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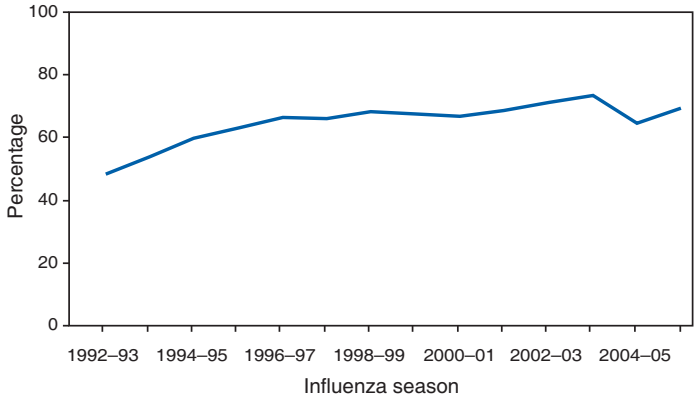
State-Specific Influenza Vaccination Coverage Among Adults Aged ≥18 Years — United States, 2003–04 and 2005–06 Influenza Seasons

Influenza epidemics occur seasonally and result in substantial morbidity and mortality among adults in the United States (*1*). Adult groups included in the 2007 Advisory Committee on Immunization Practices (ACIP) recommendation for annual influenza vaccination are persons aged 18–49 years with high-risk conditions (i.e., conditions associated with an increased risk for complications from influenza),* persons aged ≥50 years, health-care personnel, and others who are household contacts or caregivers of persons at high risk (e.g., persons with high-risk conditions or children aged ≤59 months). In addition, adults who want to reduce the risk for becoming ill with influenza or of transmitting influenza to others should be vaccinated.† *Healthy People 2010* (*HP2010*) objectives include increasing vaccination levels to 90% for adults aged ≥65 years (objective 14-29a) and 60% for persons aged 18–64 years who have one or more high-risk conditions (objective 14-29c) (*2*). From the 1992–93 through 2003–04 influenza seasons, seasonal influenza vaccination coverage estimates (based on Behavioral Risk Factor Surveillance System [BRFSS] data) among adults aged ≥65 years trended upward, except for three seasons (1997–98, 1999–00, and 2000–01) when no increases occurred (Figure).§ To evaluate recent state-specific progress toward the *HP2010* objectives, CDC compared data from the 2004 and 2006 BRFSS surveys, which reflected vaccinations received during the 2003–04 and 2005–06 influenza seasons; data from the 2004–05 influenza season, which have been published previously (*3*), were not included in this comparison because that season was marked by a substantial shortage of influenza vaccine. This report describes the results of the analysis, which indicated that influenza vaccination coverage for the

FIGURE. Estimated influenza vaccination coverage among persons aged ≥65 years — United States, Behavioral Risk Factor Surveillance System, 1992–93 to 2005–06 influenza seasons*



* Coverage estimates are for persons interviewed during February–August.

* High-risk conditions include chronic pulmonary, cardiovascular, renal, hepatic, hematologic, or metabolic disorders; immunosuppression; cognitive dysfunction; spinal cord injuries; seizure disorders; and other neuromuscular disorders.
† Recommendations available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm.
§ Additional information for comparison available at http://www.cdc.gov/flu/professionals/vaccination/#coverage.

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2005–06 season did not return to levels observed before the vaccine shortage of 2004–05 and remained substantially below *HP2010* targets. Comprehensive measures are needed to improve influenza vaccination coverage among adult populations in the United States, including increasing adoption of recommended adult immunization practices by health-care providers (*4*), raising public awareness about influenza vaccination, vaccinating throughout the influenza season, and ensuring stable supplies of readily available vaccine.

BRFSS is a state-based, random-digit–dialed telephone survey of the noninstitutionalized, U.S. civilian population aged ≥18 years. Data are weighted by age, sex, and, in certain states, race/ethnicity, to reflect the estimated adult population in each area. The survey is conducted in all 50 states, the District of Columbia, and three U.S. territories (Guam, Puerto Rico, and the U.S. Virgin Islands). Respondents were asked, "During the past 12 months, have you had a flu shot?" and "During the past 12 months, have you had a flu vaccine that was sprayed in your nose?" Respondents with an affirmative answer to either question were considered to have been vaccinated during the preceding influenza season. (Fewer than 1% reported receiving the nasal spray vaccine only.) To assess coverage for each September–January period, when the majority of vaccinations are administered during any influenza season, CDC restricted analysis to respondents interviewed during February–August after each season (e.g., to assess coverage for the 2005–06 season, analysis was restricted to respondents interviewed during February–August 2006). The median state response rate (i.e., the ratio of completed interviews to the sum of completed interviews, refusals, and terminated interviews), based on Council of American Survey and Research Organizations guidelines, was 52.7% (range: 32.2%–66.6%) in 2004 and 51.4% (range: 35.1%–66.0%) in 2006.[¶] The median state cooperation rate was 74.5% (range: 56.9%–83.5%). A total of 303,822 persons aged ≥18 years completed interviews in 2004 and 355,710 in 2006; of these, 176,994 in 2004 and 210,335 in 2006 were interviewed during February–August. Respondents for whom information on influenza vaccination status was missing (0.30% in 2004 and 0.46% in 2006) were excluded from this analysis. Each year, BRFSS also solicits information regarding selected high-risk conditions for serious complications after influenza infection. In the 2006 survey, those conditions were diabetes, asthma, myocardial infarction, and coronary heart disease. In the 2004 survey, only two high-risk conditions (diabetes and asthma) were included.

[¶] Additional information available at http://www.cdc.gov/brfss/technical_infodata/quality.htm.

Estimated influenza vaccination coverage for the 2005–06 season was 30.5% among persons aged 18–49 years with the identified high-risk conditions, compared with 18.3% among all other persons aged 18–49 years (Table 1). State-specific influenza vaccination coverage among persons aged 18–49 years with high-risk conditions ranged from 43.0% in Rhode Island to 19.3% in Nevada (median: 31.5%). The median percentage-point change in influenza vaccination coverage among persons aged 18–49 years with high-risk conditions from the 2003–04 season to the 2005–06 season was -5.7 (range: -23.1–6.1) (Table 2), and the decline in influenza vaccination coverage was statistically significant in five regions** and 22 states.

** The nine regions (which are identical to the nine divisions of the U.S. census) are New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont); Mid-Atlantic (New Jersey, New York, and Pennsylvania); East North Central (Illinois, Indiana, Michigan, Ohio, and Wisconsin); West North Central (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota); South Atlantic (Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia); East South Central (Alabama, Kentucky, Mississippi, and Tennessee); West South Central (Arkansas, Louisiana, Oklahoma, and Texas); Mountain (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming); and Pacific (Alaska, California, Hawaii, Oregon, and Washington).

Among adults aged 50–64 years, influenza vaccination coverage for the 2005–06 season was 36.6% overall, ranging from 49.9% in South Dakota to 23.8% in Florida (median: 40.3%) (Table 1). Influenza vaccination coverage for the 2005–06 season was 48.4% (95% confidence interval [CI] = ±1.7) among persons aged 50–64 years with the identified high-risk conditions, compared with 32.2% (CI = ±0.9) among all other persons aged 50–64 years. The median percentage-point changes in influenza vaccination coverage from the 2003–04 to 2005–06 season were -7.1 (range: -16.2–6.1) among persons with identified high-risk conditions and -8.6 (range: -15.8–0.9) among all other persons aged 50–64 years (Table 2); these changes were statistically significant in four of the nine regions.

