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Influenza Vaccination Coverage Among Children Aged 6 Months–18 Years — Eight Immunization Information System Sentinel Sites, United States, 2008–09 Influenza Season

Vaccination is the most effective way to prevent influenza-related morbidity and mortality (*1*). Annual influenza vaccination was first recommended for children aged 6–23 months in 2004 and for children aged 24–59 months in 2006 (*2,3*). In August 2008, the Advisory Committee on Immunization Practices (ACIP) expanded its recommendations to include all children aged 5–18 years, beginning with the 2008–09 influenza season (*1*). Among children aged 6 months–8 years, previously unvaccinated children and children who received only 1 vaccine dose for the first time in the preceding influenza season are recommended to receive 2 influenza vaccine doses (*1*). Children aged 9–18 years are recommended to receive 1 vaccine dose. To update previous estimates (*4*) by assessing influenza vaccination coverage among children aged 6 months–18 years during the 2008–09 season, CDC averaged data from the eight immunization information system (IIS) sentinel sites. The results indicated that average (unweighted) vaccination coverage with ≥1 influenza vaccine doses decreased with increasing age from 47.8% for children aged 6–23 months to 9.1% for those aged 13–18 years. Among sites, average coverage with ≥1 doses among children aged 6–23 months increased from 40.8% during the 2007–08 influenza season to 47.8% during the 2008–09 season; however, coverage levels remained suboptimal. Vaccination against both seasonal influenza and 2009 pandemic influenza A (H1N1) are recommended for children in 2009 (*5*); these findings highlight the need to identify opportunities for and barriers to influenza vaccination of children.

IIS sentinel sites* are useful data sources to assess influenza vaccination coverage because data 1) reflect the most recent influenza season, 2) are provider-verified, 3) can track vaccination patterns throughout the entire August-March influenza season, and 4) can assess coverage among children and adolescents. For the 2008–2012 sentinel site project period, CDC is supporting eight IIS sites that meet the following criteria: 1) >85% of child vaccine provider sites are enrolled in the IIS, 2) >85% of children aged <19 years who resided in the sentinel site region with ≥2 vaccinations are recorded in the IIS, and 3) >70% of doses are reported to the IIS ≤30 days of vaccination. The six sentinel site areas in Arizona, Colorado, Michigan, Minnesota, Oregon, and Wisconsin consist of contiguous counties, postal codes, or census tracts; the other two sentinel sites consist of the entire state of North Dakota and all of New

* An IIS is a confidential, population-based, computerized data system designed primarily to consolidate vaccination records for all children within a geographic area from multiple vaccination providers. Data are collected from health-care providers, vital records, and billing systems. Additional information regarding IIS sentinel sites is available at http://www.cdc.gov/vaccines/programs/iis/activities/sentinel-sites.htm.

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York City. As of March 31, 2009, 5,236,894 children aged 6 months–18 years were enrolled in the sentinel sites (range: 32,917 in Colorado to 2,303,355 in New York City).

To reflect ACIP recommendations for the 2008–09 influenza season (*1*), full vaccination for children aged 6 months–8 years was defined as 1) receipt of 2 vaccine doses separated by at least 4 weeks in the current season among previously unvaccinated children and children who received 1 dose for the first time during August 1, 2007–March 31, 2008, or 2) receipt of 1 vaccine dose in the current season among all other children. Children aged 9–18 years were considered fully vaccinated with receipt of 1 vaccine dose. Vaccination coverage was calculated for children aged 6–23 months, 2–4 years, 5–10 years, 11–12 years, and 13–18 years who resided in each sentinel site area during the 2008–09 influenza season. Analyses included only children who were in the specified age categories during the entire influenza season to ensure that all children evaluated had the same opportunity for vaccination. Vaccination coverage at each sentinel site was calculated by dividing the number of children vaccinated by the total number of children in each specified age group. The unweighted average for the eight sites (i.e., average site-specific coverage) was calculated by summing the percentages of children vaccinated at each site and dividing by the total number of sites (eight). To determine weekly vaccination patterns, the number of influenza vaccine doses administered each week to children aged 6 months–18 years during the 2008–09 influenza season was determined at each of the eight sites and converted into a percentage of all doses administered during the entire season; those eight percentages were then averaged.

During the 2008–09 influenza season, among children aged 6–23 months, average site coverage for the eight sites with ≥1 vaccine doses was 47.8% (range: 34.3%–60.1%); average full vaccination site coverage was 28.9% (range: 19.8%–39.7%) (Table). Among children aged 2–4 years, average site coverage with ≥1 vaccine doses was 27.8% (range: 17.3%–38.1%); average full vaccination site coverage was 21.8% (range: 12.6%–32.3%). Among children aged 5–10 years, average site coverage with ≥1 vaccine doses was 16.3% (range: 9.4%–23.7%); average full vaccination site coverage was 12.0% (range: 6.2%–19.7%). For children aged 11–12 years and 13–18 years, the average site coverage for ≥1 vaccine dose (making them fully vaccinated) was 12.7% (range: 6.6%–18.0%) and 9.1% (range: 4.8%–14.5%), respectively.

All eight sentinel sites reported vaccination coverage for children aged 6 months–4 years for both the 2007–08 and 2008–09 influenza seasons. Average site coverage for ≥1 influenza vaccine doses among children aged 6–23 months increased 17.2%, from 40.8% during the 2007–08 influenza season to 47.8% during the 2008–09 season, and increased

TABLE. Percentage of children aged 6 months–18 years who received influenza vaccination, by sentinel site, age group and vaccination status — Immunization Information System sentinel sites, 2008–09 influenza season

	6–23 months			2–4 years			5–10 years			11–12 years			13–18 years		
Sentinel site	No. of children in sentinel site*	≥1 dose	Full vaccination†	No. of children in sentinel site	≥1 dose	Full vaccination	No. of children in sentinel site	≥1 dose	Full vaccination	No. of children in sentinel site	≥1 dose	Full vaccination	No. of children in sentinel site	≥1 dose	Full vaccination
Arizona	10,795	41.4	20.4	30,908	21.7	18.7	75,551	14.1	12.2	19,105	14.1	14.1	83,066	8.8	8.8
Colorado	1,869	34.3	19.8	5,289	17.3	12.6	12,154	9.4	6.2	2,975	6.6	6.6	10,630	4.8	4.8
Michigan	75,820	45.6	26.2	230,170	24.8	16.8	597,168	13.7	7.8	161,011	9.6	9.6	663,152	6.6	6.6
Minnesota	15,569	60.1	38.5	41,671	38.1	32.2	93,570	23.7	19.7	23,679	18.0	18.0	86,199	14.5	14.5
North Dakota	8,124	54.5	33.5	22,548	31.8	26.3	50,140	18.8	12.9	14,633	12.8	12.8	60,278	8.5	8.5
New York City	122,565	40.3	24.2	354,983	24.4	20.4	875,153	13.9	10.3	226,933	11.7	11.7	723,721	9.9	9.9
Oregon	15,535	49.8	29.1	42,599	28.6	16.6	98,333	15.2	8.7	23,837	11.2	11.2	93,377	7.7	7.7
Wisconsin	13,320	56.0	39.7	39,218	35.4	30.9	93,566	21.9	18.2	24,585	17.2	17.2	93,059	11.9	11.9
Unweighted average		**47.8**	**28.9**	—	**27.8**	**21.8**	—	**16.3**	**12.0**	—	**12.7**	**12.7**	—	**9.1**	**9.1**

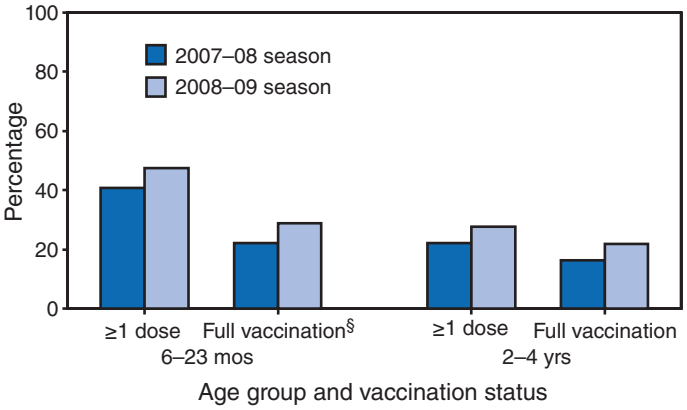
* Number of children in each age range at each sentinel site as of March 31, 2009.
† Full vaccination for children aged 6 months–8 years was defined as 1) receipt of 2 vaccine doses separated by at least 4 weeks in the current season among vaccine naïve children and children who received 1 dose for the first time during August 1, 2007–March 31, 2008, or 2) receipt of 1 vaccine dose in the current season among all other children. Children aged 9–18 years were considered fully vaccinated with receipt of 1 vaccine dose.

25.2%, from 22.2% to 27.8% for children aged 2–4 years (*4*) (Figure 1). Average full vaccination site coverage among children aged 6–23 months increased 30.8%, from 22.1% during the 2007–08 influenza season to 28.9% during the 2008–09 season and 32.1%, from 16.5% to 21.8% for children aged 2–4 years. Increases in coverage with ≥1 influenza vaccine doses and full vaccination coverage were observed for children aged 6 months–4 years at each sentinel site.

The weekly pattern of influenza vaccination was similar for all age groups except for children aged 6–23 months. To highlight this difference, data for children aged 2–18 years were consolidated for comparison with children aged 6–23 months. The average weekly percentages of influenza vaccinations increased steadily during September 21–October 25, 2008, and then began to decline among children aged 2–18 years (Figure 2). The percentage of vaccinations of children aged 6–23 months remained steady until November 22, 2008, when they began to decline. However, a greater percentage of vaccinations of children aged 6–23 months occurred during December–March than among children aged 2–18 years. The declines in both age groups began months before influenza activity peaked in the United States in February 2009 (*6*).

Reported by: *R Potter, DVM, Michigan Dept of Community Health. LJ Pabst, MPH, Immunization Svcs Div; AE Fiore, MD, Influenza Div, National Center for Immunization and Respiratory Diseases, CDC.*

FIGURE 1. Average percentage* of children aged 6–23 months and 2–4 years† who received influenza vaccination, by vaccination status — Immunization Information System Sentinel Sites, 2007–08 and 2008–09 influenza seasons

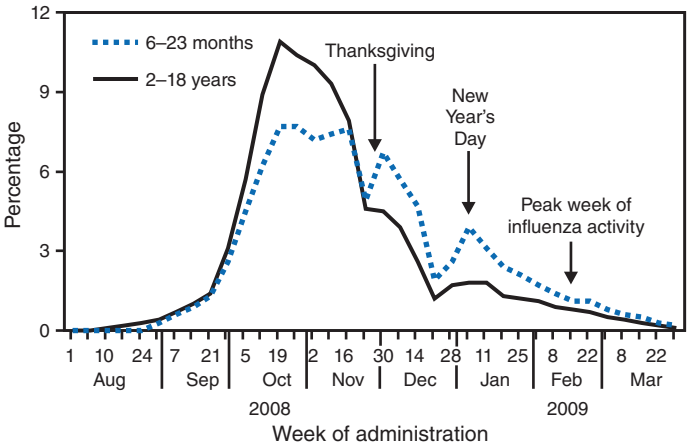


* Unweighted average percentage of children in the two age groups who received vaccination at the eight sentinel sites.
† 2007–08 season: 6–23 months (n = 302,333), 2–4 years (n = 808,711); 2008–09 season: 6–23 months (n = 263,597), 2–4 years (n = 767,422).
§ Full vaccination for children aged 6 months–23 months and 2–4 years was defined as 1) receipt of 2 vaccine doses separated by at least 4 weeks in the current season among vaccine naïve children and children who received 1 dose for the first time during August 1, 2007–March 31, 2008, or 2) receipt of 1 vaccine dose in the current season among all other children.

Editorial Note: These data describe vaccination coverage among children aged 6 months–18 years during the 2008–09 influenza season, including all children aged 5–18 years who were not included in ACIP recommendations for influenza vaccination until guidance published in August 2008 (*1*). Vaccination coverage increased from the 2007–08 season to the 2008–09 season among children aged 6 months–4 years at all eight sentinel sites. Increases have been observed previously at some, but not all, sentinel sites and have not been consistent from season to season (*7*). Monitoring influenza vaccination coverage among children aged 6 months–4 years remains important because younger children are at increased risk for influenza-related hospitalizations (*1*).

During the 2008–09 influenza season, a greater proportion of children aged 6–23 months were vaccinated late in the season compared with children in all other age groups. Although reasons for this are not clear, children aged 6–23 months likely

FIGURE 2. Average percentage* of all influenza doses administered to children aged 6 months–18 years, by week of administration — Immunization Information System sentinel sites, 2008–09 influenza season



* Unweighted average percentage of doses administered at the eight sentinel sites.

have more visits to health-care providers, resulting in more opportunities for influenza vaccination; the later vaccinations also might reflect children in this age group returning for a second influenza vaccine dose.

The 2008–09 influenza season was the first for which influenza vaccination coverage at IIS sentinel sites was assessed among children aged 5–18 years, a group newly recommended for vaccination by ACIP. Coverage was low at all sites in this group, suggesting that vaccine providers had not incorporated annual influenza vaccination into routine preventive measures for healthy children aged 5–18 years. IIS sites might underascertain influenza vaccination of older children and adolescents because vaccinations administered at pharmacies, urgent-care clinics, school vaccination clinics, and other sites might be less likely reported to IIS than those administered at health-care provider offices. School vaccination campaigns have been used in past influenza seasons to increase the number of children receiving vaccine and reduce influenza-related illness (*8,9*). Immunization programs should work with vaccination providers in traditional and complementary settings to ensure that all administered doses are entered into the IIS.

The findings in this report are subject to at least two limitations. First, although IIS sentinel sites have >85% vaccination provider site participation, not all provider sites in all sentinel sites are enrolled in IIS. The lack of information on vaccinations administered by nonenrolled providers might have resulted in underestimates of vaccination coverage. However, during the 2007–08 influenza season, IIS-based coverage was consistent with coverage calculated by the National Immunization Survey for children aged 6–23 months (*4,10*), suggesting that IIS data are complete at least for children in that age group. Second, these results might not be generalizable to the entire U.S. population and should be viewed as representative of their specific geographic areas only.

Development of a second vaccine recommended for the 2009–10 influenza season, the influenza A (H1N1) 2009 monovalent vaccine, poses a challenge for vaccination providers, particularly with regard to younger children, who might require 2 doses of seasonal influenza vaccine and 2 doses of influenza A (H1N1) 2009 monovalent vaccine to be fully protected. School vaccination clinics and other vaccination sites outside of health-care provider offices might become increasingly important to maximizing opportunities for older children and adolescents to receive influenza vaccine. State and local immunization programs should identify opportunities in traditional and other settings to administer influenza vaccinations to children and adolescents and should work with vaccination providers to ensure that the doses administered are reported to their IIS. Monitoring IIS data will continue to be an important means of providing rapid assessment of progress toward increasing influenza vaccination coverage for seasonal influenza and 2009 pandemic influenza A (H1N1).

Acknowledgments

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Influenza Vaccination Coverage Among Children Aged 6–23 Months — United States, 2007–08 Influenza Season

Infants and children aged <2 years often require medical care for influenza and have higher rates of influenza-related hospitalization than any other age group except persons aged ≥65 years (*1*). Since 2004, the Advisory Committee on Immunization Practices (ACIP) has recommended seasonal influenza vaccination for all children aged 6–23 months (*2*). Full vaccination for these children requires receipt of 2 doses in the current influenza season if they have not been vaccinated previously or received a single dose during the preceding season. To assess influenza vaccination coverage among children aged 6–23 months during September–December of the 2007–08 influenza season, CDC analyzed data from the 2008 National Immunization Survey (NIS). The results of those analyses indicated that, during the 4 months, 40.7% of children aged 6–23 months received ≥1 doses of influenza vaccine, and 23.4% were fully vaccinated. Substantial variability was observed among the 50 states and participating local areas; the percentage of children with full vaccination ranged from 6.4% to 40.9% among states and local areas. Nationally, the percentage of children aged 6–23 months receiving ≥1 doses of influenza vaccine increased from 31.8% in 2006–07 (*3*) to 40.7% in 2007–08, and the percentage with full vaccination increased from 21.3% to 23.4%; however, influenza vaccination coverage among children remains low. Further study is needed to identify barriers to influenza vaccination and to implement strategies that can increase vaccination coverage with emphasis on attaining full vaccination in this population at greater risk for complications from influenza.

NIS is an ongoing, random-digit–dialed telephone survey of households with children who are aged 19–35 months at the time of interview, followed by a mail survey of all of the children's vaccination providers (nominated by the household respondent) to obtain vaccination data (*4*). The 2008 NIS* interviews were conducted during January 3, 2008–February 4, 2009, in all 50 states and in 17 local areas.† Histories of influenza vaccination since birth were obtained through a mail survey of children's vaccination providers.

Two measures of influenza vaccination coverage were reported for children aged 6–23 months: 1) receipt of ≥1 doses of influenza vaccine during September–December 2007, and 2) full vaccination. Full vaccination was defined as 1) receipt of 2 doses from September 1, 2007, through the date of interview or January 31, 2008 (whichever was earlier), among previously unvaccinated children and children who received 1 dose for the first time in the previous influenza season, or 2) receipt of 1 dose of influenza vaccine during September 1, 2007–December 31, 2007, among all other children. The definition of full vaccination reflects a change in ACIP recommendations in 2007; the previous ACIP recommendation considered children fully vaccinated if they received 1 dose during the current season and had only 1 dose their first season (*5*). Vaccination later in the season was not assessed because data collection began in January 2008. NIS methodology, including the weighting procedure, has been described previously (*4*). Season-to-season comparisons of influenza vaccination coverage estimates were conducted using t-tests to determine statistical significance at $p<0.05$.

