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Norwalk-Like Virus–Associated Gastroenteritis in a Large, High-Density Encampment — Virginia, July 2001

Norwalk-like viruses (NLVs) are an important cause of gastro-enteritis in the United States, with approximately 23 million cases of NLV-associated gastroenteritis occurring each year (1). NLVs accounted for 96% of nonbacterial gastroenteritis outbreaks reported to CDC during January 1996–June 1997 (2). These outbreaks are common especially in settings of crowding and poor sanitation (2,3). Transmission of NLVs in these settings is facilitated by high attack rates (82%) (4), a low infectious dose (<100 virions), the absence of long-lasting immunity, the durability of the organism (5), and the potential for multiple modes of transmission (3,6). In 2001, outbreaks were reported from youth camps in Wisconsin and Florida, resulting in closure of the camps (7; CDC, unpublished data, 2001). This report describes an outbreak of NLV-associated gastroenteritis at a large youth encampment in Virginia and the successful use of control measures to limit spread of illness to other campers. Rapid, effective containment is a central goal of public health response when outbreaks of infectious diseases occur.

In July 2001, a large encampment held every 4 years by a national youth organization began in rural Virginia. Approximately 40,000 campers arrived on July 23 from locations throughout the United States and from several other countries. The camp was divided into 20 subcamps comprising approximately 600 groups of 40–90 campers, who were housed in tents. Groups of campers shared water that was dispensed at multiple central locations, outdoor showers, and flush toilets that drained to septic systems. Meals were prepared in small groups of five to 10 campers. On arrival, each group of campers had a requisite health-screening examination before proceeding to a campsite. Medical and public health personnel screened each group by using a standard interview form that asked about the presence of rashes,

vomiting, diarrhea, fever, headache, and cough. Groups of campers in which at least one person had a rash or at least two persons shared other symptoms associated with communicable disease were then referred for in-depth screening by the epidemiology support team. Ill campers were asked about the nature and timing of symptoms, travel history, and the source of food and beverages consumed recently. In addition, campers from each of the 20 subcamps within the 7-square-mile encampment who had vomiting, diarrhea, or other symptoms were assessed daily during the encampment to monitor for outbreaks of illness.

On initial screening, two groups of campers had multiple members with vomiting and diarrhea. Initially, these symptoms were found in six (8%) of 80 campers in group A from Illinois and 15 (18%) of 84 in group B from California; both groups arrived on July 23. On the morning of July 24, five (6%) of 80 members of group C from Oklahoma, camped several miles from the other two groups, were found to have similar symptoms. All illnesses were characterized by an acute onset of malaise, nausea, vomiting, and diarrhea. Symptoms typically lasted 24–48 hours. Review of cases by date of onset suggested an infectious illness that had an incubation period

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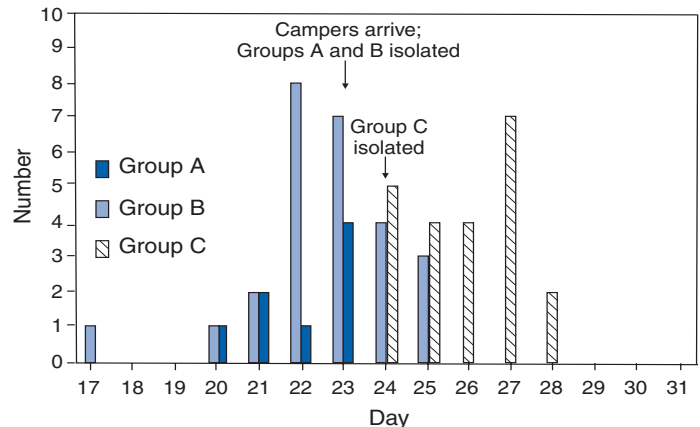
Notifiable Disease Morbidity and 122 Cities Mortality Data

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of approximately 24 hours but was inconsistent with a single-point source for all of the outbreaks (Figure). Attack rates were eight (10%) of 80 for group A, 26 (31%) of 84 for group B, and 22 (28%) of 80 for group C. Interviews of patients did not reveal any shared exposures or travel history among the three groups. Stool samples were collected from two (25%) of eight ill campers in group A, two (8%) of 26 ill campers in group B, and four (18%) of 22 ill campers in group C. NLVs were detected by the Virginia Division of Consolidated Laboratory Services by using reverse transcriptase-polymerase chain reaction (RT-PCR) in six of the eight stool samples, two from each group. All strains were tested at CDC and were genetically identical within the portion of the genome sequenced.

Control measures, including limiting contact between ill and well persons, were instituted for groups A and B on July 23 and for group C on July 24. All members of groups in which cases of gastroenteritis had been identified were excluded from camp activities in which transmission might occur, including all water sports and any activity in which a shared implement might be contaminated (e.g., archery, shooting, and rappelling). Affected groups were provided with dedicated latrines and washing facilities and were supplied with drinking water, ensuring that they would not draw it themselves from sources used by other campers. Shower space was reserved for affected group members at specified times; facilities were cleaned after each use with a 10% bleach solution. All symptomatic campers were excluded from food handling or preparation for at least 48 hours after resolution of symptoms. Scrupulous hand washing was stressed for all members of the affected groups. Arrangements were made so that well members of affected groups could participate in limited camp activities consistent with enteric precautions (e.g., supervised

FIGURE. Number* of Norwalk-like virus cases among campers, by date of illness onset and group of campers — Virginia, July 2001



* n=56.

walks around the encampment and attendance at evening concerts). An affected group was released from isolation when no new cases in that group were detected for at least 36 hours; however, campers remained in isolation until they were asymptomatic for 48 hours.

Outbreaks in the affected groups lasted 4–9 days, compared with durations of 3–4 weeks in two recent camp-associated outbreaks (7; CDC, unpublished data, 2001). Group A was released from isolation on July 25, group B on July 26, and group C on July 29. No new cases were reported from any of the three groups between the time of release from isolation and the end of the encampment. Of 244 campers in the three groups, 56 (23%) became ill. For the subcamps housing the three affected groups, the average rate of campers who had vomiting or diarrhea was 6.0 per 1,000 campers, compared with 3.7 among nonaffected subcamps.

On July 31, the final evening of the encampment, 36 campers staying at the same subcamp as group A became ill with vomiting or diarrhea, for a rate that day of 23.3. Because all campers left the next morning, no information was available on the group or groups involved. The sudden increase in gastrointestinal symptoms was indicative of a point-source outbreak; rates for such symptoms at the subcamp during the days between this outbreak and the release of group B for general activity had averaged 4.1 with no significant upward trend.

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Editorial Note: The findings in this report suggest that intervention efforts were effective in limiting spread of disease within and among groups. However, because no formal control group was available for comparison, the effectiveness of the control measures cannot be proven, given the opportunities for NLV transmission in this crowded, primitive camp setting. The control measures were designed to mitigate foodborne, waterborne, and person-to-person spread. Isolating affected groups and providing dedicated latrines and washing facilities decreased the likelihood of person-to-person or fomite-mediated spread to noninfected groups. Within affected groups, avoidance of food handling by infected campers and frequent hand washing were apparently effective in limiting transmission to other group members. Although evidence of NLV viral shedding has been noted by

RT-PCR testing as late as 2 weeks after symptom resolution (8), use of a shorter isolation period appears to have been effective in controlling this outbreak.

The sudden increase in gastroenteritis cases among campers in the vicinity of group A suggests a point-source exposure that might not have been related to NLV. However, no specimens were available for testing, and the number and identity of groups affected by this late outbreak were unknown. The absence of any additional cases among group A campers and of any identifiable outbreaks among other groups in the subcamp during the intervening 6 days between group A's release and the final outbreak suggest that the original outbreak was not linked directly.

Although several outbreaks of NLV gastroenteritis in bivouac or military base settings have been reported (7,9; CDC, unpublished data, 2001), the effectiveness of possible control measures is not known. Although closure of camps was required to end transmission in two recently reported NLV outbreaks in camp settings (7; CDC, unpublished data, 2001), disease was apparently contained at the Virginia encampment, even though the nonisolated camper population was 20 times larger. Factors critical to the successful containment of this outbreak include: 1) the preparations of local public health staff, who had an effective control system in place before the campers arrived; 2) the diligence of affected campers, whose compliance was induced by incentives to participate in activities available to nonisolated campers at this event; 3) active surveillance; and 4) prompt implementation of control measures.

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National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19–35 Months — United States, 2001

Each annual birth cohort in the United States comprises approximately four million infants. Maintaining the gains in childhood vaccination coverage attained during the 1990s among these children poses an ongoing challenge for public health. The National Immunization Survey (NIS) is an ongoing survey that provides estimates of vaccination coverage among children aged 19–35 months on the basis of data for the most recent 12 months for each of the 50 states and 28 selected urban areas. This report presents NIS findings for 2001*, which indicate a substantial nationwide increase in coverage with ≥ 1 dose of varicella vaccine (VAR), generally steady coverage for other vaccines nationwide, and wide variability in coverage among the states and urban areas covered by NIS.

To collect vaccination data for all age-eligible children, NIS uses a quarterly random-digit-dialing sample of telephone numbers for each survey area. NIS methodology, including how the responses are weighted to represent the population of children aged 19–35 months, has been described previously (1,2). During 2001, household interviews were completed for 33,437 children; of these, adequate health-care provider information was available for 23,551. The response rate for eligible households for the 78 survey areas was 63.8%. For this report, NIS data for 2001 were compared with data for 2000† (3).

National vaccination coverage with ≥ 1 dose of VAR increased from 67.8% (95% confidence interval [CI]= $\pm 0.9\%$) in 2000 to 76.3% (95% CI= $\pm 0.8\%$) in 2001. Coverage with ≥ 1 dose of measles, mumps, and rubella (MMR) vaccine increased from 90.5% (95% CI= $\pm 0.6\%$) in 2000 to 91.4% (95% CI= $\pm 0.6\%$) in 2001, and coverage with ≥ 3 doses of hepatitis B vaccine (HepB) decreased from 90.3% (95% CI= $\pm 0.6\%$) in 2000 to 88.9% (95% CI= $\pm 0.7\%$) in 2001 (Table 1).

* For the January–December 2001 reporting period, NIS included children born during February 1998–May 2000.

† For the January–December 2001 reporting period, NIS included children born during February 1997–May 1999.

