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Outbreaks of *Shigella sonnei* Infection Associated with Eating Fresh Parsley — United States and Canada, July–August 1998

In August 1998, the Minnesota Department of Health reported to CDC two restaurant-associated outbreaks of *Shigella sonnei* infections. Isolates from both outbreaks had two closely related pulsed-field gel electrophoresis (PFGE) patterns that differed only by a single band. Epidemiologic investigations implicated chopped, uncooked, curly parsley as the common vehicle for these outbreaks. Through inquiries to health departments and public health laboratories, six similar outbreaks were identified during July–August (in California [two], Massachusetts, and Florida in the United States and in Ontario and Alberta in Canada). Isolates from five of these outbreaks had the same PFGE pattern identified in the two outbreaks in Minnesota. This report describes the epidemiologic, traceback, environmental, and laboratory investigations, which implicated parsley imported from a farm in Mexico as the source of these outbreaks.

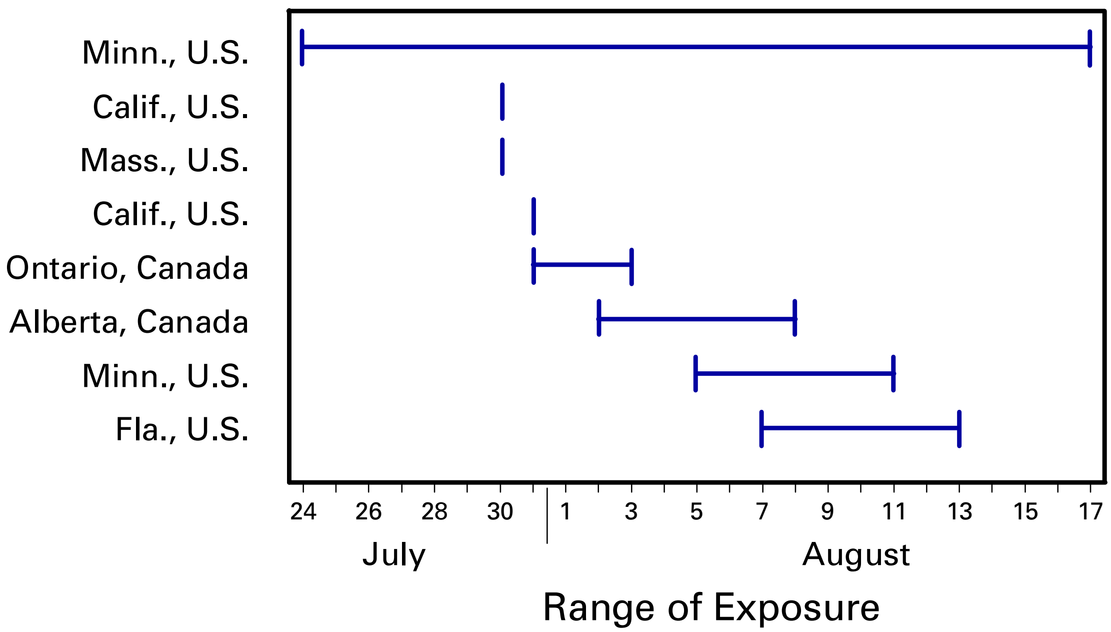
United States

Minnesota. On August 17, the Minnesota Department of Health received reports of shigellosis in two persons who ate at the same restaurant during July 24–August 17 (Figure 1). *S. sonnei* subsequently was isolated from stool samples of 43 ill restaurant patrons; an additional 167 persons had probable shigellosis (diarrhea [three or more loose stools during a 24-hour period] lasting ≥3 days or accompanied by fever). Eight (18%) of 44 restaurant employees had a similar illness; five had laboratory-confirmed *S. sonnei* infection. In a case-control study of 172 ill and 95 well restaurant patrons, five items were associated with illness: water (odds ratio [OR]=1.9; 95% confidence interval [CI]=1.0–3.8), ice (OR=3.7; 95% CI=1.6–8.6), potatoes (OR=2.6; 95% CI=1.5–4.6), uncooked parsley (OR=4.3; 95% CI=2.4–8.0), and raw tomato (OR=1.9; 95% CI=1.0–3.9). In a multivariate analysis, only uncooked parsley (OR=4.3; p<0.01) and ice (OR=6.9; p<0.01) remained significantly associated with illness.

California. On August 5, the Los Angeles County Department of Health Services was notified of two persons with shigellosis who ate at the same restaurant on July 31. Stool samples from six ill restaurant patrons yielded *S. sonnei*; an additional three had probable shigellosis (diarrhea [three or more loose stools during a 24-hour period], or any loose stools accompanied by fever). All 27 foodhandlers denied illness

Shigella sonnei — *Continued*

FIGURE 1. Range of dates of exposure for persons infected with *Shigella sonnei* in outbreaks associated with eating fresh parsley — United States* and Canada, July–August, 1998



*Minnesota and California each reported two outbreaks.

and had stool samples that were negative for *S. sonnei*. In an unmatched comparison with 10 well dining companions, ill patrons were significantly more likely to have eaten foods sprinkled with chopped, uncooked parsley (OR=32.0; 95% CI=1.8–1381.4).

Massachusetts. On August 11, the Massachusetts Department of Health was notified of six persons who reported illness after eating at a restaurant lunch party on July 30. Stool samples from three persons yielded *S. sonnei*; an additional three had probable shigellosis (diarrhea within 4 days of the July 30 meal). Chopped, uncooked parsley was served on chicken sandwiches and in cole slaw served at the lunch. In a cohort study of 23 lunch attendees, illness was significantly associated with eating chicken sandwiches (relative risk [RR]=10.0; 95% CI=2.7–37.2) or eating uncooked parsley with any item (RR=10.0; 95% CI=1.4–70.2). All restaurant employees except one submitted a stool sample for culture; all were negative for *S. sonnei*.

Canada

On August 10, the Ontario Ministry of Health was notified of a family of three persons with *S. sonnei* infection who attended a food fair during July 31–August 3. Laboratory-based surveillance identified 32 additional persons with *S. sonnei* infection who had eaten at a specific kiosk at the fair or at the restaurant that had supplied the kiosk. Of the 35 persons, 20 were questioned about food history; all reported eating a smoked salmon and pasta dish made with fresh chopped parsley. Stool samples from six (38%) of 16 foodhandlers, including the four who handled the parsley, were negative for *S. sonnei*. One child who had eaten at the kiosk was the index patient at a day care center, from which five secondary cases of shigellosis were reported.

Other Investigations

In addition to these four outbreaks, four additional restaurant-associated outbreaks of *S. sonnei* were identified, involving an additional 218 persons with culture-confirmed or probable shigellosis. Of the 111 persons interviewed, 106 (96%) reported eating chopped, uncooked, curly parsley. Isolates from three of these outbreaks (in Minnesota and California in the United States and in Alberta in Canada) matched the outbreak PFGE pattern. In the fourth outbreak (in Florida), one culture-confirmed case was identified; the isolate was not available for PFGE testing.