During the 2008 NIS, the household survey response rate was 63.2%§; provider-reported vaccination records were obtained for 18,430 children (71.0%) aged 19–35 months for whom household interviews were completed (*4*). Among those with provider-reported records, 11,964 met the 6–23 month age criteria for this assessment. Of these 11,964 children, 40.7% received ≥1 or more doses of influenza vaccine, and 23.4% received full vaccination; substantial variability in influenza vaccination coverage was observed among participating states and local areas (Table). The percentages of children receiving full influenza vaccination was >35% in four states (Rhode Island, 40.7%; Massachusetts, 39.8%; Wisconsin, 38.4%; and Connecticut, 35.8%) and one local area (Santa Clara County, California, 40.9%). Full vaccination coverage was <10% in two states (Arkansas, 8.1%, and Mississippi, 7.1%) and three local areas (northern California counties, 9.6%; El Paso County, Texas, 9.6%; and Miami-Dade County, Florida, 6.4%).

Overall in the United States, the percentage of children aged 6–23 months receiving ≥1 doses of influenza vaccine increased 28.0%, from 31.8% in 2006–07 to 40.7% in 2007–08, and the percentage with full vaccination increased 9.9%, from 21.3% to 23.4% (Figure 1) (*5*). A total of 42.4% of participating children who received at least 1 dose during the 2007–08 required a second dose but did not receive one by January 31, 2008 (or date of interview, if interviewed in January).

* Eligible participants were born during January 4, 2005–July 4, 2007.

† The 17 local areas sampled separately for the 2008 NIS included six areas that receive federal immunization grant funds and have been included in the NIS every year since its inception in 1994 (District of Columbia; Chicago, Illinois; New York, New York; Philadelphia County, Pennsylvania; Bexar County, Texas; and Houston, Texas). Also included were eight areas chosen by state grantees based on local need that had been included during 1996–2007 (Los Angeles County, California; northern California counties; Santa Clara County, California; Miami-Dade County, Florida; Baltimore, Maryland; Dallas County, Texas; El Paso County, Texas; and eastern/western Washington counties). Also included were three areas sampled for the first time (Madison and St. Clair counties, Illinois; Minneapolis/St. Paul, Minnesota; and Orange County, Florida).

§ The Council of American Survey Research Organizations (CASRO) household response rate is the product of the resolution rate (82.3%), the screening completion rate (90.3%), and the interview completion rate (85.1%).

TABLE. Percentage of children aged 6–23 months who received influenza vaccination during September–December 2007,* by vaccination status and state/area — National Immunization Survey (NIS), United States, 2007–08 influenza season

State/Area	Unweighted sample size	≥1 doses		Full vaccination†	
		%	(95% CI§)	%	(95% CI)
United States	**11,964**	**40.7**	**(39.1–42.2)**	**23.4**	**(22.2–24.7)**
Alabama	221	35.2	(28.4–42.8)	18.5	(13.3–25.2)
Alaska	159	38.5	(29.8–48.1)	20.6	(14.2–29.0)
Arizona	173	43.3	(34.9–52.1)	23.7	(16.9–32.1)
Arkansas	219	20.0	(14.4–27.1)	8.1	(4.9–13.2)
California	634	44.5	(38.2–50.9)	21.9	(17.3–27.4)
Los Angeles County	188	40.8	(33.5–48.6)	21.6	(15.9–28.8)
Northern counties	153	20.8	(14.2–29.3)	9.6	(5.6–15.9)
Santa Clara County	132	51.6¶	(41.5–61.6)	40.9	(31.5–51.0)
Rest of state	161	45.8	(37.2–54.6)	21.1	(15.0–28.8)
Colorado	184	50.5¶	(40.0–60.9)	30.9	(21.9–41.6)
Connecticut	147	55.1	(45.3–64.5)	35.8	(27.5–45.1)
Delaware	171	43.8	(35.0–53.1)	23.7	(16.9–32.1)
District of Columbia	179	51.2	(42.1–60.3)	27.1	(19.8–35.8)
Florida	494	36.2	(28.8–44.3)	17.4	(12.4–23.9)
Miami-Dade County	162	24.1	(16.9–33.2)	6.4	(3.6–11.3)
Orange County	175	30.9	(23.4–39.6)	18.0	(12.4–25.3)
Rest of state	157	38.7	(29.6–48.7)	19.2	(13.0–27.4)
Georgia	188	39.5	(31.0–48.6)	24.6	(17.6–33.3)
Hawaii	159	37.2	(28.8–46.5)	21.5	(15.6–29.0)
Idaho	174	30.9	(23.4–39.5)	13.1	(8.5–19.7)
Illinois	620	38.7	(32.8–44.9)	24.2	(19.2–30.0)
City of Chicago	218	42.2	(34.3–50.4)	20.7	(15.3–27.4)
Madison and St. Clair counties	196	37.6	(30.0–45.9)	26.3	(19.6–34.5)
Rest of state	206	37.4	(29.7–45.8)	25.4	(18.8–33.4)
Indiana	207	42.4	(34.2–51.0)	25.5	(18.6–34.0)
Iowa	177	36.1	(28.8–44.2)	25.3	(18.8–33.1)
Kansas	204	25.6	(19.3–33.0)	17.7	(12.9–23.8)
Kentucky	170	33.5	(26.0–41.8)	17.0	(11.9–23.7)
Louisiana	221	38.1	(30.8–46.1)	18.0	(12.6–25.1)
Maine	188	39.4	(31.7–47.6)	21.0	(15.1–28.3)
Maryland	427	48.0	(40.6–55.4)	31.7	(25.2–38.9)
City of Baltimore	213	34.7	(27.3–42.9)	15.4	(10.3–22.3)
Rest of state	214	50.0	(41.5–58.5)	34.1	(26.7–42.4)
Massachusetts	174	58.5	(48.7–67.6)	39.8	(30.9–49.4)
Michigan	177	38.7	(30.3–47.9)	24.1	(17.2–32.6)
Minnesota	250	47.0	(39.7–54.5)	27.7	(21.8–34.4)
Minneapolis-St. Paul	168	48.0	(39.2–56.9)	26.9	(20.3–34.8)
Rest of state	82	45.7¶	(33.5–58.5)	28.6¶	(18.8–41.1)
Mississippi	265	22.1	(16.7–28.6)	7.1	(4.6–10.8)
Missouri	204	37.1	(29.7–45.2)	22.1	(16.5–29.1)
Montana	164	33.2	(25.5–42.0)	13.4	(8.8–19.9)
Nebraska	205	45.1	(37.3–53.3)	26.2	(20.0–33.4)
Nevada	163	25.0	(18.1–33.6)	14.1	(8.9–21.5)
New Hampshire	148	48.2	(39.8–56.7)	32.1	(24.8–40.5)
New Jersey	209	39.7	(31.8–48.1)	21.2	(15.6–28.1)
New Mexico	180	33.9	(25.8–43.1)	21.1	(14.7–29.4)
New York	342	45.9	(40.0–52.0)	31.3	(26.0–37.2)
New York City	187	43.4	(35.6–51.6)	27.7	(20.8–35.8)
Rest of state	155	48.6	(39.7–57.7)	35.2	(27.2–44.2)
North Carolina	204	49.7	(41.7–57.7)	27.2	(20.6–34.9)
North Dakota	171	44.0	(36.2–52.2)	24.6	(18.7–31.6)
Ohio	188	40.7	(32.3–49.6)	30.1	(22.7–38.7)
Oklahoma	165	25.7	(19.0–33.9)	13.1	(8.7–19.3)
Oregon	153	29.1	(21.3–38.3)	19.7	(13.4–28.0)
Pennsylvania	395	41.3	(34.4–48.5)	26.8	(21.1–33.3)
Philadelphia County	226	42.4	(35.5–49.6)	27.1	(21.4–33.7)
Rest of state	169	41.1	(33.1–49.5)	26.7	(20.2–34.5)
Rhode Island	141	61.5	(51.6–70.5)	40.7	(31.5–50.6)
South Carolina	231	31.2	(24.3–39.0)	14.8	(10.7–20.1)
South Dakota	190	52.6	(44.3–60.7)	28.7	(22.1–36.5)

TABLE. (*Continued*) Percentage of children aged 6–23 months who received influenza vaccination during September–December 2007, by vaccination status and state/area — National Immunization Survey (NIS), United States, 2007–08 influenza season

State/Area	Unweighted sample size	≥1 doses		Full vaccination†	
		%	(95% CI§)	%	(95% CI)
Tennessee	213	36.1	(28.3–44.6)	21.1	(15.1–28.6)
Texas	901	35.6	(29.6–42.0)	18.5	(14.2–23.8)
Bexar County	194	33.3	(25.8–41.8)	13.5	(9.1–19.5)
City of Houston	186	41.6	(33.6–50.1)	21.9	(16.1–29.0)
Dallas County	178	41.2	(32.9–49.9)	19.7	(13.9–27.3)
El Paso County	179	23.0	(17.3–30.0)	9.6	(6.1–14.7)
Rest of state	164	34.5	(26.0–44.0)	18.7	(12.7–26.7)
Utah	157	42.5	(33.0–52.6)	20.6	(14.2–28.9)
Vermont	149	46.5	(37.7–55.4)	34.6	(26.6–43.6)
Virginia	142	43.0¶	(32.8–53.9)	24.7	(16.6–35.0)
Washington	278	40.5	(32.9–48.6)	23.6	(17.9–30.5)
Eastern/western counties	151	32.2	(24.5–41.0)	18.6	(12.7–26.4)
Rest of state	127	44.0¶	(33.7–54.8)	25.7	(18.1–35.1)
West Virginia	184	40.7	(33.1–48.7)	24.3	(18.1–31.8)
Wisconsin	140	55.5	(45.9–64.7)	38.4	(29.6–47.9)
Wyoming	165	36.6	(29.2–44.7)	23.3	(17.2–30.6)

* Only those children aged 6–23 months during the entire period of September–December 2007 and who had provider-reported immunization records are included.
† Full vaccination: 1) receipt of 2 doses from September 1, 2007, through the date of interview or January 31, 2008 (whichever was earlier), among influenza vaccine naïve children and children who received 1 dose for the first time in the previous influenza season; or 2) receipt of 1 dose of influenza vaccine during September 1, 2007–December 31, 2007, among all other children.
§ Confidence interval.
¶ Estimate might not be reliable; confidence interval width >20.0.

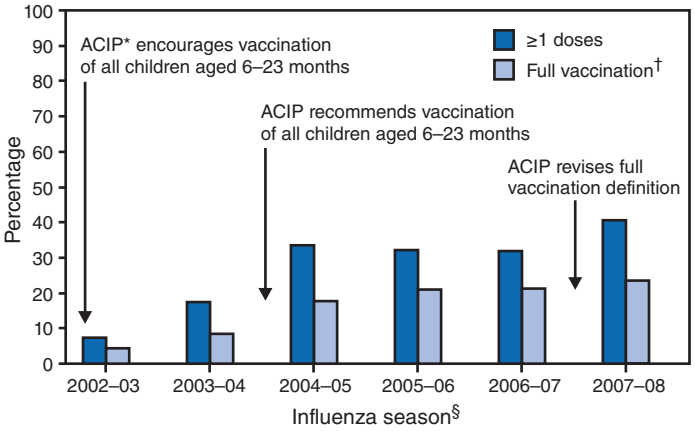
First-dose (or only dose) influenza vaccinations most often were administered during epidemiology weeks 42–45 (October 21–November 17, 2007) with a drop in doses administered during week 46 (Figure 2). Among children requiring 2 doses, the second dose was most often administered during weeks 47–50 (November 26–December 22).

Reported by: *TA Santibanez, PhD, A Fiore, MD, JA Singleton, MS, Immunization Svcs Div, National Center for Immunization and Respiratory Diseases, CDC.*

Editorial Note: This report of influenza vaccination coverage during the 2007–08 influenza season, the fourth season since ACIP recommended routine vaccination for all children aged 6–23 months, indicates the percentage of children receiving ≥1 dose increased 28.0% and the percentage fully vaccinated increased 9.9%, compared with the 2006–07 season. However, despite these increases, the percentage of children fully vaccinated remains low (23.4%). Similarly suboptimal influenza vaccination coverage during the 2007–08 season has been reported for other groups, using data from the National Health Interview Survey: 40.3% among children aged 2–4 years, 38.4% among persons aged 50–64 years, 30.4% among persons with high-risk conditions aged 18–49 years, and 24.2% among pregnant women (*6*).

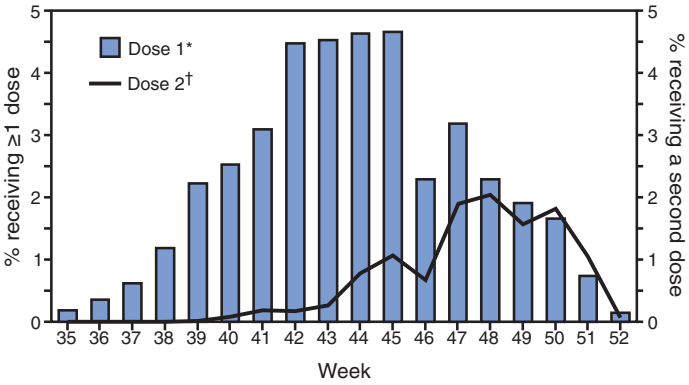
Strategies that have been successful at improving influenza vaccination coverage among children include standing orders, vaccination-only visits for children requiring only immunization services, and reminder/recall systems (*6*). Severity of the influenza season and the amount of corresponding media

FIGURE 1. Percentage of children aged 6–23 months who received influenza vaccination during September–December, by influenza season and vaccination status — National Immunization Survey, United States, 2002–03 through 2007–08 influenza seasons



* Advisory Committee on Immunizaton Practices.
† Full vaccination: 1) receipt of 2 doses from September 1, 2007, through the date of interview or January 31, 2008 (whichever was earlier), among influenza vaccine naïve children and children who received 1 dose for the first time in the previous influenza season; or 2) receipt of 1 dose of influenza vaccine during September 1, 2007–December 31, 2007, among all other children.
§ Number of children: 2002–03 (n = 13,831), 2003–04 (n = 13,881), 2004–05 (n = 12,056), 2005–06 (n = 13,546), 2006–07 (n = 9,710), and 2007–08 (n = 11,964).

FIGURE 2. Percentage of children aged 6–23 months receiving influenza vaccination September–December 2007, by week of vaccination and dose received — National Immunization Survey, United States, 2007–08 influenza season



* Among all age-eligible children (n = 11,964).
† Among those age-eligible children who met the Advisory Committee on Immunization Practices recommendation to receive 2 doses during the current influenza season (i.e., had received no influenza dose before September 1, 2007) or who had received only 1 dose for the first time during the 2006–07 influenza season (n = 9,889).

attention also have been found to affect parental perceptions and acceptance of vaccine for their children (*7*).

In 2007, ACIP recommended that children aged <9 years who received only 1 dose in their first year of vaccination receive 2 doses the following year, with single annual doses in subsequent years (*5*). This change in recommendation was based on a study indicating that children aged <9 years who received only 1 dose during their initial year of vaccination and then received 2 doses the following season had better protection against influenza than children who received only 1 dose in each of their first two seasons (*8*). Although this change in recommendation increased by 19% the number of children in the NIS sample who were recommended to receive 2 doses, a 9.9% increase in the percentage of children receiving full vaccination was observed from 2006–07 to 2007–08.

The findings in this report are subject to at least two limitations. First, because NIS interviews were conducted during the influenza season and some children received influenza vaccinations after the interview, coverage estimates likely are underestimated. Second, coverage estimates might be greater among children in this analysis, compared with all children aged 6–23 months, at some point during September–December. Children who became eligible for influenza vaccination at age 6 months after September 1, 2007 (and thus were excluded from the analysis), might have been less likely to have been vaccinated because of a shorter duration of time they were eligible during the vaccination period. Other limitations of vaccination coverage data obtained through the NIS have been described previously (*4,9*).

During the 2009–10 influenza season, children aged 6–23 months are recommended to receive both the seasonal influenza vaccine and influenza A (H1N1) 2009 monovalent vaccine; many children in this age group might require 2 doses of each vaccine (*10*). Vaccination providers are encouraged to begin offering doses as soon as vaccine becomes available and to continue vaccination efforts throughout the influenza season. These recommendations are especially important for children who require 2 doses. When possible, providers should use strategies shown to improve vaccination coverage such as reminder/recall systems and standing orders.

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Hurricane Ike Rapid Needs Assessment — Houston, Texas, September 2008

On the morning of September 13, 2008, Hurricane Ike made landfall on the upper Texas Gulf coast at Galveston Island as a category 2 storm, with hurricane force winds extending 125 miles from its center (*1*). As the storm continued through nearby Houston and surrounding areas, it caused power blackouts for more than 3 million households. In Houston, city services were disrupted for weeks, officials declared nightly

curfews, and supplies of bottled water, ice, electrical generators, and gasoline became scarce. At least five deaths were associated with carbon monoxide asphyxiation from improper use of generators in homes (*2*). During September 18–19, 2008, the Houston Department of Health and Human Services conducted a rapid needs assessment to gauge the prevalence of injuries and health complaints, determine immediate needs for health-care and medical supplies, and provide assessment information to those responsible for postdisaster response management and intervention. This report describes the assessment, which found that services to residents were disrupted longer and more extensively than anticipated, and that the greatest need among surveyed households was for assistance obtaining food (26.8%). The results suggest the need to prepare communities at risk for hurricanes for longer than the commonly anticipated 3–5 day recovery period. These findings also highlight the importance of rapid assessments of health and basic needs in such areas, even when communities sustain little structural loss and few injuries. Responders should prepare to support such areas that might experience health-related effects exacerbated by protracted recovery periods.