Among adults aged ≥65 years, influenza vaccination coverage for the 2005–06 season was 69.3%, ranging from 78.8% in Rhode Island to 58.3% in the District of Columbia (median: 67.2%) (Table 1). Coverage was higher for non-Hispanic whites (71.9%) compared with other racial/ethnic groups (58.3%). Among these other racial/ethnic groups, coverage was 51.8% (CI = ±3.5) for non-Hispanic blacks, 64.0% (CI = ±14.7) for Asians, 62.9% (CI = ±10.2) for American Indians/Alaska Natives, and 60.7% (CI = ±5.6) for Hispanics. The median percentage-point change in coverage from the

TABLE 1. Estimated self-reported influenza vaccination coverage during the 2005–06 influenza season* among adults aged ≥18 years, by region, state/area, and selected age, risk, and racial/ethnic subgroups — United States, Behavioral Risk Factor Surveillance System (BRFSS), 2006†

	Age, risk, and racial/ethnic subgroup											
	Persons aged 18–49 yrs at high risk§		Other persons aged 18–49 yrs		All persons aged 50–64 yrs		All persons aged ≥65 yrs		Non-Hispanic whites aged ≥65 yrs		Persons of all other races/ethnicities aged ≥65 yrs	
Region and state/area	%	(95% CI¶)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
All states combined**	**30.5**	**(±2.1)**	**18.3**	**(±0.6)**	**36.6**	**(±0.8)**	**69.3**	**(±0.8)**	**71.9**	**(±0.8)**	**58.3**	**(±2.7)††**
New England	**34.9**	**(±3.9)**	**20.5**	**(±1.3)**	**41.4**	**(±1.7)**	**74.8**	**(±1.5)**	**75.3**	**(±1.6)**	**67.1**	**(±5.7)††**
Connecticut	32.7	(±7.4)	21.3	(±2.6)	42.0	(±3.5)	72.8	(±3.1)	74.3	(±3.2)	55.9	(±11.4)††
Maine	32.4	(±8.8)	19.0	(±3.1)	40.3	(±3.8)	74.9	(±3.8)	75.1	(±3.9)	—§§	—§§
Massachusetts	35.5	(±7.0)	19.8	(±2.3)	40.9	(±3.1)	75.4	(±2.7)	75.9	(±2.8)	69.4	(±8.8)
New Hampshire	34.4	(±6.9)	20.0	(±2.7)	40.8	(±3.2)	72.7	(±3.4)	72.4	(±3.4)	78.1	(±14.9)
Rhode Island	43.0	(±9.7)	25.3	(±3.6)	47.0	(±4.1)	78.8	(±3.2)	79.2	(±3.3)	74.0	(±14.9)
Vermont	30.2	(±6.9)	18.6	(±2.5)	38.0	(±2.9)	74.1	(±2.8)	74.3	(±2.9)	70.2	(±11.5)
Mid-Atlantic	**32.3**	**(±4.7)**	**18.7**	**(±1.6)**	**35.9**	**(±2.1)**	**69.0**	**(±2.1)**	**72.4**	**(±2.0)**	**54.7**	**(±6.2)††**
New Jersey	27.3	(±5.9)	16.4	(±1.9)	32.3	(±2.4)	67.9	(±2.4)	73.0	(±2.4)	49.0	(±6.6)††
New York	32.2	(±8.0)	19.8	(±2.8)	37.5	(±3.7)	69.4	(±3.6)	74.6	(±3.4)	53.4	(±9.7)††
Pennsylvania	35.8	(±7.9)	18.7	(±2.8)	35.9	(±3.4)	69.2	(±3.4)	69.7	(±3.5)	65.0	(±12.5)
East North Central	**29.9**	**(±5.1)**	**16.8**	**(±1.4)**	**36.1**	**(±2.0)**	**69.9**	**(±2.1)**	**71.9**	**(±2.1)**	**56.5**	**(±6.9)††**
Illinois	29.2	(±8.0)	14.1	(±2.3)	29.2	(±3.7)	68.8	(±4.1)	72.3	(±3.7)	54.5	(±13.6)††
Indiana	27.2	(±7.2)	17.9	(±2.5)	37.5	(±3.4)	67.3	(±3.5)	69.5	(±3.6)	49.9	(±11.3)††
Michigan	31.5	(±7.5)	15.7	(±2.4)	35.7	(±3.3)	71.3	(±3.3)	74.2	(±3.3)	52.1	(±11.9)††
Ohio	28.5	(±14.1)	17.5	(±3.7)	39.7	(±5.1)	69.1	(±5.2)	70.2	(±5.5)	60.3	(±14.5)
Wisconsin	34.9	(±12.5)	22.4	(±3.1)	40.4	(±3.9)	74.0	(±3.9)	73.6	(±4.0)	80.0	(±12.9)
West North Central	**33.0**	**(±4.6)**	**21.3**	**(±1.4)**	**42.6**	**(±2.0)**	**74.9**	**(±1.7)**	**75.8**	**(±1.7)**	**62.0**	**(±7.8)††**
Iowa	30.6	(±9.2)	22.8	(±2.6)	44.8	(±3.5)	76.5	(±3.2)	77.3	(±3.2)	60.2	(±16.4)††
Kansas	28.7	(±5.9)	19.7	(±2.3)	40.9	(±2.9)	74.7	(±2.6)	74.9	(±2.7)	71.6	(±10.5)
Minnesota	36.7	(±10.3)	23.5	(±3.3)	44.7	(±4.1)	76.9	(±3.8)	77.0	(±3.9)	—§§	—§§
Missouri	31.5	(±10.3)	16.6	(±2.9)	39.4	(±5.1)	72.7	(±4.2)	74.7	(±4.3)	56.0	(±13.4)††
Nebraska	40.5	(±9.0)	24.0	(±3.0)	42.9	(±3.4)	75.3	(±2.9)	76.2	(±2.8)	58.0	(±18.8)
North Dakota	30.2	(±10.3)	26.8	(±3.5)	40.3	(±4.1)	73.1	(±3.6)	72.7	(±3.8)	80.2	(±13.2)
South Dakota	40.3	(±8.6)	30.3	(±4.1)	49.9	(±3.5)	75.2	(±2.7)	74.8	(±2.8)	85.1	(±9.2)††

TABLE 1. (*Continued*) Estimated self-reported influenza vaccination coverage during the 2005–06 influenza season* among adults aged ≥18 years, by region, state/area, and selected age, risk, and racial/ethnic subgroups — United States, Behavioral Risk Factor Surveillance System (BRFSS), 2006†

