
Age-appropriateness												
Designed for ages 2–12 years	240	(51%)	(46%–55%)	344	(84%)	(81%–88%)	198	(45%)	(40%–49%)	**783**	**(59%)**	**(56%–62%)**
Separation of equipment	127	(53%)	(47%–59%)	128	(37%)	(32%–42%)	71	(37%)	(30%–44%)	**326**	**(42%)**	**(38%–45%)**
Signage for age level	21	(10%)	(6%–14%)	20	(7%)	(4%– 9%)	16	(10%)	(5%–15%)	**57**	**(9%)**	**(6%–11%)**

*Site was unknown for one playground; denominators vary depending on the specific factor being examined.
†Confidence interval.

Playground Safety — Continued

These survey results should be interpreted cautiously because of at least four limitations. First, interrater reliability is unknown. Second, a single assessment may not reflect accurately seasonal or time-of-day differences in safety. Third, observation of the playground does not measure maintenance and supervision policies, although it does reflect actual practice. However, in a number of schools and child care centers, researchers were not permitted to be in the playground while children were present. Thus, the data on supervision may not reflect true practices. Finally, the sample size is small relative to the total number of playgrounds in the United States.

To provide a safer play environment, playgrounds must have adequate supervision, be maintained continually, and be equipped with age-appropriate equipment and resilient surfaces. Further information about the survey and safer playgrounds is available from the National Program for Playground Safety, telephone (800) 554-7529 or on the World-Wide Web at <http://www.uni.edu/playground>*.

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

Childhood Work-Related Agricultural Fatalities — Minnesota, 1994–1997

Agriculture is one of the most hazardous industries in the United States, with the second highest work-related fatality rate during 1992–1996 (21.9 deaths per 100,000 workers) (*1*). During 1992–1995, 155 deaths were reported among agricultural workers aged ≤19 years; 64 (41%) of these youths were working in their family's business (*2*). In Minnesota during 1992–1996, agriculture had the highest fatality rate of any industry (21.3 per 100,000 workers) (*1*). To characterize agriculture work-related deaths among youths in Minnesota during 1994–1997, the Minnesota Department of Health (MDH) analyzed data from the state's Fatality Assessment and Control Evaluation (FACE) program. This report presents five cases of agriculture work-related fatalities among youths in Minnesota.

Childhood Agricultural Fatalities — Continued

Since 1992, MDH has collected data about work-related fatalities through the FACE program.* Cases are identified by reviewing medical records, sheriff's reports, newspaper articles, death certificates, and Occupational Safety and Health Administration records. During 1994–1997, Minnesota FACE investigated six work-related agricultural fatalities among persons aged <19 years.

Case Reports

Case 1. On June 3, 1994, a 13-year-old boy died while attempting to divert a runaway farm wagon. A farmer was using a tractor to pull a forage chopper with the wagon hitched behind. When the tractor turned, the quick-release hitch connecting the wagon to the chopper unlatched. As the farmer maneuvered to reattach the chopper and wagon, the wagon rolled toward a garage. The boy ran in front of the wagon and attempted to pick up the wagon tongue to steer it. He was caught between the wagon and the garage wall and sustained severe chest injuries.

Case 2. On July 30, 1994, a 10-year-old boy died when the tractor he was driving overturned while turning off a public highway onto a gravel road. The tractor was towing a hay baler and loaded hayrack and was not equipped with a rollover protective structure (ROPS) and seat belt. He died from acute laceration of the brain with multiple skull fractures.

Case 3. On July 11, 1995, a 13-year-old boy died after being engulfed by corn inside a grain bin. The boy and his father were using a portable auger to unload corn from the bin into a truck. The youth uncovered the bin roof access opening and sat on the roof ladder to monitor the flow of corn. Fifteen minutes later, his father noticed the boy was no longer on the roof. He climbed to the roof but was unable to locate the boy. He shut down the auger and attempted to break open the bin with a loader-equipped tractor. Emergency personnel cut holes in the bin with power saws and extracted the youth. He was transported to a medical center but died two days later from complications of anoxic encephalopathy.

Case 4. On August 17, 1995, a 17-year-old boy died after he was struck by a front-end loader bucket. The boy was riding in a tractor with the farmer and dismounted the tractor to open a gate to allow the farmer to drive through. He then climbed into the bucket, which had been improperly secured. The farmer raised the bucket and proceeded down the driveway. The tractor struck a bump, bouncing the loader arms and disengaging the bucket. The boy fell and was struck by the falling bucket. He died from skull fracture and massive fracture of the cervical spine.

Case 5. On September 13, 1997, a 13-year-old boy died when he was run over by a grass seeder being towed by a tractor on sloped land. The youth was riding on the frame of the seeder and using his hand to ensure even seed flow when he lost his balance, fell from the seeder, and was run over. He died from severe chest and head trauma.

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Editorial Note: The fatalities described in this report represent common farm injuries and indicate that children who work on farms are exposed to the same injury risks as adults. In 1991, an estimated 1.2 million children aged ≤19 years resided on farms and

*Through cooperative agreements with CDC's National Institute for Occupational Safety and Health, 15 states maintain multiple-source networks to identify traumatic occupational fatalities, conduct site investigations of selected incidents (including machinery deaths and falls from elevations), and disseminate injury-prevention information.

Childhood Agricultural Fatalities — Continued

ranches in the United States (*3*). Although the proportion of such children engaging in agricultural work is uncertain, a Minnesota survey indicated that approximately 40% of boys and 10% of girls in grades 10–12 who reside in rural areas had done some type of agricultural work during the preceding year (*4*). During 1992–1996, an estimated 300,000 youth aged 15–19 years were employed in the U.S. agricultural production and services sector (U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, unpublished data, 1998).

In the agricultural industry, children may perform tasks that are prohibited in other industries (*5*), be exposed to workplace hazards at an early age, and perform tasks that are inappropriate for their age (*6*). Compared with adults, youth may lack work experience, physical size, and attention to task. The ability of youth to operate equipment safely may be compromised by cognitive abilities that are less well developed than in adults, by diminished visibility from operators' cabs designed for adults, and by control layouts that may not accommodate their reach. In addition, they may have limited influence in business and operational decisions such as equipment purchases, work practices, and work assignments.