To conduct the assessment, the health department used a cluster sampling technique modified from that developed by the World Health Organization for its Expanded Programme on Immunizations (*3*). Because official damage assessment data to guide health assessment efforts were unavailable, initial observational reports of damage recorded by various city department employees and the local media were used to define a broad study area of 262 square miles, bound by the City of Houston Solid Waste Management department's official debris collection zones.* The study area included a sampling frame of 340,370 households and excluded sections of Houston that extended into well-publicized evacuation zones (*4*), from which residents had been ordered to evacuate on September 11, 2008. The study area also excluded large sections of the city for which no reports of damage were available up to the date of the assessment (Figure).

Geographic information system (GIS) software was used to divide the selected debris collection zones into 159 clusters (aggregations of census block groups) of roughly 2,000 households each, from which a simple random sample of 75 clusters was selected for assessment. Approximately 100 health department staff members and volunteers, organized into 20 teams, were trained and deployed to the field with maps of the assigned clusters. From random starting points, teams systematically sampled seven households per cluster, following the random walk method, with a specially-devised protocol for decision making at corners and intersections using a coin toss. Teams interviewed one convenient adult representative at each selected household for household-level needs and health information.

A 26-item assessment tool, adapted from that used in Houston following Tropical Storm Allison (*5*), was developed and designed for scanning using optical mark recognition software. Data collection was completed in 68 of 75 clusters, and responses were weighted for probability of household selection within clusters to adjust for variations in sampling during the 2-day field period. Weighted proportions and 95% confidence intervals were calculated using statistical software.

Mapping, training, conducting the field work, analysis, and report writing were completed in 8 days, and a total of 440 household-level interviews were conducted. All interviews were conducted on September 18 and 19, the 5th and 6th days after the hurricane made landfall. Among the households, 18.9%† reported having experienced flooding in their residences, (Table 1).§ Although none of the households included in the survey was in an official hurricane evacuation zone, 24.7% of households reported having evacuated the home for at least 1 day because of the storm. Only 3.9% of households indicated a current need for assistance in obtaining emergency shelter.¶ However, 23.2% of households reported that they were sheltering members of other households in their residence,** and 13.8% of households reported that some of their own family members had not returned to the residence 5–6 days after the storm had passed.†† More than half (52.3%) of all households had at least one resident belonging to one of three groups that had been previously designated by the health department as vulnerable groups of concern: children aged <2 years, pregnant women, and adults aged >60 years. Households with older adults represented the largest portion (36.1%) of households with vulnerable members.

At the time of the survey, utility services remained disrupted (Table 1). Among all households surveyed, approximately 55% reported that they had lost electricity and were still without power; 9.5% reported using gasoline-powered generators to

* The debris collection zones are a part of the Houston's overall Emergency Management Plan (Annex W), and are based on the number of homes and the estimated amount of debris that would be collected following a category 4 hurricane.

† All percentages have been weighted.

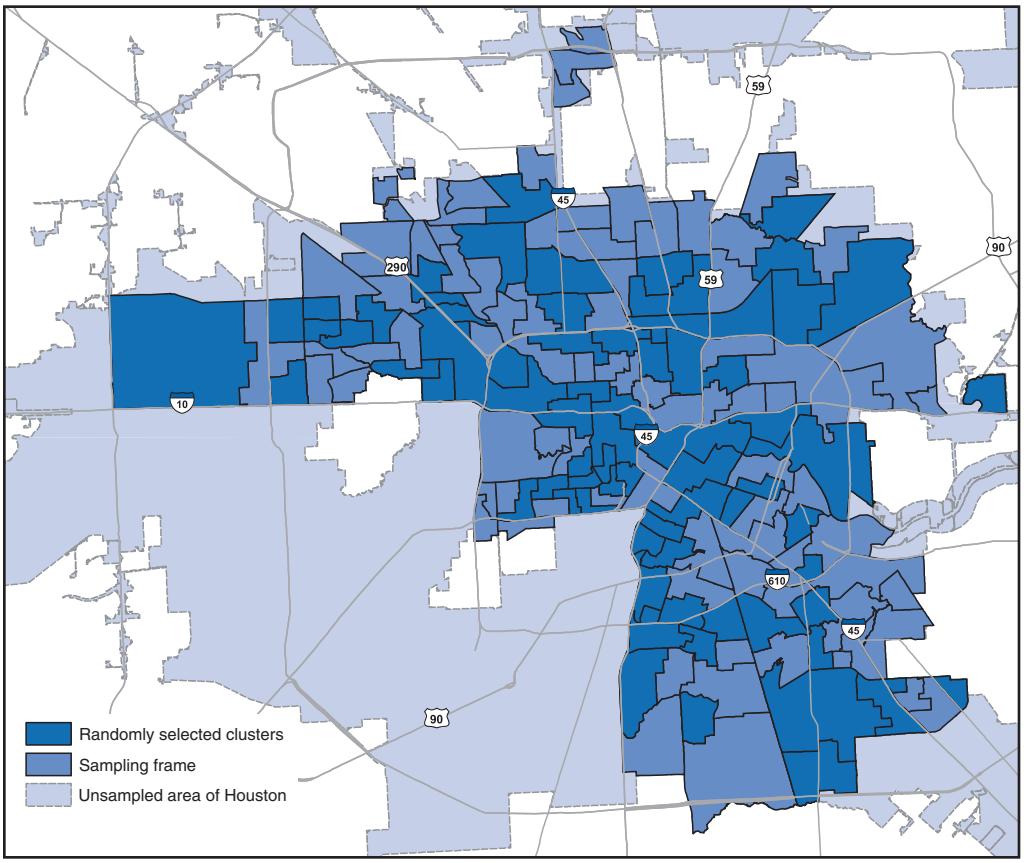
§ The term "flooded" was not specifically defined by the survey, and all evidence of it was self-reported. Residents were asked the yes-no question, "Was your home flooded?" If the response was yes, a follow-up question, "How long was it flooded?" was asked, with an open-ended response.

¶ In response to the yes-no question, "Please report whether anyone in your household needs assistance with obtaining emergency shelter."

** In response to the yes-no question, "Are you sheltering people from other households at your residence because of the storm?"

†† In response to the yes-no question, "Are household members residing someplace other than this house, today?" This was a follow-up question posed to those households that reported that they had evacuated their homes for at least one day specifically because of the storm.

FIGURE. Areas in which rapid needs assessments were conducted by the Houston Department of Health and Human Services after Hurricane Ike — Houston, Texas, September 18–19, 2008



restore limited electrical power to their homes and 29.1% reported using charcoal grills and camp stoves for cooking. Among surveyed households, 6.4% reported having no functioning toilet, and 18.3% reported no garbage pickup. More than one in four households (26.8%) reported that they needed assistance in obtaining food.[§§] Other reported needs included clothing (13.1%), prescription medication (11.1%), access to medical care (11.1%), and transportation (11.1%).

Since the start of the storm, the most commonly reported new health complaints were sleep disturbances (25.2%), headache (17.1%), diarrhea (15.6%), and respiratory complaints (13.2%) (Table 2).[¶¶] Household reports of new injuries since the start of the storm were relatively rare and included puncture wounds (1.9%), cuts needing stitches (1.3%), and animal bites (1.1%).

Survey results provided guidance for local hurricane disaster mitigation activities. The health department used the information to anticipate immediate needs of households affected by the storm, arrange for various referral services, and establish six comfort stations at sites across the city, from which ready-to-eat-meals, bottled water, ice, and boxed food supplies were distributed. The health department also used the results to estimate demand for emergency shelters in the aftermath of the storm and then provided support to two temporary shelters in Houston.

Reported by: *M Perry, MPH, D Banerjee, PhD, M Slentz, R Stephen, MS, L Liu, MD, D Tran, MD, S Mukkavilli, MPH, RR Arafat, MD, City of Houston Dept of Health and Human Svcs, Houston, Texas.*

Editorial Note: The rapid community assessment described in this report provided information to the City of Houston Office of Emergency Management and other city officials regarding basic needs of residents across large sections of the city in the aftermath of Hurricane Ike. The health department and its many partners among community-based, faith-based, mental health, and health-care organizations used the assessment information to locate and provide health service referrals, outreach, and recovery assistance to affected households.

The findings from the assessment suggest that by the 5th and 6th day after the storm, the days when the interviews were conducted, the primary effects of Hurricane Ike upon the health of residents in the study area were related to disruption of utilities and regular access to food, medication, and health-care services. These findings are consistent with those of needs assessments conducted in other areas surrounding Galveston after Hurricane Ike (*6*), and after weather-related disasters such as Tropical Storm Allison and Hurricane Katrina (*5,7*).

[§§] In response to the yes-no question, "Please report whether anyone in your household needs assistance with obtaining food."

[¶¶] The question asked was "How many people staying in this house had the condition since the start of the storm?" and listed a set of conditions (A. stomachache/nausea/vomiting/diarrhea? B. respiratory/cold? C. severe headache? D. dizziness? E. sleep disturbance? F. nightmare?). Injuries were similarly assessed with the question, "Has anyone living in this house been injured since the start of the storm?" with types of injuries being listed (A. cuts needing stitches? B. puncture wounds? C. crush injury? D. animal bites? E. broken bone? F. blunt head injury? G. deaths?).

TABLE 1. Selected conditions in households sampled during a rapid public health assessment following Hurricane Ike — Houston, Texas, September 18–19, 2008

Condition	No.*	(%)†	(95% CI§)
Dwelling type			
Single-family home	369	84.1	(76.9–89.4)
Apartment (≥6 units)	47	10.5	(6.1–17.5)
Duplex or fourplex	23	5.2	(3.2–8.2)
Mobile home/trailer	1	0.2	(0.0–1.7)
Flooding in the home			
Home was flooded	85	18.9	(14.9–23.8)
Vulnerable groups in the home			
>60 yrs	156	36.1	(30.4–42.3)
<2 yrs	54	11.8	(8.7–15.7)
Pregnant women	20	4.4	(2.8–6.7)
Shelter actions taken			
Evacuated home at some point because of storm	108	24.7	(20.3–29.7)
Households sheltering nonhousehold members	104	23.2	(18.3–28.9)
Households with members still residing elsewhere	64	13.8	(10.6–17.8)
Sought emergency shelter	17	3.9	(2.5–5.8)
Health care/basic needs (required assistance to obtain)			
Food	117	26.8	(21.4–32.9)
Clothing	60	13.1	(9.8–17.2)
Pharmacy or medical supplies	51	11.1	(8.1–15.0)
Doctor or medical care	51	11.1	(8.1–15.0)
Services disrupted (at time of interview)			
No electricity	240	54.6	(46.2–62.8)
No functioning telephone	96	23.0	(18.0–28.9)
No garbage pickup	78	18.3	(13.3–24.6)
No reliable transportation	44	11.1	(7.6–16.0)
No drinking water	32	7.3	(5.0–10.6)
No functioning toilet	31	6.4	(4.2–9.6)
Emergency energy sources used			
Cooking on charcoal or camp stove	128	29.1	(23.5–35.4)
Gasoline generator	38	9.5	(5.9–14.9)
Storm preparation information source			
TV	320	72.4	(66.4–77.7)
Radio	63	15.0	(11.3–19.8)
Neighbor/friend/family	14	2.9	(1.7–4.8)
Internet	7	1.6	(0.7–3.3)
Newspaper	1	0.2	(0.0–1.4)
Other	16	3.5	(1.7–7.0)

* Unweighted frequencies; N = 440. Missing values are not reported.
† Proportions calculated from weighted frequency data.
§ Confidence intervals for weighted proportions.

Residents primarily relied on televised reports (70.4%) and radio reports (15.0%) to prepare for the storm.*** Some residents relied on neighbors, friends, or family (2.9%) as their primary source of information, or other sources (3.5%), which included communications at their workplace. Very few relied on print media as their primary information resource to prepare themselves (0.2%). The relatively high percentage of households reporting a need for assistance in obtaining food (26.8%) so soon after the hurricane suggests that many Houston residents had not prepared themselves to be without essential supplies for more than a few days, and that recommendations commonly promoted in the news media to prepare for a 3–5 day recovery period might have been inadequate or not heeded by residents. Prehurricane preparedness messages advising residents to store up to a 7-day supply of nonperishable foods and medicines were promoted by the health department through community- and faith-based organizations, by way of presentations, pamphlets, and evacuation registration guidance targeted largely at households with vulnerable population groups. Such messages might not have reached a large proportion of Houston residents, or many households might have lacked resources to amass and maintain the recommended food stores. The Hurricane Ike experience suggests that longer recovery periods should be incorporated into public health messages,

*** In response to the question, "What source did you rely on most to prepare yourself for the storm?" Only one response was expected, and the choices were television, radio, Internet, neighbor/friend/family, newspaper, and other.

TABLE 2. Number and percentage of households with inhabitants reporting new health symptoms and injuries 5–6 days after landfall of Hurricane Ike — Houston, Texas, September 18–19, 2008

Reported condition	No.*	(%)†	(95% CI§)
Symptoms¶			
Sleep disturbance	108	25.2	(19.9–31.3)
Severe headache	72	17.1	(13.1–22.0)
Stomachache/Nausea/Vomiting/Diarrhea/	70	15.6	(12.2–19.8)
Respiratory/Cold	58	13.2	(9.6–17.3)
Nightmare	58	12.5	(9.5–16.3)
Dizziness	49	10.6	(7.7–14.4)
Injuries**			
Puncture wounds	8	1.9	(0.9–3.9)
Animal bites	5	1.1	(0.5–2.7)
Cuts needing stitches	2	1.3	(0.5–3.2)
Crush injury	1	0.4	(0.1–1.7)
Broken bone	1	0.2	(0.0–1.7)
Head injury	1	0.2	(0.0–1.7)
Death of person in household	1	0.2	(0.0–1.7)

* Unweighted count; N = 440.
† Proportions are calculated from weighted frequency data.
§ Confidence intervals for weighted proportions.
¶ The question asked was "How many people staying in this house had the condition since the start of the storm?" and listed a set of conditions (A. stomachache/nausea/vomiting/diarrhea? B. respiratory/cold? C. severe headache? D. dizziness? E. sleep disturbance? F. nightmare?).
** Injuries were assessed with the question, "Has anyone living in this house been injured since the start of the storm?" with types of injuries being listed (A. cuts needing stitches? B. puncture wounds? C. crush injury? D. animal bites? E. broken bone? F. blunt head injury? G. deaths?).

using a variety of media to reach the broadest population possible. The demand for food, ice, medication, medical supplies and care indicated to emergency planners that the potential public health effects associated with protracted power outages in the area warranted new and special consideration for future disaster preparedness planning and management (*6*).

The findings in this report are subject to at least four limitations. First, given the urgency of collecting rapid assessment data from a large geographic area, some safeguards against selection bias were ignored, such as the requirement to revisit targeted households at which no one was present at the time of the field visit. However, other research has found that this bias might have limited impact upon estimates (*8*). Second, exclusion of large areas of the city from assessment prevented the results from being generalizable to the city of Houston as a whole. Third, variability in the number and constancy of trained team membership over the course of the survey might have reduced the reliability of results. Many field staff were unavailable for the entire survey period, and their replacements, when available, required repeated, and increasingly brief "just-in-time" training. The variability in trained staffing contributed to the collection of a number of incomplete or unusable returned questionnaires. Finally, the survey questions did not uniformly distinguish preexisting needs from those specifically arising from effects of the storm, particularly in terms of needs for assistance with access to medical and health-care services, clothing, and food. This made it difficult to quantify and interpret the magnitude of these and other effects of the storm, and especially their effects among households with vulnerable populations.

Efficient coordination of information between agencies responsible for postdisaster response is necessary to facilitate rapid assessment. The destructive effects of Hurricane Ike in Houston were widespread, such that preliminary damage assessment data useful for a geographically targeted assessment were not available until several months after the storm. When planning for future emergency weather events of this magnitude, local health departments should anticipate that official damage reports might not be available immediately and should therefore conduct their assessment broadly, efficiently, and as soon as possible.

Acknowledgments

The findings in this report are based, in part, on the contributions of volunteer field staff and supervisors of the Houston Department of Health and Human Services, and students from the University of Texas School of Public Health, Houston, Texas.

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Bacterial Coinfections in Lung Tissue Specimens from Fatal Cases of 2009 Pandemic Influenza A (H1N1) — United States, May–August 2009

On September 29, this report was posted as an MMWR Early Release *on the* MMWR *website* (http://www.cdc.gov/mmwr).

In previous influenza pandemics, studies of autopsy specimens have shown that most deaths attributed to influenza A virus infection occurred concurrently with bacterial pneumonia (*1*), but such evidence has been lacking for 2009 pandemic influenza A (H1N1). To help determine the role of bacterial coinfection in the current influenza pandemic, CDC examined postmortem lung specimens from patients with fatal cases of 2009 pandemic influenza A (H1N1) for bacterial causes of pneumonia. During May 1–August 20, 2009, medical examiners and local and state health departments submitted specimens to CDC from 77 U.S. patients with fatal cases of confirmed 2009 pandemic influenza A (H1N1). This report summarizes the demographic and clinical findings from these cases and the laboratory evaluation of the specimens. Evidence of concurrent bacterial infection was found in specimens from 22 (29%) of the 77 patients, including 10 caused by *Streptococcus pneumoniae* (pneumococcus). Duration of illness was available for 17 of the 22 patients; median duration was 6 days (range: 1–25 days). Fourteen of 18 patients for whom information was available sought medical care while ill, and eight (44%) were hospitalized. These findings confirm that bacterial lung infections are occurring among patients with fatal cases of 2009 pandemic influenza A (H1N1) and underscore both the importance of pneumococcal vaccination for persons at increased risk for pneumococcal pneumonia and the need for early recognition of bacterial pneumonia in persons with influenza.