	Age, risk, and racial/ethnic subgroup											
	Persons aged 18–49 yrs at high risk§		Other persons aged 18–49 yrs		All persons aged 50–64 yrs		All persons aged ≥65 yrs		Non-Hispanic whites aged ≥65 yrs		Persons of all other races/ethnicities aged ≥65 yrs	
Region and state/area	%	(95% CI¶)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
South Atlantic	**27.1**	**(±3.1)**	**18.1**	**(±1.0)**	**34.1**	**(±1.4)**	**66.2**	**(±1.4)**	**69.5**	**(±1.5)**	**55.2**	**(±3.6)††**
Delaware	37.7	(±10.6)	22.1	(±4.3)	43.0	(±5.1)	72.9	(±4.4)	74.8	(±4.5)	55.0	(±16.6)††
District of Columbia	32.8	(±9.0)	22.2	(±3.1)	39.7	(±4.3)	58.3	(±5.2)	73.4	(±6.5)	52.6	(±6.6)††
Florida	21.7	(±7.2)	11.8	(±2.0)	23.8	(±2.7)	63.2	(±2.8)	67.0	(±3.0)	49.9	(±6.7)††
Georgia	26.7	(±7.0)	19.7	(±2.5)	35.2	(±3.0)	65.6	(±3.6)	70.8	(±3.4)	51.6	(±9.4)††
Maryland	27.9	(±6.9)	22.0	(±2.4)	40.6	(±3.3)	68.3	(±3.4)	71.6	(±3.2)	59.3	(±9.2)††
North Carolina	32.2	(±5.3)	22.4	(±2.0)	41.8	(±2.4)	70.5	(±2.3)	73.2	(±2.4)	60.3	(±6.1)††
South Carolina	23.1	(±6.7)	19.7	(±2.3)	33.4	(±2.8)	66.1	(±3.0)	70.8	(±3.1)	53.3	(±6.9)††
Virginia	32.8	(±9.1)	21.8	(±3.7)	41.8	(±5.2)	70.4	(±4.5)	70.4	(±5.1)	70.5	(±9.9)
West Virginia	31.2	(±9.3)	16.3	(±2.9)	42.4	(±4.1)	67.2	(±4.2)	64.7	(±4.4)	65.0	(±6.7)
East South Central	**28.7**	**(±5.0)**	**20.9**	**(±2.1)**	**39.1**	**(±2.3)**	**67.4**	**(±2.4)**	**70.1**	**(±2.5)**	**54.7**	**(±6.4)††**
Alabama	26.2	(±9.7)	18.0	(±4.1)	37.1	(±4.6)	61.8	(±5.1)	64.7	(±5.6)	53.3	(±10.9)
Kentucky	26.2	(±9.3)	19.7	(±4.0)	41.4	(±4.6)	67.2	(±4.3)	67.5	(±4.4)	63.8	(±17.2)
Mississippi	29.2	(±7.4)	22.0	(±3.1)	36.2	(±3.2)	69.1	(±3.4)	74.8	(±3.4)	54.7	(±7.5)††
Tennessee	31.8	(±10.3)	23.1	(±4.1)	40.5	(±4.6)	71.0	(±5.0)	73.4	(±4.9)	53.2	(±17.5)††
West South Central	**38.2**	**(±10.5)**	**19.6**	**(±2.3)**	**37.3**	**(±3.1)**	**68.4**	**(±2.9)**	**72.3**	**(±3.0)**	**55.8**	**(±6.9)††**
Arkansas	27.8	(±7.2)	21.2	(±2.6)	41.6	(±3.3)	69.9	(±3.1)	71.1	(±3.3)	61.0	(±9.3)††
Louisiana	41.9	(±8.1)	24.4	(±2.6)	37.5	(±3.2)	67.2	(±3.6)	72.7	(±3.8)	54.5	(±7.5)††
Oklahoma	38.1	(±7.1)	26.9	(±3.0)	45.4	(±3.5)	74.2	(±2.9)	74.6	(±3.0)	73.0	(±7.6)
Texas	38.8	(±14.3)	17.9	(±3.2)	35.5	(±4.5)	67.3	(±4.5)	72.1	(±4.7)	53.0	(±10.1)††
Mountain	**26.4**	**(±4.2)**	**19.7**	**(±1.6)**	**39.3**	**(±2.0)**	**70.0**	**(±2.0)**	**70.6**	**(±2.2)**	**66.5**	**(±5.8)**
Arizona	20.2	(±11.4)	14.6	(±4.7)	34.2	(±6.0)	67.6	(±5.5)	69.1	(±5.7)	57.2	(±17.7)
Colorado	35.7	(±7.3)	23.7	(±2.4)	46.9	(±3.3)	77.3	(±3.2)	76.3	(±3.5)	82.7	(±8.1)
Idaho	23.0	(±7.6)	16.1	(±2.6)	36.7	(±3.8)	65.2	(±4.2)	65.1	(±4.3)	65.8	(±15.2)
Montana	30.2	(±8.1)	23.7	(±3.2)	42.3	(±3.3)	74.1	(±3.1)	74.6	(±3.2)	66.3	(±13.5)
Nevada	19.3	(±9.3)	18.1	(±4.5)	31.9	(±5.2)	58.8	(±6.2)	60.5	(±6.9)	52.9	(±14.3)
New Mexico	32.7	(±8.3)	20.2	(±2.6)	36.7	(±3.4)	70.5	(±3.4)	71.8	(±3.9)	67.8	(±6.5)
Utah	23.8	(±6.8)	23.1	(±3.0)	45.3	(±4.2)	73.4	(±4.2)	73.1	(±4.3)	77.7	(±16.1)
Wyoming	27.4	(±7.6)	23.8	(±2.8)	41.3	(±3.3)	74.8	(±3.3)	74.4	(±3.5)	78.5	(±10.6)
Pacific	**26.6**	**(±5.2)**	**15.1**	**(±1.8)**	**34.3**	**(±2.9)**	**69.7**	**(±3.2)**	**72.0**	**(±2.7)**	**64.6**	**(±8.7)**
Alaska	31.7	(±12.4)	23.3	(±4.7)	44.7	(±7.5)	63.6	(±9.8)	63.8	(±10.7)	63.2	(±21.3)
California	24.5	(±7.0)	13.9	(±2.3)	32.6	(±3.9)	68.8	(±4.4)	71.8	(±3.9)	63.3	(±10.1)
Hawaii	39.5	(±9.2)	28.5	(±3.4)	43.1	(±3.8)	77.1	(±3.5)	72.5	(±6.2)	79.0	(±4.2)
Oregon	30.3	(±8.3)	17.3	(±2.8)	37.1	(±3.3)	71.4	(±3.5)	71.8	(±3.6)	64.8	(±14.4)
Washington	32.2	(±4.5)	18.2	(±1.5)	39.3	(±2.2)	72.4	(±1.8)	73.1	(±1.9)	63.3	(±8.0)††
U.S. territories¶¶	**18.0**	**(±6.6)**	**14.2**	**(±2.8)**	**15.1**	**(±2.7)**	**34.8**	**(±3.9)**	—§§	—§§	**34.7**	**(±3.9)**
Puerto Rico	18.0	(±6.7)	14.2	(±2.8)	15.0	(±2.8)	34.7	(±2.9)	—§§	—§§	34.8	(±3.9)
U.S. Virgin Islands	20.0	(±11.7)	13.1	(±2.9)	19.3	(±3.8)	39.2	(±7.3)	—§§	—§§	31.8	(±7.9)
*Median***	*31.5*		*20.0*		*40.3*		*67.2*		*73.0*		*60.3*	
*Range***	*19.3–43.0*		*11.8–30.3*		*23.8–49.9*		*58.3–78.8*		*60.5–79.2*		*49.0–85.1*	

* Coverage estimates are for persons interviewed during February–August.
† Percentages are weighted.
§ Each year, BRFSS solicits information regarding selected high-risk conditions for serious complications after influenza infection. In the 2006 survey, those conditions were diabetes, asthma, myocardial infarction, and coronary heart disease.
¶ Confidence interval.
** Excludes U.S. territories.
†† p<0.05. Percentage-point difference between non-Hispanic white persons and persons of other races/ethnicities is statistically significant.
§§ Sample size is insufficient for analysis (sample size <30 or relative standard error >0.3).
¶¶ Guam did not collect BRFSS data in 2006.

2003–04 season to the 2005–06 season among persons aged ≥65 years was -3.8 overall (range: -10.5–1.4) (Table 2).

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Editorial Note: The findings in this report indicate that influenza vaccination coverage in all states during the 2005–06 influenza season was substantially below the *HP2010* targets. Vaccination coverage in each age and risk group declined significantly for the 2005–06 influenza season compared with the 2003–04 season, indicating a possible lingering effect on coverage caused by the vaccine shortage during the 2004–05 season. In October 2004, one of the influenza vaccine manufacturers announced that it could not supply any vaccine to the United States, reducing to nearly one half the expected supply of trivalent inactivated influenza vaccine. This announcement prompted revised recommendations that the vaccine be administered first to persons in certain priority

TABLE 2. Percentage-point change in estimated self-reported influenza vaccination coverage from the 2003–04 influenza season to the 2005–06 season* among adults aged ≥18 years, by region, state/area, and selected age and risk groups — United States, Behavioral Risk Factor Surveillance System (BRFSS)