Traceback and Environmental Investigations

To determine the source(s) of parsley for the seven outbreaks linked by PFGE, state and provincial health departments, CDC, the Food and Drug Administration (FDA), and the Canadian Food Inspection Agency conducted traceback investigations. Farm A in Baja California, Mexico, was a possible source of parsley served in six of the seven outbreaks; four farms in California were possible sources of parsley in two to four of the seven outbreaks.

Field investigations of farm A by FDA and CDC found that the municipal water that supplied the packing shed was unchlorinated and vulnerable to contamination. This water was used for chilling the parsley in a hydrocooler immediately after harvest and for making ice with which the parsley was packaged for transport. Because the water in the hydrocooler was recirculated, bacterial contaminants in the water supply or on the parsley could have survived in the absence of chlorine and contaminated many boxes of parsley. Farm workers and village residents served by this water system reported drinking bottled water or water from other sources. Workers had limited hygiene education and limited sanitary facilities available on the farm at the time of the outbreak.

Foodhandlers at six (75%) of the eight implicated restaurants reported washing parsley before chopping it. Usually parsley was chopped in the morning and left at room temperature, sometimes until the end of the day, before it was served to customers.

Laboratory Investigations

The Minnesota Department of Health laboratory, which has tested isolates of *S. sonnei* by PFGE routinely since 1995, identified a previously unrecognized PFGE pattern of *S. sonnei* and a closely related pattern that differed by a single band associated with the two outbreaks in Minnesota. The pattern was distributed to other laboratories through PulseNet, the national molecular subtyping network for foodborne disease. In Minnesota and at CDC, strains from all seven outbreaks for which isolates were available for PFGE testing had the outbreak PFGE pattern. Isolates from the seven outbreaks were resistant to ampicillin, trimethoprim-sulfamethoxazole, tetracycline, sulfisoxazole, and streptomycin.

Investigators at the University of Georgia Center for Food Safety and Quality Enhancement conducted studies to determine the effects of temperature and handling on the growth and survival of *S. sonnei* on parsley. Colony-forming units of *S. sonnei* per gram (cfu/g) decreased by approximately 1 log per week on parsley, whether chopped or whole, under refrigeration (39 F [4 C]). In contrast, *S. sonnei* counts increased on parsley kept at room temperature (70 F [21 C]). On whole parsley, the increase was limited to 1 log cfu/g during the first 1–2 days, but on chopped parsley a 3 log cfu/g increase was observed within 24 hours.

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Editorial Note: *S. sonnei* is a common cause of gastroenteritis, accounting for 10,262 (73%) of the 14,071 laboratory-confirmed *Shigella* infections reported to CDC in 1996 (*1*). Humans and other primates are the only reservoirs for *S. sonnei*, and transmission occurs through the fecal-oral route. As few as 10–100 organisms can cause infection, enabling person-to-person transmission where hygienic conditions are compromised. In the United States, *S. sonnei* primarily infects young children and is a common cause of diarrheal outbreaks in child care centers (*2*). Although reported infrequently, foodborne outbreaks of shigellosis have been associated with raw produce, including green onions (*3*), iceberg lettuce (*4–7*), and uncooked baby maize (*8*).

Before the outbreak described in this report, PFGE was not used routinely by most state public health laboratories to subtype isolates of *S. sonnei*, making it difficult to detect clusters or outbreaks. This investigation demonstrated how the routine use of PFGE and PulseNet can link clusters of *S. sonnei* infections in widely dispersed geographic areas. This same technology is now used widely for comparing isolates of *Escherichia coli* O157:H7. CDC, in consultation with the Minnesota Department of Health, is developing a standard protocol for PFGE subtyping of *S. sonnei* isolates by PulseNet laboratories.

In the outbreak described in this report, isolates were resistant to many antimicrobial agents, including ampicillin and trimethoprim-sulfamethoxazole, which are commonly used to treat shigellosis. This highly resistant pattern is seen more frequently in countries other than the United States. During 1985–1995, antimicrobial resistance among *Shigella* increased substantially in the United States (*9*): resistance to ampicillin increased from 32% to 67%, resistance to trimethoprim-sulfamethoxazole increased from 7% to 35%, and resistance to both agents increased from 6% to 19%. A history of international travel was the strongest risk factor for *Shigella* infection resistant to trimethoprim-sulfamethoxazole (*9*).

The findings in this report indicate that several changes in food storage and food preparation procedures are needed. In restaurants, foodhandling practices such as pooling large batches of parsley for chopping and holding chopped parsley at room temperature increase the risk that sporadic low-level bacterial contamination will lead to outbreaks of gastrointestinal illness. When fresh produce is chopped, the release of nutrients may provide a favorable medium for bacterial growth. The risk for outbreaks can be reduced by storing chopped parsley for shorter times, keeping it refrigerated, and chopping smaller batches (*10*). Changes in parsley production on the farm (e.g., the use of adequately chlorinated water for chilling and icing parsley, education of farm workers on proper hygiene, and possibly the use of post-harvest control measures such as irradiation) may be necessary to ensure that produce is not contaminated with pathogens.

References

1. Foodborne and Diarrheal Diseases Branch. Shigella surveillance: annual tabulation summary, 1996. Atlanta, Georgia: US Department of Health and Human Services, Public Health Service, CDC, National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases, Foodborne and Diarrheal Diseases Branch, 1997.
2. Mohle-Boetani JC, Stapleton M, Finger R, et al. Communitywide shigellosis: control of an outbreak and risk factors in child day-care centers. Am J Public Health 1995;85:812–6.
3. Cook K, Boyce T, Langkop C, et al. A multistate outbreak of *Shigella flexneri* 6 traced to imported green onions. Presented at the 35th Interscience Conference on Antimicrobial Agents and Chemotherapy. San Francisco, California, September 1995.
4. Martin DL, Gustafson TL, Pelosi JW, Suarez L, Pierce GV. Contaminated produce—a common source for two outbreaks of *Shigella* gastroenteritis. Am J Epidemiol 1986;124:299–305.
5. Davis H, Taylor JP, Perdue JN, et al. A shigellosis outbreak traced to commercially distributed shredded lettuce. Am J Epidemiol 1988;128:1312–21.
6. Kapperud G, Rorvik LM, Hasseltvedt V, et al. Outbreak of *Shigella sonnei* infection traced to imported iceberg lettuce. J Clin Microbiol 1995;33:609–14.
7. Frost JA, McEvoy MB, Bentley CA, Andersson Y. An outbreak of *Shigella sonnei* infection associated with consumption of iceberg lettuce. Emerging Infectious Diseases 1995;1:26–9.
8. Mølbak K, Neimann J. Outbreak in Denmark of *Shigella sonnei* infections related to uncooked "baby maize" imported from Thailand. Eurosurveillance Weekly 1998;2:980813. Available at <http://www.outbreak.org.uk/1998/980813.html>. Accessed April 2, 1999.
9. Cook K, Boyce T, Puhr N, Tauxe R, Mintz E. Increasing antimicrobial-resistant *Shigella* infections in the United States. Presented at the 36th Interscience Conference on Antimicrobial Agents and Chemotherapy. New Orleans, Louisiana, September 1996.
10. Wu FM, Doyle MP, Beuchat LR, Mintz E, Swaninathan B. Factors influencing survival and growth of *Shigella sonnei* on parsley. Presented at the sixth annual meeting of the Center for Food Safety and Quality Enhancement. Atlanta, Georgia, March 1999.