CDC receives tissue specimens routinely from patients with confirmed or suspected infectious diseases and provides histopathologic, immunohistochemical, and molecular evaluations. Early in the 2009 influenza A (H1N1) virus pandemic, CDC provided guidelines for submission of tissue specimens for evaluation of influenza virus infections.* Confirmed fatal cases of 2009 pandemic influenza A (H1N1) were defined as influenza-like illness or postmortem findings suggestive of viral pneumonia and laboratory-confirmed 2009 pandemic influenza A (H1N1) virus infection by real time reverse transcriptase–polymerase chain reaction (rRT-PCR). Respiratory specimens (i.e., lung, trachea, and large-airway specimens) collected at autopsy were submitted to CDC by medical examiners, hospitals, and local and state health departments for additional evaluation.

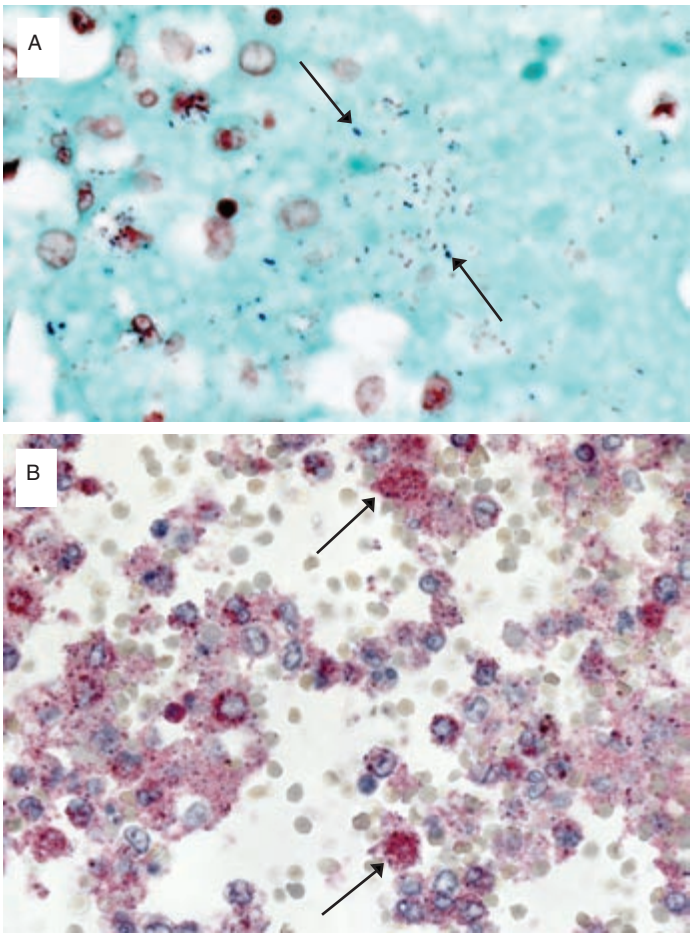
Specimens were received from 77 patients who had 2009 pandemic influenza A (H1N1) virus infection confirmed before death (N = 41) or after death (N = 36). Of the 77 cases evaluated, 56 (72%) had at least some clinical information available, and 35 (45%) had preliminary autopsy reports submitted with the tissue specimens. All specimens were examined using hematoxylin and eosin stain, Lillie-Twort tissue Gram stain, and Warthin-Starry silver stain (Figure). Tissue specimens also were evaluated by various immunohistochemical assays using antibodies that are specifically reactive with *S. pneumoniae*, *Streptococcus pyogenes*, *Staphylococcus aureus,* or *Haemophilus influenzae*. All bacteria were evaluated by a broad-range PCR assay that targets a segment of the 16S ribosomal DNA gene in DNA extracted from formalin-fixed, paraffin-embedded tissue (*2*). PCR for *lytA* and *spy* genes and pneumococcal serotyping by multiplex PCR were conducted to further characterize streptococcal coinfections.†

Of the 77 confirmed cases evaluated, 22 had histopathologic, immnohistochemical, and molecular evidence of coinfection with an identified bacteria, including 10 cases with *S. pneumoniae*, six with *S. pyogenes*, seven with *S. aureus*, two with *Streptococcus mitis*, and one with *H. influenzae*; four cases involved multiple pathogens (Table). The median age of the 22 patients was 31 years (range: 2 months–56 years); 11 (50%) were male. The cases were reported from eight states: California, Hawaii, Illinois, New Jersey, New York, Texas, Utah, and Virginia.

Duration of illness was available for 17 of the 22 patients; median duration was 6 days (range: 1–25 days). Fourteen of 18 patients with information available sought medical care while ill, and eight were hospitalized. Of the seven hospitalized

*Additional information available at http://www.cdc.gov/h1n1flu/tissuesubmission.htm.
† Additional information available at http://www.cdc.gov/ncidod/biotech/strep/protocols.htm.

FIGURE. Histochemical and immunohistochemical diagnosis of *Streptococcus pneumoniae* infection in a patient with confirmed 2009 pandemic influenza A (H1N1). (A) Detection of Gram-positive cocci (arrows) with use of Lillie- Twort Gram stain of lung tissue (original magnification ×63). (B) Immunohistochemical staining of multiple *S. pneumoniae* (arrows) with use of immunoalkaline phosphatase with naphthol-fast red and hematoxylin counterstain (original magnification ×63).



patients with information available, all required mechanical ventilation. Seven of nine patients with information available on antimicrobial therapy were treated with antibiotics. Sixteen of the 21 patients for whom previous medical history was known had underlying medical conditions that were known to increase the risk for influenza-associated complications (16 patients) (*3*) or that were indications for vaccination with 23-valent pneumococcal polysaccharide vaccine (PPSV23) (15 patients).[§]

Reported by: *J Louie, MD, C Jean, MPH, California Dept of Public Health. T-H Chen, MD, S Park, MD, R Ueki, Hawaii State Dept of Health. T Harper, MD, Stroger Hospital of Cook County; Chicago Dept of Public Health. E Chmara, MD, Northern Region Medical Examiner Office; New Jersey Dept of Health and Senior Svcs. J Myers, Erie County Medical Center; R Stoppacher, MD, Onondaga County Medical Examiner's Office; C Catanese, MD, Orange County Medical Examiner's Office; City of New York Office of the Chief Medical Examiner; New York City Dept of Health and Mental Hygiene; New York State Dept of Health. N Farley, MD, Valley Forensics, P.L.L.C.; Texas Dept of State Health Svcs. E Leis, MD, Utah Office of the Medical Examiner; Utah Dept of Public Health. C DiAngelo, MD, Northern District Office of the Chief Medical Examiner, Virginia; Virginia Dept of Health. AM Fry, MD, L Finelli, DrPH, Influenza Div, MG Carvalho, PhD, B Beall, PhD, M Moore, MD, C Whitney, MD, Div of Bacterial Diseases, National Center for Immunization and Respiratory Diseases; Infectious Diseases Pathology Br, National Center for Zoonotic, Vector-Borne, and Enteric Diseases; DM Blau, DVM, PhD, EIS Officer, CDC.*

Editorial Note: During previous influenza pandemics, bacterial coinfections caused by *S. pneumoniae*, *H. influenzae, S. aureus,* and group A *Streptococcus* have been important contributors to morbidity and mortality (*1,4*). However, two early reviews of severe cases of 2009 pandemic influenza A (H1N1) showed no evidence of bacterial pneumonia among 30 hospitalized patients with laboratory-confirmed cases in California (*5*) and 10 intensive-care patients in Michigan (*6*). These reports might have led to a perception that bacterial coinfections are playing a limited role or no role in influenza deaths during the current pandemic. However, failure to document bacterial lung infections might reflect the difficulty of establishing specific bacterial diagnoses among persons with bacterial coinfections. Routine clinical tests used to identify bacterial infections among patients with pneumonia do not detect many of these infections. For example, <10% of patients who are hospitalized with clinically diagnosed pneumonia have blood cultures that are positive for bacterial infections (*7*). Histopathologic evaluation and testing of lung tissue, especially using PCR and immunochemistry methods, can detect many bacterial lung infections missed by standard clinical methods (*2*). The findings in this report indicate that, as during previous influenza pandemics, bacterial pneumonia is contributing to deaths associated with pandemic H1N1 and that histopathologic methods can be used to identify bacterial coinfections after death.

Although the findings in this report confirm the presence of bacterial lung coinfection, the results cannot be used to assess the prevalence of bacterial pneumonia among patients who have died from pandemic H1N1. The cases in this report do not come from a systematic sample and might not be representative of all pandemic H1N1 deaths or all pandemic H1N1 deaths associated with bacterial pneumonia. Systematic research is needed to determine the incidence and outcome of bacterial lung coinfections among patients with pandemic H1N1 virus infection and to quantify the role of these infections in fatal cases.

[§] Additional information available at http://www.cdc.gov/h1n1flu/guidance/ppsv_h1n1.htm.

TABLE. Characteristics of patients with fatal 2009 pandemic influenza A (H1N1) and histopathologic evidence of bacterial lung infection — United States, May–August 2009

			Receipt of health care		Receipt of antimicrobials			
Age	Sex	Illness duration	Sought medical care	Hospitalized	Antibiotics	Antivirals	Relevant medical history	Bacteria detected
2 mos	M	1 day	Yes	No	No	No	None reported	*Streptococcus pneumoniae* (serotype 15B/15C)
9 yrs	F	6 days	Yes	No	No	No	None reported	Group A *Streptococcus* (*S. pyogenes*)
9 yrs	F	15 days	Yes	Yes	Yes	Yes	None reported	*Staphylococcus aureus* (methicillin-resistant *S. aureus* [MRSA])
11 yrs	F	6 days	No	No	No	No	Obesity	Group A *Streptococcus* (*S. pyogenes)* and *S. pneumoniae* (serotype 19A)
13 yrs	M	~5 days	Yes	Yes	Unknown	Yes	None reported	*S. aureus*
15 yrs	M	2 days	No	No	No	No	Down syndrome	*S. aureus*
15 yrs	M	9 days	Yes	Yes	Yes	No	None reported	*S. aureus* (MRSA) and *Haemophilus influenzae*
27 yrs	M	5 days	Yes	Yes	Yes	Yes	Human immunodeficiency virus (HIV) infection	*S. aureus* (MRSA) and group A *Streptococcus* (*S. pyogenes)*
28 yrs	M	Unknown	Unknown	Unknown	Unknown	Unknown	Asthma, obesity	*S. pneumoniae*
30 yrs	M	3 days	No	No	Unknown	Unknown	Drug use	Group A *Streptococcus (S. pyogenes)* and *Streptococcus mitis*
30 yrs	M	Unknown	Yes	Yes	Yes	Yes	Hypertension, diabetes mellitus, obesity	*S. pneumoniae*
34 yrs	M	~3 days	Yes	No	Unknown	Unknown	Hypertension, obesity	*S. pneumoniae* (serotype 10F/10C/33C)
36 yrs	F	5 days	No	No	Yes	No	None reported	*S. mitis*
43 yrs	F	3 days	Yes	No	Yes	Yes	Asthma, chronic obstructive pulmonary disease, hypothyroidism	*S. aureus* (MRSA)
44 yrs	M	5 days	Unknown	Unknown	Unknown	Unknown	Unknown	*S. pneumoniae* (serotype 6A/B)
46 yrs	F	~4 days	Yes	Yes	Yes	Yes	Stroke	*S. pneumoniae* (serotype 15A/15F)
47 yrs	F	7 days	Yes	No	Unknown	Unknown	Obesity, smoking	Group A *Streptococcus* (*S. pyogenes)*
47 yrs	F	11 days	No	No	Yes	Yes	Obesity	*S. pneumoniae* (serotype 6A/B)
47 yrs	M	25 days	Yes	Yes	Yes	Yes	Asthma, hypertension, previous splenectomy	*S. aureus* (MRSA)
48 yrs	F	7 days	No	No	No	No	Non–insulin-dependent diabetes mellitus, thyroid adenoma	*S. pneumoniae*
55 yrs	F	7 days	Yes	Yes	Yes	Yes	Down syndrome, hepatitis B	*S. pneumoniae* (serotype 11A/11D)
56 yrs	F	7 days	Yes	No	Unknown	Unknown	Obesity, hypertensive cardiovascular disease	Group A *Streptococcus* (*S. pyogenes*, type M18)

Medical examiners and coroners have an important role in the surveillance of deaths caused by the 2009 pandemic influenza A (H1N1) virus (*8*). Histopathologic techniques can assist with postmortem diagnosis of coinfections in patients in whom culture, antemortem or postmortem, does not detect bacteria. When autopsies are performed for patients with confirmed or suspected influenza who die after acute respiratory disease, a pathological evaluation of respiratory tissues should be conducted and should include testing for both viral and bacterial pathogens (*8*).

The findings in this report are subject to at least three limitations. First, not all potential bacterial pathogens (e.g., *Legionella* species) were evaluated. Second, the analysis of patient characteristics was based on limited patient information. Because medical records and death certificates generally were not available, no conclusion could be drawn about whether the cause of

death was influenza, bacterial infection, or both. Third, because assessments of bacterial coinfections were conducted at autopsy, inadequate sampling, collection of specimens from unaffected portions of the lung, or prolonged illness and treatment before death might have prevented identification of bacteria.

The most common bacteria found in patients described in this report were *S. pneumoniae*. This infection was documented in 10 of the 22 patients. Although no data were available on the vaccination status of the 22 patients, one patient was aged <5 years and was therefore a candidate for pneumococcal conjugate vaccine, and 15 others had underlying medical conditions that were indications for PPSV23 vaccine (*9,10*). Persons at greatest risk for invasive pneumococcal disease include young children, older adults, and persons of any age with certain conditions, including chronic lung or cardiovascular disease and immunosuppressive conditions. All children aged <5 years should receive pneumococcal conjugate vaccine according to current Advisory Committee on Immunization Practices (ACIP) recommendations (*9*). In addition, PPSV23 is recommended for all persons aged 2–64 years with certain health conditions and all persons aged ≥65 years.[¶] Available vaccination coverage data indicate that only a small proportion of persons aged 2–64 years in the United States who are recommended by ACIP to receive pneumococcal vaccine have received the vaccine. One study indicated that only 16% of persons aged 18–49 years with indications for PPSV23 vaccine had received the vaccine.[**] Because of the higher rates of 2009 pandemic H1N1 illness and death among persons aged 2–64 years, providers should target persons in this group who have existing ACIP indications for PPSV23 to receive the vaccine.

The findings in this report also underscore the importance of managing patients with influenza who also might have bacterial pneumonia with both empiric antibacterial therapy and antiviral medications.[††] In addition, public health departments should encourage the use of pneumococcal vaccine, seasonal influenza vaccine, and, when the vaccine becomes available, pandemic influenza A (H1N1) 2009 monovalent vaccine.

[¶] Additional information available at http://www.cdc.gov/h1n1flu/guidance/ppsv_h1n1.htm.

[**] Additional information available at http://www.cdc.gov/flu/professionals/vaccination/pdf/NHIS89_07ppvvaxtrendtab.pdf.

[††] Additional information available at http://www.cdc.gov/h1n1flu/recommendations.htm.

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Announcement

Get Smart About Antibiotics Week—October 5–11, 2009

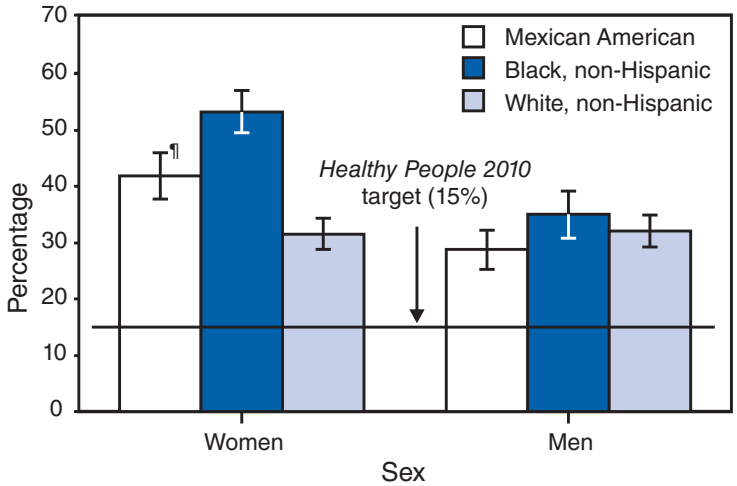
Get Smart About Antibiotics Week is scheduled for October 5–11, 2009. This annual effort coordinates the work of CDC's Get Smart: Know When Antibiotics Work campaign, state-based appropriate antibiotic use campaigns, nonprofit partners, and for-profit partners during a week-long observance focused on antibiotic resistance and the importance of appropriate antibiotic use.

Inappropriate use of antibiotics can promote antibiotic resistance. To reduce the spread of resistance, the Get Smart program urges health-care providers to avoid prescribing antibiotics to treat viral upper respiratory infections (URIs) and to 1) identify and discuss patient concerns related to URIs, 2) recommend symptomatic therapy for URIs, and 3) prescribe a targeted antibiotic (rather than broad-spectrum) for bacterial infections. Additional information is available at http://www.cdc.gov/getsmart.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Prevalence* of Obesity† Among Adults Aged ≥20 Years, by Race/Ethnicity§ and Sex — National Health and Nutrition Examination Survey, United States, 2003–2006



* Prevalence estimates are age adjusted to the 2000 U.S. standard population.
† Defined as having a body mass index (weight [kg] / height [m^2]) ≥30.
§ The categories non-Hispanic black and non-Hispanic white include persons who reported only one race and exclude persons of Hispanic ethnicity. Persons of Mexican-American ethnicity might be of any race.
¶ 95% confidence interval.