Region and state/area	Age and risk group					
	Persons aged 18–49 yrs at high risk†	Other persons aged 18–49 yrs	Persons aged 50–64 yrs at high risk	Other persons aged 50–64 yrs	All persons aged ≥65 yrs	All persons aged ≥18 yrs
All states combined§	**-5.0¶**	**-4.8¶**	**-6.8¶**	**-9.5¶**	**-4.2¶**	**-5.6¶**
New England	**-4.2¶**	**-3.5¶**	**2.6**	**-8.0¶**	**-2.8**	**-4.2¶**
Connecticut	-5.2¶	-5.3¶	6.1¶	-8.0¶	-7.0¶	-5.6
Maine	-7.2	-3.8¶	-3.3	-10.7¶	-6.0¶	-5.7¶
Massachusetts	-4.8	-2.7¶	3.1	-6.5¶	0.4	-3.4¶
New Hampshire	6.1	-4.2¶	1.6	-9.2¶	-3.9¶	-4.2
Rhode Island	-9.5	1.3	2.9	-6.4	-3.6¶	-1.4¶
Vermont	-6.0¶	-4.1¶	-9.8¶	-12.7¶	0.6	-4.4¶
Mid-Atlantic	**-3.4¶**	**-2.5¶**	**-3.8**	**-10.6¶**	**-3.1¶**	**-4.4**
New Jersey	-12.0¶	-5.0¶	-12.1¶	-8.6¶	-5.5¶	-6.6¶
New York	-1.2	-1.5	-1.7	-12.8¶	-2.9	-4.1
Pennsylvania	-0.4	-2.3¶	-1.4	-9.6¶	-1.7	-3.5
East North Central	**-4.1**	**-4.4¶**	**-10.0¶**	**-10.9¶**	**-1.4**	**-4.8¶**
Illinois	-6.3	-5.6¶	-9.8	-13.6¶	-2.1¶	-6.0¶
Indiana	-3.8	-5.2¶	-13.1¶	-10.5¶	-1.8	-5.5¶
Michigan	-4.4	-3.3¶	-4.5	-12.2¶	-0.9	-4.3
Ohio	-4.6	-5.6¶	-15.2	-10.3¶	1.1	-5.3
Wisconsin	1.3	-1.0	-0.5	-6.4¶	-5.1	-2.3
West North Central	**-8.1¶**	**-6.0¶**	**-11.6¶**	**-8.2¶**	**-2.7**	**-6.4¶**
Iowa	-11.0	-5.5¶	-12.5	-9.7¶	-1.8	-6.0¶
Kansas	-8.1	-6.1¶	-10.2¶	-9.6¶	1.4	-5.7¶
Minnesota	0.3	-6.0¶	-16.1¶	-7.4¶	-2.5	-6.2
Missouri	-13.4¶	-6.3¶	-13.1	-6.8	-3.6	-6.9¶
Nebraska	-1.7	-6.6¶	-10.3¶	-11.7¶	-3.4	-7.0¶
North Dakota	-10.5¶	-1.1	-7.4	-4.4¶	-6.7¶	-4.0
South Dakota	-19.5¶	-4.7¶	-9.0¶	-7.6	-6.8¶	-6.2¶
South Atlantic	**-2.8**	**-4.5¶**	**-4.0**	**-11.3¶**	**-6.1¶**	**-5.7¶**
Delaware	-2.2	-0.8	-1.4	0.9	-2.9	-0.6
District of Columbia	-6.9	-9.9¶	-3.9	-9.4¶	-9.2¶	-8.5¶
Florida	5.2	-7.1¶	-4.8	-15.8¶	-8.1¶	-8.4¶
Georgia	-2.3	-2.6	-7.2	-8.5¶	-4.2	-3.6¶
Maryland	-23.0¶	-6.0¶	0.3	-9.7	-7.8¶	-6.8¶
North Carolina	-0.5	-1.4	-2.5	-3.7	-1.3	-1.6
South Carolina	-17.3¶	-6.1¶	-8.0	-14.1¶	-7.3¶	-8.3¶
Virginia	-1.1	-1.9	-3.8	-12.8¶	-5.1	-3.8¶
West Virginia	0.8	-8.1¶	-12.6	-8.9¶	-6.1¶	-7.2¶
East South Central	**-5.9**	**-5.8¶**	**-8.2¶**	**-7.5¶**	**-4.0¶**	**-5.7¶**
Alabama	-9.3¶	-7.4¶	-10.3	-8.5	-8.8¶	-8.0
Kentucky	0.6	-5.5	-2.9	-0.8	-1.6	-2.9
Mississippi	-6.5¶	-3.6	-6.1¶	-9.2¶	-5.1¶	-4.0
Tennessee	-8.0	-5.9¶	-10.8	-10.2¶	-1.5	-6.7¶
West South Central	**2.5**	**-6.6¶**	**-8.4**	**-10.6¶**	**-6.4¶**	**-7.1¶**
Arkansas	-2.7	-7.6¶	-15.5¶	-6.6¶	-3.0	-6.6
Louisiana	0.9	-1.7	-1.0	-8.8¶	-7.5¶	-2.8
Oklahoma	0.8	-5.0¶	-7.0	-12.4¶	-5.2¶	-5.5¶
Texas	3.6	-7.2¶	-9.3	-10.9¶	-6.9¶	-7.8¶
Mountain	**-11.0¶**	**-6.6¶**	**-7.3**	**-6.7¶**	**-5.6¶**	**-6.9¶**
Arizona	-12.9¶	-8.3¶	-2.7	-8.2¶	-4.2	-8.6¶
Colorado	-4.0	-8.9¶	-7.4	-4.0¶	-4.0¶	-6.9
Idaho	-10.4	-7.1¶	-6.7	-5.7	-10.5¶	-7.6¶
Montana	-6.0	-3.2	-16.2¶	-8.3¶	-3.1	-4.4¶
Nevada	-23.1¶	-0.8	-2.3	-7.2	-10.3¶	-4.4
New Mexico	-5.4	-6.1¶	-9.3	-10.2¶	-7.2¶	-6.4¶
Utah	-16.9¶	-5.2¶	-12.5¶	-6.6	-8.6¶	-7.4¶
Wyoming	-12.7¶	-6.2¶	-2.6	-10.9¶	-2.0	-6.2

TABLE 2. (*Continued*) Percentage-point change in estimated self-reported influenza vaccination coverage from the 2003–04 influenza season to the 2005–06 season* among adults aged ≥18 years, by region, state/area, and selected age and risk groups — United States, Behavioral Risk Factor Surveillance System (BRFSS)

Region and state/area	Age and risk group					
	Persons aged 18–49 yrs at high risk†	Other persons aged 18–49 yrs	Persons aged 50–64 yrs at high risk	Other persons aged 50–64 yrs	All persons aged ≥65 yrs	All persons aged ≥18 yrs
Pacific	**-12.0¶**	**-4.8¶**	**-8.5¶**	**-6.7¶**	**-5.0¶**	**-5.3¶**
Alaska	-6.8	-9.9¶	2.2	-3.2	0.4	-5.7¶
California	-15.1¶	-4.9¶	-9.1¶	-7.0¶	-6.4¶	-5.9¶
Hawaii	**	**	**	**	**	**
Oregon	-9.3¶	-2.4	-11.1¶	-3.0	-4.1¶	-3.2
Washington	-1.1	-7.9¶	-3.5	-9.4¶	0.0	-5.9¶
U.S. territories††	**-3.7**	**1.7**	**-0.8**	**-3.9**	**-1.6**	**-0.3**
Puerto Rico	-3.6	1.8	-0.6	-4.1	-1.6	-0.2
U.S. Virgin Islands	-14.4¶	-2.5¶	-11.5¶	3.8¶	-1.6	-1.8¶
Median§	*-5.7*	*-5.2*	*-7.1*	*-8.6*	*-3.8*	*-5.7*
Range§	*-23.1–6.1*	*-9.9–1.3*	*-16.2–6.1*	*-15.8–0.9*	*-10.5–1.4*	*-8.6– -0.6*

* Coverage estimates are for persons interviewed during February–August.
† Each year, BRFSS solicits information regarding selected high-risk conditions for serious complications after influenza infection. In the 2004 survey, only two high-risk conditions (diabetes and asthma) were included. Thus, for this comparison, high-risk conditions for both years were limited to these two conditions.
§ Excludes U.S. territories.
¶ p<0.05. Percentage-point difference between influenza seasons is statistically significant.
** Hawaii did not report data in 2004.
†† Guam did not collect BRFSS data in 2004 or 2006.

groups: persons aged ≥65 years, persons aged 2–64 years with high-risk conditions, health-care workers, household contacts of children aged <6 months, and children aged 6–23 months (*5*). Thus, healthy persons aged 50–64 years were not considered a priority group even though influenza vaccination is routinely recommended for this group. The findings in this report suggest that the rebound in vaccination coverage rates after the 2004–05 season among persons aged 50–64 years who were not at high risk was smaller than that observed among persons in this age group at high risk. Influenza vaccine supply was adequate for the 2005–06 influenza season, although the distribution of vaccine from one manufacturer was delayed, which could have contributed to decreases in coverage.

Among persons aged ≥65 years, non-Hispanic whites had markedly higher vaccination coverage than other racial/ethnic groups. This result is consistent with findings of other studies that have documented racial/ethnic differences in influenza vaccination coverage among persons aged ≥65 years in the United States (*6,7*). These differences are not accounted for by differences in health-care access or socioeconomic status variables and might result from a combination of factors, including differences in 1) attitudes toward vaccination and preventive care, 2) quality of care, 3) patient-provider interactions, and 4) propensity to seek and accept vaccination (*6–8*).

Previous reports have indicated that recommendations by health-care providers influence decisions by patients to be vaccinated (*8,9*). Health-care providers should routinely assess the influenza vaccination status of their patients and ensure that influenza vaccine is offered (usually beginning in October) to all patients throughout the influenza season. Influenza vaccine should be administered to all persons who want to reduce their risk for becoming ill with influenza or transmitting the virus to others. For adult patients aged <50 years, health-care providers should determine whether influenza vaccination is indicated based on 1) the presence of a high-risk medical condition or 2) whether the patient is a household contact or caregiver of a person aged ≥50 years or <5 years or with a high-risk medical condition. Particular attention is needed to improve vaccination coverage among older adults in racial/ethnic minority groups. Health-care systems should adopt and implement effective strategies (*10*), including those developed by the Joint Commission on Accreditation of Health Care Organizations, that have been demonstrated to increase vaccination rates.††

The findings in this report are subject to at least five limitations. First, BRFSS excludes persons without landline telephones. Second, BRFSS has median response rates below 60%; however, BRFSS data consistently have been demonstrated to provide valid and reliable estimates when compared with national household surveys in the United States.§§ Third, data

†† Additional information available at http://www.jointcommission.org/newsroom/newsreleases/nr_08_npsgs_dsc.htm.
§§ Additional information available at http://elib.cdc.gov:2259/cgi/content/full/93/8/1335.

are self-reported and subject to recall bias and misclassification bias. Fourth, sample sizes for both Hispanics and non-Hispanic blacks were too small for meaningful assessment of vaccination by age and racial/ethnic groups at state levels. Finally, respondents were not asked about certain high-risk conditions (e.g., emphysema, cancer, kidney diseases, and neurologic conditions that impair lung function) or other recommended indications for influenza vaccination (e.g., being a health-care worker or a member of a household with a person at high risk).

To quantify the effect of limiting participants to persons with landline telephones, CDC compared the results for all states combined with estimates from the 2006 National Health Interview Survey (NHIS). NHIS, a national, in-person household survey conducted annually, includes households without landline telephones and has higher response rates (70.8% in 2006) than BRFSS.[¶¶] Estimated influenza vaccination coverage from the 2006 NHIS was lower than that in BRFSS for all age groups examined (25.2% among persons aged 18–49 years with high-risk conditions, 32.5% among persons aged 50–64 years, and 65.3% among persons aged ≥65 years).