Impact of Multiple Births on Low Birthweight — Massachusetts, 1989–1996

In Massachusetts during 1989–1996, perinatal health indicators such as infant mortality, teen birth rate, and maternal smoking during pregnancy decreased steadily; however, low birthweight (LBW) (i.e., <2500 g [<5 lbs, 8 oz]) rates increased consistently (*1*). During this same period, the multiple-birth rate (i.e., number of twins and higher order multiple births per 100 live births) increased from 2.5% in 1989 to 3.5% in 1996. Massachusetts has the highest multiple-birth rate in the United States (*2,3*). Multiple births are more likely to result in LBW infants (*2*). To determine the effect of changes in the rate of multiple births on LBW rates and to characterize women who have multiple births, the Massachusetts Department of Public Health examined data on births in Massachusetts during 1989–1996. This report summarizes the results of this analysis, which indicate that the increase in LBW rates in Massachusetts was associated with changes in the rate of multiple births, especially among older, better educated women.

Low Birthweight — Continued

Data were derived from birth certificates of infants born to women who resided in Massachusetts during 1989–1996. Plurality is classified as singleton, twin, and triplets-plus (i.e., multiple births of three or more infants). Two categories of maternal education were analyzed: high school education or less and four or more years of college. Adjusted LBW rates were calculated by applying the plurality-specific LBW rate in a given year to the plurality distribution in 1989. The adjusted LBW rate can be interpreted as the LBW rate in a given year had the plurality distribution been the same as in 1989. The difference between the adjusted and unadjusted LBW rates indicates the effect of the change in the distribution of plurality on LBW rates.

From 1989 to 1996, the LBW rate for singletons remained constant at 4.8% (Table 1). However, the proportion of twins increased from 2.4% to 3.3%, and the LBW rate among twins increased slightly from 45.8% to 48.2%. The largest plurality-specific increase in births was among triplets-plus, which increased from 0.1% of all births in 1989 to 0.2% in 1996. The LBW rate for triplets-plus did not change substantially from 1989 through 1996, ranging from 84% to 92%.

The unadjusted LBW rate increased 8% during 1989–1996 (Table 1). However, when LBW rates were adjusted for the increase in multiple births, LBW rates for 1989 and 1996 were the same (5.9%).

In 1989, multiple-birth rates by maternal education level were similar: for women with a high school education or less, the rate was 2.4%, compared with 2.5% for women with four or more years of college (Table 2). From 1989 to 1996, the proportion of multiple births to women with high school education or less increased from 2.4% to 2.8%, and the proportion of multiple births to women with four or more years of college increased from 2.5% to 4.2%. Among women aged ≥35 years and with four or more years of college, the proportion of multiple births increased from 3.2% to 5.8%. Although the overall number of births in Massachusetts decreased 12% from 1989 to 1996, the number of multiple births increased 24%. Among women aged ≥35 years, the number of multiple births more than doubled. From 1989 through 1996, unadjusted LBW rates for infants born to women aged <35 years with a high school education or less declined slightly from 7.1% to 7.0%; among women aged <35 years with four or more years of college, the LBW rate increased 22%, from 4.1% to 5.0%. Among women aged ≥35 years, LBW rates increased 27% among less educated women (7.8% to 9.8%) and 30% (5.0% to 6.5%) among more educated women.

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Editorial Note: The findings in this report indicate that the increase in the proportion of multiple births is directly responsible for the increase in crude LBW rates in Massachusetts from 1989 to 1996. These findings are consistent with national data that indicate state LBW rates are affected by twin birth rates (*4*).

This analysis highlights two issues. First, although multiple births constitute a small proportion of all live-born infants, the large increase in multiple births substantially influences trends in LBW. Routine birthweight surveillance trend data should be adjusted for, or stratified by, plurality. Second, the characteristics of mothers giving birth to LBW infants changed during this time period. For example, in 1989, 59% of LBW infants in Massachusetts were born to women who had a high school education

TABLE 1. Number of births and percentage distribution of births and low birthweight (LBW) infants, by plurality, and unadjusted and adjusted LBW rates* — Massachusetts, 1989–1996

		Singletons		Twins		Triplets-plus†				
Year	No. births	% of births	% LBW	% of births	% LBW	% of births	% LBW	Multiple: % of births	Unadjusted LBW rate	Adjusted LBW rate
1989	91,314	97.5	4.8	2.4	45.8	0.1	87.7	2.5	5.9	5.9
1990	92,460	97.4	4.7	2.5	46.5	0.1	88.9	2.6	5.8	5.8
1991	88,176	97.3	4.7	2.6	47.2	0.1	84.3	2.7	5.9	5.8
1992	87,202	97.2	4.7	2.7	45.3	0.2	87.2	2.8	5.9	5.7
1993	84,627	97.0	4.8	2.8	46.7	0.2	86.8	3.0	6.2	5.9
1994	83,758	96.9	5.0	2.8	47.7	0.3	92.5	3.1	6.4	6.0
1995	81,562	96.8	4.9	3.0	46.5	0.2	90.4	3.2	6.3	6.0
1996	80,167	96.5	4.8	3.3	48.2	0.2	86.1	3.5	6.4	5.9

* Per 100 live births.
† Multiple births of three or more infants.

TABLE 2. Number of births and percentage distribution of multiple births and low birthweight (LBW) infants, by maternal education, age group, and year — Massachusetts, 1989–1996