The age-adjusted percentage of adults aged ≥20 years who were obese during 2003–2006 varied by race/ethnicity among women, ranging from 53.3% for non-Hispanic black women to 41.8% for Mexican-American women and 31.6% for non-Hispanic white women. Obesity levels were more similar for Mexican-American men (28.8%), non-Hispanic black men (35.0%), and non-Hispanic white men (32.0%). None of the groups had met the *Healthy People 2010* target of 15% (objective 19-02).

SOURCES: National Health and Nutrition Examination Survey, 2003–2006. Available at http://www.cdc.gov/nchs/nhanes.htm.

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TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending September 26, 2009 (38th week)*

Disease	Current week	Cum 2009	5-year weekly average†	Total cases reported for previous years 2008	2007	2006	2005	2004	States reporting cases during current week (No.)
Anthrax	—	2	—	—	1	1	—	—	
Botulism:									
foodborne	—	12	0	17	32	20	19	16	
infant	1	40	2	109	85	97	85	87	CA (1)
other (wound and unspecified)	—	18	0	19	27	48	31	30	
Brucellosis	—	71	2	80	131	121	120	114	
Chancroid	—	21	0	25	23	33	17	30	
Cholera	—	7	0	5	7	9	8	6	
Cyclosporiasis§	1	107	2	139	93	137	543	160	FL (1)
Diphtheria	—	—	—	—	—	—	—	—	
Domestic arboviral diseases§,¶:									
California serogroup	—	22	4	62	55	67	80	112	
eastern equine	—	3	0	4	4	8	21	6	
Powassan	—	1	—	2	7	1	1	1	
St. Louis	—	7	1	13	9	10	13	12	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§,**:									
Ehrlichia chaffeensis	10	560	17	1,137	828	578	506	338	NY (5), OH (1), NC (2), TN (2)
Ehrlichia ewingii	—	6	0	9	—	—	—	—	
Anaplasma phagocytophilum	6	447	17	1,026	834	646	786	537	NY (6)
undetermined	1	85	4	180	337	231	112	59	MO (1)
Haemophilus influenzae,††									
invasive disease (age <5 yrs):									
serotype b	1	18	0	30	22	29	9	19	ME (1)
nonserotype b	1	148	3	244	199	175	135	135	FL (1)
unknown serotype	—	170	2	163	180	179	217	177	
Hansen disease§	—	46	2	80	101	66	87	105	
Hantavirus pulmonary syndrome§	—	7	1	18	32	40	26	24	
Hemolytic uremic syndrome, postdiarrheal§	1	140	7	330	292	288	221	200	MN (1)
Hepatitis C viral, acute	8	1,435	15	878	845	766	652	720	NY (2), PA (1), MI (1), KY (3), TN (1)
HIV infection, pediatric (age <13 years)§§	—	—	2	—	—	—	380	436	
Influenza-associated pediatric mortality§,¶¶	11	129	0	90	77	43	45	—	KS (1), SC (2), GA (1), TN (1), AR (1), TX (2), CO (3)
Listeriosis	10	507	23	759	808	884	896	753	NY (2), PA (2), OH (1), FL (1), AZ (1), WA (1), CA (2)
Measles***	—	57	1	140	43	55	66	37	
Meningococcal disease, invasive†††:									
A, C, Y, and W-135	—	191	4	330	325	318	297	—	
serogroup B	—	100	2	188	167	193	156	—	
other serogroup	—	20	0	38	35	32	27	—	
unknown serogroup	4	331	10	616	550	651	765	—	OH (1), FL (1), AR (1), CA (1)
Mumps	2	297	15	454	800	6,584	314	258	MA (1), TN (1)
Novel influenza A virus infections	—	§§§	0	2	4	N	N	N	
Plague	—	6	0	3	7	17	8	3	
Poliomyelitis, paralytic	—	—	0	—	—	—	1	—	
Polio virus infection, nonparalytic§	—	—	—	—	—	N	N	N	
Psittacosis§	—	8	0	8	12	21	16	12	
Q fever total§,¶¶¶:	—	60	3	124	171	169	136	70	
acute	—	50	1	110	—	—	—	—	
chronic	—	10	0	14	—	—	—	—	
Rabies, human	—	1	0	2	1	3	2	7	
Rubella****	—	4	0	16	12	11	11	10	
Rubella, congenital syndrome	—	1	—	—	—	1	1	—	
SARS-CoV§,††††	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	—	102	1	157	132	125	129	132	
Syphilis, congenital (age <1 yr)	—	141	8	434	430	349	329	353	
Tetanus	1	8	1	19	28	41	27	34	OH (1)
Toxic-shock syndrome (staphylococcal)§	2	61	2	71	92	101	90	95	TN (1), CA (1)
Trichinellosis	—	12	0	39	5	15	16	5	
Tularemia	1	56	3	123	137	95	154	134	AR (1)
Typhoid fever	2	264	11	449	434	353	324	322	FL (1), NV (1)
Vancomycin-intermediate *Staphylococcus aureus*§	1	56	1	63	37	6	2	—	AZ (1)
Vancomycin-resistant *Staphylococcus aureus*§	—	—	—	—	2	1	3	1	
Vibriosis (noncholera *Vibrio* species infections)§	16	399	9	492	549	N	N	N	MN (1), GA (1), FL (5), WA (8), CA (1)
Yellow fever	—	—	—	—	—	—	—	—	

See Table I footnotes on next page.

TABLE I. (*Continued*) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending September 26, 2009 (38th week)*

—: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts.

* Incidence data for reporting year 2009 is provisional, whereas data for 2004 through 2008 are finalized.

† Calculated by summing the incidence counts for the current week, the 2 weeks preceding the current week, and the 2 weeks following the current week, for a total of 5 preceding years. The total sum of incident cases is then divided by 25 weeks. Additional information is available at http://www.cdc.gov/epo/dphsi/phs/files/5yearweeklyaverage.pdf.

§ Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at http://www.cdc.gov/epo/dphsi/phs/infdis.htm.

¶ Includes both neuroinvasive and nonneuroinvasive. Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for West Nile virus are available in Table II.

** The names of the reporting categories changed in 2008 as a result of revisions to the case definitions. Cases reported prior to 2008 were reported in the categories: Ehrlichiosis, human monocytic (analogous to *E. chaffeensis*); Ehrlichiosis, human granulocytic (analogous to *Anaplasma phagocytophilum*), and Ehrlichiosis, unspecified, or other agent (which included cases unable to be clearly placed in other categories, as well as possible cases of *E. ewingii*).

†† Data for *H. influenzae* (all ages, all serotypes) are available in Table II.

§§ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Implementation of HIV reporting influences the number of cases reported. Updates of pediatric HIV data have been temporarily suspended until upgrading of the national HIV/AIDS surveillance data management system is completed. Data for HIV/AIDS, when available, are displayed in Table IV, which appears quarterly.

¶¶ Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Fourteen influenza associated pediatric deaths occurring during the 2009–10 influenza season beginning September 1, 2009 have been reported. One hundred and fourteen influenza-associated pediatric deaths occurring during the 2008–09 influenza season have been reported.

*** No measles cases were reported for the current week.

††† Data for meningococcal disease (all serogroups) are available in Table II.

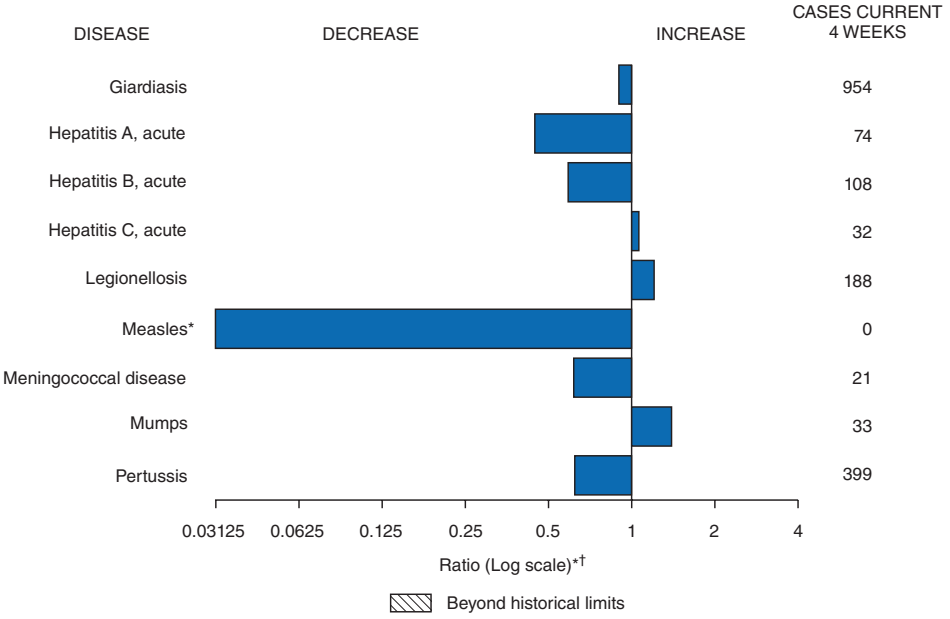
§§§ CDC discontinued reporting of individual confirmed and probable cases of novel influenza A (H1N1) viruses infections on July 24, 2009. CDC will report the total number of novel influenza A (H1N1) hospitalizations and deaths weekly on the CDC H1N1 influenza website (http://www.cdc.gov/h1n1flu).

¶¶¶ In 2008, Q fever acute and chronic reporting categories were recognized as a result of revisions to the Q fever case definition. Prior to that time, case counts were not differentiated with respect to acute and chronic Q fever cases.

**** No rubella cases were reported for the current week.

†††† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals September 26, 2009, with historical data



* No measles cases were reported for the current 4-week period yielding a ratio for week 38 of zero (0).

† 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.

Notifiable Disease Data Team and 122 Cities Mortality Data Team

Patsy A. Hall

Deborah A. Adams
Willie J. Anderson
Jose Aponte
Lenee Blanton
Rosaline Dhara
Michael S. Wodajo
Pearl C. Sharp

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Chlamydia†					Coccidiodomycosis					Cryptosporidiosis				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 week Med	Previous 52 week Max	Cum 2009	Cum 2008
United States	13,167	22,361	25,700	816,901	860,876	231	165	472	8,330	4,672	121	125	401	4,754	5,940
New England	625	759	1,655	29,178	27,018	—	0	1	1	1	3	5	34	290	332
Connecticut	304	222	1,306	8,503	7,814	N	0	0	N	N	—	0	27	27	41
Maine§	43	48	75	1,769	1,840	N	0	0	N	N	—	0	4	34	38
Massachusetts	215	344	945	14,185	12,899	N	0	0	N	N	3	2	15	134	146
New Hampshire	3	38	61	1,174	1,514	—	0	1	1	1	—	1	4	49	47
Rhode Island§	60	66	244	2,729	2,119	—	0	0	—	—	—	0	3	5	7
Vermont§	—	22	53	818	832	N	0	0	N	N	—	1	5	41	53
Mid. Atlantic	2,732	2,867	6,734	111,597	106,740	—	0	0	—	—	17	13	30	549	554
New Jersey	247	395	838	14,841	16,318	N	0	0	N	N	—	0	2	8	35
New York (Upstate)	752	579	4,563	22,811	19,932	N	0	0	N	N	9	4	13	166	190
New York City	1,180	1,146	3,130	43,353	40,812	N	0	0	N	N	—	1	8	53	86
Pennsylvania	553	828	1,072	30,592	29,678	N	0	0	N	N	8	7	19	322	243
E.N. Central	1,686	3,473	4,072	124,406	140,937	1	0	4	26	37	6	27	105	1,002	1,572
Illinois	435	1,089	1,370	38,199	42,727	N	0	0	N	N	—	2	11	99	152
Indiana	340	426	713	16,977	15,693	N	0	0	N	N	—	3	17	134	138
Michigan	690	854	1,332	33,752	33,321	—	0	3	14	28	—	5	13	193	196
Ohio	58	789	1,231	23,303	33,515	1	0	2	12	9	5	8	56	296	485
Wisconsin	163	339	494	12,175	15,681	N	0	0	N	N	1	8	25	280	601
W.N. Central	348	1,318	1,668	46,648	48,664	—	0	1	8	1	35	18	63	761	738
Iowa	—	189	256	6,730	6,456	N	0	0	N	N	—	4	13	158	229
Kansas	7	136	550	5,489	6,691	N	0	0	N	N	—	1	6	61	64
Minnesota	—	259	342	8,684	10,477	—	0	0	—	—	29	4	33	230	156
Missouri	301	509	647	19,005	17,825	—	0	1	8	1	3	3	12	137	134
Nebraska§	40	105	219	3,815	3,806	N	0	0	N	N	3	2	7	76	88
North Dakota	—	23	60	809	1,325	N	0	0	N	N	—	0	10	7	3
South Dakota	—	57	80	2,116	2,084	N	0	0	N	N	—	2	10	92	64
S. Atlantic	2,412	4,038	5,453	143,080	176,242	—	0	1	5	4	26	21	49	779	698
Delaware	106	87	180	3,477	2,609	—	0	1	1	1	—	0	2	8	11
District of Columbia	—	128	226	4,737	5,036	—	0	0	—	—	—	0	2	2	10
Florida	588	1,423	1,606	53,304	51,943	N	0	0	N	N	24	8	23	317	326
Georgia	—	708	1,909	22,002	30,775	N	0	0	N	N	2	6	23	273	178
Maryland§	390	425	772	15,545	16,937	—	0	1	4	3	—	1	5	30	28
North Carolina	—	0	1,193	—	24,796	N	0	0	N	N	—	0	16	58	28
South Carolina§	599	540	1,422	18,294	19,029	N	0	0	N	N	—	1	7	34	38
Virginia§	670	609	926	23,055	22,793	N	0	0	N	N	—	1	6	46	59
West Virginia	59	69	101	2,666	2,324	N	0	0	N	N	—	0	2	11	20
E.S. Central	1,408	1,753	2,210	66,518	61,705	—	0	0	—	—	6	3	10	149	128
Alabama§	1	474	625	16,830	18,403	N	0	0	N	N	1	1	4	42	57
Kentucky	287	248	458	9,505	8,674	N	0	0	N	N	2	1	4	44	26
Mississippi	472	459	841	17,803	14,382	N	0	0	N	N	—	0	3	11	14
Tennessee§	648	573	809	22,380	20,246	N	0	0	N	N	3	1	5	52	31
W.S. Central	1,712	2,924	5,339	110,101	107,851	—	0	1	1	3	3	11	271	343	1,145
Arkansas§	394	273	417	10,617	10,424	N	0	0	N	N	1	1	10	37	54
Louisiana	—	414	1,134	14,901	15,456	—	0	1	1	3	—	1	6	29	45
Oklahoma	236	175	2,731	10,306	9,836	N	0	0	N	N	2	2	13	89	93
Texas§	1,082	1,994	2,523	74,277	72,135	N	0	0	N	N	—	7	258	188	953
Mountain	565	1,430	2,145	51,763	54,131	202	119	369	6,524	3,156	5	9	24	382	463
Arizona	75	457	735	15,877	17,957	202	118	365	6,446	3,077	—	1	4	26	69
Colorado	—	377	727	12,882	12,909	N	0	0	N	N	—	2	10	109	90
Idaho§	55	65	313	2,492	2,869	N	0	0	N	N	3	1	7	62	48
Montana§	30	56	88	2,170	2,240	N	0	0	N	N	2	1	4	46	38
Nevada§	260	166	456	7,379	7,123	—	1	4	46	43	—	0	2	15	16
New Mexico§	116	176	540	6,309	5,612	—	0	2	9	24	—	2	7	89	155
Utah	29	93	251	3,318	4,343	—	0	2	23	10	—	0	3	20	31
Wyoming§	—	34	97	1,336	1,078	—	0	1	—	2	—	0	2	15	16
Pacific	1,679	3,617	4,684	133,610	137,588	28	42	172	1,765	1,470	20	11	24	499	310
Alaska	—	96	199	3,193	3,449	N	0	0	N	N	—	0	1	6	3
California	1,195	2,789	3,594	104,411	106,893	28	42	172	1,765	1,470	12	6	20	300	185
Hawaii	—	119	147	4,160	4,296	N	0	0	N	N	—	0	1	1	2
Oregon§	137	198	631	6,820	7,335	N	0	0	N	N	2	3	8	133	53
Washington	347	409	571	15,026	15,615	N	0	0	N	N	6	1	6	59	67
American Samoa	—	0	0	—	73	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	3	8	—	107	—	0	0	—	—	—	0	0	—	—
Puerto Rico	169	130	332	5,386	5,259	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	9	17	290	500	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional. Data for HIV/AIDS, AIDS, and TB, when available, are displayed in Table IV, which appears quarterly.
† Chlamydia refers to genital infections caused by *Chlamydia trachomatis*.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Giardiasis					Gonorrhea					*Haemophilus influenzae*, invasive All ages, all serotypes†				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	267	324	499	12,347	13,055	3,693	5,279	7,089	194,369	243,549	10	60	124	2,218	2,068
New England	27	28	55	1,101	1,182	101	94	301	3,580	3,816	1	3	16	149	118
Connecticut	—	5	14	171	246	72	46	275	1,679	1,800	—	0	12	43	28
Maine§	7	4	13	169	123	2	2	9	103	73	1	0	2	16	10
Massachusetts	12	12	30	499	498	16	38	112	1,431	1,594	—	2	5	72	57
New Hampshire	—	3	11	121	122	2	2	6	78	80	—	0	2	9	9
Rhode Island§	—	1	8	38	61	9	6	19	257	241	—	0	7	6	6
Vermont§	8	3	15	103	132	—	1	4	32	28	—	0	1	3	8
Mid. Atlantic	66	63	116	2,302	2,387	624	588	1,138	22,545	23,917	3	11	25	445	385
New Jersey	—	7	17	215	382	91	86	122	3,157	3,923	—	2	7	84	65
New York (Upstate)	43	25	81	936	807	173	106	664	4,270	4,470	—	3	20	106	114
New York City	6	15	30	571	621	199	210	577	8,104	7,520	—	2	11	85	67
Pennsylvania	17	15	46	580	577	161	187	267	7,014	8,004	3	4	10	170	139
E.N. Central	25	44	80	1,633	1,957	759	1,076	1,494	38,641	50,447	—	12	28	478	339
Illinois	—	9	23	313	535	131	337	448	11,708	14,947	—	3	9	122	108
Indiana	N	0	11	N	N	130	145	252	5,556	6,385	—	1	22	50	56
Michigan	4	12	22	440	419	428	276	493	10,966	12,389	—	0	3	17	18
Ohio	19	16	28	600	628	16	246	431	7,311	12,121	—	2	6	76	107
Wisconsin	2	8	19	280	375	54	92	140	3,100	4,605	—	3	20	213	50
W.N. Central	10	25	141	1,118	1,484	90	277	393	10,055	12,312	—	3	15	121	150
Iowa	—	6	14	221	238	—	33	53	1,137	1,134	—	0	0	—	2
Kansas	—	2	11	96	123	12	34	83	1,446	1,615	—	0	2	13	17
Minnesota	—	0	104	250	509	—	44	65	1,431	2,285	—	0	10	43	46
Missouri	7	8	29	357	360	66	129	173	4,770	5,910	—	1	4	41	55
Nebraska§	3	3	9	123	148	12	22	54	969	1,035	—	0	4	19	21
North Dakota	—	0	16	9	10	—	2	7	46	89	—	0	4	5	9
South Dakota	—	1	7	62	96	—	7	20	256	244	—	0	0	—	—
S. Atlantic	53	69	109	2,658	2,077	771	1,156	2,042	41,216	62,000	3	13	31	543	526
Delaware	—	0	3	18	30	28	17	37	704	791	—	0	1	3	6
District of Columbia	—	0	5	18	52	—	51	88	1,870	1,856	—	0	2	—	5
Florida	45	37	59	1,404	871	198	416	486	15,513	17,370	3	4	10	184	140
Georgia	3	12	67	678	504	1	243	876	7,472	11,420	—	3	9	117	107
Maryland§	—	5	9	170	196	121	122	212	4,206	4,512	—	1	6	65	75
North Carolina	N	0	0	N	N	—	0	470	—	10,935	—	1	17	61	57
South Carolina§	1	2	8	71	89	223	169	412	5,808	6,945	—	1	5	46	48
Virginia§	4	8	31	265	280	196	144	308	5,268	7,608	—	1	6	42	70
West Virginia	—	1	3	34	55	4	10	23	375	563	—	0	3	25	18
E.S. Central	14	7	20	268	344	425	514	714	19,253	22,322	—	3	9	122	113
Alabama§	3	3	12	125	197	—	140	204	4,815	7,250	—	0	4	28	18
Kentucky	N	0	0	N	N	82	80	135	2,771	3,371	—	0	5	18	6
Mississippi	N	0	0	N	N	159	145	252	5,570	5,213	—	0	1	4	13
Tennessee§	11	3	13	143	147	184	162	246	6,097	6,488	—	2	6	72	76
W.S. Central	5	9	22	318	315	515	853	1,391	32,043	37,114	3	2	22	86	92
Arkansas§	4	2	8	100	103	134	83	134	3,266	3,440	—	0	2	13	11
Louisiana	—	3	8	96	107	—	142	420	4,796	6,686	—	0	1	12	8
Oklahoma	1	4	18	122	105	64	69	612	3,540	3,615	3	1	20	60	66
Texas§	N	0	0	N	N	317	557	725	20,441	23,373	—	0	1	1	7
Mountain	14	27	53	1,077	1,162	98	172	265	6,048	8,572	—	5	11	181	229
Arizona	2	3	10	146	94	14	52	88	1,815	2,515	—	1	7	64	88
Colorado	—	9	26	350	407	—	55	122	1,765	2,700	—	1	6	54	43
Idaho§	4	3	10	129	142	2	2	13	72	131	—	0	1	4	12
Montana§	4	2	10	95	68	—	1	6	53	88	—	0	1	1	3
Nevada§	4	2	11	85	85	55	29	91	1,318	1,666	—	0	2	14	15
New Mexico§	—	2	8	80	87	27	24	52	826	999	—	0	3	18	35
Utah	—	5	12	161	249	—	4	15	147	380	—	1	2	23	30
Wyoming§	—	1	4	31	30	—	1	7	52	93	—	0	1	3	3
Pacific	53	51	130	1,872	2,147	310	546	764	20,988	23,049	—	2	8	93	116
Alaska	—	2	10	76	67	—	15	24	546	390	—	0	3	13	16
California	38	34	56	1,247	1,426	260	467	657	17,703	18,886	—	0	3	22	38
Hawaii	—	0	2	10	35	—	11	22	434	463	—	0	3	22	15
Oregon§	6	7	17	271	345	9	20	42	707	904	—	1	3	33	45
Washington	9	7	74	268	274	41	45	71	1,598	2,406	—	0	2	3	2
American Samoa	—	0	0	—	—	—	0	0	—	3	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	1	15	—	45	—	0	0	—	—
Puerto Rico	—	2	10	66	166	8	3	24	178	213	—	0	1	3	1
U.S. Virgin Islands	—	0	0	—	—	—	2	7	80	97	N	0	0	N	N