During the 2006–07 influenza season, approximately 218.1 million persons in the United States (73.1% of the 2006 U.S. census population) were included in the ACIP-recommended target groups for influenza vaccination; however, on the basis of current trends, fewer than 50% are receiving their annual influenza vaccination.[***] To achieve the *Healthy People 2010* objectives and further improve vaccination coverage among all population subgroups, comprehensive strategies are required and should include 1) promoting vaccine-seeking behavior by consumers, 2) increasing demand for vaccinations among groups targeted for influenza vaccination, 3) increasing access to vaccination at nontraditional sites (e.g., pharmacies, churches, and senior centers), 4) increasing use of reminder-recall systems, 5) increasing targeted media promotions and educational programs, 6) expanding the use of standing orders, and 7) implementing more comprehensive provider-based or system-based interventions (*10*). In addition, vaccine supply and distribution problems that remain should be addressed.

References

1. Thompson WW, Shay DK, Weintraub E, et al. Mortality associated with influenza and respiratory syncytial virus in the United States. JAMA 2003;289:179–86.
2. US Department of Health and Human Services. Healthy people 2010 (conference ed, in 2 vols). Washington, DC: US Department of Health and Human Services; 2000. Available at http://www.health.gov/healthypeople.
3. CDC. Influenza and pneumococcal vaccination coverage among persons aged ≥65 years—United States, 2004–2005. MMWR 2006;55:1065–8.
4. Poland GA, Shefer AM, McCauley M, et al. Standards for adult immunization practice. Am J Prev Med 2003;25:144–50.
5. CDC. Updated interim influenza vaccination recommendations—2004–2005 influenza season. MMWR 2004;53:1183–4.
6. Link MW, Ahluwalia IB, Euler GL, et al. Racial and ethnic disparities in influenza vaccination coverage among adults during the 2004–2005 season. Am J Epidemiol 2006;163:571–8.
7. CDC. Racial/ethnic disparities in influenza and pneumococcal vaccination levels among persons aged ≥65 years—United States, 1989–2001. MMWR 2003;52:958–62.
8. Lindley MC, Wortley PM, Winston CA, et al. The rule of attitudes in understanding disparities in adult influenza vaccination. Am J Prev Med 2006;31:281–5.
9. Schwartz KL, Neale AV, Northrup J, et al. Racial similarities in response to standardized offer of influenza vaccination. J Gen Intern Med 2006;21:346–51.
10. Task Force on Community Preventive Services. The guide to community preventive services. What works to promote health? New York, NY: Oxford University Press; 2005:233–303.

[¶¶] Additional information available at http://www.cdc.gov/nchs/about/major/nhis/quest_data_related_1997_forward.htm.

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

Influenza Vaccination Coverage Among Children Aged 6–23 Months — United States, 2005–06 Influenza Season

Children aged <2 years are at increased risk for influenza-related hospitalizations, and those aged <5 years have more influenza-related health-care visits than older children (*1*). In 2004, the Advisory Committee on Immunization Practices (ACIP) recommended annual influenza vaccination of children aged 6–23 months (*2*). Two doses, at least 4 weeks apart, were recommended to fully vaccinate children aged <9 years who were receiving influenza vaccination for the first time. To assess influenza vaccination coverage among children aged 6–23 months during the 2005–06 influenza season, data from the 2006 National Immunization Survey (NIS) were analyzed. This report describes the results of that analysis, which indicated that 31.9% of children in this age group received at least 1 dose of influenza vaccine and 20.6% were fully vaccinated according to ACIP recommendations; however, results varied substantially among states. The results underscore the need to continue to monitor influenza vaccination coverage among young children, develop systems to provide childhood influenza vaccination services more efficiently, and increase awareness among health-care providers and caregivers about the effectiveness of influenza vaccination among young children.

NIS, which provides estimates of vaccination coverage among noninstitutionalized children aged 19–35 months (*3*), is an ongoing, random-digit–dialed household telephone survey that is followed by a mail survey of vaccination providers

to obtain vaccination data. The annual NIS interviews are conducted from approximately January–December of each year; the 2006 NIS interviews were conducted from January 5, 2006, through February 6, 2007, and included children born during January 21, 2003–June 18, 2005. In 2006, the survey was conducted in all 50 states, the District of Columbia, and 29 local areas. Lifetime histories of influenza vaccination were obtained from children's vaccination providers.

Analyses included only children who were aged 6–23 months during the entire span of September–December 2005. The doses counted were restricted to those received during September–December 2005 because interviewing began in early January and could not account for children who received vaccination after the interview date. Two measures were used to assess vaccination coverage: 1) receipt of at least 1 dose of influenza vaccine during September–December 2005 and, within that group, 2) full vaccination according to ACIP recommendations. Children were considered fully vaccinated if they had 1) received no dose of influenza vaccine before September 1, 2005, but then received 2 doses from September 1, 2005, through the date of interview or January 31, 2006 (whichever was earlier), or 2) received at least 1 dose of influenza vaccine before September 1, 2005, and received at least 1 dose during September–December 2005. Data were weighted to adjust for households with multiple telephone landlines, noncoverage of households without landline telephones, household and provider nonresponse, and U.S. population estimates.

The household survey response rate was 64.5%, and provider-reported vaccination records were available for 70.4% of children with a completed household interview. Of the 21,044 children aged 19–35 months with provider-reported vaccination data, a total of 13,546 children (unweighted sample size) met the age criteria for this assessment (i.e., were aged 6–23 months during the entire span of September–December 2005). Of these, 31.9% received at least 1 dose of influenza vaccine during September–December 2005, and 20.6% were fully vaccinated (Table).

Substantial variability in influenza vaccination coverage was observed among states. Percentages of children receiving at least 1 dose of influenza vaccine ranged from 8.3% in Mississippi to 52.9% in Connecticut (Table). Compared with the 2004–05 influenza season, the percentage of children receiving at least 1 dose of influenza vaccine in 2005–06 increased in Nevada (by 11.9 percentage points) and Vermont (15.0 percentage points); decreased in Alabama (15.0 percentage points), Massachusetts (14.2 percentage points), Mississippi (14.4 percentage points), and Montana (13.1 percentage points); and did not change significantly in the remaining states. The percentage of fully vaccinated children increased in nine states (Arizona, by 7.7 percentage points; Connecticut, 14.2; Florida, 6.1; Indiana, 10.0; Nevada, 8.4; New Hampshire, 13.9; Oklahoma, 9.0; Vermont, 19.3; and Washington 9.7), decreased in Mississippi (7.9 percentage points), and did not change significantly in the remaining states.

For the 2005–06 season, 76% of the children aged 6–23 months had received no influenza vaccine dose before the start of the season and therefore needed 2 doses according to ACIP recommendations. Among these children, 11% received at least 2 doses, and 15% received only 1 dose. Among children who received at least 1 dose before the 2005–06 season, 49% received at least 1 dose in the 2005–06 season.

Receipt of dose 1 (i.e., the first or only dose) most frequently occurred during October 10, 2005–November 19, 2005 (Figure). Among children recommended to receive 2 doses (i.e., those who had not received a previous dose), the second dose was received most frequently during November 28, 2005–December 17, 2005.

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Editorial Note: The findings in this report indicate that during the 2005–06 influenza season, the second season after ACIP recommended annual influenza vaccination for all children aged 6–23 months, coverage remained low and did not increase substantially from the 2004–05 season. The national estimate for fully vaccinated children increased by approximately 3 percentage points from the 2004–05 influenza season; however, no significant change was observed in the proportion of children who received at least 1 dose of influenza vaccine. During the 2004–05 season, coverage was estimated at 33.4% for children who received at least 1 dose of influenza vaccine, compared with 31.9% for 2005–06. Coverage for fully vaccinated was estimated at 17.8% for 2004–05, compared with 20.6% for 2005–06. For the 2005–06 season, only one in five children aged 6–23 months was fully vaccinated, and only one in 10 children needing 2 doses received both doses. Influenza vaccination coverage varied substantially among states; no state had more than 40% of children fully vaccinated.

Several factors can contribute to low vaccination coverage. First, the ACIP recommendation for annual vaccination in this age group is recent; additional education for providers and caregivers, vaccine promotion, and other measures will be needed to fully implement the recommendation. Second, influenza vaccinations are required annually and must occur during a specified period, which often necessitates provider visits solely for vaccination for certain children aged 6–23 months (*4*). This time constraint makes measures to reduce missed opportunities for vaccination especially important.