	Aged <35 years						Aged ≥35 years						Total*					
	≤High school			≥4 Years college			≤High school			≥4 Years college			≤High school			≥4 Years college		
Year	No. births	% LBW	% Multiple	No. births	% LBW	% Multiple	No. births	% LBW	% Multiple	No. births	% LBW	% Multiple	No. births	% LBW	% Multiple	No. births	% LBW	% Multiple
1989	41,453	7.1	2.3	18,761	4.1	2.4	2,641	7.8	3.5	5,381	5.0	3.2	**44,095**	**7.1**	**2.4**	**24,143**	**4.3**	**2.5**
1990	41,325	6.9	2.4	19,614	4.5	2.3	2,939	9.2	3.6	5,898	5.5	3.7	**44,264**	**7.1**	**2.4**	**25,512**	**4.7**	**3.2**
1991	38,789	7.1	2.3	18,933	4.2	3.2	2,906	7.7	3.0	5,938	5.5	4.4	**41,698**	**7.2**	**2.4**	**24,872**	**4.5**	**3.5**
1992	36,585	7.0	2.4	19,578	4.2	3.2	3,095	9.2	3.4	6,319	5.3	4.1	**39,682**	**7.2**	**2.5**	**25,897**	**4.5**	**3.4**
1993	34,310	7.2	2.3	19,712	4.3	3.5	3,187	9.0	3.4	6,490	6.1	5.3	**37,500**	**7.4**	**2.4**	**26,205**	**4.8**	**3.4**
1994	32,713	7.7	2.6	20,051	4.7	3.3	3,121	8.9	3.5	6,987	5.9	5.3	**35,834**	**7.8**	**2.7**	**27,038**	**5.1**	**3.8**
1995	29,759	7.3	2.4	20,250	4.8	3.3	3,155	10.0	4.1	7,479	6.0	5.7	**32,915**	**7.6**	**2.5**	**27,730**	**5.1**	**3.4**
1996	27,054	7.0	2.5	21,402	5.0	3.6	3,146	9.8	4.6	8,075	6.5	5.8	**30,200**	**7.3**	**2.8**	**29,477**	**5.4**	**4.2**

* Numbers may not add to total because of missing data.

Low Birthweight — Continued

or less. By 1996, 43% of LBW infants were born to women who had a high school education or less. From 1989 to 1996, the proportion of LBW infants born to women aged >35 years doubled (from 11% to 22%).

The increase in multiple births and LBW rates, particularly among older women, may result from increased use of fertility drugs and assisted reproduction technologies (*5*). In Massachusetts in 1996, based on new data recorded on Massachusetts birth certificiates, fertility drugs or assisted reproduction technologies were used by 13% of mothers with multiple-birth deliveries, compared with 0.7% of mothers with singleton births. Massachusetts law, which requires insurance companies, health-maintenance organizations, and medical assistance to cover medically necessary expenses of infertility diagnosis and treatment, and the state's aging birthing population may have increased the use of assisted reproduction technologies (*6*). In addition, better educated women may be more sophisticated users of reproductive assistance and have the financial resources for the additional costs of fertility treatment.

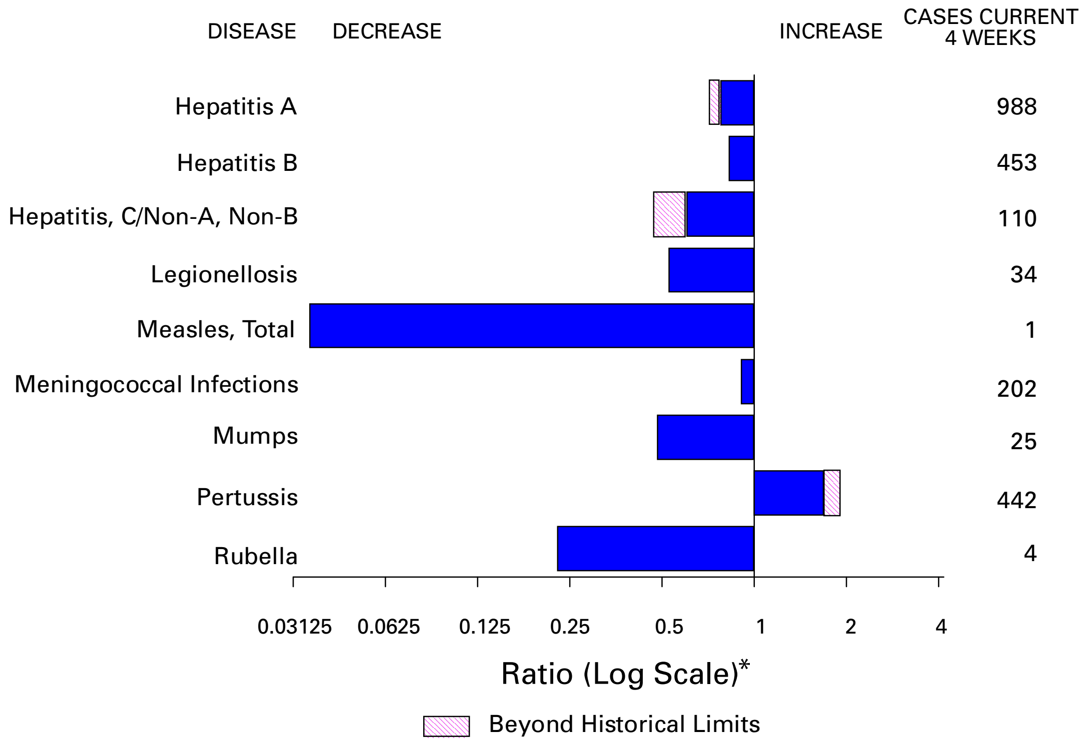
The findings in this report are subject to at least two limitations. First, newly collected data on birth certificates about use of fertility drugs and assisted reproduction technologies may be underreported. Second, other factors that may affect change in LBW (e.g., smoking) were not included in this analysis.

The public health implications for targeting services for this emerging LBW infant population and their mothers are substantial. Multiple gestation increases morbidity risks for infants and mothers (*2,7*) and mortality risks for infants (*8*). Programs such as high-risk infant identification, congenital anomaly surveillance, and delivery of early intervention services must be reevaluated as a result of these changes in the birthing population.

References

1. Zhang Z, Cohen BB, Averbach AR. Advance data births: 1996. Boston, Massachusetts: Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health, March 1998.
2. Ventura SJ, Martin JA, Curtin SC, Mathews TJ. Report of final natality statistics, 1996. Hyattsville, Maryland: US Department for Health and Human Services, CDC, National Center for Health Statistics. Monthly vital statistics reports (vol 46, no. 11).
3. Martin JA, MacDormand MF, Mathews TJ. Triplet births: trends and outcomes, 1971–94. Vital Health Stat 1997;21(55).
4. CDC. State-specific variation in rates of twin births—United States, 1992–1994. MMWR 1997;46: 121–5.
5. Wilcox LS, Kiely JL, Melvin CL, Martin MC. Assisted reproductive technologies: estimates of their contribution to multiple births and newborn hospital days in the United States. Fertil Steril 1996;65:361–6.
6. American Society for Reproductive Medicine. State infertility insurance laws. Available at <http://www.asrm.org/patient/insur.html>. Accessed September 3, 1998.
7. Keith LG, Papiernick E, Luke B. The costs of multiple pregnancy. Int J Gynaecol Obstet 1991;36: 109–14.
8. Kleinman JC, Flower MG, Kessel SS. Comparison of infant mortality among twins and singletons: United States, 1986 and 1983. Am J Epidemiol 1991;133:133–43.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending April 10, 1999, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending April 10, 1999 (14th Week)