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Data for *H. influenzae* (age <5 yrs for serotype b, nonserotype b, and unknown serotype) are available in Table I.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Hepatitis (viral, acute), by type†										Legionellosis				
	A					B									
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	14	36	89	1,342	1,957	17	64	197	2,232	2,774	51	51	136	2,099	2,211
New England	—	2	8	74	98	—	1	4	28	61	—	3	18	127	145
Connecticut	—	0	2	17	22	—	0	3	10	23	—	1	5	45	30
Maine§	—	0	5	1	6	—	0	2	9	10	—	0	3	6	6
Massachusetts	—	1	4	46	48	—	0	2	6	17	—	1	9	50	63
New Hampshire	—	0	1	5	10	—	0	2	3	5	—	0	2	9	24
Rhode Island§	—	0	2	3	10	—	0	0	—	4	—	0	14	11	17
Vermont§	—	0	1	2	2	—	0	1	—	2	—	0	1	6	5
Mid. Atlantic	4	5	13	183	232	3	7	17	233	329	17	15	68	826	731
New Jersey	—	1	5	35	60	—	1	6	58	93	—	3	14	129	91
New York (Upstate)	2	1	4	39	44	1	1	11	42	48	7	5	29	268	231
New York City	—	2	5	58	81	—	1	4	45	74	—	2	20	148	101
Pennsylvania	2	1	4	51	47	2	2	8	88	114	10	6	25	281	308
E.N. Central	2	5	18	187	266	—	8	21	272	378	12	9	27	372	490
Illinois	—	1	12	81	95	—	1	6	36	146	—	1	8	26	78
Indiana	—	0	4	13	16	—	1	18	47	25	—	1	5	25	40
Michigan	—	1	5	49	97	—	2	8	95	107	2	2	11	100	132
Ohio	2	1	4	33	32	—	1	13	69	86	10	4	17	216	209
Wisconsin	—	0	4	11	26	—	0	4	25	14	—	0	2	5	31
W.N. Central	—	2	16	91	212	2	3	16	124	60	1	2	7	69	102
Iowa	—	0	2	25	102	—	0	3	24	15	—	0	2	16	15
Kansas	—	0	1	7	14	—	0	2	5	6	—	0	1	3	2
Minnesota	—	0	12	14	26	—	0	11	20	7	—	0	3	8	9
Missouri	—	0	3	24	27	—	1	5	59	26	—	1	5	31	56
Nebraska§	—	0	3	19	39	2	0	2	15	5	1	0	2	9	18
North Dakota	—	0	2	—	—	—	0	1	—	1	—	0	3	1	—
South Dakota	—	0	1	2	4	—	0	1	1	—	—	0	1	1	2
S. Atlantic	3	7	14	299	298	4	18	32	658	674	13	9	18	351	364
Delaware	—	0	1	3	6	U	0	1	U	U	—	0	5	11	10
District of Columbia	U	0	0	U	U	U	0	0	U	U	2	0	1	8	14
Florida	1	4	9	142	111	1	6	11	220	240	10	3	7	131	107
Georgia	1	1	3	46	43	—	3	9	106	129	—	1	5	37	32
Maryland§	—	0	4	28	33	—	1	5	47	59	—	2	10	77	104
North Carolina	—	0	4	25	48	—	2	19	135	57	—	0	6	39	24
South Carolina§	—	0	3	29	12	—	1	4	35	52	—	0	1	6	9
Virginia§	1	0	2	25	40	—	2	10	63	78	1	1	5	36	40
West Virginia	—	0	1	1	5	3	1	19	52	59	—	0	2	6	24
E.S. Central	—	1	3	31	64	1	7	11	224	291	2	2	11	89	93
Alabama§	—	0	2	7	9	—	2	7	66	84	—	0	2	8	13
Kentucky	—	0	1	8	24	—	2	7	58	69	—	1	3	39	44
Mississippi	—	0	1	8	4	—	1	2	20	35	—	0	1	3	1
Tennessee§	—	0	2	8	27	1	2	6	80	103	2	1	8	39	35
W.S. Central	—	3	43	103	184	—	10	99	341	545	—	1	21	45	61
Arkansas§	—	0	1	4	6	—	1	5	40	45	—	0	2	4	10
Louisiana	—	0	1	3	10	—	1	4	33	71	—	0	2	4	9
Oklahoma	—	0	6	3	7	—	2	17	75	80	—	0	6	3	3
Texas§	—	3	37	93	161	—	6	76	193	349	—	1	19	34	39
Mountain	1	3	8	123	173	—	3	7	102	148	2	2	8	83	63
Arizona	1	2	6	57	87	—	1	4	37	56	2	1	4	37	14
Colorado	—	0	5	39	33	—	0	2	20	26	—	0	2	10	7
Idaho§	—	0	1	3	16	—	0	2	7	7	—	0	1	1	3
Montana§	—	0	1	6	1	—	0	0	—	2	—	0	2	5	4
Nevada§	—	0	3	8	7	—	0	3	25	32	—	0	2	10	9
New Mexico§	—	0	1	6	15	—	0	2	5	8	—	0	1	2	8
Utah	—	0	1	4	11	—	0	1	5	12	—	0	4	17	18
Wyoming§	—	0	0	—	3	—	0	2	3	5	—	0	1	1	—
Pacific	4	7	17	251	430	7	6	36	250	288	4	3	12	137	162
Alaska	—	0	1	3	3	—	0	1	2	9	—	0	1	1	1
California	4	5	17	200	348	7	4	28	185	203	1	3	9	107	125
Hawaii	—	0	1	5	16	—	0	1	4	6	—	0	1	1	7
Oregon§	—	0	2	12	24	—	0	4	28	33	1	0	2	11	14
Washington	—	1	4	31	39	—	1	8	31	37	2	0	4	17	15
American Samoa	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	2	17	20	—	0	3	12	45	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Data for acute hepatitis C, viral are available in Table I.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Lyme disease					Malaria					Meningococcal disease, invasive† All groups				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	272	498	1,658	21,582	25,437	6	23	42	832	898	4	17	48	642	898
New England	26	100	358	4,122	9,488	—	1	5	31	46	—	0	4	23	24
Connecticut	—	0	82	—	3,268	—	0	4	5	10	—	0	1	2	1
Maine§	23	10	76	642	434	—	0	1	1	1	—	0	1	3	4
Massachusetts	1	28	245	2,251	3,996	—	0	3	19	26	—	0	3	12	16
New Hampshire	—	12	78	835	1,356	—	0	1	2	3	—	0	1	1	2
Rhode Island§	—	0	78	166	119	—	0	1	2	2	—	0	1	4	1
Vermont§	2	4	36	228	315	—	0	1	2	4	—	0	1	1	—
Mid. Atlantic	210	229	1,401	12,802	10,184	1	5	13	196	251	—	2	5	72	98
New Jersey	—	37	302	3,121	2,934	—	0	3	—	58	—	0	2	8	13
New York (Upstate)	99	86	1,368	3,167	3,441	1	1	10	38	27	—	0	2	18	25
New York City	—	3	23	154	641	—	3	8	117	134	—	0	2	12	20
Pennsylvania	111	53	620	6,360	3,168	—	1	4	41	32	—	1	4	34	40
E.N. Central	3	19	186	1,654	1,989	—	3	9	119	121	1	3	8	106	156
Illinois	—	1	11	84	98	—	1	4	49	63	—	1	6	27	56
Indiana	—	1	4	39	36	—	0	3	15	5	—	0	3	26	22
Michigan	2	1	10	82	66	—	0	3	19	14	—	0	5	18	27
Ohio	—	1	3	37	37	—	1	6	31	24	1	0	3	29	32
Wisconsin	1	15	172	1,412	1,752	—	0	1	5	15	—	0	1	6	19
W.N. Central	—	4	336	172	558	—	1	7	42	52	—	1	9	51	78
Iowa	—	1	12	72	93	—	0	2	9	8	—	0	1	6	17
Kansas	—	0	4	14	7	—	0	2	4	5	—	0	2	8	4
Minnesota	—	0	326	67	443	—	0	7	13	21	—	0	4	10	21
Missouri	—	0	2	4	4	—	0	2	10	10	—	0	3	19	23
Nebraska§	—	0	3	14	8	—	0	1	5	8	—	0	1	5	10
North Dakota	—	0	10	—	—	—	0	0	—	—	—	0	3	1	1
South Dakota	—	0	1	1	3	—	0	1	1	—	—	0	1	2	2
S. Atlantic	19	63	207	2,564	2,967	3	6	17	252	214	1	2	9	116	128
Delaware	2	12	63	763	630	—	0	1	4	2	—	0	1	2	1
District of Columbia	—	0	5	19	55	—	0	2	5	2	—	0	0	—	—
Florida	3	1	9	66	54	1	2	7	76	37	1	1	4	42	46
Georgia	3	0	6	44	32	1	1	5	57	48	—	0	2	23	14
Maryland§	—	25	130	1,140	1,481	—	1	8	52	55	—	0	1	7	14
North Carolina	—	1	14	56	21	—	0	5	21	23	—	0	5	18	11
South Carolina§	—	0	3	22	19	—	0	1	2	8	—	0	1	10	20
Virginia§	11	11	61	354	566	1	1	4	33	37	—	0	2	9	17
West Virginia	—	0	27	100	109	—	0	1	2	2	—	0	2	5	5
E.S. Central	—	0	2	20	39	—	1	3	24	13	—	0	3	21	40
Alabama§	—	0	1	2	9	—	0	3	7	3	—	0	1	5	5
Kentucky	—	0	1	1	4	—	0	2	8	4	—	0	1	4	7
Mississippi	—	0	0	—	1	—	0	1	1	1	—	0	1	2	9
Tennessee§	—	0	2	17	25	—	0	3	8	5	—	0	1	10	19
W.S. Central	—	1	21	37	79	—	1	8	34	62	1	1	12	61	95
Arkansas§	—	0	0	—	—	—	0	1	3	—	1	0	2	6	13
Louisiana	—	0	0	—	3	—	0	1	3	3	—	0	3	11	19
Oklahoma	—	0	2	—	—	—	0	2	2	2	—	0	3	8	12
Texas§	—	1	21	37	76	—	1	7	26	57	—	1	9	36	51
Mountain	—	1	13	40	45	—	0	5	25	25	—	1	4	49	48
Arizona	—	0	2	4	8	—	0	2	7	12	—	0	2	13	6
Colorado	—	0	1	6	3	—	0	3	8	3	—	0	2	15	10
Idaho§	—	0	2	9	7	—	0	1	1	1	—	0	1	5	4
Montana§	—	0	13	3	4	—	0	3	5	—	—	0	2	4	4
Nevada§	—	0	2	12	11	—	0	1	—	4	—	0	2	4	7
New Mexico§	—	0	1	1	8	—	0	1	—	2	—	0	1	3	8
Utah	—	0	1	4	2	—	0	2	4	3	—	0	1	1	7
Wyoming§	—	0	1	1	2	—	0	0	—	—	—	0	2	4	2
Pacific	14	4	13	171	88	2	3	10	109	114	1	3	14	143	231
Alaska	—	0	1	2	5	—	0	1	2	4	—	0	2	5	6
California	11	3	11	146	48	—	2	8	80	83	1	2	8	96	170
Hawaii	N	0	0	N	N	—	0	1	1	2	—	0	1	3	4
Oregon§	—	0	3	12	27	—	0	2	10	4	—	0	6	26	28
Washington	3	0	12	11	8	2	0	3	16	21	—	0	6	13	23
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	2	—	1	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	2	2	—	0	0	—	3
U.S. Virgin Islands	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Data for meningococcal disease, invasive caused by serogroups A, C, Y, and W-135; serogroup B; other serogroup; and unknown serogroup are available in Table I.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Pertussis					Rabies, animal					Rocky Mountain spotted fever				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	101	275	1,697	9,578	6,865	44	69	139	2,739	3,226	19	29	179	1,125	1,792
New England	8	15	27	483	756	—	7	14	236	304	—	0	2	9	4
Connecticut	—	0	4	31	43	—	2	10	101	152	—	0	0	—	—
Maine†	—	1	10	68	27	—	1	5	40	38	—	0	2	4	1
Massachusetts	1	8	21	289	589	—	0	0	—	—	—	0	1	4	1
New Hampshire	—	1	7	58	23	—	0	7	24	31	—	0	0	—	1
Rhode Island†	7	0	5	29	63	—	0	3	33	27	—	0	2	—	1
Vermont†	—	0	1	8	11	—	1	4	38	56	—	0	1	1	—
Mid. Atlantic	6	22	64	811	808	22	14	26	469	703	1	1	29	57	107
New Jersey	—	4	12	134	166	—	0	0	—	—	—	0	2	—	73
New York (Upstate)	2	5	41	158	312	22	8	20	350	380	1	0	29	11	12
New York City	—	0	21	53	50	—	0	2	1	14	—	0	4	25	11
Pennsylvania	4	12	33	466	280	—	4	17	118	309	—	0	2	21	11
E.N. Central	46	55	238	1,994	1,116	2	3	19	204	215	—	1	6	69	133
Illinois	—	11	45	284	243	1	1	9	81	87	—	1	6	40	98
Indiana	—	4	158	181	45	—	0	6	21	7	—	0	3	10	6
Michigan	5	11	32	553	182	1	1	6	59	67	—	0	2	5	3
Ohio	40	21	57	869	532	—	0	5	43	54	—	0	4	14	26
Wisconsin	1	3	12	107	114	N	0	0	N	N	—	0	0	—	—
W.N. Central	8	35	872	1,333	561	1	5	17	217	239	3	4	26	268	384
Iowa	—	5	21	139	90	—	0	5	24	17	—	0	2	4	8
Kansas	—	4	12	142	44	—	1	6	60	52	—	0	1	2	—
Minnesota	—	0	808	165	159	1	0	11	46	44	—	0	1	2	—
Missouri	6	20	51	734	180	—	1	5	56	52	3	4	25	249	357
Nebraska†	2	4	32	112	64	—	0	1	—	32	—	0	2	11	16
North Dakota	—	0	24	17	1	—	0	9	4	24	—	0	1	—	—
South Dakota	—	0	10	24	23	—	0	4	27	18	—	0	0	—	3
S. Atlantic	13	29	71	1,216	681	3	25	111	1,223	1,308	11	13	40	393	631
Delaware	—	0	2	10	12	—	0	0	—	—	—	0	3	16	27
District of Columbia	—	0	2	2	4	—	0	0	—	—	—	0	0	—	6
Florida	6	9	32	432	208	—	0	95	136	138	1	0	2	6	10
Georgia	—	3	11	140	66	—	0	72	334	295	—	0	7	40	71
Maryland†	—	2	8	78	102	—	6	14	264	335	—	1	3	27	72
North Carolina	—	0	65	213	79	N	2	4	N	N	10	6	36	237	291
South Carolina†	2	4	17	179	92	—	0	0	—	—	—	0	9	16	34
Virginia†	5	3	24	138	110	—	10	23	399	471	—	1	9	47	112
West Virginia	—	0	5	24	8	3	2	6	90	69	—	0	1	4	8
E.S. Central	3	15	33	579	236	1	2	7	72	145	—	4	15	197	268
Alabama†	1	4	19	221	32	—	0	0	—	—	—	1	6	49	71
Kentucky	—	6	15	178	60	1	1	4	38	35	—	0	1	1	1
Mississippi	—	1	4	42	79	—	0	1	—	4	—	0	1	7	10
Tennessee†	2	3	14	138	65	—	0	4	34	106	—	3	14	140	186
W.S. Central	1	56	389	1,873	1,100	10	0	13	55	77	4	1	161	110	226
Arkansas†	1	4	38	177	71	10	0	5	33	43	—	0	61	47	44
Louisiana	—	2	8	90	65	—	0	0	—	—	—	0	1	2	5
Oklahoma	—	0	45	37	32	—	0	13	21	32	4	0	98	48	142
Texas†	—	44	304	1,569	932	—	0	1	1	2	—	0	6	13	35
Mountain	3	18	31	670	639	1	2	9	72	78	—	1	3	20	36
Arizona	—	3	10	165	179	N	0	0	N	N	—	0	2	4	10
Colorado	—	4	12	201	118	—	0	0	—	—	—	0	1	1	1
Idaho†	—	1	5	60	24	—	0	0	—	11	—	0	1	1	1
Montana†	—	0	6	28	76	—	0	4	24	8	—	0	2	8	3
Nevada†	3	0	3	14	26	1	0	1	6	11	—	0	1	1	2
New Mexico†	—	1	10	41	35	—	0	2	18	24	—	0	1	1	4
Utah	—	4	19	153	167	—	0	6	7	7	—	0	1	1	5
Wyoming†	—	0	5	8	14	—	0	4	17	17	—	0	1	3	10
Pacific	13	18	67	619	968	4	5	12	191	157	—	0	1	2	3
Alaska	—	1	21	34	130	—	0	2	11	13	N	0	0	N	N
California	—	4	19	143	399	4	4	12	165	136	—	0	1	2	—
Hawaii	—	0	3	23	10	—	0	0	—	—	N	0	0	N	N
Oregon†	3	3	16	200	135	—	0	3	15	8	—	0	0	—	3
Washington	10	6	58	219	294	—	0	0	—	—	—	0	0	—	—
American Samoa	—	0	0	—	—	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	N	0	0	N	N
Puerto Rico	—	0	1	1	—	2	0	3	30	49	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N	N	0	0	N	N