TABLE. Influenza vaccination coverage levels among children aged 6–23 months,* by state/area† — National Immunization Survey (NIS), United States, September–December 2005

State/Area	No. (unweighted sample size)	Vaccinated with at least 1 dose§ %	(95% CI**)	Fully vaccinated¶ %	(95% CI)
United States	**13,546**	**31.9**	**(30.6–33.2)**	**20.6**	**(19.5–21.7)**
Alabama	171	16.3	(11.4–22.8)	9.0	(5.7–14.1)
Alaska	149	40.8	(32.6–49.6)	28.5	(21.3–37.0)
Arizona	334	30.5	(25.2–36.4)	20.1	(16.0–25.1)
Maricopa County	184	29.2	(22.7–36.8)	18.5	(13.5–24.9)
Rest of state	150	32.9	(24.6–42.5)	23.2	(16.5–31.6)
Arkansas	137	17.5	(10.8–27.1)	11.3	(6.1–20.0)
California	1,083	28.7	(24.4–33.6)	16.9	(13.8–20.6)
Fresno County	176	28.5	(21.6–36.6)	16.4	(11.1–23.6)
Los Angeles County	209	29.2	(22.7–36.6)	15.4	(11.0–21.2)
Northern California counties	179	24.7	(18.2–32.5)	14.5	(9.9–20.8)
San Diego County	197	38.7	(30.9–47.0)	21.9	(15.3–30.4)
Santa Clara County	147	45.6	(37.0–54.5)	28.8	(21.4–37.4)
Rest of state	175	25.5	(18.7–33.8)	16.0	(11.2–22.5)
Colorado	136	—††	—	19.5	(12.0–30.1)
Connecticut	170	52.9	(44.3–61.3)	37.7	(29.9–46.2)
Delaware	149	—	—	30.7	(22.0–41.0)
District of Columbia	187	37.9	(30.3–46.1)	25.0	(18.8–32.4)
Florida	605	20.6	(15.7–26.6)	13.2	(9.4–18.2)
Miami-Dade County	185	13.3	(8.5–20.1)	5.4	(2.7–10.4)
Duval County	235	24.1	(18.3–30.9)	13.1	(9.0–18.8)
Rest of state	185	21.8	(15.7–29.4)	14.7	(10.0–21.2)
Georgia	372	31.5	(25.6–38.2)	21.0	(15.9–27.2)
Fulton and DeKalb counties	184	33.3	(25.4–42.3)	21.2	(15.5–28.4)
Rest of state	188	31.1	(24.1–39.2)	21.0	(15.0–28.6)
Hawaii	144	—	—	33.2	(24.4–43.4)
Idaho	142	18.0	(12.0–26.2)	10.1	(6.0–16.6)
Illinois	364	28.9	(22.7–36.0)	21.8	(16.2–28.7)
City of Chicago	219	22.0	(16.6–28.6)	11.2	(7.5–16.5)
Rest of state	145	31.5	(23.3–41.1)	25.9	(18.3–35.2)
Indiana	325	33.7	(26.1–42.3)	20.3	(14.3–28.0)
Marion County	169	23.5	(16.9–31.7)	16.2	(10.8–23.5)
Rest of state	156	35.9	(26.8–46.1)	21.2	(14.2–30.6)
Iowa	133	35.9	(27.1–45.8)	23.0	(15.3–32.9)
Kansas	344	22.1	(17.1–28.1)	13.1	(9.8–17.2)
Eastern Kansas counties	170	32.0	(24.4–40.8)	23.4	(16.8–31.6)
Rest of state	174	19.1	(13.3–26.6)	9.9	(6.5–14.9)
Kentucky	166	29.6	(22.2–38.1)	22.2	(15.6–30.5)
Louisiana	192	24.5	(17.9–32.7)	14.8	(9.6–22.2)
Maine	128	31.5	(23.2–41.1)	20.9	(14.1–30.0)
Maryland	316	41.0	(33.5–49.0)	26.7	(20.5–34.0)
City of Baltimore	153	39.8	(31.0–49.4)	25.1	(17.8–34.0)
Rest of state	163	41.2	(32.7–50.4)	27.0	(19.9–35.4)
Massachusetts	325	45.1	(36.8–53.7)	34.4	(26.7–43.1)
City of Boston	167	42.0	(34.2–50.2)	29.6	(22.9–37.3)
Rest of state	158	45.4	(36.3–54.9)	34.9	(26.5–44.5)
Michigan	356	27.8	(21.8–34.7)	17.7	(12.8–23.8)
City of Detroit	155	15.3	(10.2–22.3)	5.8	(2.9–11.0)
Rest of state	201	29.3	(22.6–37.0)	19.1	(13.7–26.0)
Minnesota	146	41.5	(32.8–50.7)	27.5	(20.6–35.7)
Mississippi	174	8.3	(4.1–16.2)	1.6	(0.6–4.0)
Missouri	162	32.1	(24.5–40.7)	21.6	(15.4–29.5)
Montana	176	18.0	(12.6–25.0)	13.7	(9.0–20.3)
Nebraska	161	41.5	(33.3–50.2)	32.0	(24.5–40.5)
Nevada	157	23.7	(17.0–31.9)	14.6	(9.4–22.0)
New Hampshire	156	47.2	(38.1–56.4)	35.8	(27.4–45.3)
New Jersey	349	31.4	(24.3–39.6)	17.2	(11.9–24.2)
City of Newark	163	17.2	(11.6–24.7)	9.1	(5.3–15.4)
Rest of state	186	32.1	(24.6–40.6)	17.5	(12.0–24.9)
New Mexico	320	26.7	(21.1–33.2)	19.9	(15.0–25.9)
Southern New Mexico	180	20.3	(14.6–27.4)	14.5	(9.8–21.0)
Rest of state	140	29.8	(22.1–38.9)	22.5	(15.8–31.1)
New York	330	39.5	(33.0–46.3)	25.4	(20.4–31.3)
City of New York	180	33.7	(26.4–41.9)	22.0	(16.0–29.5)
Rest of state	150	—	—	28.6	(20.8–37.9)
North Carolina	145	35.3	(27.0–44.7)	17.9	(12.0–25.8)
North Dakota	209	38.5	(31.1–46.5)	32.3	(25.2–40.4)
Ohio	337	32.7	(25.7–40.5)	20.2	(14.8–27.1)
Cuyahoga County	171	39.8	(31.5–48.8)	23.7	(17.6–31.3)
Rest of state	166	31.8	(24.2–40.5)	19.8	(13.8–27.5)
Oklahoma	202	33.9	(26.1–42.6)	22.5	(16.2–30.2)
Oregon	149	29.3	(22.0–38.0)	18.6	(12.7–26.4)
Pennsylvania	523	45.5	(38.2–53.1)	32.9	(26.3–40.3)
Allegheny County	209	42.9	(33.8–52.4)	33.5	(25.4–42.8)
Philadelphia County	140	—	—	30.6	(22.3–40.4)
Rest of state	174	46.5	(37.2–56.1)	33.3	(25.0–42.7)
Rhode Island	202	49.9	(41.7–58.1)	40.6	(32.9–48.7)
South Carolina	203	37.2	(29.4–45.8)	19.1	(13.7–26.1)
South Dakota	189	34.3	(27.0–42.5)	20.1	(14.6–27.1)
Tennessee	355	24.4	(18.8–30.9)	15.5	(11.2–21.0)
Shelby County	195	29.1	(21.8–37.5)	21.7	(15.4–29.6)
Rest of state	160	23.4	(17.1–31.1)	14.3	(9.5–20.9)
Texas	908	30.4	(25.8–35.3)	17.4	(14.0–21.5)
Bexar County	157	31.5	(23.1–41.3)	15.2	(10.0–22.4)
City of Houston	170	23.4	(16.9–31.5)	13.1	(8.5–19.8)
Dallas County	142	25.8	(18.7–34.5)	16.9	(11.3–24.6)
El Paso County	198	14.3	(10.2–19.8)	7.3	(4.5–11.7)
Rest of state	241	33.5	(26.9–40.8)	19.2	(14.3–25.4)
Utah	142	36.9	(28.5–46.2)	24.2	(17.1–33.1)
Vermont	148	46.0	(36.9–55.3)	35.1	(26.9–44.2)
Virginia	163	40.6	(32.8–48.9)	29.3	(22.5–37.2)
Washington	446	32.9	(26.8–39.7)	22.8	(17.6–28.9)
Eastern Washington counties	185	32.5	(24.7–41.4)	19.4	(13.0–27.9)
King County	124	—	—	28.2	(19.9–38.2)
Rest of state	137	29.5	(21.0–39.7)	21.0	(13.8–30.6)
West Virginia	153	26.1	(18.9–34.8)	16.4	(10.6–24.4)
Wisconsin	315	41.5	(34.6–48.8)	34.7	(28.2–41.8)
Milwaukee County	161	41.9	(33.7–50.6)	31.9	(24.7–40.2)
Rest of state	154	41.4	(33.1–50.2)	35.4	(27.6–43.9)
Wyoming	198	22.2	(16.5–29.3)	14.2	(10.0–19.9)

* N = 13,546. Coverage levels represent a subset of children included in the 2006 NIS. Only children who were aged 6–23 months during the entire period of September–December 2005 and who had provider-reported vaccination records are included.