TABLE 1. Vaccination coverage levels among children aged 19–35 months, by selected vaccines — National Immunization Survey, United States, 1997–2001

Vaccine/Dose	1997*	1998†	1999§	2000¶	2001**
	% (95% CI††)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
DTP/DT/DTaP§§					
>3 doses	95.5 (± 0.4)	95.6 (± 0.5)	95.9 (± 0.4)	94.1 (± 0.5)	94.3 (± 0.5)
≥ 4 doses	81.5 (± 0.7)	83.9 (± 0.8)	83.3 (± 0.8)	81.7 (± 0.8)	82.1 (± 0.8)
Poliovirus					
≥ 3 doses	90.8 (± 0.5)	90.8 (± 0.7)	89.6 (± 0.6)	89.5 (± 0.6)	89.4 (± 0.7)
Hib¶¶					
≥ 3 doses	92.7 (± 0.5)	93.4 (± 0.6)	93.5 (± 0.5)	93.4 (± 0.5)	93.0 (± 0.6)
MMR***					
≥ 1 dose	90.5 (± 0.7)	92.0 (± 0.6)	91.5 (± 0.6)	90.5 (± 0.6)	91.4 (± 0.6)
Hepatitis B					
≥ 3 doses	83.7 (± 0.6)	87.0 (± 0.7)	88.1 (± 0.7)	90.3 (± 0.6)	88.9 (± 0.7)
Varicella					
≥ 1 dose	25.9 (± 0.7)	43.2 (± 1.0)	57.5 (± 1.0)	67.8 (± 0.9)	76.3 (± 0.8)
Combined series					
4:3:1†††	77.9 (± 0.7)	80.6 (± 0.9)	79.9 (± 0.8)	77.6 (± 0.9)	78.6 (± 0.9)
4:3:1:3§§§	76.2 (± 0.8)	79.2 (± 0.9)	78.4 (± 0.9)	76.2 (± 0.9)	77.2 (± 0.9)
4:3:1:3:3¶¶¶	—	—	73.2 (± 0.9)	72.8 (± 0.9)	73.7 (± 0.9)

* Born during February 1994–May 1996.

† Born during February 1995–May 1997.

§ Born during February 1996–May 1998.

¶ Born during February 1997–May 1999.

** Born during February 1998–May 2000.

†† Confidence interval.

§§ Diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine.

¶¶ *Haemophilus influenzae* type b.

*** Measles, mumps, and rubella vaccine.

††† Comprises ≥ 4 doses of DTP/DT/DTaP, ≥ 3 doses of poliovirus vaccine, and ≥ 1 dose of measles-containing vaccine.

§§§ 4:3:1 plus ≥ 3 doses of Hib vaccine.

¶¶¶ 4:3:1:3 plus ≥ 3 doses of hepatitis B vaccine.

In 2001, estimated vaccination coverage differed substantially among states. The estimated coverage with the 4:3:1:3:3 series[§] ranged from 81.7% in Rhode Island to 63.2% in New Mexico, a difference of 18.5 percentage points (Table 2). Variability among states was lowest for 3 doses of diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine (DTP/DT/DTaP) (9.1 percentage points; range: 89.2%–98.3%) and highest for 1 dose of VAR (34.1 percentage points; range: 55.8%–89.9%). Variability among the 28 urban areas was slightly greater than among states. Among the 28 urban areas, the highest estimate for coverage with the 4:3:1:3:3 series was 79.5% in Jefferson County, Alabama, and the lowest was 57.7% in Detroit, Michigan, a difference of 21.8 percentage points.

For the 4:3:1:3:3 series, the magnitude of the disparity between the highest and lowest estimates for states has been consistent during the preceding 4 years (20.3 percentage points in 1998, 21.4 in 1999, 19.3 in 2000, and 18.5 in 2001) having decreased from 28.1 percentage points in 1997. The decreased disparity in 1998 compared with 1997 was attributed mostly to more complete implementation of hepatitis B vaccination in a few states. No state consistently had either the highest or lowest coverage estimates from year to year.

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Editorial Note: The findings in this report indicate that among U.S. children aged 19–35 months, coverage with recommended vaccines remains near all-time highs, and declines observed recently probably are too limited to pose a major public health risk. Although coverage with recommended vaccines for each new birth cohort remains high, vigilance is needed to maintain these high levels. Eliminating the disparity between states and urban areas with the highest and lowest coverage remains a priority. Should vaccine-preventable disease be introduced in an area with low coverage, groups of susceptible persons might serve as a reservoir to transmit disease.

TABLE 2. Estimated vaccination coverage levels with 4:3:1*, 4:3:1:3†, and 4:3:1:3:3§ series among children aged 19–35 months, by state and selected urban areas — National Immunization Survey, United States, 2001

State	4:3:1	4:3:1:3	4:3:1:3:3
	% (95% CI) [¶]	% (95% CI)	% (95% CI)
Alabama	84.5 (±3.8)	82.7 (±4.0)	79.1 (±4.2)
Jefferson County	86.9 (±4.0)	86.6 (±4.1)	79.5 (±5.0)
Rest of state	84.1 (±4.5)	82.0 (±4.7)	79.0 (±4.9)
Alaska	74.5 (±5.5)	74.1 (±5.5)	71.2 (±5.6)
Arizona	73.8 (±4.0)	72.9 (±4.1)	68.1 (±4.3)
Maricopa County	73.1 (±5.6)	71.7 (±5.7)	66.5 (±5.9)
Rest of state	75.2 (±5.3)	75.2 (±5.3)	70.7 (±5.7)
Arkansas	74.1 (±4.7)	74.1 (±4.7)	69.1 (±4.9)
California	76.5 (±3.6)	74.9 (±3.6)	72.6 (±3.7)
Los Angeles	76.7 (±5.2)	73.3 (±5.4)	71.6 (±5.5)
San Diego County	80.8 (±4.4)	79.9 (±4.5)	75.7 (±4.8)
Santa Clara	80.0 (±5.0)	77.0 (±5.3)	70.7 (±5.7)
Rest of state	75.4 (±5.6)	74.9 (±5.7)	72.9 (±5.8)
Colorado	77.2 (±4.5)	75.4 (±4.6)	71.5 (±4.8)
Connecticut	85.9 (±4.7)	84.1 (±4.9)	78.4 (±5.6)
Delaware	81.0 (±4.9)	78.6 (±5.1)	74.9 (±5.4)
District of Columbia	75.5 (±5.6)	74.2 (±5.6)	68.9 (±5.9)
Florida	79.4 (±4.0)	76.9 (±4.3)	73.0 (±4.5)
Dade County	79.1 (±5.7)	77.8 (±5.8)	74.5 (±6.2)
Duval County	77.5 (±5.4)	76.0 (±5.5)	73.7 (±5.7)
Rest of state	79.6 (±5.1)	76.8 (±5.3)	72.7 (±5.6)
Georgia	81.3 (±4.2)	80.0 (±4.3)	78.5 (±4.4)
Fulton/DeKalb counties	78.3 (±5.4)	75.1 (±5.7)	73.0 (±5.8)
Rest of state	82.0 (±5.0)	81.1 (±5.1)	79.8 (±5.2)
Hawaii	73.4 (±6.6)	72.8 (±6.6)	70.8 (±6.7)
Idaho	75.0 (±5.1)	74.1 (±5.2)	70.2 (±5.4)
Illinois	76.4 (±4.1)	75.6 (±4.1)	72.7 (±4.2)
Chicago	71.9 (±5.9)	69.0 (±6.0)	65.1 (±6.2)
Rest of state	78.1 (±5.2)	78.1 (±5.2)	75.6 (±5.3)
Indiana	75.5 (±4.6)	73.6 (±4.7)	71.1 (±4.8)
Marion County	74.6 (±6.4)	72.0 (±6.6)	68.6 (±6.7)
Rest of state	75.7 (±5.3)	73.9 (±5.4)	71.6 (±5.6)
Iowa	80.1 (±4.9)	79.4 (±5.0)	78.6 (±5.1)
Kansas	76.7 (±6.9)	75.7 (±6.9)	72.8 (±7.0)
Kentucky	80.2 (±4.7)	78.5 (±4.9)	75.9 (±5.0)
Louisiana	69.9 (±5.5)	68.9 (±5.6)	64.1 (±5.9)
Orleans Parish	69.3 (±5.9)	67.8 (±6.0)	62.4 (±6.1)
Rest of state	70.0 (±6.2)	69.1 (±6.3)	64.4 (±6.6)
Maine	83.3 (±4.4)	82.2 (±4.5)	75.1 (±5.1)
Maryland	79.7 (±4.0)	77.9 (±4.1)	73.4 (±4.4)
Baltimore	72.4 (±6.2)	71.6 (±6.2)	65.3 (±6.4)
Rest of state	81.0 (±4.5)	79.0 (±4.7)	74.8 (±5.0)
Massachusetts	81.9 (±4.3)	80.6 (±4.4)	76.6 (±4.7)
Boston	85.1 (±4.6)	84.5 (±4.7)	78.5 (±5.4)
Rest of state	81.5 (±4.8)	80.2 (±4.9)	76.4 (±5.2)
Michigan	74.7 (±4.9)	73.9 (±5.0)	70.0 (±5.2)
Detroit	65.3 (±6.3)	62.5 (±6.4)	57.7 (±6.5)
Rest of state	75.9 (±5.6)	75.5 (±5.6)	71.7 (±5.8)
Minnesota	81.3 (±4.8)	79.0 (±5.1)	76.3 (±5.3)
Mississippi	84.5 (±4.7)	83.9 (±4.8)	80.2 (±5.2)
Missouri	79.0 (±5.3)	77.8 (±5.4)	75.5 (±5.5)
Montana	83.0 (±4.5)	81.7 (±4.6)	77.9 (±5.0)
Nebraska	81.5 (±4.6)	80.4 (±4.7)	78.9 (±4.9)
Nevada	73.9 (±5.6)	72.2 (±5.7)	68.1 (±5.9)

* Comprises ≥4 doses of diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine; ≥3 doses of poliovirus vaccine; and ≥1 dose of measles-containing vaccine.

† 4:3:1 plus ≥3 doses of *Haemophilus influenzae* type b vaccine.

§ 4:3:1:3 plus ≥3 doses of hepatitis B vaccine.

¶ Confidence interval.