	Cum. 1999		Cum. 1999
Anthrax	-	Plague	-
Brucellosis	12	Poliomyelitis, paralytic	-
Cholera	-	Psittacosis	9
Congenital rubella syndrome	1	Rabies, human	-
Cryptosporidiosis*	304	Rocky Mountain spotted fever (RMSF)	34
Diphtheria	-	Streptococcal disease, invasive Group A	549
Encephalitis: California*	1	Streptococcal toxic-shock syndrome*	11
eastern equine*	-	Syphilis, congenital¶	13
St. Louis*	-	Tetanus	5
western equine*	-	Toxic-shock syndrome	29
Hansen Disease	15	Trichinosis	3
Hantavirus pulmonary syndrome*†	2	Typhoid fever	71
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 10, 1999, and April 11, 1998 (14th 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	11,980	136,677	150,349	289	131	74,445	88,345	603	1,199
NEW ENGLAND	542	314	5,105	5,751	43	30	1,669	1,544	47	23
Maine	5	8	193	244	4	-	15	11	-	-
N.H.	18	12	263	280	3	1	19	27	-	-
Vt.	4	8	132	92	3	-	14	2	1	2
Mass.	367	92	2,505	2,365	19	16	774	569	46	21
R.I.	30	34	596	662	1	1	148	88	-	-
Conn.	118	160	1,416	2,108	13	12	699	847	-	-
MID. ATLANTIC	2,841	3,417	19,593	18,394	15	1	9,870	10,320	45	106
Upstate N.Y.	360	426	N	N	12	-	965	1,713	29	90
N.Y. City	1,441	1,933	10,053	9,754	-	1	4,495	4,324	-	-
N.J.	600	574	2,716	3,136	3	-	1,211	1,867	-	-
Pa.	440	484	6,823	5,504	N	-	3,199	2,416	16	16
E.N. CENTRAL	841	993	20,262	22,484	46	28	13,819	16,941	129	133
Ohio	147	173	5,998	7,181	24	8	3,528	4,321	-	5
Ind.	124	257	-	-	5	7	726	1,668	-	3
Ill.	402	373	7,540	6,248	6	3	5,182	5,230	3	16
Mich.	124	144	5,418	5,392	11	4	3,886	4,294	126	109
Wis.	44	46	1,306	3,663	N	6	497	1,428	-	-
W.N. CENTRAL	248	207	4,560	9,656	73	17	1,558	4,363	32	27
Minn.	38	31	1,572	1,919	24	12	587	643	-	-
Iowa	29	11	551	1,088	7	2	179	306	-	3
Mo.	97	100	-	3,523	6	2	-	2,291	30	22
N. Dak.	3	3	102	267	2	-	7	29	-	-
S. Dak.	6	7	436	440	1	1	39	73	-	-
Nebr.	19	24	714	806	26	-	295	320	-	2
Kans.	56	31	1,185	1,613	7	-	451	701	2	-
S. ATLANTIC	3,237	3,186	29,462	30,089	28	10	22,080	23,867	61	37
Del.	40	40	797	664	1	-	467	380	-	-
Md.	345	335	2,189	2,252	1	-	2,255	2,489	19	3
D.C.	118	262	N	N	-	-	742	958	-	-
Va.	179	230	3,341	3,044	6	2	2,310	1,980	6	1
W. Va.	19	30	630	1,311	-	1	144	433	9	3
N.C.	198	216	5,687	6,162	7	3	5,028	5,179	-	7
S.C.	321	183	5,284	4,876	1	1	2,682	3,142	10	-
Ga.	349	372	4,157	6,715	2	-	3,142	5,331	1	8
Fla.	1,668	1,518	7,377	5,065	10	3	5,310	3,975	16	15
E.S. CENTRAL	493	442	11,883	10,611	18	7	9,615	10,055	33	35
Ky.	70	65	1,812	1,692	5	-	883	987	1	7
Tenn.	214	141	3,854	3,460	9	3	2,976	2,919	31	25
Ala.	110	119	3,546	2,789	4	3	3,189	3,542	1	3
Miss.	99	117	2,671	2,670	-	1	2,567	2,607	-	-
W.S. CENTRAL	1,182	1,356	15,982	22,120	9	6	9,563	13,362	50	168
Ark.	45	52	1,522	1,005	2	2	711	1,161	1	2
La.	121	206	4,724	3,392	3	2	3,881	2,931	38	-
Okla.	35	71	2,059	2,425	3	2	1,086	1,348	2	-
Tex.	981	1,027	7,677	15,298	1	-	3,885	7,922	9	166
MOUNTAIN	405	377	7,501	8,079	17	8	1,981	2,176	50	164
Mont.	4	10	309	256	-	-	8	15	4	4
Idaho	5	8	459	510	-	1	26	47	4	66
Wyo.	2	1	180	197	1	1	7	11	14	40
Colo.	76	65	2,063	2,055	5	2	545	684	9	9
N. Mex.	13	52	1,126	1,095	1	-	198	192	4	23
Ariz.	190	127	2,168	2,775	5	3	843	953	12	-
Utah	37	35	428	615	5	1	46	67	1	11
Nev.	78	79	768	576	-	-	308	207	2	11
PACIFIC	1,724	1,688	22,329	23,165	40	24	4,290	5,717	156	506
Wash.	90	133	3,294	2,984	5	8	564	509	2	5
Oreg.	45	40	1,383	-	14	10	195	-	4	7
Calif.	1,562	1,481	16,493	19,036	21	6	3,344	5,003	150	459
Alaska	6	11	552	558	-	-	105	85	-	1
Hawaii	21	23	607	587	-	-	82	120	-	34
Guam	1	-	-	81	N	-	-	6	-	-
P.R.	411	457	U	U	3	U	83	106	-	-
V.I.	10	13	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	-	9	-	-

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 10, 1999, and April 11, 1998 (14th Week)