† Six new areas were separately sampled by NIS in 2006: Fresno County, California; rural northern counties of California; Eastern counties of Kansas; rural southern counties of New Mexico; Allegheny County, Pennsylvania; and Eastern counties of Washington.

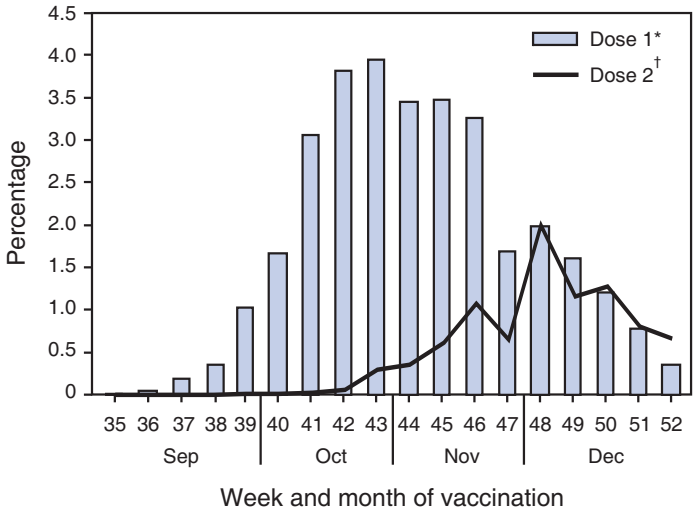
§ Received at least 1 dose of influenza vaccine during September–December 2005; includes the subset of children who were considered fully vaccinated.

¶ Children were considered fully vaccinated according to Advisory Committee on Immunization Practices recommendations if they had 1) received no dose of influenza vaccine before September 1, 2005, but then received 2 doses from September 1, 2005, through either the date of interview or through January 31, 2006, or 2) received at least 1 dose of influenza vaccine before September 1, 2005, and then received at least 1 dose during September–December 2005.

** Confidence interval.

†† Estimate not reported because the unweighted sample size for the numerator is <30, the CI half-width / Estimate is >0.5, or the CI half-width is >10.

FIGURE. Percentage of children aged 6–23 months receiving influenza vaccination, by week of vaccination and dose received — National Immunization Survey, United States, September–December 2005



* Denominator is all age-eligible children (N = 13,546).
† Denominator is the subset of age-eligible children (n = 10,067) who had no influenza dose before September 2005 and thus were recommended by the Advisory Committee on Immunization Practices to receive 2 doses.

Strategies that have improved influenza vaccination coverage in children include standing orders, vaccination-only health-care visits for children, and reminder-recall systems (including those based on immunization information system data) (*5,6*). Third, vaccine supply might have contributed to the low rate. The manufacturer of one vaccine experienced delays during the 2005–06 season (*7*). Although this manufacturer produces an influenza vaccine product that is indicated only for use in children aged ≥4 years, the delay could have affected the use of other products that were licensed for broader age groups.

Children aged <9 years who have not been vaccinated previously are recommended to receive 2 doses during their first year of vaccination, a recommendation that is based on multiple studies demonstrating lower vaccine antibody levels or effectiveness for a single vaccination dose among these children (*8–10*). In July 2007, ACIP began recommending 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 (*1*). This recommendation will further increase the number of children in the United States who are recommended to receive 2 doses of influenza vaccine in one season.

One important strategy for increasing the number of children who are fully vaccinated against influenza is to continue vaccinations through December and beyond for children who require 2 doses of vaccine or those who remain unvaccinated after November. Peak influenza activity has occurred in January or later in approximately 80% of influenza seasons since 1976; in approximately 60% of seasons, the peak occurred in February or later (*1*). Thus, children vaccinated after December will benefit from influenza vaccination during most influenza seasons. Even for children in communities where influenza activity has already begun, vaccination later in the season can be beneficial because more than one strain of influenza often circulates in a given season.

The substantial variability in influenza vaccination coverage by state likely is attributable to several factors, including varying degrees of programmatic and provider implementation during the first few years of a recommendation and variation in parental knowledge and understanding of the recommendation. Continued monitoring of state-level vaccine coverage and trends over time is critical for vaccination program evaluation, particularly after a new vaccine recommendation has been issued.

The findings in this report are subject to at least five limitations. First, doses received after December 31, 2005 (for those who received at least 1 dose) and after January 31, 2006 (for those who received second doses) were excluded; therefore, these results represent early-season vaccination only and underestimate coverage for the entire season. Second, measurement of vaccination coverage was restricted to children aged 6–23 months during the entire influenza vaccination period of September–December; this ensured that children included in the analysis were recommended to receive vaccine during the entire assessment period and that caregivers and providers for all children had an equal amount of time to obtain and provide vaccination. Therefore, the sample of children included in this assessment likely had higher vaccination coverage than the children who were excluded, which might have resulted in an overestimation of vaccination coverage in this group. Third, NIS is a telephone survey; although statistical adjustments compensate for nonresponse and households without landline telephones, bias might remain. Fourth, NIS relies on provider-verified vaccination histories; incomplete records and reporting might affect estimates. Finally, because of sampling uncertainty and wide confidence intervals for many state and local area estimates, these estimates should be interpreted with caution.

This report underscores the need to continue monitoring influenza vaccination coverage among young children, including the extent to which first-time vaccinees aged <9 years receive 2 doses of influenza vaccine. Health-care providers and immunization programs should continue identifying missed opportunities for influenza vaccination during the fall and

winter and develop systems that provide influenza vaccination services efficiently. Improving vaccination coverage will require measures to increase awareness among health-care providers and caregivers about the burden of influenza among young children and the effectiveness of influenza vaccination for this age group.

References

1. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP), 2007. MMWR 2007;56(No. RR-6).
2. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2004;53(No. RR-6).
3. Smith PJ, Hoaglin DC, Battaglia MP, Khare M, Barker LE. Statistical methodology of the National Immunization Survey, 1994–2002. Vital Health Stat 2005;2(138).
4. Szilagyi PG, Iwane MK, Schaffer S, et al. Potential burden of universal influenza vaccination of young children on visits to primary care practices. Pediatrics 2003;112:821–8.
5. Kempe A, Daley MF, Barrow J, et al. Implementation of universal influenza immunization recommendations for healthy young children: results of a randomized, controlled trial with registry-based recall. Pediatrics 2005;115:146–54.
6. Zimmerman RK, Hoberman A, Nowalk MP, et al. Feasibility of influenza immunization for inner-city children aged 6 to 23 months. Am J Prev Med 2004;27:397–403.
7. Bardenheier B, Strikas R, Kempe A, Stokley S. Influenza vaccine supply, 2005–2006: did we come up short? BMC Health Services Research 2007;7:66.
8. Allison MA, Daley MF, Crane LA, et al. Influenza vaccine effectiveness in healthy 6- to 21-month-old children during the 2003–2004 season. J Pediatr 2006;149:755–62.
9. Englund JA, Walter EB, Fairchok MP, Monto AS, Neuzil KM. A comparison of 2 influenza vaccine schedules in 6- to 23-month-old children. Pediatrics 2005;115:1039–47.
10. Ritzwoller DP, Bridges CB, Shetterly S, Yamasaki K, Kolczak M, France EK. Effectiveness of the 2003–2004 influenza vaccine among children 6 months to 8 years of age, with 1 vs 2 doses. Pediatrics 2005;116:153–9.

Influenza Vaccination Coverage Among Children Aged 6–59 Months — Six Immunization Information System Sentinel Sites, United States, 2006–07 Influenza Season

In June 2006, the Advisory Committee on Immunization Practices (ACIP) expanded its 2004 recommendation for routine influenza vaccination of children aged 6–23 months to include children aged 24–59 months. The 2006 ACIP recommendations also reemphasized that previously unvaccinated children aged <9 years should receive 2 doses of influenza vaccine administered at least 1 month apart to be fully vaccinated (*1*). In 2007, using data from six immunization information system (IIS)* sentinel sites, CDC conducted the first assessment of influenza vaccination coverage among children aged 6–59 months during the 2006–07 influenza season. The findings demonstrated that, at all six sites, <30% of children aged 6–23 months and <20% of children aged 24–59 months were fully vaccinated. Vaccination coverage data from national and state surveys for an influenza season generally are not available until the next influenza season. Rapid assessment of influenza vaccination coverage can help direct activities of state and local public health agencies aimed at increasing the number of children fully vaccinated against influenza.