[§] Comprises ≥4 doses of diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine; ≥3 doses of poliovirus vaccine; ≥1 dose of measles-containing vaccine; ≥3 doses of *Haemophilus influenzae* type b vaccine; and ≥3 doses of HepB vaccine.

TABLE 2. (Continued) Estimated vaccination coverage levels with 4:3:1*, 4:3:1:3†, and 4:3:1:3:3‡ series among children aged 19-35 months, by state and selected urban areas — National Immunization Survey, United States, 2001

State	4:3:1 % (95% CI)¶	4:3:1:3 % (95% CI)	4:3:1:3:3 % (95% CI)
New Hampshire	84.9 (±4.1)	83.9 (±4.2)	77.6 (±4.8)
New Jersey	77.9 (±5.0)	76.2 (±5.4)	73.1 (±5.5)
Newark	67.0 (±5.7)	64.0 (±5.9)	58.8 (±6.1)
Rest of state	78.4 (±5.2)	76.7 (±5.6)	73.8 (±5.7)
New Mexico	72.7 (±5.0)	71.0 (±5.1)	63.2 (±5.5)
New York	81.9 (±3.5)	80.5 (±3.6)	77.1 (±3.8)
New York City	77.6 (±5.7)	75.9 (±5.9)	74.3 (±6.1)
Rest of state	85.8 (±4.2)	84.6 (±4.3)	79.5 (±4.8)
North Carolina	85.7 (±4.5)	84.7 (±4.6)	80.4 (±5.1)
North Dakota	83.5 (±4.5)	82.5 (±4.6)	78.7 (±4.9)
Ohio	76.3 (±4.0)	74.7 (±4.0)	71.2 (±4.2)
Cuyahoga County	74.0 (±5.7)	72.8 (±5.8)	68.4 (±6.0)
Franklin County	79.3 (±4.9)	78.3 (±5.0)	74.4 (±5.3)
Rest of state	76.2 (±5.0)	74.5 (±5.1)	71.2 (±5.3)
Oklahoma	77.1 (±5.3)	76.2 (±5.4)	70.0 (±5.7)
Oregon	75.3 (±5.7)	73.0 (±5.8)	68.5 (±6.1)
Pennsylvania	84.6 (±3.8)	82.0 (±4.0)	78.8 (±4.2)
Philadelphia County	76.0 (±5.4)	73.8 (±5.6)	64.9 (±6.1)
Rest of state	86.1 (±4.3)	83.5 (±4.7)	81.3 (±4.8)
Rhode Island	84.8 (±4.0)	83.7 (±4.1)	81.7 (±4.3)
South Carolina	81.2 (±5.1)	80.8 (±5.1)	78.7 (±5.2)
South Dakota	80.5 (±5.3)	79.1 (±5.5)	76.5 (±5.8)
Tennessee	84.6 (±3.1)	83.9 (±3.2)	79.7 (±3.6)
Davidson County	83.1 (±4.6)	81.9 (±4.7)	77.6 (±5.0)
Shelby County	75.8 (±5.4)	73.9 (±5.6)	72.1 (±5.7)
Rest of state	87.3 (±4.2)	87.0 (±4.2)	82.0 (±4.8)
Texas	74.9 (±3.7)	73.7 (±3.8)	69.7 (±4.0)
Bexar County	75.1 (±5.1)	73.2 (±5.3)	71.4 (±5.4)
Houston	70.5 (±6.6)	69.2 (±6.7)	63.0 (±7.3)
Dallas County	68.9 (±5.7)	66.5 (±5.9)	63.1 (±5.9)
El Paso County	69.2 (±5.3)	68.5 (±5.3)	64.4 (±5.4)
Rest of state	77.2 (±5.4)	76.2 (±5.5)	72.3 (±5.8)
Utah	75.1 (±5.5)	74.1 (±5.6)	66.1 (±5.9)
Vermont	89.2 (±3.6)	88.0 (±3.8)	80.3 (±4.6)
Virginia	78.4 (±6.1)	78.0 (±6.1)	74.9 (±6.7)
Washington	76.7 (±4.2)	75.5 (±4.3)	71.2 (±4.4)
King County	73.8 (±5.9)	72.3 (±6.0)	64.7 (±6.2)
Rest of state	77.9 (±5.3)	76.7 (±5.5)	73.8 (±5.6)
West Virginia	82.1 (±5.0)	81.0 (±5.1)	78.1 (±5.3)
Wisconsin	83.8 (±3.5)	82.5 (±3.6)	79.5 (±3.9)
Milwaukee County	71.6 (±6.4)	70.3 (±6.4)	65.6 (±6.4)
Rest of state	87.3 (±4.1)	86.1 (±4.2)	83.6 (±4.6)
Wyoming	80.9 (±5.1)	80.6 (±5.1)	74.3 (±5.8)

* Comprises ≥4 doses of diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine; ≥3 doses of poliovirus vaccine; and ≥1 dose of measles-containing vaccine.

† 4:3:1 plus ≥3 doses of *Haemophilus influenzae* type b vaccine.

‡ 4:3:1:3 plus ≥3 doses of hepatitis B vaccine.

¶ Confidence interval.

The findings in this report are subject to at least three limitations. First, NIS is a telephone survey; although statistical weights adjust for nonresponses and households without telephones, some bias might remain. Second, NIS relies on provider-verified vaccination histories; incomplete records and reporting could result in underestimates of coverage. The

estimation procedure assumes that coverage among children whose providers do not respond is similar to that among children whose providers respond. Finally, although national level estimates are precise, estimates for states and urban areas should be interpreted with caution (4).

In October 2000, the Advisory Committee on Immunization Practices recommended that all children aged 2–24 months without contraindications receive 4 doses of pneumococcal vaccine (5). The first NIS coverage estimates will be presented next year because the recommendation applies to all children covered by the 2002 NIS.

Shortages of routinely recommended childhood vaccines, including DTaP, pneumococcal conjugate vaccine (PCV7), MMR, varicella vaccine, and tetanus toxoid began in early 2001 (6–9). The shortages did not affect coverage in 2001 because almost all children included in the 2001 NIS were eligible to receive recommended vaccines before 2001. As children potentially affected by the shortages are surveyed by NIS, CDC will monitor the impact on coverage. The supplies of all vaccines, except PCV7, have improved. Additional information about the status of the vaccine shortages is available at <http://www.cdc.gov/nip/news/shortages/default.htm>.

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Impact of Vaccine Shortage on Diphtheria and Tetanus Toxoids and Acellular Pertussis Vaccine Coverage Rates Among Children Aged 24 Months — Puerto Rico, 2002

In March 2001, because of a temporary shortage of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine, CDC recommended that providers whose supply of DTaP was inadequate defer administration of the fourth dose of the vaccine (DTaP4) (1,2). CDC recommended that providers recall for vaccination all children who had missed DTaP4 when adequate supplies of DTaP become available (2). On May 4, 2001, the Puerto Rico Department of Health (PRDOH) directed all regional vaccine coordinators to implement the deferment of DTaP4. Vaccine coordinators and their staffs visited all providers that receive vaccines from the Puerto Rico Immunization Program (PRIP), a majority of which are private providers serving indigent patients, to instruct them to defer administering DTaP4 while continuing the rest of the schedule. The recommendations also were implemented in special vaccination clinics for children operated by PRIP. In March 2002, to assess the impact of the vaccine shortage on vaccination coverage levels among children in Puerto Rico, PRDOH conducted a survey of vaccination coverage levels among children aged 24 months. This report summarizes the results of the survey, which indicate that the DTaP4 coverage level was substantially lower in 2002 than in 2001. Now that supplies have returned to normal levels, the routine schedule for DTaP vaccination of children should be resumed, and data from national and local immunization surveys will be used to monitor post-shortage vaccination levels.

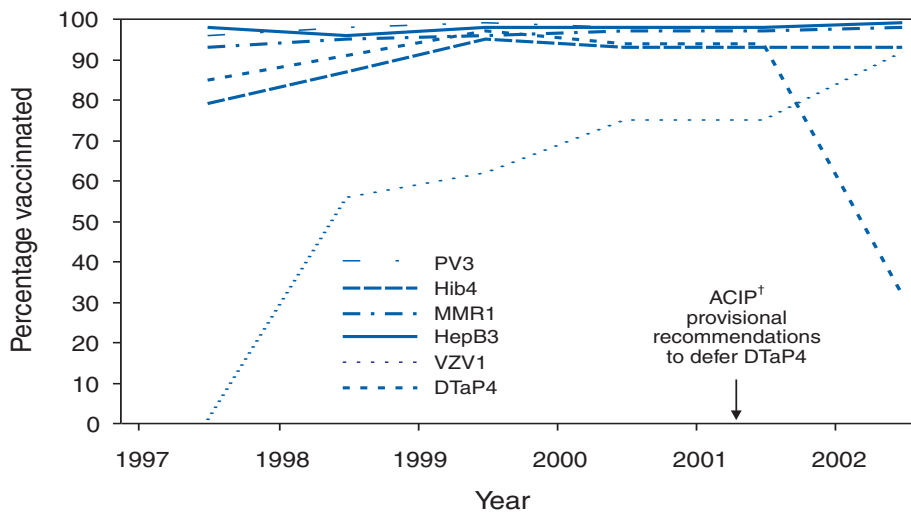
The Puerto Rico Immunization Survey (PRIS) is an annual household survey that measures vaccination coverage levels among children aged 24 months. For the 2002 survey, PRDOH selected a random sample of 1,080 children out of all 4,818 children born in Puerto Rico during March 2000. During March 2002, PRDOH attempted to locate and interview the parents or guardians of these 1,080 children to verify the children's vaccination status. Of the 1,080 children, 70 (6.5%) had left Puerto Rico or could not be traced. Survey responses were obtained for 990 of the remaining 1,010 children, for

a response rate of 98.0%. These figures were similar to those obtained in 2001, when 78 (7.3%) of 1,080 children could not be located and the response rate was 96.9%. If a parent-held vaccination card was not available as proof of vaccination, the interviewers requested consent to visit the child's health-care provider to verify the child's vaccination history. Vaccinations were counted only if they were documented on the vaccination card or reported by a health-care provider. Children's coverage levels for routinely recommended vaccines in the 2002 PRIS were compared with 2001 results.