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U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Salmonellosis					Shiga toxin-producing *E. coli* (STEC)†					Shigellosis				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	731	905	2,323	31,040	34,168	59	86	255	2,957	3,657	130	313	1,268	10,857	14,317
New England	9	33	344	1,644	1,783	—	3	54	165	195	1	3	37	264	189
Connecticut	—	0	318	318	491	—	0	54	54	47	—	0	32	32	40
Maine§	3	2	7	103	111	—	0	3	14	16	—	0	1	2	18
Massachusetts	6	23	49	880	921	—	1	6	60	91	1	3	26	198	114
New Hampshire	—	3	42	207	116	—	1	3	24	17	—	0	4	14	4
Rhode Island§	—	2	11	93	73	—	0	1	—	7	—	0	3	13	10
Vermont§	—	1	5	43	71	—	0	6	13	17	—	0	2	5	3
Mid. Atlantic	70	86	169	3,331	4,311	6	7	19	258	367	12	56	79	2,096	1,816
New Jersey	—	9	32	238	1,009	—	1	4	31	109	—	14	35	435	630
New York (Upstate)	43	24	66	980	992	5	3	9	104	125	6	5	23	172	469
New York City	8	19	49	852	974	—	1	5	41	42	—	9	21	324	575
Pennsylvania	19	28	61	1,261	1,336	1	1	6	82	91	6	24	61	1,165	142
E.N. Central	37	91	144	3,450	3,828	6	12	47	483	636	9	59	132	1,920	2,813
Illinois	—	25	50	941	1,113	—	2	10	101	105	—	12	25	395	762
Indiana	—	7	50	246	447	—	1	6	39	72	—	1	21	38	511
Michigan	6	18	33	717	724	2	3	28	114	141	—	5	24	173	94
Ohio	31	28	52	1,116	953	4	3	11	107	147	9	33	80	949	1,107
Wisconsin	—	11	29	430	591	—	3	10	122	171	—	10	38	365	339
W.N. Central	39	50	109	2,034	2,162	14	12	39	553	623	15	16	49	685	683
Iowa	—	7	15	313	333	—	2	14	131	164	—	1	12	49	121
Kansas	—	6	18	269	361	—	1	7	33	35	—	3	11	159	34
Minnesota	17	12	51	475	545	6	2	18	162	132	5	2	14	68	237
Missouri	20	12	32	502	592	7	2	10	97	126	10	4	40	383	177
Nebraska§	2	5	41	279	183	1	2	6	70	127	—	0	3	19	6
North Dakota	—	0	30	40	31	—	0	28	3	1	—	0	9	3	33
South Dakota	—	3	22	156	117	—	0	12	57	38	—	0	1	4	75
S. Atlantic	353	262	440	8,596	8,367	11	13	30	460	622	29	46	85	1,673	2,333
Delaware	—	2	7	83	123	—	0	2	11	11	—	1	8	86	7
District of Columbia	—	0	5	21	49	—	0	1	1	6	—	0	2	6	16
Florida	280	115	228	4,191	3,391	5	3	7	125	105	18	9	24	344	636
Georgia	54	39	96	1,636	1,638	2	1	4	54	71	4	13	30	479	855
Maryland§	—	15	26	502	631	—	1	6	60	103	—	6	14	257	75
North Carolina	12	21	104	800	848	3	2	21	77	71	6	5	27	259	142
South Carolina§	5	15	54	542	797	—	0	3	22	33	—	3	14	90	442
Virginia§	2	20	88	662	734	1	3	16	91	190	1	5	59	146	132
West Virginia	—	4	23	159	156	—	0	3	19	32	—	0	3	6	28
E.S. Central	22	53	124	1,969	2,484	—	4	12	161	206	12	17	58	599	1,414
Alabama§	8	15	38	482	694	—	1	4	36	51	—	3	11	100	334
Kentucky	5	10	18	358	331	—	2	7	55	67	9	2	25	154	217
Mississippi	—	13	45	578	853	—	0	1	6	4	—	1	4	32	280
Tennessee§	9	14	62	551	606	—	2	8	64	84	3	11	48	313	583
W.S. Central	40	101	1,333	3,225	4,828	1	4	139	126	265	13	55	967	1,863	3,127
Arkansas§	21	12	29	456	575	1	0	4	27	46	2	7	20	245	419
Louisiana	—	13	43	599	836	—	0	1	—	7	—	4	17	108	515
Oklahoma	19	14	102	476	575	—	1	82	21	23	11	5	61	219	110
Texas§	—	54	1,204	1,694	2,842	—	2	55	78	189	—	40	889	1,291	2,083
Mountain	12	57	126	2,179	2,509	3	11	40	401	430	9	24	54	877	736
Arizona	7	20	47	752	809	1	1	4	56	52	8	17	42	646	352
Colorado	—	13	33	481	547	—	3	18	131	125	—	2	11	72	85
Idaho§	—	4	10	137	130	2	2	15	62	90	—	0	2	8	10
Montana§	—	2	7	86	89	—	0	7	27	30	—	0	5	13	6
Nevada§	3	4	13	191	174	—	0	4	23	15	1	1	11	54	171
New Mexico§	—	5	28	257	441	—	1	2	27	42	—	2	12	69	82
Utah	2	6	15	232	261	—	2	7	70	66	—	0	3	15	27
Wyoming§	—	1	6	43	58	—	0	2	5	10	—	0	1	—	3
Pacific	149	127	537	4,612	3,896	18	10	31	350	313	30	27	70	880	1,206
Alaska	—	1	6	56	42	—	0	1	—	5	—	0	1	2	1
California	128	95	516	3,498	2,830	9	5	15	178	145	27	20	65	714	1,040
Hawaii	—	5	13	184	202	—	0	1	3	11	—	0	4	27	36
Oregon§	1	8	16	307	336	1	1	6	48	52	—	1	7	29	65
Washington	20	12	85	567	486	8	3	18	121	100	3	3	11	108	64
American Samoa	—	0	1	—	2	—	0	0	—	—	—	1	2	3	1
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	2	—	11	—	0	0	—	—	—	0	1	—	14
Puerto Rico	1	8	40	261	540	—	0	1	1	—	—	0	2	7	24
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Includes *E. coli* O157:H7; Shiga toxin-positive, serogroup non-O157; and Shiga toxin-positive, not serogrouped.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Streptococcal diseases, invasive, group A					*Streptococcus pneumoniae*, invasive disease, nondrug resistant† Age <5 years				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	21	101	239	3,988	4,258	15	36	122	1,227	1,288
New England	1	5	28	237	304	1	1	12	45	61
Connecticut	—	0	21	63	86	—	0	11	—	—
Maine§	—	0	2	13	21	—	0	1	3	1
Massachusetts	1	3	10	103	141	—	1	4	30	45
New Hampshire	—	1	4	34	20	—	0	2	8	8
Rhode Island§	—	0	2	11	23	—	0	2	1	7
Vermont§	—	0	3	13	13	1	0	1	3	—
Mid. Atlantic	5	19	43	810	869	3	5	33	186	160
New Jersey	—	3	7	115	157	—	1	4	32	47
New York (Upstate)	3	7	25	265	271	3	2	17	88	71
New York City	—	4	12	155	160	—	0	31	66	42
Pennsylvania	2	6	18	275	281	N	0	2	N	N
E.N. Central	1	17	42	749	804	2	6	18	188	234
Illinois	—	5	12	211	214	—	1	5	23	66
Indiana	—	2	23	120	109	—	0	13	26	26
Michigan	—	3	11	121	140	—	1	5	49	59
Ohio	1	4	13	187	219	2	1	6	56	44
Wisconsin	—	2	11	110	122	—	1	4	34	39
W.N. Central	1	6	37	323	316	1	2	11	109	70
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	5	37	34	N	0	1	N	N
Minnesota	—	0	34	146	150	—	0	10	61	20
Missouri	1	2	8	72	74	1	0	4	30	31
Nebraska§	—	1	3	36	31	—	0	1	8	7
North Dakota	—	0	4	11	8	—	0	3	4	6
South Dakota	—	0	3	21	19	—	0	2	6	6
S. Atlantic	11	22	49	911	873	2	6	16	227	252
Delaware	—	0	1	10	6	—	0	0	—	—
District of Columbia	—	0	3	11	12	N	0	0	N	N
Florida	5	6	12	226	198	1	1	6	54	47
Georgia	3	5	13	217	195	1	2	6	58	69
Maryland§	—	3	12	140	149	—	1	4	51	47
North Carolina	1	2	12	84	110	N	0	0	N	N
South Carolina§	—	1	5	57	57	—	1	6	34	44
Virginia§	2	3	9	132	113	—	0	4	18	38
West Virginia	—	1	4	34	33	—	0	3	12	7
E.S. Central	1	3	10	152	150	2	2	7	68	65
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	1	1	5	30	32	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	2	14	8
Tennessee§	—	3	9	122	118	2	1	6	54	57
W.S. Central	—	9	79	343	383	3	5	46	207	204
Arkansas§	—	0	2	14	9	—	0	4	22	11
Louisiana	—	0	3	11	15	—	0	3	13	11
Oklahoma	—	3	20	111	88	3	1	7	46	51
Texas§	—	5	59	207	271	—	3	34	126	131
Mountain	1	10	22	343	443	1	4	16	171	203
Arizona	1	3	7	118	157	1	2	10	92	92
Colorado	—	3	7	108	111	—	0	4	30	48
Idaho§	—	0	2	8	13	—	0	2	7	3
Montana§	N	0	0	N	N	N	0	0	N	N
Nevada§	—	0	1	5	8	—	0	1	—	3
New Mexico§	—	2	7	62	104	—	0	4	15	27
Utah	—	1	6	41	44	—	0	5	27	28
Wyoming§	—	0	1	1	6	—	0	0	—	2
Pacific	—	3	9	120	116	—	0	4	26	39
Alaska	—	1	4	26	29	—	0	3	20	24
California	N	0	0	N	N	N	0	0	N	N
Hawaii	—	3	8	94	87	—	0	2	6	15
Oregon§	N	0	0	N	N	N	0	0	N	N
Washington	N	0	0	N	N	N	0	0	N	N
American Samoa	—	0	0	—	30	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Includes cases of invasive pneumococcal disease, in children aged <5 years, caused by *S. pneumoniae*, which is susceptible or for which susceptibility testing is not available (NNDSS event code 11717).
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	*Streptococcus pneumoniae*, invasive disease, drug resistant†										Syphilis, primary and secondary				
	All ages					Aged <5 years									
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	22	60	276	2,062	2,297	2	9	21	315	356	137	266	452	9,544	9,297
New England	—	1	48	41	53	—	0	5	3	7	3	5	15	236	223
Connecticut	—	0	48	—	7	—	0	5	—	—	—	1	5	43	23
Maine§	—	0	2	10	15	—	0	1	1	1	—	0	1	1	9
Massachusetts	—	0	1	3	—	—	0	1	2	—	3	4	11	167	156
New Hampshire	—	0	3	5	—	—	0	0	—	—	—	0	2	13	14
Rhode Island§	—	0	6	12	18	—	0	1	—	4	—	0	5	12	14
Vermont§	—	0	2	11	13	—	0	0	—	2	—	0	2	—	7
Mid. Atlantic	4	3	14	126	233	—	0	3	20	21	37	35	51	1,360	1,214
New Jersey	—	0	0	—	—	—	0	0	—	—	3	4	13	166	161
New York (Upstate)	3	1	10	57	50	—	0	2	10	6	3	2	8	90	97
New York City	—	0	4	3	93	—	0	2	—	1	22	22	40	846	763
Pennsylvania	1	1	8	66	90	—	0	2	10	14	9	6	12	258	193
E.N. Central	5	11	41	461	484	—	1	7	64	65	6	23	43	781	882
Illinois	N	0	0	N	N	N	0	0	N	N	2	8	19	229	355
Indiana	—	3	32	162	166	—	0	6	22	21	2	2	10	123	104
Michigan	—	0	2	19	17	—	0	1	2	2	—	4	18	180	144
Ohio	5	7	18	280	301	—	1	4	40	42	—	6	17	216	238
Wisconsin	—	0	0	—	—	—	0	0	—	—	2	1	4	33	41
W.N. Central	1	2	161	96	163	—	0	3	20	33	4	6	11	226	310
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	2	17	15
Kansas	—	1	5	38	59	—	0	2	13	4	3	0	3	25	24
Minnesota	—	0	156	—	24	—	0	3	—	24	—	1	6	40	78
Missouri	1	1	5	45	72	—	0	1	5	2	1	3	7	124	182
Nebraska§	—	0	1	1	—	—	0	0	—	—	—	0	3	16	11
North Dakota	—	0	3	10	2	—	0	0	—	—	—	0	1	3	—
South Dakota	—	0	2	2	6	—	0	2	2	3	—	0	1	1	—
S. Atlantic	10	26	53	976	941	1	4	14	145	157	28	64	262	2,353	2,031
Delaware	—	0	2	15	3	—	0	0	—	—	1	0	3	24	10
District of Columbia	N	0	0	N	N	N	0	0	N	N	—	3	9	120	95
Florida	10	15	36	573	535	1	2	13	90	101	1	19	32	711	760
Georgia	—	8	25	296	317	—	1	5	48	48	—	14	227	554	461
Maryland§	—	0	1	4	4	—	0	0	—	1	4	6	16	226	253
North Carolina	N	0	0	N	N	N	0	0	N	N	16	9	21	398	196
South Carolina§	—	0	0	—	—	—	0	0	—	—	2	2	6	88	64
Virginia§	N	0	0	N	N	N	0	0	N	N	4	7	15	228	184
West Virginia	—	2	13	88	82	—	0	3	7	7	—	0	2	4	8
E.S. Central	1	5	25	199	249	—	1	3	29	47	13	23	36	836	795
Alabama§	N	0	0	N	N	N	0	0	N	N	—	8	17	313	327
Kentucky	—	1	5	56	62	—	0	2	7	10	2	1	10	49	62
Mississippi	—	0	3	3	30	—	0	1	2	9	—	4	18	163	114
Tennessee§	1	3	23	140	157	—	0	3	20	28	11	8	19	311	292
W.S. Central	1	2	6	75	76	1	0	3	15	12	35	49	80	1,798	1,585
Arkansas§	1	1	5	43	13	1	0	3	10	3	6	4	35	173	116
Louisiana	—	1	5	32	63	—	0	1	5	9	—	10	40	303	446
Oklahoma	N	0	0	N	N	N	0	0	N	N	1	1	7	49	57
Texas§	—	0	0	—	—	—	0	0	—	—	28	32	50	1,273	966
Mountain	—	2	7	85	96	—	0	3	17	12	3	9	18	317	468
Arizona	—	0	0	—	—	—	0	0	—	—	—	4	9	132	240
Colorado	—	0	0	—	—	—	0	0	—	—	—	1	4	64	111
Idaho§	N	0	1	N	N	N	0	1	N	N	—	0	2	3	4
Montana§	—	0	1	—	—	—	0	0	—	—	—	0	7	—	—
Nevada§	—	1	4	33	45	—	0	2	7	5	3	1	10	79	62
New Mexico§	—	0	0	—	—	—	0	0	—	—	—	1	5	37	32
Utah	—	1	6	43	50	—	0	3	9	7	—	0	2	—	16
Wyoming§	—	0	2	9	1	—	0	1	1	—	—	0	1	2	3
Pacific	—	0	1	3	2	—	0	1	2	2	8	43	67	1,637	1,789
Alaska	—	0	0	—	—	—	0	0	—	—	—	0	0	—	1
California	N	0	0	N	N	N	0	0	N	N	6	40	60	1,495	1,618
Hawaii	—	0	1	3	2	—	0	1	2	2	—	0	3	21	16
Oregon§	N	0	0	N	N	N	0	0	N	N	—	1	4	32	15
Washington	N	0	0	N	N	N	0	0	N	N	2	2	7	89	139
American Samoa	N	0	0	N	N	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	5	3	17	168	114
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional.
† Includes cases of invasive pneumococcal disease caused by drug-resistant *S. pneumoniae* (DRSP) (NNDSS event code 11720).
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending September 26, 2009, and September 20, 2008 (38th week)*