Safety requirements of the Occupational Safety and Health Act of 1970 are not enforceable on 95% of U.S. farms. As a result, most farm owners lack the direction provided by mandatory safety standards to address the complex problem of controlling risk for both adult and youth workers (*5*). In addition, children engaged in agricultural work as family members are not covered by provisions of the Fair Labor Standards Act of 1938 (*7*), which prohibits youth aged <16 years employed outside their family farm from performing hazardous agricultural tasks such as operating machinery, working from ladders >20 feet high, and working in confined spaces. However, youth aged 14 and 15 years who have received safety training on specific topics through specialized programs may perform work activities otherwise prohibited for minors aged <16 years, and youth aged ≥14 years may perform tasks other than those declared hazardous. Efforts are under way to develop consensus guidelines for developmentally appropriate tasks for children in agriculture (*5*).

The fatalities described in this report could have been prevented by adherence to standard safety practices applicable to workers of all ages (e.g., using of ROPS and seat belts, properly securing attachments, and operating at safe speeds). However, before allowing children to perform farm work, especially tasks involving operation of equipment, parents and farm managers should evaluate additional factors that may expose youth to increased risk for injury (*8*). CDC's National Institute for Occupational Safety and Health recommends that parents and farm managers carefully consider the following questions before assigning work tasks to youth:

- Does the youth possess the physical capacity to perform the task safely?
- Does the youth have sufficient and appropriate training and experience?
- Can the youth recognize and control potential hazards?
- Can the youth read and understand safety instructions in operating manuals and on signs?
- Is the youth mature enough to exercise good judgement?
- Has the youth been trained to cope with emergencies?
- Do work procedures accommodate physical characteristics of the youth?

Childhood Agricultural Fatalities — Continued

- Is adult supervision available?

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Update: Outbreak of Nipah Virus — Malaysia and Singapore, 1999

During March 1999, health officials in Malaysia and Singapore, in collaboration with Australian researchers and CDC, investigated reports of febrile encephalitic and respiratory illnesses among workers who had exposure to pigs (*1*). A previously unrecognized paramyxovirus (formerly known as Hendra-like virus), now called Nipah virus, was implicated by laboratory testing in many of these cases. Febrile encephalitis continues to be reported in Malaysia but has decreased coincident with mass culling of pigs in outbreak areas. No new cases of febrile illness associated with Nipah virus infection have been identified in Singapore since March 19, 1999, when abattoirs were closed. This report summarizes interim findings from ongoing epidemiologic and laboratory investigations in Malaysia and Singapore.

Malaysia

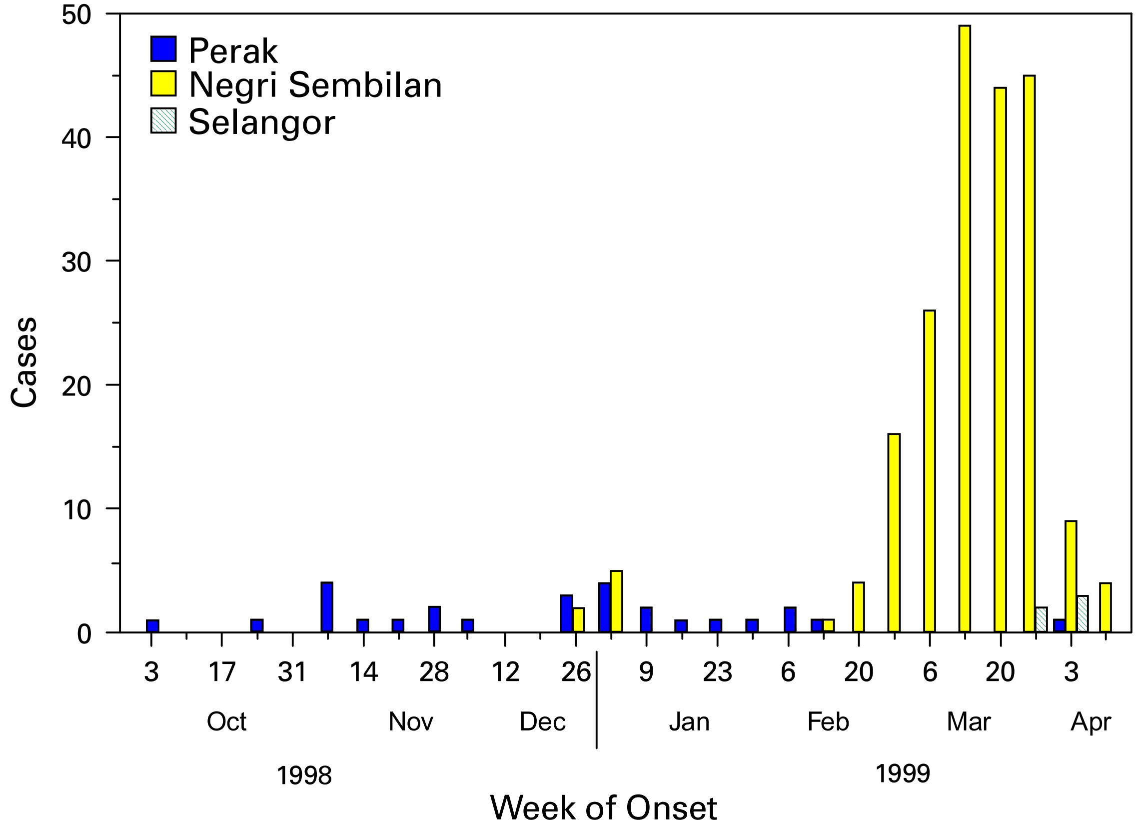
As of April 27, 1999, 257 cases of febrile encephalitis were reported to the Malaysian Ministry of Health (MOH), including 100 deaths. Laboratory results from 65 patients who died suggested recent Nipah virus infection. Since April 4, new encephalitis cases have been reported in the states of Negeri Sembilan and Selangor. However, the number of new cases reported decreased from a peak of 46 during March 13–19 to four during April 10–16 (Figure 1).

The apparent source of infection among most human cases continues to be exposure to pigs. Of 65 serologically confirmed cases of Nipah virus-associated encephalitis in Negeri Sembilan, 56 (86%) case-patients reported touching or handling pigs before onset of illness. Of the 56 case-patients, 36 (64%) reported contact with pigs that appeared to be ill.

Human-to-human transmission of Nipah virus has not been documented. In a survey of nurses and physicians who cared for encephalitis patients during the outbreak

Outbreak of Nipah Virus — Continued

FIGURE 1. Number of cases of Nipah virus infection, by week of illness onset — Perak, Negri Sembilan, and Selangor states, Malaysia 1998–1999



and pathologists who conducted postmortem examinations of case-patients, none developed an encephalitic illness or had acute serologic evidence confirming recent Nipah virus infection. To further define risk factors for human transmission, other groups being surveyed include case-patients and their families, pig workers, abattoir workers from 10 Malaysian states, soldiers involved in pig culling, and veterinary workers with potential exposure to Nipah virus-infected animals.