DTaP3 vaccination coverage levels among children aged 24 months in 2002 (99.1%) showed little change from 2001 (98.3%). However, the coverage level for DTaP4 was substantially lower in 2002 (31.8%) than in 2001 (95.8%). Coverage levels with 3 doses of any poliovirus vaccine (PV3), 4 doses of *Haemophilus influenzae* type b vaccine (Hib4), 1 dose of measles, mumps, and rubella vaccine (1MMR), 3 doses of hepatitis B vaccine (HepB3), and 1 dose of varicella vaccine were nearly identical in 2002 and 2001 (Figure). However, consistent with the decline in DTaP4 coverage level, coverage with the 4:3:1:3 (DTaP4, PV3, 1MMR, and 3 doses of Hib) and the 4:3:1:3:3 (4:3:1:3 series and HepB3) vaccine series both were substantially lower in 2002 (31.2% and 30.9%, respectively) than in 2001 (94.1% and 93.8%, respectively).

Reported by: A Rivera, MD, JC Orengo, MD, AL Rivera, C Rodríguez, MS, E Calderón, J Rullán, MD, Puerto Rico Dept of Health. H Yusuf, MBBS, L Rodewald, MD, Immunization Svcs Div;

FIGURE. Vaccination* coverage levels among children aged 24 months, by selected vaccines and year — Puerto Rico Immunization Survey, Puerto Rico, June 1997–March 2002



* PV3=3 doses of any poliovirus vaccine; Hib4=4 doses of *Haemophilus influenzae* type b vaccine; MMR1=1 dose of measles, mumps, and rubella vaccine; HepB3=3 doses of hepatitis B vaccine; VZV1=1 dose of varicella vaccine; and DTaP4=4 doses of diphtheria and tetanus toxoids and acellular pertussis vaccine.

† Advisory Committee on Immunization Practices.

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Editorial Note: The decrease in DTaP4 coverage among children in Puerto Rico might herald similar findings for other parts of the United States. PRDOH implemented the recommendations for postponing DTaP4 in May 2001, during the period when children in the cohort reviewed in the 2002 PRIS were due to receive DTaP4. Consistent with the revised policy, PRIS detected a substantial decline in DTaP4 coverage among these children; coverage levels for the first 3 doses of DTaP and for other vaccines did not change. The annual National Immunization Survey (NIS) estimates coverage levels for routinely recommended vaccines among children aged 19–35 months in all 50 states and in 28 large urban areas (3,4). Because children included in NIS are slightly older than those included in PRIS and the larger NIS sample size results in a 6-month delay between data collection and reporting of results, declines in DTaP4 coverage levels in other parts of the United States monitored by NIS might not be recorded until late 2002 at the earliest. The maximum impact of the shortage might not be recorded until the second half of 2003, when all children in the cohort surveyed will be old enough to have received DTaP4 during the shortage period.

The findings in this report are subject to at least two limitations. First, estimating vaccination coverage levels among children by using information in health-care providers' medical records is considered the most effective method for such assessments (5). For PRIS, the health-care provider was contacted only when the parent or guardian did not have the child's vaccination card. However, because vaccination cards are used officially in Puerto Rico to determine a child's vaccination needs, these records probably are accurate. Second, because PRIS samples children aged 24 months during the month of the survey, conclusions cannot be drawn about the duration of the decrease in DTaP4 coverage among these children.

One measure used frequently to evaluate the performance of state and local vaccination programs that receive federal vaccination grants is their 4:3:1:3 vaccine series coverage levels; grantees are ranked annually according to these levels. Because of the temporary deferral of DTaP4 administration during the vaccine shortage, decreases in these coverage levels can be expected among children included in NIS during the next 3 years. Basing program performance results primarily on 4:3:1:3 series coverage might be misleading. The 4:3:1:3 coverage estimates are influenced most heavily by the vaccine with the lowest coverage level, usually DTaP4. Even with

≥90.0% coverage for other vaccines, using low DTaP4 coverage levels in the series might lead to the erroneous inference that coverage levels for all vaccines are low. Other elements (e.g., vaccination coverage levels for individual vaccines and incidence rates of vaccine-preventable diseases) might be better measures of overall program effectiveness.

The DTaP supply problems were experienced disproportionately by the public sector and by private providers who depend on public supply, so the impact might vary among programs. On July 12, 2002, CDC published recommendations for returning to the full dosing schedule for DTaP now that supplies have returned to normal levels (6). Providers also were cautioned that for the next 2 months, supplies might not be adequate for the initiation of ambitious recall efforts (6). When adequate levels are reached, children who missed ≥1 dose of vaccine should be recalled and vaccinated, and catch-up vaccination levels should be monitored. PRIS can help monitor catch-up levels among children in Puerto Rico. State and local vaccination registries have the opportunity to facilitate catch-up vaccination in the rest of the United States. Through NIS, CDC will monitor the impact of vaccine shortages on vaccination coverage levels.

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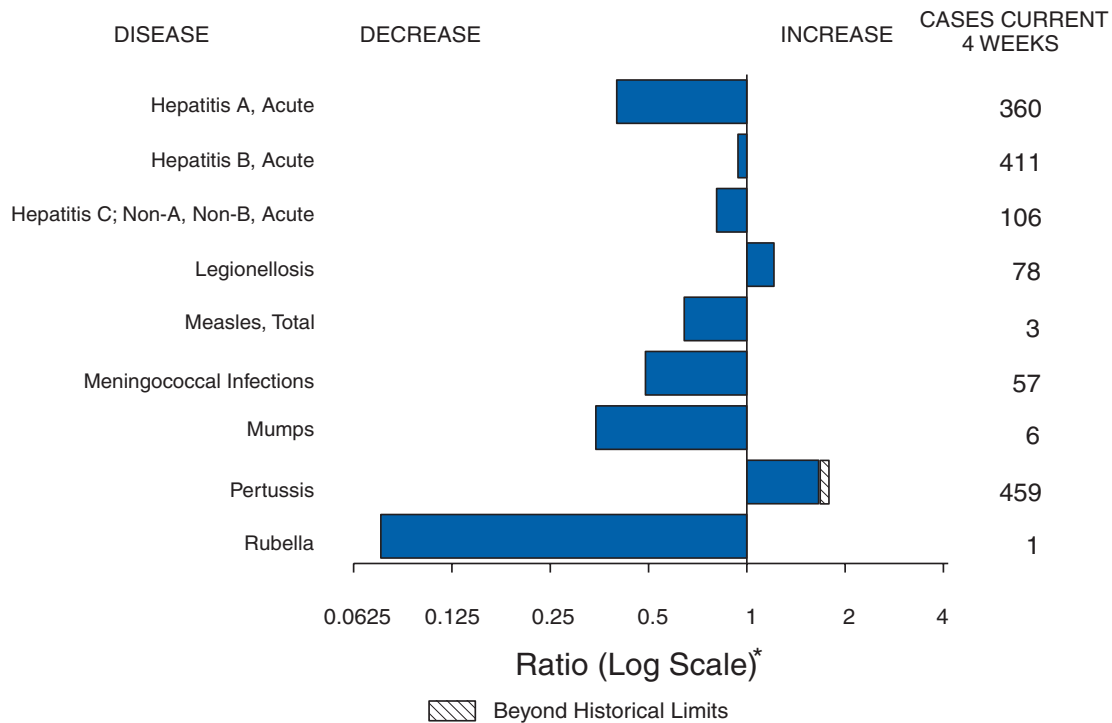
Weekly Update: West Nile Virus Activity — United States, July 24–30, 2002

This report summarizes West Nile virus (WNV) surveillance data reported to CDC through ArboNET and verified by states and other jurisdictions as of July 30, 2002.

During the reporting week of July 24–30, a total of 24 confirmed human cases of WNV illness were reported from two states (Louisiana and Mississippi). In addition, the Texas Department of Health reported eight probable cases of

(Continued on page 679)

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending July 27, 2002, with historical data



* 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 of provisional cases of selected notifiable diseases, United States, cumulative, week ending July 27, 2002 (30th Week)*

	Cum. 2002	Cum. 2001		Cum. 2002	Cum. 2001
Anthrax	2	1	Encephalitis: West Nile [†]	14	2
Botulism: foodborne	9	11	Hansen disease (leprosy) [†]	47	44
infant	34	55	Hantavirus pulmonary syndrome [†]	8	5
other (wound & unspecified)	10	7	Hemolytic uremic syndrome, postdiarrheal [†]	92	73
Brucellosis [†]	44	67	HIV infection, pediatric ^{†§}	98	97
Chancroid	37	23	Plague	-	2
Cholera	4	3	Poliomyelitis, paralytic	-	-
Cyclosporiasis [†]	92	67	Psittacosis [†]	12	8
Diphtheria	1	1	Q fever [†]	22	15
Ehrlichiosis: human granulocytic (HGE) [†]	142	90	Rabies, human	1	1
human monocytic (HME) [†]	60	60	Streptococcal toxic-shock syndrome [†]	57	52
other and unspecified	3	3	Tetanus	10	23
Encephalitis: California serogroup viral [†]	14	13	Toxic-shock syndrome	70	75
eastern equine [†]	1	-	Trichinosis	9	11
Powassan [†]	-	-	Tularemia [†]	33	68
St. Louis [†]	-	-	Yellow fever	1	-
western equine [†]	-	-			

-: No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

[†] Not notifiable in all states.