Reporting Area	Legionellosis Cum. 1999	Legionellosis Cum. 1998	Lyme Disease Cum. 1999	Lyme Disease Cum. 1998	Malaria Cum. 1999	Malaria Cum. 1998	Syphilis (Primary & Secondary) Cum. 1999	Syphilis (Primary & Secondary) Cum. 1998	Tuberculosis Cum. 1999*	Tuberculosis Cum. 1998*	Rabies, Animal Cum. 1999
UNITED STATES	210	320	948	1,091	261	305	1,544	1,942	1,206	1,972	1,279
NEW ENGLAND	14	19	149	219	3	13	19	21	95	88	222
Maine	2	1	-	2	-	-	-	1	3	3	39
N.H.	2	2	-	5	-	1	-	1	-	2	15
Vt.	3	1	-	2	-	-	1	-	-	1	43
Mass.	3	6	98	49	3	12	13	17	49	43	45
R.I.	1	4	8	16	-	-	1	-	15	12	20
Conn.	3	5	43	145	-	-	4	2	28	27	60
MID. ATLANTIC	61	71	588	694	71	96	69	78	457	469	279
Upstate N.Y.	16	16	212	326	21	23	5	7	56	62	181
N.Y. City	5	19	4	18	16	50	30	16	273	291	U
N.J.	5	3	97	83	24	14	11	25	128	116	60
Pa.	35	33	275	267	10	9	23	30	U	U	38
E.N. CENTRAL	47	128	22	19	17	26	279	273	66	77	9
Ohio	19	43	15	14	4	1	25	51	U	U	2
Ind.	5	25	5	4	4	1	32	41	U	U	-
Ill.	2	17	1	-	-	14	193	120	U	U	-
Mich.	20	18	1	1	7	8	27	38	48	49	7
Wis.	1	25	U	U	2	2	2	23	18	28	-
W.N. CENTRAL	8	19	14	9	13	17	6	53	111	92	135
Minn.	-	1	7	1	2	8	1	3	49	29	26
Iowa	6	3	2	6	3	2	1	-	2	-	25
Mo.	1	7	-	1	7	6	-	39	47	44	5
N. Dak.	-	-	1	-	-	-	-	-	1	1	30
S. Dak.	1	-	-	-	-	-	-	-	3	4	25
Nebr.	-	7	-	-	-	-	1	4	4	-	1
Kans.	-	1	4	1	1	1	3	7	5	14	23
S. ATLANTIC	33	37	112	108	71	60	558	753	185	376	462
Del.	2	6	-	2	-	1	1	7	-	5	3
Md.	5	8	87	91	20	24	123	209	U	U	99
D.C.	-	3	1	4	6	3	10	26	12	30	-
Va.	6	3	3	3	12	7	41	52	17	53	98
W. Va.	N	N	2	2	1	-	2	-	11	17	24
N.C.	5	4	15	1	6	7	142	218	89	191	108
S.C.	5	4	1	-	-	-	68	85	56	80	43
Ga.	-	-	-	2	5	12	82	73	U	U	46
Fla.	10	9	3	3	21	6	89	83	U	U	41
E.S. CENTRAL	8	11	13	12	3	9	291	335	89	167	64
Ky.	2	5	-	2	-	-	28	38	U	U	13
Tenn.	5	3	5	5	2	4	144	163	U	U	23
Ala.	1	1	6	5	1	3	78	73	83	105	28
Miss.	-	2	2	-	-	2	41	61	6	62	-
W.S. CENTRAL	1	2	-	3	8	5	238	251	53	530	23
Ark.	-	-	-	2	-	1	25	38	28	22	-
La.	1	-	-	-	6	3	67	87	U	U	-
Okla.	-	-	-	-	1	-	61	13	25	31	23
Tex.	-	2	-	1	1	1	85	113	-	477	-
MOUNTAIN	14	15	3	1	13	17	35	74	38	66	36
Mont.	-	1	-	-	2	-	-	-	-	2	16
Idaho	-	-	-	-	1	1	-	-	-	2	-
Wyo.	-	1	1	-	-	-	-	-	-	1	8
Colo.	1	4	-	-	4	5	-	4	U	U	1
N. Mex.	1	1	1	-	2	6	-	7	13	15	-
Ariz.	1	1	-	-	4	2	33	57	U	U	11
Utah	5	6	1	-	-	1	1	2	11	17	-
Nev.	6	1	-	1	-	2	1	4	14	29	-
PACIFIC	24	18	47	26	62	62	49	104	112	107	49
Wash.	4	1	-	1	3	1	11	4	58	51	-
Oreg.	-	-	1	1	7	6	-	-	U	U	-
Calif.	20	17	46	24	48	54	36	100	U	U	46
Alaska	-	-	-	-	-	-	1	-	12	11	3
Hawaii	-	-	-	-	4	1	1	-	42	45	-
Guam	-	1	-	-	-	1	-	-	-	37	-
P.R.	-	-	-	-	-	-	59	61	-	30	21
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.	-	-	-	-	-	-	-	62	-	40	-

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 10, 1999, and April 11, 1998 (14th 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	316	324	4,087	5,526	1,535	2,238	-	14	1	6	20	13
NEW ENGLAND	24	22	43	97	28	35	-	-	-	1	1	1
Maine	2	2	2	10	-	-	-	-	-	-	-	-
N.H.	4	1	6	6	4	4	-	-	-	1	1	-
Vt.	3	2	2	6	1	-	-	-	-	-	-	-
Mass.	11	17	11	26	17	19	-	-	-	-	-	1
R.I.	-	-	2	6	6	1	-	-	-	-	-	-
Conn.	4	-	20	43	-	11	-	-	-	-	-	-
MID. ATLANTIC	40	45	255	442	198	339	-	-	-	-	-	3
Upstate N.Y.	24	17	70	94	51	83	-	-	-	-	-	-
N.Y. City	4	13	43	164	42	93	-	-	-	-	-	-
N.J.	12	14	36	81	27	61	-	-	-	-	-	2
Pa.	-	1	106	103	78	102	-	-	-	-	-	1
E.N. CENTRAL	34	48	959	862	131	469	-	-	-	-	-	1
Ohio	21	22	233	105	29	22	-	-	-	-	-	-
Ind.	1	5	29	89	4	225	-	-	-	-	-	-
Ill.	8	20	130	225	-	68	-	-	-	-	-	-
Mich.	4	-	565	361	98	128	-	-	-	-	-	1
Wis.	-	1	2	82	-	26	-	-	-	-	-	-
W.N. CENTRAL	31	13	211	516	86	102	-	-	-	-	-	-
Minn.	11	4	18	20	13	7	-	-	-	-	-	-
Iowa	6	1	38	230	15	13	-	-	-	-	-	-
Mo.	10	4	121	209	48	68	-	-	-	-	-	-
N. Dak.	-	-	-	2	-	1	U	-	U	-	-	-
S. Dak.	1	-	8	2	-	1	-	-	-	-	-	-
Nebr.	1	-	14	13	6	4	-	-	-	-	-	-
Kans.	2	4	12	40	4	8	-	-	-	-	-	-
S. ATLANTIC	79	62	503	457	297	252	-	-	1	1	1	5
Del.	-	-	1	-	-	-	-	-	-	-	-	-
Md.	22	16	100	106	52	45	-	-	-	-	-	1
D.C.	2	-	16	15	6	3	-	-	-	-	-	-
Va.	8	9	38	77	26	28	-	-	-	-	-	2
W. Va.	1	2	4	-	5	2	-	-	-	-	-	-
N.C.	12	8	42	28	63	68	-	-	-	-	-	-
S.C.	2	1	5	8	32	-	-	-	-	-	-	-
Ga.	18	17	139	109	33	57	-	-	-	-	-	1
Fla.	14	9	158	114	80	49	-	-	1	1	1	1
E.S. CENTRAL	27	21	107	129	92	131	-	-	-	-	-	-
Ky.	2	5	6	6	7	10	U	-	U	-	-	-
Tenn.	14	10	72	72	58	96	-	-	-	-	-	-
Ala.	10	5	27	31	27	25	-	-	-	-	-	-
Miss.	1	1	2	20	-	-	-	-	-	-	-	-
W.S. CENTRAL	18	17	437	542	114	199	-	-	-	2	2	-
Ark.	-	-	11	13	10	25	-	-	-	-	-	-
La.	4	7	14	8	27	10	-	-	-	-	-	-
Okla.	12	8	128	127	34	14	-	-	-	-	-	-
Tex.	2	2	284	394	43	150	-	-	-	2	2	-
MOUNTAIN	36	58	408	934	142	222	-	1	-	-	1	-
Mont.	1	-	5	9	7	2	-	-	-	-	-	-
Idaho	1	-	16	59	7	9	-	-	-	-	-	-
Wyo.	1	-	1	12	-	2	U	-	U	-	-	-
Colo.	2	12	85	73	29	30	-	1	-	-	1	-
N. Mex.	10	-	11	51	47	86	-	-	-	-	-	-
Ariz.	18	31	233	602	25	52	-	-	-	-	-	-
Utah	3	3	16	55	8	19	-	-	-	-	-	-
Nev.	-	12	41	73	19	22	-	-	-	-	-	-
PACIFIC	27	38	1,164	1,547	447	489	-	13	-	2	15	3
Wash.	-	1	77	178	11	35	-	-	-	-	-	-
Oreg.	13	19	70	126	21	52	-	8	-	-	8	-
Calif.	12	15	1,014	1,218	404	394	-	5	-	2	7	3
Alaska	2	1	2	3	7	2	-	-	-	-	-	-
Hawaii	-	2	1	22	4	6	-	-	-	-	-	-
Guam	-	-	-	-	-	-	U	-	U	-	-	-
P.R.	-	1	25	13	31	158	-	-	-	-	-	-
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.	-	-	-	-	-	26	U	-	U	-	-	-