Outbreak control in Malaysia has focused on culling pigs in the states of Perak, Negri Sembilan, and Selangor; approximately 890,000 pigs have been killed. Other measures include a ban on transporting pigs within the country, education about contact with pigs, use of personal protective equipment among persons exposed to pigs, and a national surveillance and control system to detect and cull additional infected herds.

Field and laboratory studies have been initiated to investigate the potential for Nipah virus infection among animal species other than commercially raised pigs. Lung, kidney, spleen, and heart tissues from one necropsied dog demonstrated positive immunohistochemical staining using hyperimmune Hendra antibodies. Virus was isolated from kidney and liver tissues from this dog. Nucleotide sequencing of product from reverse transcriptase polymerase chain reaction amplification of RNA extracted from these tissues confirmed Nipah virus infection.

Outbreak of Nipah Virus — Continued

Singapore

No new cases of febrile illness associated with Nipah virus have been documented in Singapore after pig importation from Malaysia ceased and abattoirs were closed on March 19. During March 13–19, 11 abattoir workers developed febrile encephalitic or respiratory illnesses associated with acute Nipah virus infection. Epidemiologic investigations are under way to determine risk factors for Nipah-associated illness among abattoir workers in Singapore, and laboratory studies among abattoir, laboratory, and health-care workers are continuing to determine whether Nipah virus exposure may have led to mild or asymptomatic illness.

Reported by: Vector-Borne Disease Control Section, Disease Control Div, Institute for Medical Research, Ministry of Health; Dept of Medical Microbiology; Univ Hospital; Univ of Malaya; General Hospital, Kuala Lumpur; Seremban Hospital, Seremban; Ipoh Hospital, Ipoh; Institute of Veterinary Research, Veterinary Svc, Ministry of Agriculture, Malaysia. Primary Production Dept, Ministry of National Development; Quarantine and Epidemiology Dept, Ministry of the Environment, Singapore. Australian Animal Health Laboratory, Geelong, Queensland; Animal Research Institute, Queensland Dept of Primary Industries, Australia. Western Pacific Regional Office, World Health Organization, Manila, Philippines. Respiratory and Enterovirus Br, Special Pathogens Br, and Infectious Diseases Pathology Activity, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; and EIS officers, CDC.

Editorial Note: The absence of new Nipah virus cases in Singapore in the month since abattoirs were closed and the decrease in new encephalitis cases in Malaysia following the institution of measures to limit human contact with pigs suggest that pigs are the primary source of Nipah virus among infected humans in this outbreak. Investigations continue to define risk factors for infection and disease in humans to determine the modes of Nipah virus transmission between animals and from animals to humans and to identify the primary reservoir of this virus.

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Notice to Readers

Alcohol and Other Drug-Related Birth Defects Awareness Week — May 9–15, 1999

The National Council on Alcoholism and Drug Dependence (NCADD) has designated May 9–15, 1999, as Alcohol and Other Drug-Related Birth Defects Awareness Week. This year's focus on early identification of women with drinking problems parallels CDC's research activities targeting nonpregnant women of childbearing age who are at risk for having an alcohol-exposed pregnancy (Project CHOICES [Changing High-risk Alcohol Use and Increasing Contraception Effectiveness Study]).

Fertile women who drink alcohol frequently and have unprotected sex are at risk for having an alcohol-exposed pregnancy. As many as one in eight women of childbearing age engage in frequent drinking (five or more drinks on at least one occasion in the previous month or an average of seven or more drinks per week) (*1*). Half of all pregnancies in the United States are unplanned (*2*), and many women do not know they are pregnant until well into their first trimester (*3*). Any woman with an

Notices to Readers — Continued

unplanned pregnancy could expose her unborn child to alcohol before she knows she is pregnant. Alcohol use during pregnancy can have harmful effects on the fetus, including spontaneous abortion, birth defects, neurodevelopmental disorders, and fetal alcohol syndrome (FAS) (the most common known nongenetic cause of mental retardation) (*4*).

The incidence of alcohol-exposed pregnancies can be reduced if women at risk reduce their alcohol consumption or postpone pregnancy until their problem drinking is resolved. Screening instruments (*5,6*) can be used to identify women who are problem drinkers, and brief interventions, consisting of counseling and advice, can be given to those for whom problems are identified.

Additional information about Alcohol and Other Drug-Related Birth Defects Awareness Week is available from the NCADD World-Wide Web site, <http://www.ncadd.org>*, or telephone (212) 206-6770. Information about FAS and other alcohol-related birth defects and developmental disabilities is available from CDC, <http://www.cdc.gov/nceh/programs/programs.htm>, or telephone (770) 488-7268.

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

Notice to Readers

Changes in CPT Code for Hepatitis Panel Causing Delayed Reports of Acute Hepatitis

Current Procedural Terminology (CPT) codes are standardized codes developed and maintained by the CPT Board of the American Medical Association for reporting medical services. The Health Care Financing Administration requires use of these codes in the Common Procedure Coding System when services are reported to Medicare and Medicaid for reimbursement. Effective January 1, 1998, the CPT Board changed the hepatitis serology panel (CPT#80059) to exclude the tests for IgM antibody to hepatitis A virus (IgM anti-HAV) and IgM antibody to hepatitis B core antigen (IgM anti-HBc). These two tests specifically identify recent infection with HAV and

Notices to Readers — Continued

HBV, respectively. Many providers may be unaware that these tests are not part of the standard hepatitis panel, and diagnoses of cases of acute viral hepatitis are likely to be delayed by the need to perform additional testing. As a result, reporting of cases to health departments may be delayed, and CDC has received reports of instances of insufficient time to provide postexposure prophylaxis to prevent transmission of HAV or HBV to susceptible contacts of the case-patient.

The CPT Board has revised the hepatitis serology panel to include both IgM tests that were deleted. However, these modifications will not be implemented until the next CPT code manual is issued on January 1, 2000. Until this change takes effect, health departments should notify health-care practitioners and/or laboratories of the need to order individual tests for IgM anti-HAV (CPT#86709) and IgM anti-HBc (CPT#86705) for accurate determination of the cause of illness in patients with signs and/or symptoms of acute viral hepatitis and for timely prophylaxis of contacts.

Notice to Readers

International Course in Applied Epidemiology

CDC and Emory University's Rollins School of Public Health will cosponsor a course, "International Course in Applied Epidemiology," October 4–29, 1999, in Atlanta. This basic course is directed at public health professionals from countries other than the United States. Its content includes presentations and discussions of epidemiologic principles, basic statistical analysis, public health surveillance, field investigations, surveys and sampling, and discussions of epidemiologic aspects of major public health problems in international health.