[§] 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 June 30, 2002.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	AIDS		Chlamydia†		Cryptosporidiosis		<i>Escherichia coli</i>			
	Cum. 2002§	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	O157:H7		Shiga Toxin Positive, Serogroup non-O157	
							Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	20,967	22,215	401,098	432,230	1,141	1,252	1,199	1,249	49	52
NEW ENGLAND	802	834	14,848	12,266	69	59	110	130	14	21
Maine	19	22	834	701	3	4	12	14	-	-
N.H.	19	16	912	755	14	2	8	18	-	3
Vt.	8	10	430	342	15	17	4	6	-	-
Mass.	377	478	6,133	4,736	19	27	52	67	5	6
R.I.	62	51	1,579	1,602	13	3	5	6	-	-
Conn.	317	257	4,960	4,130	5	6	29	19	9	12
MID. ATLANTIC	4,702	5,887	41,640	46,256	141	165	94	97	-	-
Upstate N.Y.	359	973	9,403	7,563	48	49	75	58	-	-
N.Y. City	2,554	3,016	15,057	17,166	60	67	4	8	-	-
N.J.	812	1,000	4,157	7,305	8	9	15	31	-	-
Pa.	977	898	13,023	14,222	25	40	N	N	-	-
E.N. CENTRAL	2,241	1,472	72,579	79,920	289	438	298	289	2	3
Ohio	433	232	18,924	20,620	73	72	63	70	1	2
Ind.	306	163	9,216	8,699	25	34	28	39	-	-
Ill.	1,029	673	17,554	24,304	43	54	89	79	-	-
Mich.	364	320	18,025	17,007	57	82	48	33	1	1
Wis.	109	84	8,860	9,290	91	196	70	68	-	-
W.N. CENTRAL	330	493	23,319	22,098	130	138	197	167	5	3
Minn.	72	92	5,252	4,476	53	62	68	65	3	1
Iowa	47	47	2,765	2,713	13	31	50	27	-	-
Mo.	138	233	8,010	7,858	18	23	27	28	N	N
N. Dak.	1	1	522	584	6	4	3	1	-	-
S. Dak.	2	18	1,196	968	5	5	20	10	1	1
Nebr.	31	47	1,857	1,956	26	13	16	22	1	1
Kans.	39	55	3,717	3,543	9	-	13	14	-	-
S. ATLANTIC	6,499	6,743	80,301	82,835	170	184	112	104	16	14
Del.	114	142	1,511	1,648	2	1	4	1	-	-
Md.	961	899	8,485	8,764	10	27	6	7	-	-
D.C.	321	460	1,908	1,920	3	9	-	-	-	-
Va.	488	541	9,422	10,201	4	13	27	29	2	2
W. Va.	50	47	1,345	1,352	2	1	2	3	-	-
N.C.	456	491	13,941	11,407	23	18	18	27	-	-
S.C.	455	403	7,290	9,040	2	2	1	3	-	-
Ga.	1,087	751	15,102	17,878	80	76	39	18	9	7
Fla.	2,567	3,009	21,297	20,625	44	37	15	16	5	5
E.S. CENTRAL	919	1,049	28,544	28,642	74	25	52	61	-	-
Ky.	150	219	4,921	5,039	3	3	13	27	-	-
Tenn.	404	307	9,079	8,574	38	5	21	20	-	-
Ala.	173	259	8,506	8,056	29	9	12	9	-	-
Miss.	192	264	6,038	6,973	4	8	6	5	-	-
W.S. CENTRAL	2,181	2,315	60,386	61,620	17	38	18	123	-	-
Ark.	149	123	3,650	4,436	6	5	5	5	-	-
La.	508	459	10,496	10,232	4	7	1	4	-	-
Okla.	119	128	6,240	6,181	7	6	12	14	-	-
Tex.	1,405	1,605	40,000	40,771	-	20	-	100	-	-
MOUNTAIN	678	767	26,254	25,547	86	63	128	126	7	7
Mont.	6	13	1,309	1,165	4	6	9	6	-	-
Idaho	15	16	1,423	993	18	7	9	16	2	2
Wyo.	4	2	503	468	6	1	2	5	1	-
Colo.	133	183	8,000	7,250	24	19	46	54	2	3
N. Mex.	51	59	3,234	3,405	13	12	4	9	1	2
Ariz.	284	280	8,379	8,512	12	4	15	15	1	-
Utah	35	70	1,280	974	6	11	29	15	-	-
Nev.	150	144	2,126	2,780	3	3	14	6	-	-
PACIFIC	2,615	2,655	53,227	73,046	165	142	190	152	5	4
Wash.	264	285	8,064	7,694	24	U	20	38	-	-
Oreg.	196	110	3,938	4,176	25	18	54	24	5	4
Calif.	2,090	2,208	36,788	57,374	115	121	86	78	-	-
Alaska	12	14	1,991	1,569	-	-	5	3	-	-
Hawaii	53	38	2,446	2,233	1	3	25	9	-	-
Guam	2	8	-	240	-	-	N	N	-	-
P.R.	601	580	1,625	1,530	-	-	-	1	-	-
V.I.	60	2	30	106	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	2	U	122	U	-	U	-	U	-	U

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

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

† Chlamydia refers to genital infections caused by *C. trachomatis*.

§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update June 30, 2002.