Reporting area	Varicella (chickenpox)					West Nile virus disease†									
						Neuroinvasive					Nonneuroinvasive§				
	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008	Current week	Previous 52 weeks Med	Previous 52 weeks Max	Cum 2009	Cum 2008
United States	134	457	1,035	13,135	21,714	1	1	33	207	593	—	0	33	187	609
New England	12	8	46	225	1,226	—	0	1	—	6	—	0	0	—	3
Connecticut	—	0	21	—	633	—	0	0	—	5	—	0	0	—	3
Maine¶	12	0	11	30	187	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	2	2	—	—	0	1	—	—	—	0	0	—	—
New Hampshire	—	4	11	146	195	—	0	0	—	—	—	0	0	—	—
Rhode Island¶	—	0	1	4	—	—	0	0	—	1	—	0	0	—	—
Vermont¶	—	2	17	43	211	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	35	37	58	1,136	1,741	—	0	3	4	42	—	0	2	1	17
New Jersey	N	0	0	N	N	—	0	1	2	4	—	0	0	—	4
New York (Upstate)	N	0	0	N	N	—	0	3	1	20	—	0	1	—	6
New York City	—	0	0	—	—	—	0	0	—	8	—	0	1	—	5
Pennsylvania	35	37	58	1,136	1,741	—	0	1	1	10	—	0	1	1	2
E.N. Central	52	161	254	4,718	5,274	—	0	4	3	36	—	0	3	3	19
Illinois	11	37	73	1,158	834	—	0	1	1	10	—	0	0	—	8
Indiana	1	3	29	302	—	—	0	1	2	2	—	0	1	1	1
Michigan	10	48	90	1,361	2,161	—	0	1	—	9	—	0	1	—	5
Ohio	26	42	91	1,499	1,671	—	0	1	—	13	—	0	2	2	1
Wisconsin	4	12	55	398	608	—	0	2	—	2	—	0	0	—	4
W.N. Central	3	19	114	716	913	—	0	4	19	44	—	0	6	41	122
Iowa	N	0	0	N	N	—	0	0	—	3	—	0	1	3	2
Kansas	—	5	22	183	346	—	0	2	3	11	—	0	2	4	14
Minnesota	—	0	0	—	—	—	0	0	—	2	—	0	1	1	8
Missouri	3	10	51	476	530	—	0	1	1	10	—	0	0	—	3
Nebraska¶	N	0	0	N	N	—	0	2	10	5	—	0	5	23	34
North Dakota	—	0	108	57	—	—	0	0	—	2	—	0	1	1	35
South Dakota	—	0	4	—	37	—	0	3	5	11	—	0	2	9	26
S. Atlantic	32	55	146	1,511	3,584	—	0	2	5	19	—	0	1	1	19
Delaware	—	0	4	8	33	—	0	0	—	—	—	0	0	—	1
District of Columbia	—	0	3	8	18	—	0	0	—	4	—	0	1	—	3
Florida	15	27	67	962	1,244	—	0	0	—	3	—	0	0	—	—
Georgia	N	0	0	N	N	—	0	1	2	3	—	0	1	1	4
Maryland¶	N	0	0	N	N	—	0	0	—	6	—	0	0	—	8
North Carolina	N	0	0	N	N	—	0	0	—	2	—	0	0	—	1
South Carolina¶	—	2	54	154	665	—	0	2	3	—	—	0	0	—	1
Virginia¶	—	0	119	28	1,079	—	0	0	—	—	—	0	0	—	1
West Virginia	17	9	32	351	545	—	0	0	—	1	—	0	0	—	—
E.S. Central	—	11	28	358	916	—	0	5	25	44	—	0	4	15	55
Alabama¶	—	10	28	356	904	—	0	0	—	11	—	0	0	—	7
Kentucky	N	0	0	N	N	—	0	1	2	1	—	0	0	—	—
Mississippi	—	0	1	2	12	—	0	5	22	20	—	0	4	14	41
Tennessee¶	N	0	0	N	N	—	0	1	1	12	—	0	1	1	7
W.S. Central	—	97	747	3,421	6,388	—	0	13	64	58	—	0	5	18	52
Arkansas¶	—	2	47	96	555	—	0	1	1	6	—	0	0	—	2
Louisiana	—	1	7	76	61	—	0	3	7	13	—	0	5	6	23
Oklahoma	N	0	0	N	N	—	0	1	4	2	—	0	0	—	5
Texas¶	—	88	721	3,249	5,772	—	0	11	52	37	—	0	3	12	22
Mountain	—	32	83	970	1,577	—	0	8	41	78	—	0	12	62	169
Arizona	—	0	0	—	—	—	0	5	11	42	—	0	7	4	40
Colorado	—	13	44	402	645	—	0	4	13	16	—	0	11	38	53
Idaho¶	N	0	0	N	N	—	0	1	2	3	—	0	2	6	34
Montana¶	—	2	20	105	233	—	0	1	2	—	—	0	1	1	5
Nevada¶	N	0	0	N	N	—	0	2	7	8	—	0	1	5	7
New Mexico¶	—	2	20	134	173	—	0	2	4	4	—	0	1	2	2
Utah	—	12	31	329	516	—	0	1	—	5	—	0	0	—	20
Wyoming¶	—	0	1	—	10	—	0	1	2	—	—	0	2	6	8
Pacific	—	2	7	80	95	1	0	8	46	266	—	0	11	46	153
Alaska	—	1	6	50	47	—	0	0	—	—	—	0	0	—	—
California	—	0	0	—	—	—	0	8	30	261	—	0	6	30	139
Hawaii	—	1	4	30	48	—	0	0	—	—	—	0	0	—	—
Oregon¶	N	0	0	N	N	—	0	1	1	3	—	0	3	6	13
Washington	N	0	0	N	N	1	0	3	15	2	—	0	4	10	1
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	2	3	—	55	—	0	0	—	—	—	0	0	—	—
Puerto Rico	1	7	26	337	458	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting year 2009 is provisional. Data for HIV/AIDS, AIDS, and TB, when available, are displayed in Table IV, which appears quarterly.
† Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for California serogroup, eastern equine, Powassan, St. Louis, and western equine diseases are available in Table I.
§ Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at http://www.cdc.gov/epo/dphsi/phs/infdis.htm.
¶ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE III. Deaths in 122 U.S. cities,* week ending September 26, 2009 (38th week)

Reporting area	All causes, by age (years)						P&I†
	All Ages	≥65	45–64	25–44	1–24	<1	Total
New England	468	318	100	25	10	15	45
Boston, MA	130	80	31	9	4	6	17
Bridgeport, CT	29	21	5	3	—	—	—
Cambridge, MA	21	12	8	—	1	—	1
Fall River, MA	29	25	2	1	1	—	2
Hartford, CT	51	38	8	3	—	2	4
Lowell, MA	17	12	4	—	1	—	—
Lynn, MA	8	4	4	—	—	—	—
New Bedford, MA	14	10	2	2	—	—	—
New Haven, CT	17	12	4	1	—	—	5
Providence, RI	75	48	17	4	1	5	10
Somerville, MA	—	—	—	—	—	—	—
Springfield, MA	U	U	U	U	U	U	U
Waterbury, CT	31	24	5	1	1	—	2
Worcester, MA	46	32	10	1	1	2	4
Mid. Atlantic	1,936	1,315	419	117	45	37	83
Albany, NY	49	36	11	2	—	—	2
Allentown, PA	29	20	6	2	1	—	1
Buffalo, NY	79	54	19	4	—	2	3
Camden, NJ	35	26	4	5	—	—	—
Elizabeth, NJ	17	7	3	4	—	3	1
Erie, PA	41	33	5	1	2	—	2
Jersey City, NJ	29	17	8	2	1	1	2
New York City, NY	977	668	211	57	23	17	29
Newark, NJ	14	4	6	2	—	2	3
Paterson, NJ	U	U	U	U	U	U	U
Philadelphia, PA	274	155	77	22	11	7	10
Pittsburgh, PA§	13	9	—	2	1	1	1
Reading, PA	32	24	7	—	1	—	4
Rochester, NY	115	89	19	3	2	2	13
Schenectady, NY	16	13	2	—	1	—	—
Scranton, PA	28	22	6	—	—	—	—
Syracuse, NY	124	96	19	6	1	2	9
Trenton, NJ	24	19	4	1	—	—	—
Utica, NY	22	11	7	3	1	—	1
Yonkers, NY	18	12	5	1	—	—	2
E.N. Central	1,706	1,127	422	86	28	43	97
Akron, OH	51	33	14	2	1	1	3
Canton, OH	45	29	13	2	—	1	3
Chicago, IL	U	U	U	U	U	U	U
Cincinnati, OH	95	57	22	11	3	2	10
Cleveland, OH	224	157	55	8	2	2	8
Columbus, OH	194	122	53	7	1	11	18
Dayton, OH	121	89	25	3	4	—	2
Detroit, MI	161	88	49	14	7	3	7
Evansville, IN	49	33	15	1	—	—	1
Fort Wayne, IN	66	48	13	3	—	2	2
Gary, IN	15	9	3	1	2	—	—
Grand Rapids, MI	55	46	7	—	1	1	7
Indianapolis, IN	200	119	55	13	5	8	12
Lansing, MI	38	27	8	3	—	—	3
Milwaukee, WI	109	64	35	7	—	3	4
Peoria, IL	63	42	17	—	—	4	5
Rockford, IL	37	27	8	1	—	1	3
South Bend, IN	39	29	4	3	2	1	1
Toledo, OH	91	65	16	7	—	3	6
Youngstown, OH	53	43	10	—	—	—	2
W.N. Central	662	414	183	33	19	13	36
Des Moines, IA	100	71	25	—	3	1	12
Duluth, MN	30	22	7	—	—	1	2
Kansas City, KS	37	24	10	2	1	—	1
Kansas City, MO	93	58	23	7	2	3	4
Lincoln, NE	42	34	6	1	1	—	3
Minneapolis, MN	54	31	17	4	—	2	1
Omaha, NE	84	52	25	5	2	—	1
St. Louis, MO	82	31	39	4	7	1	7
St. Paul, MN	51	38	8	3	—	2	—
Wichita, KS	89	53	23	7	3	3	5
S. Atlantic	1,289	768	335	107	37	41	63
Atlanta, GA	145	86	34	19	4	2	2
Baltimore, MD	180	90	62	20	6	2	14
Charlotte, NC	126	78	30	8	4	6	11
Jacksonville, FL	193	115	48	19	4	7	6
Miami, FL	99	67	21	4	4	3	7
Norfolk, VA	60	38	17	1	2	2	4
Richmond, VA	54	27	21	3	—	3	2
Savannah, GA	49	32	11	2	2	2	3
St. Petersburg, FL	51	30	12	5	3	1	1
Tampa, FL	178	109	44	18	3	4	10
Washington, D.C.	135	86	28	6	5	9	2
Wilmington, DE	19	10	7	2	—	—	1
E.S. Central	853	550	217	42	23	21	71
Birmingham, AL	135	85	37	3	5	5	14
Chattanooga, TN	76	57	12	2	2	3	4
Knoxville, TN	84	57	22	3	2	—	8
Lexington, KY	80	54	22	1	1	2	1
Memphis, TN	188	114	52	13	5	4	17
Mobile, AL	86	57	21	5	1	2	7
Montgomery, AL	52	36	15	1	—	—	4
Nashville, TN	152	90	36	14	7	5	16
W.S. Central	1,343	841	329	109	37	24	79
Austin, TX	85	51	26	5	2	1	6
Baton Rouge, LA	73	50	14	7	—	2	1
Corpus Christi, TX	73	40	25	6	2	—	8
Dallas, TX	176	105	40	17	7	5	11
El Paso, TX	94	66	19	5	2	2	5
Fort Worth, TX	U	U	U	U	U	U	U
Houston, TX	354	217	82	38	11	6	19
Little Rock, AR	106	69	28	3	4	2	2
New Orleans, LA	U	U	U	U	U	U	U
San Antonio, TX	222	148	52	15	4	2	14
Shreveport, LA	48	33	9	5	1	—	4
Tulsa, OK	112	62	34	8	4	4	9
Mountain	1,076	697	244	84	31	20	63
Albuquerque, NM	93	62	16	12	3	—	9
Boise, ID	43	28	13	1	1	—	3
Colorado Springs, CO	67	46	12	5	2	2	1
Denver, CO	80	56	12	6	1	5	6
Las Vegas, NV	245	159	65	17	3	1	17
Ogden, UT	29	17	6	6	—	—	—
Phoenix, AZ	182	93	52	15	16	6	9
Pueblo, CO	32	25	6	1	—	—	1
Salt Lake City, UT	138	92	29	9	4	4	7
Tucson, AZ	167	119	33	12	1	2	10
Pacific	1,410	952	331	75	28	24	121
Berkeley, CA	10	5	3	—	1	1	1
Fresno, CA	U	U	U	U	U	U	U
Glendale, CA	41	31	7	2	—	1	9
Honolulu, HI	U	U	U	U	U	U	U
Long Beach, CA	62	37	22	1	—	2	7
Los Angeles, CA	212	125	59	13	12	3	28
Pasadena, CA	26	20	4	1	—	1	5
Portland, OR	146	102	33	7	2	2	6
Sacramento, CA	187	139	34	11	2	1	18
San Diego, CA	151	104	32	8	3	4	14
San Francisco, CA	102	70	24	5	3	—	10
San Jose, CA	172	124	38	7	—	3	9
Santa Cruz, CA	32	21	7	3	1	—	2
Seattle, WA	104	66	25	8	3	2	10
Spokane, WA	62	38	18	3	1	2	2
Tacoma, WA	103	70	25	6	—	2	—
Total¶	**10,743**	**6,982**	**2,580**	**678**	**258**	**238**	**658**

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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