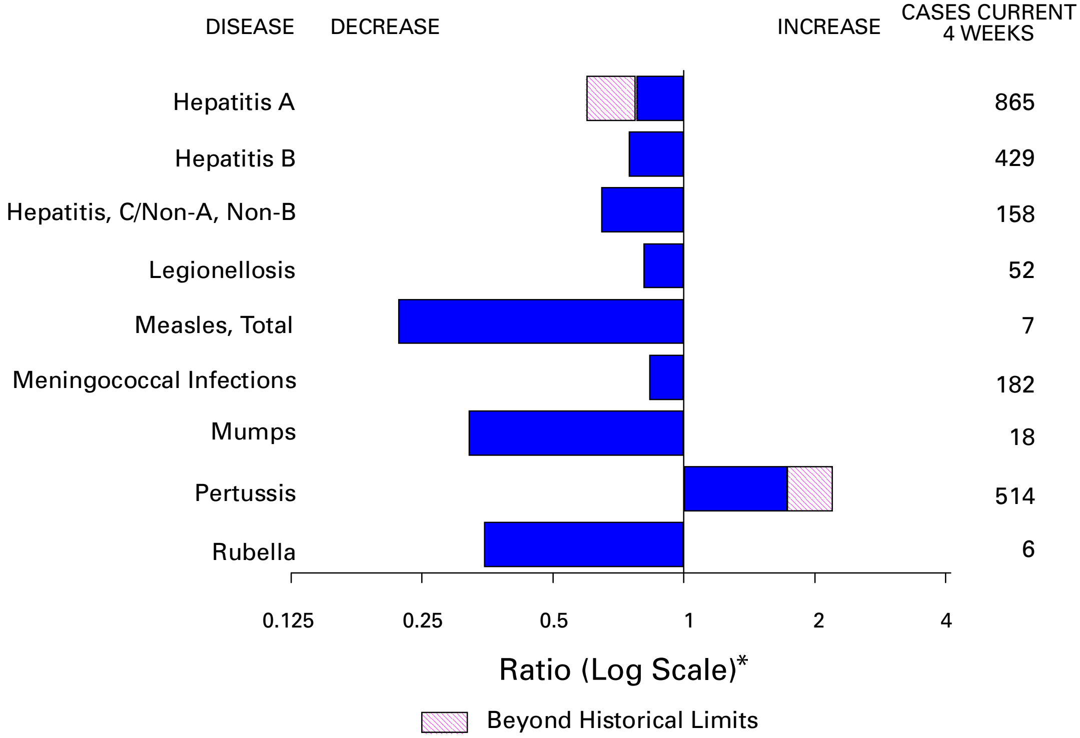
Included are small group discussions of epidemiologic case exercises based on field investigations. Participants are encouraged to give a short presentation reviewing some epidemiologic data from their own country. Computer training using Epi-Info software is included. Prerequisites are familiarity with the vocabulary and principles of basic epidemiology or completion of CDC's "Principles of Epidemiology" home-study course or equivalent. Preference will be given to applicants whose work involves priority public health problems in international health. There is a tuition charge.

Additional information and applications are available from Emory University, The Rollins School of Public Health, International Health Dept. (PIA), 1518 Clifton Rd., N.E., Room 746, Atlanta, GA 30322; telephone (404) 727-3485; fax (404) 727-4590; e-mail pvaleri@sph.emory.edu, or on the World-Wide Web at <http://www.sph.emory.edu/EPICOURSES>.

Erratum: Vol. 48, No. 13

In the report "Outbreak of Hendra-Like Virus—Malaysia and Singapore, 1998–1999," the 111 febrile encephalitis deaths reported as of April 4, 1999, (page 1, paragraph 1, line 2) was in error. The correct number of deaths reported to the Malaysian Ministry of Health at that time was 86.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending April 24, 1999, with historical data — United States



*Ratio of current 4-week total to mean of 16 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 24, 1999 (16th Week)

	Cum. 1999		Cum. 1999
Anthrax	-	Plague	-
Brucellosis	13	Poliomyelitis, paralytic	-
Cholera	-	Psittacosis	10
Congenital rubella syndrome	2	Rabies, human	-
Cryptosporidiosis*	344	Rocky Mountain spotted fever (RMSF)	39
Diphtheria	-	Streptococcal disease, invasive Group A	631
Encephalitis: California*	2	Streptococcal toxic-shock syndrome*	14
eastern equine*	-	Syphilis, congenital¶	15
St. Louis*	-	Tetanus	5
western equine*	-	Toxic-shock syndrome	33
Hansen Disease	18	Trichinosis	5
Hantavirus pulmonary syndrome*†	2	Typhoid fever	83
Hemolytic uremic syndrome, post-diarrheal*	6	Yellow fever	-
HIV infection, pediatric*§	37		

-: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 March 28, 1999.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 24, 1999, and April 25, 1998 (16th Week)