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	<i>Escherichia coli</i>		Giardiasis	Gonorrhea		<i>Haemophilus influenzae</i> , Invasive			
	Shiga Toxin Positive, Not Serogrouped					All Ages, All Serotypes		Age <5 Years	
	Cum. 2002	Cum. 2001						Serotype B	
								Cum. 2002	Cum. 2001
UNITED STATES	21	5	7,783	172,616	197,725	937	923	12	17
NEW ENGLAND	-	1	801	4,206	3,330	67	63	-	1
Maine	-	-	87	67	79	1	1	-	-
N.H.	-	-	26	64	91	5	-	-	-
Vt.	-	1	67	55	43	5	3	-	-
Mass.	-	-	395	1,886	1,410	33	34	-	1
R.I.	-	-	68	500	414	10	2	-	-
Conn.	-	-	158	1,634	1,293	13	23	-	-
MID. ATLANTIC	-	-	1,725	18,949	22,908	164	131	3	3
Upstate N.Y.	-	-	595	4,801	4,573	72	41	2	-
N.Y. City	-	-	684	6,133	7,176	37	34	-	-
N.J.	-	-	148	2,982	4,087	36	31	-	-
Pa.	-	-	298	5,033	7,072	19	25	1	3
E.N. CENTRAL	9	2	1,428	34,528	41,133	155	170	2	2
Ohio	9	2	448	10,092	11,184	61	49	-	1
Ind.	-	-	-	3,994	3,656	32	32	1	-
Ill.	-	-	325	9,431	13,106	45	58	-	-
Mich.	-	-	423	7,900	9,884	10	10	1	-
Wis.	-	-	232	3,111	3,303	7	21	-	1
W.N. CENTRAL	-	-	954	9,075	9,244	38	41	-	1
Minn.	-	-	340	1,544	1,427	25	23	-	-
Iowa	-	-	138	619	700	1	-	-	-
Mo.	N	N	269	4,578	4,724	9	12	-	-
N. Dak.	-	-	11	28	20	-	4	-	-
S. Dak.	-	-	38	147	146	-	-	-	-
Nebr.	-	-	74	652	683	-	1	-	1
Kans.	-	-	84	1,507	1,544	3	1	-	-
S. ATLANTIC	-	-	1,331	46,558	50,748	228	225	1	1
Del.	-	-	26	911	931	-	-	-	-
Md.	-	-	55	4,732	4,997	54	58	1	-
D.C.	-	-	22	1,590	1,670	-	-	-	-
Va.	-	-	118	5,497	5,641	19	18	-	-
W. Va.	-	-	26	558	358	8	8	-	1
N.C.	-	-	-	9,482	8,905	22	32	-	-
S.C.	-	-	35	4,379	6,747	11	4	-	-
Ga.	-	-	511	8,301	9,749	67	60	-	-
Fla.	-	-	538	11,108	11,750	47	45	-	-
E.S. CENTRAL	4	1	179	16,338	18,396	41	56	1	-
Ky.	4	1	-	1,982	1,942	4	2	-	-
Tenn.	-	-	81	5,192	5,681	21	27	-	-
Ala.	-	-	98	5,539	6,259	11	25	1	-
Miss.	-	-	-	3,625	4,514	5	2	-	-
W.S. CENTRAL	-	-	96	26,539	30,110	35	36	2	1
Ark.	-	-	72	2,038	2,799	1	-	-	-
La.	-	-	1	6,540	7,127	2	6	-	-
Okla.	-	-	23	2,665	2,829	30	29	-	-
Tex.	-	-	-	15,296	17,355	2	1	2	1
MOUNTAIN	8	1	745	5,473	5,897	124	100	2	4
Mont.	-	-	40	56	72	-	-	-	-
Idaho	-	-	57	44	42	2	1	-	-
Wyo.	-	-	13	35	34	1	1	-	-
Colo.	8	1	237	1,915	1,801	24	28	-	-
N. Mex.	-	-	86	623	548	19	15	-	1
Ariz.	-	-	108	2,028	2,330	59	40	1	1
Utah	-	-	130	122	87	14	5	-	-
Nev.	-	-	74	650	983	5	10	1	2
PACIFIC	-	-	524	10,950	15,959	85	101	1	4
Wash.	-	-	193	1,590	1,678	2	1	1	-
Oreg.	-	-	226	469	660	43	31	-	-
Calif.	-	-	-	8,185	13,037	12	45	-	4
Alaska	-	-	51	351	225	1	3	-	-
Hawaii	-	-	54	355	359	27	21	-	-
Guam	-	-	-	-	27	-	-	-	-
P.R.	-	-	11	241	352	1	1	-	-
V.I.	-	-	-	17	16	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	12	U	-	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	Haemophilus influenzae, Invasive				Hepatitis (Viral, Acute), By Type					
	Age <5 Years				A		B		C; Non-A, Non-B	
	Non-Serotype B		Unknown Serotype		Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001						
UNITED STATES	146	152	15	18	4,642	5,180	3,631	3,981	1,947	2,371
NEW ENGLAND	7	10	-	-	191	304	125	74	20	28
Maine	-	-	-	-	6	5	5	5	-	-
N.H.	-	-	-	-	11	10	12	10	-	-
Vt.	-	-	-	-	1	7	3	5	12	6
Mass.	4	7	-	-	84	122	70	13	8	22
R.I.	-	-	-	-	27	16	17	14	-	-
Conn.	3	3	-	-	62	144	18	27	-	-
MID. ATLANTIC	21	20	-	3	575	678	791	788	990	698
Upstate N.Y.	8	6	-	1	119	156	81	71	37	18
N.Y. City	6	5	-	-	240	244	437	371	-	-
N.J.	4	3	-	-	64	163	154	169	937	640
Pa.	3	6	-	2	152	115	119	177	16	40
E.N. CENTRAL	23	31	1	1	648	629	461	487	61	110
Ohio	7	9	1	-	206	143	64	69	6	7
Ind.	7	5	-	1	32	49	18	27	-	1
Ill.	7	11	-	-	173	209	40	62	9	9
Mich.	1	-	-	-	136	185	339	305	46	93
Wis.	1	6	-	-	101	43	-	24	-	-
W.N. CENTRAL	3	2	3	3	204	219	128	121	518	725
Minn.	3	1	1	1	26	16	9	11	-	3
Iowa	-	-	-	-	52	22	11	12	1	-
Mo.	-	-	2	2	56	47	74	70	507	714
N. Dak.	-	1	-	-	1	2	4	-	-	-
S. Dak.	-	-	-	-	3	1	-	1	-	-
Nebr.	-	-	-	-	11	28	18	17	8	3
Kans.	-	-	-	-	55	103	12	10	2	5
S. ATLANTIC	35	30	2	5	1,389	971	920	717	93	40
Del.	-	-	-	-	9	4	7	15	5	2
Md.	2	4	-	1	172	139	74	78	8	4
D.C.	-	-	-	-	52	28	10	11	-	-
Va.	3	4	-	-	53	76	120	88	2	-
W. Va.	-	1	1	-	12	7	13	18	1	8
N.C.	3	1	-	4	139	87	144	111	15	10
S.C.	4	1	-	-	43	40	57	17	4	5
Ga.	16	14	-	-	326	509	286	214	24	-
Fla.	7	5	1	-	583	81	209	165	34	11
E.S. CENTRAL	9	11	1	2	159	218	194	271	112	151
Ky.	1	-	-	1	36	57	31	31	2	5
Tenn.	5	5	-	-	61	81	75	137	21	46
Ala.	3	5	1	1	24	62	44	54	4	2
Miss.	-	1	-	-	38	18	44	49	85	98
W.S. CENTRAL	6	4	-	-	80	571	222	497	23	491
Ark.	-	-	-	-	28	42	64	59	4	5
La.	1	-	-	-	21	64	29	74	15	104
Okla.	5	4	-	-	30	85	17	68	4	4
Tex.	-	-	-	-	1	380	112	296	-	378
MOUNTAIN	24	12	7	1	358	447	331	285	60	39
Mont.	-	-	-	-	9	8	3	2	-	1
Idaho	1	-	-	-	22	47	5	8	-	1
Wyo.	-	-	-	-	2	3	11	1	7	4
Colo.	2	-	-	-	59	43	53	66	25	5
N. Mex.	4	6	1	1	9	23	70	73	1	11
Ariz.	12	4	5	-	193	227	129	93	4	9
Utah	4	2	-	-	35	46	25	15	4	2
Nev.	1	-	1	-	29	50	35	27	19	6
PACIFIC	18	32	1	3	1,038	1,143	459	741	70	89
Wash.	1	-	-	1	102	67	34	76	15	16
Oreg.	4	5	-	-	50	73	80	93	14	11
Calif.	9	25	1	1	878	978	337	553	41	62
Alaska	1	1	-	-	7	14	4	5	-	-
Hawaii	3	1	-	1	1	11	4	14	-	-
Guam	-	-	-	-	-	1	-	-	-	-
P.R.	-	1	-	-	59	104	50	153	-	1
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	32	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	Legionellosis		Listeriosis		Lyme Disease		Malaria		Measles Total	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	472	533	233	308	4,711	6,651	632	795	13 [†]	85 [§]
NEW ENGLAND	28	26	28	29	619	1,845	37	48	-	5
Maine	2	2	2	-	53	-	2	3	-	-
N.H.	4	5	2	1	78	33	5	2	-	-
Vt.	3	4	1	1	11	5	1	-	-	1
Mass.	13	7	16	15	349	730	15	23	-	3
R.I.	1	2	1	1	93	158	3	3	-	-
Conn.	5	6	6	11	35	919	11	17	-	1
MID. ATLANTIC	117	111	43	53	3,307	3,473	142	216	5	13
Upstate N.Y.	41	29	20	15	2,087	1,025	26	32	-	4
N.Y. City	20	15	11	14	77	51	84	131	5	3
N.J.	12	9	3	10	181	1,308	19	30	-	1
Pa.	44	58	9	14	962	1,089	13	23	-	5
E. N. CENTRAL	123	144	28	48	38	492	74	103	1	10
Ohio	63	64	10	9	32	11	12	15	1	3
Ind.	10	10	4	4	6	9	3	13	-	4
Ill.	-	19	1	18	-	24	19	44	-	3
Mich.	32	28	10	14	-	4	32	19	-	-
Wis.	18	23	3	3	U	444	8	12	-	-
W. N. CENTRAL	27	36	8	7	125	145	45	25	-	4
Minn.	2	9	-	-	80	102	16	6	-	2
Iowa	6	6	1	-	16	16	2	3	-	-
Mo.	10	12	5	4	23	21	12	9	-	2
N. Dak.	-	1	1	-	-	-	1	-	-	-
S. Dak.	2	3	-	-	-	-	-	-	-	-
Nebr.	7	4	-	1	1	4	5	2	-	-
Kans.	-	1	1	2	5	2	9	5	-	-
S. ATLANTIC	96	92	40	36	512	546	174	168	1	4
Del.	6	2	-	2	55	80	1	1	-	-
Md.	16	23	6	5	307	339	53	69	-	3
D.C.	5	7	-	-	12	7	7	10	-	-
Va.	10	14	3	7	37	87	13	35	-	-
W. Va.	N	N	-	4	5	8	3	1	-	-
N.C.	5	5	3	2	59	18	9	9	-	-
S.C.	5	4	6	3	5	2	5	4	-	-
Ga.	10	9	10	7	1	-	57	25	-	1
Fla.	39	28	12	6	31	5	26	14	1	-
E. S. CENTRAL	15	39	8	11	27	28	9	19	-	2
Ky.	7	9	2	4	13	10	2	7	-	2
Tenn.	3	18	3	3	8	8	2	7	-	-
Ala.	5	8	3	4	6	6	3	3	-	-
Miss.	-	4	-	-	-	4	2	2	-	-
W. S. CENTRAL	3	17	5	25	3	61	4	56	1	1
Ark.	-	-	-	1	1	-	1	3	-	-
La.	1	6	-	-	1	4	3	4	-	-
Okla.	2	3	5	1	-	-	-	2	-	-
Tex.	-	8	-	23	1	57	-	47	1	1
MOUNTAIN	22	31	20	25	13	6	31	31	1	1
Mont.	3	-	-	-	-	-	1	2	-	-
Idaho	-	2	2	1	2	3	-	3	-	1
Wyo.	1	2	-	1	-	1	-	-	-	-
Colo.	4	11	3	5	3	-	16	17	-	-
N. Mex.	1	2	2	6	1	-	2	2	-	-
Ariz.	5	8	9	6	2	-	5	3	-	-
Utah	7	4	3	1	4	-	4	2	-	-
Nev.	1	2	1	5	1	2	3	2	1	-
PACIFIC	41	37	53	74	67	55	116	129	4	45
Wash.	3	6	5	3	3	1	11	4	-	15
Oreg.	N	N	4	4	9	6	6	8	-	2
Calif.	38	26	39	64	54	46	91	109	3	22
Alaska	-	1	-	-	1	2	2	1	-	-
Hawaii	-	4	5	3	N	N	6	7	1	6
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	2	1	-	N	N	-	3	-	-
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

[†] Of 13 cases reported, four were indigenous and nine were imported from another country.

[§] Of 85 cases reported, 41 were indigenous and 44 were imported from another country.