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

*Of 63 cases among children aged <5 years, serotype was reported for 27 and of those, 4 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 10, 1999, and April 11, 1998 (14th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998
UNITED STATES	725	916	4	100	132	43	1,239	1,169	1	12	130
NEW ENGLAND	36	50	-	1	-	1	126	232	-	3	22
Maine	3	4	-	-	-	-	-	5	-	-	-
N.H.	-	1	-	1	-	-	19	20	-	-	-
Vt.	2	1	-	-	-	-	10	25	-	-	-
Mass.	26	22	-	-	-	-	90	177	-	3	2
R.I.	2	3	-	-	-	-	2	-	-	-	-
Conn.	3	19	-	-	-	1	5	5	-	-	20
MID. ATLANTIC	72	95	1	15	10	5	303	149	1	1	72
Upstate N.Y.	18	24	-	2	2	4	260	80	1	1	67
N.Y. City	18	10	-	3	5	-	10	6	-	-	1
N.J.	16	23	-	-	-	-	-	6	-	-	4
Pa.	20	38	1	10	3	1	33	57	-	-	-
E.N. CENTRAL	99	141	-	12	20	-	106	134	-	-	-
Ohio	49	51	-	6	10	-	89	38	-	-	-
Ind.	7	24	-	-	-	-	2	34	-	-	-
Ill.	28	36	-	-	1	-	-	8	-	-	-
Mich.	15	13	-	6	9	-	15	16	-	-	-
Wis.	-	17	-	-	-	-	-	38	-	-	-
W.N. CENTRAL	92	76	-	3	15	-	18	87	-	-	2
Minn.	25	6	-	-	8	-	-	50	-	-	-
Iowa	20	12	-	2	5	-	7	15	-	-	-
Mo.	33	34	-	1	1	-	9	11	-	-	1
N. Dak.	-	-	U	-	1	U	-	-	U	-	-
S. Dak.	5	5	-	-	-	-	2	2	-	-	-
Nebr.	2	4	-	-	-	-	-	3	-	-	-
Kans.	7	15	-	-	-	-	-	6	-	-	1
S. ATLANTIC	123	135	2	19	15	5	80	84	-	2	1
Del.	2	1	-	-	-	-	-	-	-	-	-
Md.	19	16	-	3	-	1	25	17	-	1	-
D.C.	1	-	-	1	-	-	-	-	-	-	-
Va.	16	15	-	2	4	-	7	6	-	-	-
W. Va.	1	4	-	-	-	-	-	1	-	-	-
N.C.	16	22	1	4	6	-	22	38	-	1	1
S.C.	15	19	-	2	3	1	7	7	-	-	-
Ga.	16	34	-	-	-	-	7	-	-	-	-
Fla.	37	24	1	7	2	3	12	15	-	-	-
E.S. CENTRAL	54	78	-	1	1	4	21	17	-	-	-
Ky.	10	13	U	-	-	U	1	2	U	-	-
Tenn.	21	27	-	-	-	4	16	6	-	-	-
Ala.	18	28	-	1	1	-	4	9	-	-	-
Miss.	5	10	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	44	66	-	12	22	5	34	55	-	5	26
Ark.	12	12	-	-	-	-	5	5	-	-	-
La.	21	16	-	-	-	-	-	-	-	-	-
Okla.	9	18	-	1	-	-	2	6	-	-	-
Tex.	2	20	-	11	22	5	27	44	-	5	26
MOUNTAIN	57	62	-	7	11	5	165	207	-	-	5
Mont.	-	2	-	-	-	-	1	1	-	-	-
Idaho	7	3	-	-	-	2	84	74	-	-	-
Wyo.	2	3	U	-	1	U	1	7	U	-	-
Colo.	18	14	-	2	1	-	24	43	-	-	-
N. Mex.	7	10	N	N	N	2	12	48	-	-	1
Ariz.	17	22	-	-	4	-	20	23	-	-	1
Utah	4	6	-	4	1	1	21	7	-	-	2
Nev.	2	2	-	1	4	-	2	4	-	-	1
PACIFIC	148	213	1	30	38	18	386	204	-	1	2
Wash.	17	24	-	-	4	14	225	76	-	-	-
Oreg.	25	40	N	N	N	4	8	12	-	-	-
Calif.	99	145	1	26	24	-	149	113	-	1	1
Alaska	3	1	-	1	2	-	2	-	-	-	-
Hawaii	4	3	-	3	8	-	2	3	-	-	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 10, 1999 (14th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	522	380	92	23	10	17	41
Boston, Mass.	161	96	40	10	6	9	10
Bridgeport, Conn.	26	17	7	2	-	-	2
Cambridge, Mass.	13	10	1	-	1	1	2
Fall River, Mass.	24	21	3	-	-	-	1
Hartford, Conn.	67	54	7	3	1	2	7
Lowell, Mass.	23	19	2	1	1	-	2
Lynn, Mass.	19	16	1	1	1	-	-
New Bedford, Mass.	25	21	3	1	-	-	-
New Haven, Conn.	47	31	10	2	-	4	2
Providence, R.I.	U	U	U	U	U	U	U
Somerville, Mass.	1	1	-	-	-	-	-
Springfield, Mass.	42	34	6	2	-	-	4
Waterbury, Conn.	23	19	4	-	-	-	2
Worcester, Mass.	51	41	8	1	-	1	9
MID. ATLANTIC	2,106	1,492	382	156	35	41	100
Albany, N.Y.	39	32	2	3	1	1	3
Allentown, Pa.	24	19	5	-	-	-	3
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	33	17	11	2	3	-	4
Elizabeth, N.J.	18	10	3	5	-	-	-
Erie, Pa.	47	39	4	3	1	-	4
Jersey City, N.J.	55	39	9	5	1	1	-
New York City, N.Y.	1,110	774	211	83	17	25	22
Newark, N.J.	74	40	19	9	4	2	3
Paterson, N.J.	39	20	7	9	-	3	-
Philadelphia, Pa.	297	224	47	17	4	5	22
Pittsburgh, Pa.§	45	27	10	4	3	1	3
Reading, Pa.	32	28	3	-	-	1	3
Rochester, N.Y.	130	100	23	5	1	1	13
Schenectady, N.Y.	27	19	8	-	-	-	-
Scranton, Pa.	36	30	3	3	-	-	4
Syracuse, N.Y.	67	49	12	5	-	1	13