Reporting Area	AIDS Cum. 1999*	AIDS Cum. 1998	Chlamydia Cum. 1999	Chlamydia Cum. 1998	*Escherichia coli* O157:H7 NETSS† Cum. 1999	*Escherichia coli* O157:H7 PHLIS§ Cum. 1999	Gonorrhea Cum. 1999	Gonorrhea Cum. 1998	Hepatitis C/NA,NB Cum. 1999	Hepatitis C/NA,NB Cum. 1998
UNITED STATES	11,513	14,555	156,448	173,683	328	168	84,493	101,001	742	1,440
NEW ENGLAND	542	368	5,863	6,472	48	35	1,899	1,750	65	26
Maine	5	8	193	278	4	-	15	12	-	-
N.H.	18	12	292	312	3	2	22	29	-	-
Vt.	4	10	151	113	6	1	16	8	2	2
Mass.	367	94	2,807	2,693	22	19	844	651	62	24
R.I.	30	42	682	767	1	1	183	102	1	-
Conn.	118	202	1,738	2,309	12	12	819	948	-	-
MID. ATLANTIC	2,841	4,301	23,417	21,617	21	2	11,988	12,070	50	116
Upstate N.Y.	360	540	N	N	18	-	1,422	2,049	31	100
N.Y. City	1,441	2,404	11,522	11,119	-	1	4,972	4,904	-	-
N.J.	600	749	3,522	3,497	3	1	1,738	2,139	-	-
Pa.	440	608	8,372	7,001	N	-	3,856	2,978	19	16
E.N. CENTRAL	841	1,246	23,419	25,923	52	34	15,645	19,345	153	158
Ohio	147	211	6,488	8,247	26	8	3,798	5,038	-	5
Ind.	124	271	-	-	5	8	726	1,905	-	3
Ill.	402	487	8,603	6,818	10	7	6,110	5,550	4	19
Mich.	124	218	6,594	6,674	11	5	4,390	5,215	149	131
Wis.	44	59	1,734	4,184	N	6	621	1,637	-	-
W.N. CENTRAL	248	271	5,634	10,965	71	21	1,880	5,082	40	9
Minn.	38	48	1,926	2,194	17	14	715	744	-	-
Iowa	29	11	862	1,268	8	2	200	391	-	3
Mo.	97	139	-	3,917	9	4	-	2,688	38	4
N. Dak.	3	4	102	302	2	-	7	30	-	-
S. Dak.	6	7	436	520	1	1	39	82	-	-
Nebr.	19	24	819	914	27	-	332	358	-	2
Kans.	56	38	1,489	1,850	7	-	587	789	2	-
S. ATLANTIC	3,237	3,703	33,564	34,227	32	17	25,116	27,014	66	37
Del.	40	40	878	786	1	-	530	423	-	-
Md.	345	483	2,514	2,541	1	-	2,413	2,740	20	3
D.C.	118	304	N	N	-	-	849	1,096	-	-
Va.	179	279	3,670	3,051	9	4	2,489	2,083	6	1
W. Va.	19	34	694	1,488	-	1	165	496	11	3
N.C.	198	270	7,279	6,927	7	6	6,277	5,806	-	7
S.C.	321	236	5,733	5,877	2	1	2,837	3,639	12	-
Ga.	349	374	4,609	7,765	1	-	3,743	6,200	1	8
Fla.	1,668	1,683	8,187	5,792	11	5	5,813	4,531	16	15
E.S. CENTRAL	493	565	12,732	12,013	22	7	10,314	11,327	69	41
Ky.	70	85	1,812	1,882	5	-	883	1,067	1	7
Tenn.	214	159	4,377	3,772	10	3	3,377	3,189	32	31
Ala.	110	183	3,615	3,146	4	3	3,287	3,992	1	3
Miss.	99	138	2,928	3,213	3	1	2,767	3,079	35	-
W.S. CENTRAL	1,182	1,883	17,145	25,516	10	7	10,281	15,170	87	316
Ark.	45	71	1,709	1,099	3	2	788	1,291	1	3
La.	121	301	5,376	3,678	3	3	4,355	3,158	75	1
Okla.	35	72	2,383	3,022	3	2	1,253	1,619	2	-
Tex.	981	1,439	7,677	17,717	1	-	3,885	9,102	9	312
MOUNTAIN	405	514	8,720	9,384	26	14	2,287	2,459	53	184
Mont.	4	12	427	330	-	-	16	17	4	4
Idaho	5	12	501	564	1	1	26	48	4	74
Wyo.	2	1	242	218	1	3	9	11	17	42
Colo.	76	90	2,169	2,400	9	4	607	731	9	10
N. Mex.	13	76	1,172	1,117	2	-	209	201	4	27
Ariz.	190	200	2,834	3,288	7	3	1,037	1,108	12	1
Utah	37	44	521	689	6	2	55	72	1	14
Nev.	78	79	854	778	-	1	328	271	2	12
PACIFIC	1,724	1,704	25,954	27,566	46	31	5,083	6,784	159	553
Wash.	90	133	3,630	3,384	10	14	656	585	3	6
Oreg.	45	41	1,656	-	14	10	232	-	4	8
Calif.	1,562	1,483	19,370	22,851	22	6	3,991	5,959	152	504
Alaska	6	11	617	631	-	-	116	99	-	1
Hawaii	21	36	681	700	-	1	88	141	-	34
Guam	1	-	-	98	N	-	-	6	-	-
P.R.	411	578	U	U	4	U	102	122	-	-
V.I.	10	15	N	N	N	U	U	U	U	U
Amer. Samoa	-	-	U	U	N	U	U	U	U	U
C.N.M.I.	-	-	N	N	N	U	-	12	-	-

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 March 28, 1999.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending April 24, 1999, and April 25, 1998 (16th 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	252	358	1,142	1,279	294	350	1,780	2,182	1,478	2,381	1,481
NEW ENGLAND	18	20	162	282	4	15	25	23	101	106	252
Maine	2	1	-	2	-	-	-	1	3	3	41
N.H.	2	2	-	5	-	2	-	1	-	2	15
Vt.	3	1	-	2	1	-	1	-	-	1	46
Mass.	4	6	109	64	3	13	15	17	50	53	50
R.I.	1	4	10	18	-	-	1	-	15	14	32
Conn.	6	6	43	191	-	-	8	4	33	33	68
MID. ATLANTIC	72	83	732	806	73	103	81	88	559	571	299
Upstate N.Y.	21	22	254	384	22	25	9	7	75	76	188
N.Y. City	5	22	5	21	16	52	36	17	337	350	U
N.J.	5	3	118	100	24	15	11	30	147	145	69
Pa.	41	36	355	301	11	11	25	34	U	U	42
E.N. CENTRAL	60	137	24	21	28	35	337	311	94	114	12
Ohio	23	47	17	14	4	2	27	52	U	U	3
Ind.	5	25	5	4	4	1	32	52	U	U	-
Ill.	9	18	1	1	11	18	226	131	U	U	-
Mich.	22	22	1	2	7	12	49	52	68	82	9
Wis.	1	25	U	U	2	2	3	24	26	32	-
W.N. CENTRAL	10	23	15	11	14	19	9	61	128	107	151
Minn.	-	3	8	3	2	8	4	4	59	35	28
Iowa	7	4	2	7	3	3	1	-	7	-	37
Mo.	2	7	-	-	8	7	-	46	49	48	6
N. Dak.	-	-	1	-	-	-	-	-	1	3	30
S. Dak.	1	-	-	-	-	-	-	-	3	4	25
Nebr.	-	7	-	-	-	-	1	4	4	2	1
Kans.	-	2	4	1	1	1	3	7	5	15	24
S. ATLANTIC	35	42	133	116	79	70	633	847	237	464	559
Del.	2	6	2	2	-	1	1	7	-	8	3
Md.	5	9	101	95	23	27	134	236	U	U	117
D.C.	-	3	1	4	6	4	12	30	14	33	-
Va.	6	4	3	4	15	9	42	66	44	89	135
W. Va.	N	N	4	4	1	-	2	-	12	19	33
N.C.	5	4	16	1	6	7	172	231	93	223	128
S.C.	6	4	1	-	-	-	83	96	74	92	44
Ga.	-	-	-	2	5	13	90	89	U	U	46
Fla.	11	12	5	4	23	9	97	92	U	U	53
E.S. CENTRAL	8	11	14	13	5	10	341	377	99	189	77
Ky.	2	5	-	2	-	-	28	41	U	U	13
Tenn.	5	3	5	6	3	5	171	189	U	U	26
Ala.	1	1	6	5	2	3	95	79	93	113	38
Miss.	-	2	3	-	-	2	47	68	6	76	-
W.S. CENTRAL	1	4	-	3	8	11	252	280	70	632	26
Ark.	-	-	-	2	-	1	26	46	40	33	-
La.	1	-	-	-	6	3	77	94	U	U	-
Okla.	-	-	-	-	1	1	64	13	30	35	26
Tex.	-	4	-	1	1	6	85	127	-	564	-
MOUNTAIN	17	17	3	1	14	18	44	79	47	71	49
Mont.	-	1	-	-	2	-	-	-	-	2	18
Idaho	-	-	-	-	1	1	-	-	-	3	-
Wyo.	-	1	1	-	-	-	-	-	-	1	18
Colo.	1	4	-	-	5	6	-	4	U	U	1
N. Mex.	1	2	1	-	2	6	-	7	20	18	-
Ariz.	1	2	-	-	4	2	41	61	U	U	12
Utah	8	6	1	-	-	1	1	2	12	18	-
Nev.	6	1	-	1	-	2	2	5	15	29	-
PACIFIC	31	21	59	26	69	69	58	116	143	127	56
Wash.	5	2	-	1	5	3	16	6	82	65	-
Oreg.	1	-	1	1	7	6	-	-	U	U	-
Calif.	24	19	58	24	53	59	40	110	U	U	51
Alaska	1	-	-	-	-	-	1	-	17	13	5
Hawaii	-	-	-	-	4	1	1	-	44	49	-
Guam	-	1	-	-	-	1	-	-	-	37	-
P.R.	-	-	-	-	-	-	63	69	-	30	25
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.	-	-	-	-	-	-	-	81	-	49	-