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	Meningococcal Disease		Mumps		Pertussis		Rabies, Animal	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	987	1,565	161	132	3,646	2,865	3,071	3,958
NEW ENGLAND	67	75	7	-	351	263	452	363
Maine	6	1	-	-	5	-	27	40
N.H.	8	9	4	-	6	14	11	6
Vt.	4	5	-	-	66	24	64	37
Mass.	31	44	2	-	264	209	156	132
R.I.	5	2	-	-	4	2	35	31
Conn.	13	14	1	-	6	14	159	117
MID. ATLANTIC	105	164	14	15	165	202	582	668
Upstate N.Y.	31	45	2	2	118	105	349	409
N.Y. City	13	26	1	9	8	33	10	16
N.J.	22	30	1	-	3	8	91	109
Pa.	39	63	10	4	36	56	132	134
E.N. CENTRAL	148	225	18	17	454	385	46	52
Ohio	56	61	3	1	242	187	13	16
Ind.	23	25	2	1	24	27	12	1
Ill.	30	58	6	12	76	43	8	8
Mich.	27	50	6	2	33	31	13	20
Wis.	12	31	1	1	79	97	-	7
W.N. CENTRAL	92	99	12	6	339	132	238	210
Minn.	22	15	3	2	117	31	19	20
Iowa	12	21	1	-	115	16	42	44
Mo.	35	35	3	-	69	64	21	20
N. Dak.	-	5	1	-	-	-	11	24
S. Dak.	2	4	-	-	5	3	41	32
Nebr.	16	10	-	1	3	4	-	4
Kans.	5	9	4	3	30	14	104	66
S. ATLANTIC	168	241	17	18	225	135	1,285	1,385
Del.	6	3	-	-	2	-	24	22
Md.	4	34	3	4	26	20	165	279
D.C.	-	-	-	-	1	1	-	-
Va.	28	30	3	2	92	13	297	249
W. Va.	-	10	-	-	17	1	103	76
N.C.	19	56	1	1	20	46	387	337
S.C.	15	25	2	1	28	22	43	75
Ga.	25	34	4	7	16	17	132	230
Fla.	71	49	4	3	23	15	134	117
E.S. CENTRAL	61	104	11	3	124	66	98	149
Ky.	11	19	4	1	49	16	17	15
Tenn.	23	44	2	-	45	29	53	106
Ala.	16	29	2	-	23	18	28	28
Miss.	11	12	3	2	7	3	-	-
W.S. CENTRAL	60	243	11	9	868	264	72	761
Ark.	20	14	-	-	374	12	-	-
La.	23	60	1	2	4	4	-	5
Okla.	16	22	-	-	51	9	72	45
Tex.	1	147	10	7	439	239	-	711
MOUNTAIN	65	72	13	9	507	927	142	147
Mont.	2	3	-	-	3	14	8	21
Idaho	3	7	1	-	46	165	11	2
Wyo.	-	4	-	1	7	-	14	20
Colo.	20	27	2	2	195	176	23	-
N. Mex.	3	9	1	2	111	55	4	7
Ariz.	20	11	1	1	94	461	78	94
Utah	4	7	5	1	31	45	2	2
Nev.	13	4	3	2	20	11	2	1
PACIFIC	221	342	58	55	613	491	156	223
Wash.	44	46	-	1	269	82	-	-
Oreg.	34	41	N	N	119	33	3	-
Calif.	136	244	47	28	213	347	129	185
Alaska	1	2	-	1	4	2	24	38
Hawaii	6	9	11	25	8	27	-	-
Guam	-	-	-	-	-	-	-	-
P.R.	3	4	-	-	1	-	46	63
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	1	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	Rocky Mountain Spotted Fever		Rubella				Salmonellosis	
	Cum. 2002	Cum. 2001	Rubella		Congenital Rubella		Cum. 2002	Cum. 2001
			Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001		
UNITED STATES	405	265	5	15	2	-	17,346	19,149
NEW ENGLAND	-	2	-	-	-	-	1,047	1,360
Maine	-	-	-	-	-	-	76	116
N.H.	-	-	-	-	-	-	66	111
Vt.	-	-	-	-	-	-	39	40
Mass.	-	2	-	-	-	-	585	783
R.I.	-	-	-	-	-	-	72	64
Conn.	-	-	-	-	-	-	209	246
MID. ATLANTIC	24	13	3	6	-	-	2,265	2,574
Upstate N.Y.	7	-	2	1	-	-	764	595
N.Y. City	2	1	-	4	-	-	668	690
N.J.	5	3	1	1	-	-	329	620
Pa.	10	9	-	-	-	-	504	669
E.N. CENTRAL	9	14	-	2	-	-	2,781	2,695
Ohio	7	1	-	-	-	-	751	742
Ind.	1	1	-	-	-	-	250	265
Ill.	-	12	-	2	-	-	843	759
Mich.	1	-	-	-	-	-	501	481
Wis.	-	-	-	-	-	-	436	448
W.N. CENTRAL	61	38	-	3	-	-	1,277	1,100
Minn.	-	-	-	-	-	-	297	341
Iowa	1	1	-	1	-	-	222	168
Mo.	56	35	-	1	-	-	456	279
N. Dak.	-	-	-	-	-	-	25	15
S. Dak.	-	2	-	-	-	-	46	74
Nebr.	4	-	-	-	-	-	70	82
Kans.	-	-	-	1	-	-	161	141
S. ATLANTIC	213	121	-	3	-	-	4,213	4,243
Del.	2	-	-	-	-	-	31	45
Md.	27	22	-	-	-	-	444	424
D.C.	-	-	-	-	-	-	41	39
Va.	13	13	-	-	-	-	501	773
W. Va.	1	-	-	-	-	-	60	56
N.C.	117	63	-	-	-	-	595	588
S.C.	32	13	-	2	-	-	245	398
Ga.	18	7	-	-	-	-	916	779
Fla.	3	3	-	1	-	-	1,380	1,141
E.S. CENTRAL	39	49	-	-	1	-	1,214	1,082
Ky.	3	1	-	-	-	-	180	182
Tenn.	26	36	-	-	1	-	324	284
Ala.	10	6	-	-	-	-	351	315
Miss.	-	6	-	-	-	-	359	301
W.S. CENTRAL	47	21	1	-	-	-	717	2,259
Ark.	12	4	-	-	-	-	375	311
La.	-	2	-	-	-	-	138	393
Okla.	35	15	-	-	-	-	202	175
Tex.	-	-	1	-	-	-	2	1,380
MOUNTAIN	9	7	-	-	-	-	1,126	1,136
Mont.	1	1	-	-	-	-	59	44
Idaho	-	1	-	-	-	-	68	76
Wyo.	2	2	-	-	-	-	32	37
Colo.	1	-	-	-	-	-	284	310
N. Mex.	-	1	-	-	-	-	150	132
Ariz.	-	-	-	-	-	-	313	318
Utah	-	2	-	-	-	-	105	123
Nev.	5	-	-	-	-	-	115	96
PACIFIC	3	-	1	1	1	-	2,706	2,700
Wash.	-	-	-	-	-	-	244	256
Oreg.	1	-	-	-	-	-	213	165
Calif.	2	-	1	-	-	-	2,047	2,054
Alaska	-	-	-	-	-	-	39	27
Hawaii	-	-	-	1	1	-	163	198
Guam	-	-	-	-	-	-	-	18
P.R.	-	-	-	3	-	-	106	512
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	23	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	Shigellosis		Streptococcal Disease, Invasive, Group A		Streptococcus pneumoniae, Drug Resistant, Invasive		Streptococcus pneumoniae, Invasive (<5 Years)	
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
UNITED STATES	7,758	9,183	2,676	2,444	1,363	1,844	155	275
NEW ENGLAND	143	144	125	164	8	89	1	30
Maine	3	6	16	10	-	-	-	-
N.H.	5	2	25	N	-	-	N	N
Vt.	-	3	9	9	3	7	1	-
Mass.	95	101	62	53	N	N	N	N
R.I.	7	8	13	8	5	-	-	2
Conn.	33	24	-	84	-	82	-	28
MID. ATLANTIC	453	895	457	439	79	118	48	74
Upstate N.Y.	125	334	215	192	71	116	48	74
N.Y. City	207	243	115	126	U	U	U	U
N.J.	48	167	91	76	N	N	N	N
Pa.	73	151	36	45	8	2	-	-
E.N. CENTRAL	804	1,805	480	583	125	128	65	75
Ohio	367	1,025	150	148	-	-	-	-
Ind.	44	132	32	46	120	128	40	38
Ill.	229	315	98	188	2	-	-	37
Mich.	91	167	200	150	3	-	N	N
Wis.	73	166	-	51	N	N	25	-
W.N. CENTRAL	663	865	177	247	149	90	35	31
Minn.	139	258	92	104	48	40	35	24
Iowa	69	257	-	-	N	N	N	N
Mo.	93	156	37	55	6	9	-	-
N. Dak.	15	13	-	7	1	4	-	7
S. Dak.	149	87	10	7	1	3	-	-
Nebr.	141	46	14	29	25	9	N	N
Kans.	57	48	24	45	68	25	N	N
S. ATLANTIC	3,030	1,217	521	422	840	990	1	4
Del.	14	5	1	2	3	2	N	N
Md.	561	69	89	N	N	N	N	N
D.C.	35	30	5	15	46	5	1	3
Va.	559	123	51	61	N	N	N	N
W. Va.	4	7	13	17	34	37	-	1
N.C.	158	214	96	111	N	N	U	U
S.C.	52	150	28	7	132	202	N	N
Ga.	962	157	130	137	251	282	N	N
Fla.	685	462	108	72	374	462	N	N
E. S. CENTRAL	744	875	69	60	98	183	-	-
Ky.	80	325	12	25	11	22	N	N
Tenn.	34	59	57	35	87	160	N	N
Ala.	400	150	-	-	-	1	N	N
Miss.	230	341	-	-	-	-	-	-
W.S. CENTRAL	466	1,641	40	230	35	215	3	61
Ark.	118	400	5	-	5	14	-	-
La.	80	154	-	-	30	201	1	61
Okla.	267	24	34	33	N	N	2	-
Tex.	1	1,063	1	197	N	N	-	-
MOUNTAIN	344	481	459	258	29	30	2	-
Mont.	3	1	-	-	-	-	-	-
Idaho	4	23	5	4	N	N	N	N
Wyo.	3	2	7	7	9	5	-	-
Colo.	69	105	153	106	-	-	-	-
N. Mex.	62	67	71	54	19	23	-	-
Ariz.	162	218	198	84	-	-	N	N
Utah	23	30	25	3	1	-	2	-
Nev.	18	35	-	-	-	2	-	-
PACIFIC	1,111	1,260	348	41	-	1	-	-
Wash.	71	102	36	-	-	-	N	N
Oreg.	55	69	N	N	N	N	N	N
Calif.	949	1,054	270	-	N	N	N	N
Alaska	2	4	-	-	-	-	N	N
Hawaii	34	31	42	41	-	1	-	-
Guam	-	32	-	1	-	-	-	-
P.R.	5	13	N	N	-	-	N	N
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	-	-	U	U
C.N.M.I.	15	U	-	U	-	-	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending July 27, 2002, and July 28, 2001 (30th Week)*

Reporting Area	Syphilis				Tuberculosis		Typhoid Fever	
	Primary & Secondary		Congenital		Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001
	Cum. 2002	Cum. 2001	Cum. 2002	Cum. 2001				
UNITED STATES	3,319	3,277	178	301	6,319	7,615	141	181
NEW ENGLAND	74	28	-	3	211	264	10	8
Maine	-	-	-	-	5	11	-	1
N.H.	2	1	-	-	7	11	-	1
Vt.	1	2	-	-	-	4	-	-
Mass.	54	16	-	2	114	131	8	5
R.I.	2	3	-	-	21	38	-	-
Conn.	15	6	-	1	64	69	2	1
MID. ATLANTIC	368	283	30	44	1,182	1,253	39	61
Upstate N.Y.	20	12	4	2	161	179	5	14
N.Y. City	204	158	11	21	620	642	19	22
N.J.	73	56	14	21	283	293	12	22
Pa.	71	57	1	-	118	139	3	3
E.N. CENTRAL	585	565	24	44	637	767	14	25
Ohio	81	51	-	2	99	152	5	3
Ind.	43	98	-	6	60	53	2	2
Ill.	153	179	18	28	312	375	1	12
Mich.	297	220	6	5	125	147	3	5
Wis.	11	17	-	3	41	40	3	3
W.N. CENTRAL	53	49	-	7	300	299	6	7
Minn.	21	23	-	2	130	132	3	3
Iowa	2	3	-	-	17	18	-	-
Mo.	13	10	-	4	84	74	1	4
N. Dak.	-	-	-	-	1	3	-	-
S. Dak.	-	-	-	-	9	8	-	-
Nebr.	4	2	-	-	9	21	2	-
Kans.	13	11	-	1	50	43	-	-
S. ATLANTIC	916	1,152	44	77	1,259	1,462	20	22
Del.	9	9	-	-	13	9	-	-
Md.	111	144	8	3	150	120	5	7
D.C.	54	16	1	2	-	42	-	-
Va.	44	64	1	4	98	130	-	6
W. Va.	-	-	-	-	14	19	-	-
N.C.	169	263	15	8	175	192	1	1
S.C.	70	157	5	18	104	119	-	-
Ga.	170	202	1	16	201	264	7	6
Fla.	289	297	13	26	504	567	7	2
E. S. CENTRAL	308	353	12	22	397	462	4	-
Ky.	58	26	2	-	71	73	4	-
Tenn.	113	200	3	14	150	166	-	-
Ala.	105	64	6	4	124	152	-	-
Miss.	32	63	1	4	52	71	-	-
W.S. CENTRAL	475	406	40	50	848	1,213	-	12
Ark.	15	23	1	5	73	85	-	-
La.	79	83	-	-	-	78	-	-
Okla.	38	40	2	4	73	82	-	-
Tex.	343	260	37	41	702	968	-	12
MOUNTAIN	156	120	10	17	199	291	10	6
Mont.	-	-	-	-	6	-	-	1
Idaho	1	-	1	-	8	6	-	-
Wyo.	-	-	-	-	2	2	-	-
Colo.	11	15	1	1	27	74	5	-
N. Mex.	25	10	-	2	21	37	-	-
Ariz.	111	85	8	14	105	112	-	1
Utah	3	7	-	-	17	15	3	-
Nev.	5	3	-	-	13	45	2	4
PACIFIC	384	321	18	37	1,286	1,604	38	40
Wash.	27	34	1	-	133	139	4	3
Oreg.	7	7	1	-	50	56	2	3
Calif.	344	274	15	37	989	1,297	31	31
Alaska	-	-	-	-	33	26	-	1
Hawaii	6	6	1	-	81	86	1	2
Guam	-	2	-	1	-	37	-	2
P.R.	132	150	10	2	33	53	-	-
V.I.	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	13	U	-	U	27	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.