Trenton, N.J.	17	11	3	3	-	-	1
Utica, N.Y.	16	14	2	-	-	-	2
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,422	1,697	458	158	47	59	233
Akron, Ohio	57	44	7	1	-	5	2
Canton, Ohio	45	31	10	2	1	1	5
Chicago, Ill.	460	301	100	41	10	5	43
Cincinnati, Ohio	110	77	22	5	3	3	16
Cleveland, Ohio	187	125	43	11	3	5	3
Columbus, Ohio	272	193	46	18	6	9	43
Dayton, Ohio	120	81	27	5	2	5	12
Detroit, Mich.	205	106	52	34	6	7	3
Evansville, Ind.	53	43	8	2	-	-	11
Fort Wayne, Ind.	59	47	9	-	2	1	1
Gary, Ind.	18	13	5	-	-	-	-
Grand Rapids, Mich.	66	57	5	3	-	1	10
Indianapolis, Ind.	251	173	51	15	9	3	26
Lansing, Mich.	32	21	5	2	1	3	4
Milwaukee, Wis.	131	98	21	8	2	2	17
Peoria, Ill.	46	36	5	-	1	4	5
Rockford, Ill.	62	49	8	3	-	2	6
South Bend, Ind.	66	54	8	3	-	1	8
Toledo, Ohio	107	83	18	4	1	1	12
Youngstown, Ohio	75	65	8	1	-	1	6
W.N. CENTRAL	974	708	167	57	23	19	80
Des Moines, Iowa	164	124	27	8	4	1	20
Duluth, Minn.	29	23	5	-	-	1	1
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	148	105	25	12	5	1	11
Lincoln, Nebr.	33	24	5	3	-	1	3
Minneapolis, Minn.	260	190	40	20	5	5	26
Omaha, Nebr.	109	80	18	3	5	3	10
St. Louis, Mo.	126	81	33	6	1	5	1
St. Paul, Minn.	105	81	14	5	3	2	8
Wichita, Kans.	U	U	U	U	U	U	U
S. ATLANTIC	1,223	839	227	102	30	25	113
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	259	173	52	27	3	4	33
Charlotte, N.C.	139	93	27	9	5	5	14
Jacksonville, Fla.	144	104	27	6	3	4	7
Miami, Fla.	100	57	23	16	4	-	1
Norfolk, Va.	45	34	5	3	-	3	3
Richmond, Va.	50	37	10	2	1	-	2
Savannah, Ga.	70	54	11	4	1	-	8
St. Petersburg, Fla.	60	42	5	8	4	1	10
Tampa, Fla.	194	150	23	13	5	3	29
Washington, D.C.	143	84	36	14	4	5	6
Wilmington, Del.	19	11	8	-	-	-	-
E.S. CENTRAL	1,031	729	201	62	23	14	94
Birmingham, Ala.	211	143	42	15	6	3	29
Chattanooga, Tenn.	79	60	13	4	1	1	8
Knoxville, Tenn.	95	78	13	3	1	-	2
Lexington, Ky.	97	65	19	6	4	3	17
Memphis, Tenn.	249	169	50	20	6	4	27
Mobile, Ala.	79	62	13	2	1	1	2
Montgomery, Ala.	76	59	11	3	2	1	6
Nashville, Tenn.	145	93	40	9	2	1	3
W.S. CENTRAL	1,608	1,088	301	141	50	27	138
Austin, Tex.	83	50	22	6	2	3	4
Baton Rouge, La.	18	15	3	-	-	-	1
Corpus Christi, Tex.	55	40	9	4	2	-	2
Dallas, Tex.	182	117	35	22	3	5	5
El Paso, Tex.	72	48	13	8	2	1	5
Ft. Worth, Tex.	117	80	21	11	4	1	18
Houston, Tex.	399	249	94	35	15	6	39
Little Rock, Ark.	90	65	11	6	5	3	8
New Orleans, La.	161	112	26	16	5	2	16
San Antonio, Tex.	199	143	33	15	4	3	13
Shreveport, La.	75	56	11	3	4	1	17
Tulsa, Okla.	157	113	23	15	4	2	10
MOUNTAIN	917	638	165	65	28	21	74
Albuquerque, N.M.	123	85	25	9	3	1	9
Boise, Idaho	35	30	3	1	1	-	2
Colo. Springs, Colo.	55	41	8	3	1	2	6
Denver, Colo.	115	75	23	11	2	4	12
Las Vegas, Nev.	217	150	43	17	3	4	8
Ogden, Utah	U	U	U	U	U	U	U
Phoenix, Ariz.	60	40	13	3	3	1	5
Pueblo, Colo.	26	19	4	2	-	1	2
Salt Lake City, Utah	146	99	23	13	6	5	15
Tucson, Ariz.	140	99	23	6	9	3	15
PACIFIC	1,450	1,056	265	77	26	22	142
Berkeley, Calif.	19	14	2	2	-	1	1
Fresno, Calif.	84	62	15	4	2	1	10
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	83	59	16	5	1	2	6
Long Beach, Calif.	96	69	17	6	2	2	10
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	20	12	6	1	1	-	3
Portland, Oreg.	128	85	27	11	2	3	6
Sacramento, Calif.	198	154	29	7	4	4	33
San Diego, Calif.	143	106	29	6	1	1	12
San Francisco, Calif.	153	112	26	10	3	1	19
San Jose, Calif.	176	124	38	8	3	3	19
Santa Cruz, Calif.	39	33	3	1	2	-	5
Seattle, Wash.	143	97	27	10	5	4	6
Spokane, Wash.	63	44	16	3	-	-	6
Tacoma, Wash.	105	85	14	3	-	-	6
TOTAL	12,253¶	8,627	2,258	841	272	245	1,015

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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