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

*Cumulative reports of provisional tuberculosis cases for 1998 and 1999 are unavailable ("U") for some areas using the Tuberculosis Information Management System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 24, 1999, and April 25, 1998 (16th 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	376	385	4,572	6,768	1,781	2,647	1	17	4	10	27	18
NEW ENGLAND	28	26	60	103	31	43	-	-	-	1	1	1
Maine	2	2	2	10	-	-	-	-	-	-	-	-
N.H.	5	1	7	6	4	5	-	-	-	1	1	-
Vt.	4	2	3	7	1	-	-	-	-	-	-	-
Mass.	11	19	17	29	17	23	-	-	-	-	-	1
R.I.	-	2	6	7	9	4	-	-	-	-	-	-
Conn.	6	-	25	44	-	11	-	-	-	-	-	-
MID. ATLANTIC	48	55	310	505	241	404	-	-	2	2	2	6
Upstate N.Y.	26	19	77	115	58	101	-	-	2	2	2	-
N.Y. City	5	15	47	181	55	115	-	-	-	-	-	-
N.J.	17	19	42	90	33	71	-	-	-	-	-	5
Pa.	-	2	144	119	95	117	-	-	-	-	-	1
E.N. CENTRAL	42	57	1,063	971	145	505	-	-	-	-	-	2
Ohio	22	25	256	117	30	24	-	-	-	-	-	-
Ind.	1	9	29	89	4	225	-	-	-	-	-	1
Ill.	15	22	140	257	-	82	-	-	-	-	-	-
Mich.	4	-	616	419	111	145	-	-	-	-	-	1
Wis.	-	1	22	89	-	29	-	-	-	-	-	-
W.N. CENTRAL	36	28	234	594	104	119	-	-	-	-	-	-
Minn.	11	17	18	28	13	11	-	-	-	-	-	-
Iowa	8	1	52	268	18	16	-	-	-	-	-	-
Mo.	11	6	128	237	63	77	-	-	-	-	-	-
N. Dak.	-	-	-	2	-	1	U	-	U	-	-	-
S. Dak.	1	-	8	3	-	1	-	-	-	-	-	-
Nebr.	3	-	15	15	6	4	-	-	-	-	-	-
Kans.	2	4	13	41	4	9	-	-	-	-	-	-
S. ATLANTIC	97	68	546	499	327	264	1	1	2	3	4	6
Del.	-	-	1	1	-	-	-	-	-	-	-	1
Md.	25	18	107	124	54	53	-	-	-	-	-	1
D.C.	2	-	22	21	7	5	-	-	-	-	-	-
Va.	8	10	41	86	29	30	1	1	2	2	3	2
W. Va.	1	2	5	-	7	2	-	-	-	-	-	-
N.C.	16	10	44	32	69	68	-	-	-	-	-	-
S.C.	2	1	7	11	35	-	-	-	-	-	-	-
Ga.	20	18	144	110	38	57	-	-	-	-	-	1
Fla.	23	9	175	114	88	49	-	-	-	1	1	1
E.S. CENTRAL	29	23	142	142	130	145	-	-	-	-	-	-
Ky.	2	5	6	8	7	14	U	-	U	-	-	-
Tenn.	15	12	81	79	67	106	-	-	-	-	-	-
Ala.	10	5	29	32	32	25	-	-	-	-	-	-
Miss.	2	1	26	23	24	-	-	-	-	-	-	-
W.S. CENTRAL	21	23	483	1,015	150	346	-	1	-	2	3	-
Ark.	1	-	14	15	13	29	-	-	-	-	-	-
La.	4	11	34	12	45	10	-	-	-	-	-	-
Okla.	14	10	151	163	37	16	-	-	-	-	-	-
Tex.	2	2	284	825	55	291	-	1	-	2	3	-
MOUNTAIN	41	62	461	1,046	166	253	-	1	-	-	1	-
Mont.	1	-	5	10	7	2	-	-	-	-	-	-
Idaho	1	-	17	76	9	13	-	-	-	-	-	-
Wyo.	1	-	2	14	1	2	-	-	-	-	-	-
Colo.	5	12	89	79	33	35	-	1	-	-	1	-
N. Mex.	10	2	17	58	54	99	-	-	-	-	-	-
Ariz.	19	31	267	661	33	57	-	-	-	-	-	-
Utah	3	3	21	68	9	21	-	-	-	-	-	-
Nev.	1	14	43	80	20	24	U	-	U	-	-	-
PACIFIC	34	43	1,273	1,893	487	568	-	14	-	2	16	3
Wash.	-	1	91	283	17	38	-	-	-	-	-	-
Oreg.	14	21	83	150	28	62	-	8	-	-	8	-
Calif.	16	18	1,095	1,433	431	458	-	6	-	2	8	3
Alaska	3	1	3	3	7	4	-	-	-	-	-	-
Hawaii	1	2	1	24	4	6	-	-	-	-	-	-
Guam	-	-	-	-	-	1	U	-	U	-	-	-
P.R.	-	1	39	14	44	179	-	-	-	-	-	-
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	-	27	U	-	U	-	-	-

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

*Of 75 cases among children aged <5 years, serotype was reported for 32 and of those, 5 were type b.