* Incidence data for reporting year 2001 and 2002 are provisional and cumulative (year-to-date).

TABLE III. Deaths in 122 U.S. cities,* week ending July 27, 2002 (30th Week)

Reporting Area	All Causes, By Age (Years)							P&I [†] Total	Reporting Area	All Causes, By Age (Years)							P&I [†] Total
	All Ages	≥65	45-64	25-44	1-24	<1	All Ages			≥65	45-64	25-44	1-24	<1			
NEW ENGLAND	367	255	77	29	1	5	19	S. ATLANTIC	1,180	732	270	104	46	28	74		
Boston, Mass.	U	U	U	U	U	U	U	Atlanta, Ga.	125	74	31	13	6	1	4		
Bridgeport, Conn.	40	31	8	1	-	-	1	Baltimore, Md.	211	119	49	28	11	4	19		
Cambridge, Mass.	15	10	3	2	-	-	-	Charlotte, N.C.	81	53	16	5	6	1	11		
Fall River, Mass.	40	27	12	1	-	-	-	Jacksonville, Fla.	146	99	26	14	4	3	8		
Hartford, Conn.	U	U	U	U	U	U	U	Miami, Fla.	102	57	29	9	5	2	6		
Lowell, Mass.	21	18	1	1	-	1	2	Norfolk, Va.	65	37	12	3	5	8	3		
Lynn, Mass.	12	10	1	1	-	-	-	Richmond, Va.	56	36	16	3	-	1	3		
New Bedford, Mass.	18	14	3	1	-	-	-	Savannah, Ga.	49	38	9	-	1	1	7		
New Haven, Conn.	42	29	7	4	-	2	5	St. Petersburg, Fla.	53	36	11	4	1	1	4		
Providence, R.I.	67	43	19	5	-	-	3	Tampa, Fla.	175	111	43	12	5	4	7		
Somerville, Mass.	2	1	-	-	1	-	-	Washington, D.C.	99	54	28	13	2	2	2		
Springfield, Mass.	42	24	13	4	-	1	5	Wilmington, Del.	18	18	-	-	-	-	-		
Waterbury, Conn.	20	14	1	4	-	1	1	E.S. CENTRAL	896	582	196	67	35	16	64		
Worcester, Mass.	48	34	9	5	-	-	2	Birmingham, Ala.	193	117	50	13	8	5	18		
MID. ATLANTIC	1,950	1,336	397	144	38	32	82	Chattanooga, Tenn.	65	49	11	4	1	-	6		
Albany, N.Y.	42	27	8	4	1	2	1	Knoxville, Tenn.	101	66	21	9	4	1	6		
Allentown, Pa.	19	17	2	-	-	-	1	Lexington, Ky.	68	41	19	3	4	1	8		
Buffalo, N.Y.	U	U	U	U	U	U	U	Memphis, Tenn.	178	112	41	15	7	3	18		
Camden, N.J.	27	18	4	1	2	2	1	Mobile, Ala.	84	54	20	5	5	-	4		
Elizabeth, N.J.	16	8	4	4	-	-	-	Montgomery, Ala.	37	25	4	6	2	-	2		
Erie, Pa.	37	31	5	1	-	-	3	Nashville, Tenn.	170	118	30	12	4	6	2		
Jersey City, N.J.	34	21	9	4	-	-	-	W.S. CENTRAL	1,378	883	311	106	40	38	97		
New York City, N.Y.	1,091	749	229	76	17	17	36	Austin, Tex.	71	47	13	7	1	3	6		
Newark, N.J.	46	24	9	11	1	1	2	Baton Rouge, La.	66	44	15	5	1	1	-		
Paterson, N.J.	20	7	8	4	-	1	1	Corpus Christi, Tex.	49	32	11	4	2	-	4		
Philadelphia, Pa.	276	180	58	23	9	6	14	Dallas, Tex.	197	124	47	14	7	5	12		
Pittsburgh, Pa. [§]	34	24	5	3	1	1	1	El Paso, Tex.	62	35	19	5	1	2	3		
Reading, Pa.	27	22	5	-	-	-	-	Ft. Worth, Tex.	118	78	29	7	3	1	8		
Rochester, N.Y.	137	100	24	6	6	1	9	Houston, Tex.	331	194	81	37	13	6	24		
Schenectady, N.Y.	U	U	U	U	U	U	U	Little Rock, Ark.	63	40	13	3	3	4	3		
Scranton, Pa.	24	20	2	2	-	-	1	New Orleans, La.	U	U	U	U	U	U	U		
Syracuse, N.Y.	48	38	9	-	1	-	9	San Antonio, Tex.	239	175	39	14	6	5	18		
Trenton, N.J.	29	16	10	2	-	1	-	Shreveport, La.	66	46	14	3	2	1	7		
Utica, N.Y.	21	16	5	-	-	-	-	Tulsa, Okla.	116	68	30	7	1	10	12		
Yonkers, N.Y.	22	18	1	3	-	-	3	MOUNTAIN	812	524	171	70	31	16	49		
E.N. CENTRAL	1,342	889	290	90	30	42	64	Albuquerque, N.M.	106	68	25	8	5	-	4		
Akron, Ohio	U	U	U	U	U	U	U	Boise, Idaho	36	28	5	1	1	1	3		
Canton, Ohio	49	37	7	3	-	2	6	Colorado Springs, Colo.	66	44	11	8	2	1	5		
Chicago, Ill.	U	U	U	U	U	U	U	Denver, Colo.	130	76	34	11	3	6	5		
Cincinnati, Ohio	U	U	U	U	U	U	U	Las Vegas, Nev.	227	141	48	23	11	4	11		
Cleveland, Ohio	133	77	34	14	-	8	-	Ogden, Utah	U	U	U	U	U	U	U		
Columbus, Ohio	162	108	31	12	3	8	9	Phoenix, Ariz.	U	U	U	U	U	U	U		
Dayton, Ohio	123	94	20	6	2	1	6	Pueblo, Colo.	27	18	6	3	-	-	2		
Detroit, Mich.	111	57	29	17	4	3	7	Salt Lake City, Utah	90	61	14	6	6	3	8		
Evansville, Ind.	33	25	4	4	-	-	2	Tucson, Ariz.	130	88	28	10	3	1	11		
Fort Wayne, Ind.	53	33	16	2	1	1	1	PACIFIC	1,789	1,244	361	113	42	28	153		
Gary, Ind.	U	U	U	U	U	U	U	Berkeley, Calif.	13	9	3	-	-	1	5		
Grand Rapids, Mich.	58	43	7	2	5	1	6	Fresno, Calif.	149	102	27	13	5	2	12		
Indianapolis, Ind.	186	105	56	12	5	8	5	Glendale, Calif.	11	10	1	-	-	-	-		
Lansing, Mich.	53	32	18	-	3	-	5	Honolulu, Hawaii	91	63	21	6	1	-	8		
Milwaukee, Wis.	123	83	27	7	2	4	7	Long Beach, Calif.	69	49	16	1	3	-	7		
Peoria, Ill.	U	U	U	U	U	U	U	Los Angeles, Calif.	481	328	102	32	14	5	35		
Rockford, Ill.	47	36	7	2	-	2	3	Pasadena, Calif.	20	13	5	-	-	2	4		
South Bend, Ind.	58	46	7	1	2	2	3	Portland, Ore.	156	110	33	9	3	1	6		
Toledo, Ohio	99	66	23	7	2	1	3	Sacramento, Calif.	168	117	36	8	3	4	21		
Youngstown, Ohio	54	47	4	1	1	1	1	San Diego, Calif.	133	90	23	15	2	3	14		
W.N. CENTRAL	656	450	123	44	21	18	46	San Francisco, Calif.	U	U	U	U	U	U	U		
Des Moines, Iowa	156	111	25	9	7	4	19	San Jose, Calif.	169	112	31	11	9	6	22		
Duluth, Minn.	45	36	7	2	-	-	4	Santa Cruz, Calif.	34	28	5	-	-	1	7		
Kansas City, Kans.	34	19	9	4	2	-	3	Seattle, Wash.	131	91	29	8	1	2	4		
Kansas City, Mo.	108	64	25	12	5	2	3	Spokane, Wash.	59	47	8	3	-	1	3		
Lincoln, Nebr.	U	U	U	U	U	U	U	Tacoma, Wash.	105	75	21	7	1	-	5		
Minneapolis, Minn.	79	57	13	4	3	2	7	TOTAL	10,370 [¶]	6,895	2,196	767	284	223	648		
Omaha, Nebr.	100	72	18	5	1	4	5										
St. Louis, Mo.	U	U	U	U	U	U	U										
St. Paul, Minn.	49	33	12	2	-	2	2										
Wichita, Kans.	85	58	14	6	3	4	3										

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. 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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