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

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 24, 1999, and April 25, 1998 (16th Week)

	Meningococcal Disease		Mumps			Pertussis			Rubella		
Reporting Area	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998
UNITED STATES	833	1,054	8	114	304	167	1,609	1,316	3	17	173
NEW ENGLAND	40	52	-	1	-	3	129	252	-	3	28
Maine	3	4	-	-	-	-	-	5	-	-	-
N.H.	-	1	-	1	-	2	21	21	-	-	-
Vt.	3	1	-	-	-	-	10	25	-	-	-
Mass.	27	23	-	-	-	-	90	196	-	3	5
R.I.	2	3	-	-	-	1	3	-	-	-	-
Conn.	5	20	-	-	-	-	5	5	-	-	23
MID. ATLANTIC	76	112	-	15	160	37	397	161	1	2	88
Upstate N.Y.	19	28	-	2	3	35	352	88	1	2	80
N.Y. City	18	13	-	3	153	-	10	9	-	-	4
N.J.	16	28	-	-	1	-	-	7	-	-	4
Pa.	23	43	-	10	3	2	35	57	-	-	-
E.N. CENTRAL	115	154	-	12	25	4	112	153	-	-	-
Ohio	57	53	-	6	11	3	92	49	-	-	-
Ind.	7	26	-	-	2	-	2	40	-	-	-
Ill.	33	41	-	-	2	-	-	9	-	-	-
Mich.	18	16	-	6	10	1	18	17	-	-	-
Wis.	-	18	-	-	-	-	-	38	-	-	-
W.N. CENTRAL	107	91	-	3	18	1	22	94	-	-	2
Minn.	25	16	-	-	9	-	-	55	-	-	-
Iowa	24	12	-	2	6	1	10	16	-	-	-
Mo.	39	39	-	1	2	-	9	9	-	-	1
N. Dak.	-	-	U	-	1	U	-	-	U	-	-
S. Dak.	5	5	-	-	-	-	2	4	-	-	-
Nebr.	4	4	-	-	-	-	1	4	-	-	-
Kans.	10	15	-	-	-	-	-	6	-	-	1
S. ATLANTIC	144	159	6	26	16	5	88	90	-	2	3
Del.	2	1	-	-	-	-	-	-	-	-	-
Md.	23	17	-	3	-	-	27	18	-	1	-
D.C.	1	-	-	1	-	-	-	1	-	-	-
Va.	19	17	5	7	4	5	12	6	-	-	-
W. Va.	2	4	-	-	-	-	1	1	-	-	-
N.C.	17	24	1	5	6	-	22	40	-	1	3
S.C.	17	25	-	2	3	-	7	9	-	-	-
Ga.	23	37	-	-	-	-	7	-	-	-	-
Fla.	40	34	-	8	3	-	12	15	-	-	-
E.S. CENTRAL	64	81	-	1	3	2	30	35	-	-	-
Ky.	10	14	U	-	-	U	1	17	U	-	-
Tenn.	24	30	-	-	-	-	20	7	-	-	-
Ala.	18	25	-	1	1	2	6	10	-	-	-
Miss.	12	12	-	-	2	-	3	1	-	-	-
W.S. CENTRAL	51	104	-	14	23	1	42	67	-	5	38
Ark.	12	13	-	-	-	-	5	9	-	-	-
La.	26	20	-	1	1	-	3	-	-	-	-
Okla.	11	21	-	1	-	-	2	6	-	-	-
Tex.	2	50	-	12	22	1	32	52	-	5	38
MOUNTAIN	65	63	1	8	12	1	177	234	2	3	5
Mont.	-	2	-	-	-	-	1	1	-	-	-
Idaho	7	3	-	-	-	-	85	81	-	-	-
Wyo.	2	3	-	-	1	-	2	7	-	-	-
Colo.	19	14	1	3	1	-	30	53	-	-	-
N. Mex.	8	10	N	N	N	-	13	49	-	-	1
Ariz.	19	22	-	-	4	-	21	23	2	3	1
Utah	5	6	-	4	1	1	23	12	-	-	2
Nev.	5	3	U	1	5	U	2	8	U	-	1
PACIFIC	171	238	1	34	47	113	612	230	-	2	9
Wash.	20	25	-	-	4	104	375	79	-	-	7
Oreg.	30	40	N	N	N	-	8	14	-	-	-
Calif.	114	168	1	28	30	9	223	133	-	2	1
Alaska	3	1	-	1	2	-	2	-	-	-	-
Hawaii	4	4	-	5	11	-	4	4	-	-	1
Guam	-	-	U	-	2	U	-	-	U	-	-
P.R.	2	2	-	-	1	-	-	2	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	-	2	U	-	1	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending April 24, 1999 (16th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	491	375	70	28	14	4	50
Boston, Mass.	161	118	21	12	8	2	18
Bridgeport, Conn.	43	38	5	-	-	-	1
Cambridge, Mass.	6	4	1	1	-	-	-
Fall River, Mass.	15	13	2	-	-	-	1
Hartford, Conn.	50	36	6	5	3	-	4
Lowell, Mass.	21	16	2	1	1	1	1
Lynn, Mass.	13	10	3	-	-	-	3
New Bedford, Mass.	23	19	1	2	1	-	1
New Haven, Conn.	32	19	10	1	1	1	-
Providence, R.I.	U	U	U	U	U	U	U
Somerville, Mass.	8	8	-	-	-	-	1
Springfield, Mass.	34	26	7	1	-	-	4
Waterbury, Conn.	34	26	6	2	-	-	5
Worcester, Mass.	51	42	6	3	-	-	11
MID. ATLANTIC	2,232	1,550	443	159	38	42	95
Albany, N.Y.	59	43	8	4	1	3	7
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	108	75	20	8	4	1	4
Camden, N.J.	22	8	8	4	1	1	-
Elizabeth, N.J.	15	13	2	-	-	-	-
Erie, Pa.	52	42	7	3	-	-	3
Jersey City, N.J.	40	32	7	1	-	-	-
New York City, N.Y.	1,161	787	241	88	19	26	28
Newark, N.J.	47	23	14	7	3	-	-
Paterson, N.J.	9	2	2	4	1	-	-
Philadelphia, Pa.	300	204	70	19	4	3	22
Pittsburgh, Pa.§	85	71	8	2	2	2	4
Reading, Pa.	28	23	4	-	1	-	2
Rochester, N.Y.	110	80	22	6	-	2	8
Schenectady, N.Y.	33	26	4	2	-	1	2
Scranton, Pa.	35	27	5	3	-	-	3
Syracuse, N.Y.	77	59	12	1	2	3	10
Trenton, N.J.	30	21	6	3	-	-	2
Utica, N.Y.	21	14	3	4	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,755	1,217	324	135	26	53	117
Akron, Ohio	57	42	8	3	1	3	-
Canton, Ohio	27	18	7	1	-	1	3
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	85	51	17	9	2	6	6
Cleveland, Ohio	167	109	33	18	3	4	3
Columbus, Ohio	187	139	28	12	1	7	21
Dayton, Ohio	130	97	26	6	-	1	14
Detroit, Mich.	203	121	53	21	5	3	4
Evansville, Ind.	54	37	11	3	-	3	1
Fort Wayne, Ind.	68	51	11	3	2	1	1
Gary, Ind.	23	13	5	3	1	1	1
Grand Rapids, Mich.	44	33	7	2	-	2	3
Indianapolis, Ind.	188	111	42	19	5	11	14
Lansing, Mich.	46	35	9	2	-	-	3
Milwaukee, Wis.	137	97	20	13	2	5	10
Peoria, Ill.	49	37	8	2	1	1	4
Rockford, Ill.	44	32	6	4	-	2	1
South Bend, Ind.	64	50	7	7	-	-	16
Toledo, Ohio	114	84	19	6	3	2	11
Youngstown, Ohio	68	60	7	1	-	-	1
W.N. CENTRAL	663	469	118	43	14	19	59
Des Moines, Iowa	97	69	17	5	3	3	15
Duluth, Minn.	30	20	6	3	1	-	2
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	114	79	16	11	4	4	9
Lincoln, Nebr.	46	32	10	3	-	1	2
Minneapolis, Minn.	147	108	27	7	1	4	15
Omaha, Nebr.	U	U	U	U	U	U	U
St. Louis, Mo.	122	75	27	10	3	7	5
St. Paul, Minn.	107	86	15	4	2	-	11
Wichita, Kans.	U	U	U	U	U	U	U
S. ATLANTIC	1,036	646	227	94	25	44	46
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	131	79	30	18	4	-	8
Charlotte, N.C.	107	63	21	12	3	8	11
Jacksonville, Fla.	155	96	37	17	3	2	5
Miami, Fla.	107	70	21	11	5	-	1
Norfolk, Va.	51	32	12	2	-	5	1
Richmond, Va.	68	43	17	6	1	1	1
Savannah, Ga.	58	46	8	1	2	1	5
St. Petersburg, Fla.	64	53	10	1	-	-	5
Tampa, Fla.	159	108	35	9	4	3	7
Washington, D.C.	119	47	31	14	3	24	2
Wilmington, Del.	17	9	5	3	-	-	-
E.S. CENTRAL	945	668	167	62	25	21	63
Birmingham, Ala.	216	160	35	10	5	4	26
Chattanooga, Tenn.	109	81	21	4	1	2	4
Knoxville, Tenn.	87	54	17	10	4	2	1
Lexington, Ky.	83	55	21	5	1	1	6
Memphis, Tenn.	212	155	32	16	5	4	20
Mobile, Ala.	84	59	18	4	1	2	2
Montgomery, Ala.	U	U	U	U	U	U	U
Nashville, Tenn.	154	104	23	13	8	6	4
W.S. CENTRAL	1,610	1,090	305	130	45	38	127
Austin, Tex.	85	54	20	8	-	3	10
Baton Rouge, La.	34	19	7	6	2	-	-
Corpus Christi, Tex.	59	45	10	3	-	1	6
Dallas, Tex.	182	112	35	21	5	9	8
El Paso, Tex.	80	51	18	6	2	1	2
Ft. Worth, Tex.	135	90	33	7	2	3	25
Houston, Tex.	412	280	76	33	15	8	27
Little Rock, Ark.	81	56	14	5	3	3	7
New Orleans, La.	125	82	23	14	4	2	11
San Antonio, Tex.	208	148	35	15	7	3	12
Shreveport, La.	71	53	11	4	1	2	12
Tulsa, Okla.	138	100	23	8	4	3	7
MOUNTAIN	912	657	151	66	19	18	79
Albuquerque, N.M.	93	73	14	3	2	1	7
Boise, Idaho	53	44	7	1	1	-	7
Colo. Springs, Colo.	62	47	10	4	-	1	7
Denver, Colo.	114	78	20	9	2	4	15
Las Vegas, Nev.	218	151	42	17	5	3	14
Ogden, Utah	U	U	U	U	U	U	U
Phoenix, Ariz.	86	57	19	4	2	4	5
Pueblo, Colo.	32	26	3	3	-	-	1
Salt Lake City, Utah	90	59	16	8	5	2	7
Tucson, Ariz.	164	122	20	17	2	3	16
PACIFIC	1,937	1,412	347	113	34	31	181
Berkeley, Calif.	12	10	1	1	-	-	1
Fresno, Calif.	94	67	14	4	8	1	11
Glendale, Calif.	30	24	6	-	-	-	2
Honolulu, Hawaii	67	50	11	5	-	1	5
Long Beach, Calif.	63	44	14	3	-	2	6
Los Angeles, Calif.	541	401	87	35	10	8	30
Pasadena, Calif.	35	25	5	4	1	-	4
Portland, Oreg.	134	101	21	8	2	2	9
Sacramento, Calif.	173	122	35	10	5	1	33
San Diego, Calif.	157	113	29	6	1	8	11
San Francisco, Calif.	139	91	34	12	-	2	20
San Jose, Calif.	203	144	35	14	5	5	21
Santa Cruz, Calif.	35	25	10	-	-	-	10
Seattle, Wash.	105	75	21	8	-	1	8
Spokane, Wash.	57	44	10	1	2	-	3
Tacoma, Wash.	92	76	14	2	-	-	7
TOTAL	11,581¶	8,084	2,152	830	240	270	817

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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