IIS data are confidential, computerized records of vaccine administration collected from health-care providers, vital records, and billing systems. The sentinel sites are subsets of IIS in five states (Arizona, Michigan, Minnesota, Montana, and Oregon) and the District of Columbia. The sites have high rates (approximately 90%) of participation by health-care provider sites and enrollment of children and represent contiguous geographic counties, postal code areas, or census tracts for which IIS data are collected on ≥10,000 children aged <6 years (Table). Databases at IIS sentinel sites incorporate certain procedures (e.g., routine comparisons of IIS records with provider data) to increase data completeness and accuracy (e.g., <5% multiple records for the same child).

Vaccination coverage was estimated for September 2006–March 2007 among children in two age groups: 6–23 months (for comparison with previous influenza seasons before the

* An IIS is an immunization registry with added capabilities (e.g., vaccine management, adverse event reporting, lifespan vaccination histories, and linkages with electronic data sources). These systems are operated by immunization program grantees in 46 states, the District of Columbia, and five cities.

TABLE. Characteristics of six immunization information system (IIS) sentinel sites — United States, 2006–07 influenza season

Site	No. of children aged <6 years in sentinel area	% of all children aged <6 years enrolled in IIS at sentinel site	Participating health-care provider sites*	
			No.	(%)
Arizona (northern)	56,738	96	184	(97)
District of Columbia (southeastern)	19,180	99	39	(100)
Michigan (excluding Detroit)	545,936	93	1,531	(90)
Minnesota (southwestern)	14,577	96	44	(92)
Montana (southwestern)	38,927	100	78	(89)
Oregon (greater Portland area)	42,167	97	58	(96)

* Sites can represent multiple health-care providers.

expanded ACIP recommendation) and 24–59 months. To assess vaccination coverage in these age groups, children were divided into two groups: 1) those vaccinated with at least 1 dose of influenza vaccine during September 2006–March 2007 and, within that group, 2) those who were fully vaccinated. Children were considered fully vaccinated if they had 1) received no dose of influenza vaccine before September 1, 2006, but then received 2 doses during September 1, 2006–March 31, 2007, or 2) received at least 1 dose of influenza vaccine before September 1, 2006 (e.g., during a previous influenza season), and then received at least 1 dose during September 1, 2006–March 31, 2007. To ensure that all children in the analysis had the same likelihood of being vaccinated during the period under study, analyses included only those children who were aged 6–23 months or 24–59 months during the entire period of September 2006–March 2007.

Vaccination coverage among children aged 6–23 months varied among the six sentinel sites (ranges: 13.9%–46.6% for children who received at least 1 dose and 3.0%–26.9% for children who were fully vaccinated). Compared with the 2005–06 season, vaccination coverage increased during 2006–07 by more than five percentage points among children aged 6–23 months who received at least 1 dose at two sites (Michigan, from 33.4% to 38.8%; Montana, from 6.6% to 13.9%). However, coverage with at least 1 dose during 2006–07 was either similar to coverage during 2005–06 or decreased at the other four sites (Figure 1).

The percentage of children aged 6–23 months who were fully vaccinated increased by nearly four percentage points at one site (Michigan, from 17.9% to 21.8%). However, the percentage of children who were fully vaccinated either was similar or decreased at the other five sites (Figure 1).

Vaccination coverage during 2006–07 among children aged 24–59 months also varied among sites (ranges: 6.2%–22.4% for children who received at least 1 dose and 1.9%–18.1% for children who were fully vaccinated) (Figure 2). At all six sites, the percentage of children aged 24–59 months who received at least 1 dose or who were fully vaccinated was lower than the percentage among children aged 6–23 months.

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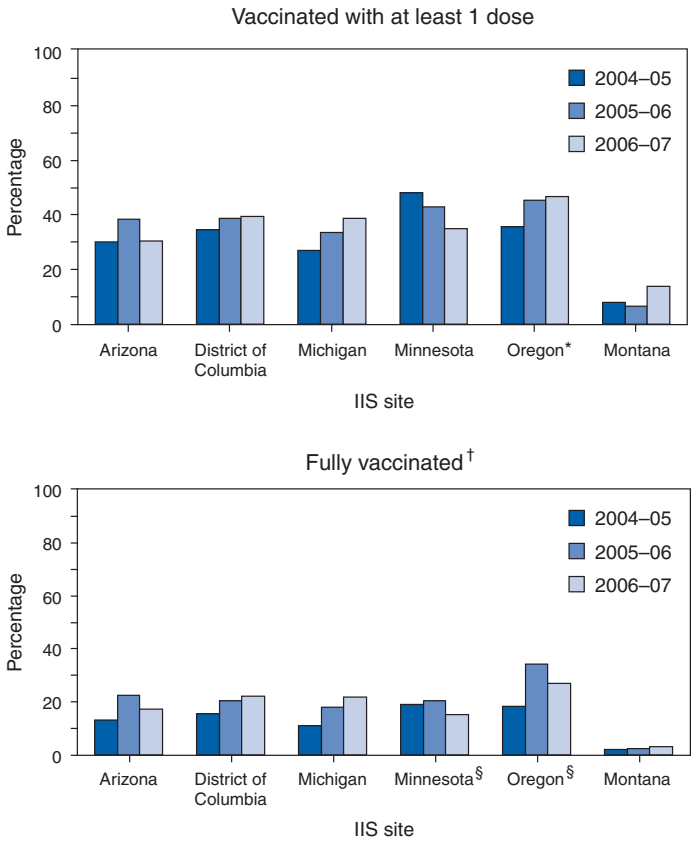
Editorial Note: Analysis of IIS sentinel site data for 2006–07 enables timely, population-based assessment of influenza vaccination coverage for the third season after the ACIP recommendation regarding children aged 6–23 months and the first season after expansion of that recommendation to include children aged 24–59 months. Results indicate that, although influenza vaccination coverage among children has increased at some sentinel sites, fewer than one third of children aged 6–23 months and fewer than one fifth of children aged 24–59 months were fully vaccinated at all of the sites during the 2006–07 season. In addition, the sentinel data revealed wide ranges in vaccination coverage among the sites.

FIGURE 1. Influenza vaccination coverage among children aged 6–23 months — six immunization information system (IIS) sentinel sites, United States, 2004–05, 2005–06, and 2006–07 influenza seasons



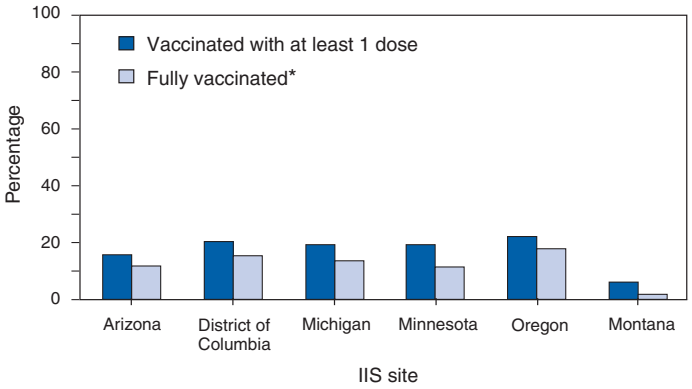
SOURCE: CDC. Influenza vaccination coverage among children aged 6–23 months—six immunization information system sentinel sites, United States, 2005–06 influenza season. MMWR 2006;55:1329–30.

* 2005–06 estimate for Oregon site is 15 percentage points lower than previously reported.

† Children were considered fully vaccinated if they had 1) received no dose of influenza vaccine before September 1, 2006, but then received 2 doses during September 1, 2006–March 31, 2007, or 2) received at least 1 dose of influenza vaccine before September 1, 2006, and then received at least 1 dose during September 1, 2006–March 31, 2007.

§ 2005–06 estimate for Minnesota site is 15 percentage points higher than previously reported, and 2005–06 estimate for Oregon site is 9 percentage points lower than previously reported.

FIGURE 2. Influenza vaccination coverage among children aged 24–59 months — six immunization information system (IIS) sentinel sites, United States, 2006–07 influenza season



* Children were considered fully vaccinated if they had 1) received no dose of influenza vaccine before September 1, 2006, but then received 2 doses during September 1, 2006–March 31, 2007, or 2) received at least 1 dose of influenza vaccine before September 1, 2006, and then received at least 1 dose during September 1, 2006–March 31, 2007.

The differences in influenza vaccination coverage among IIS sentinel sites might have been caused by varying degrees of vaccination promotion in the state or local area and varying proportions of health-care providers reporting administration of vaccine doses to IIS sites. Influenza vaccination coverage also can be influenced by media coverage regarding the importance of vaccination, the timing and severity of the influenza season (*2*), and the timing of vaccine availability. The lower coverage estimates among children aged 24–59 months were expected because the ACIP recommendation was not expanded to include that group until 2006.

IIS estimates of influenza vaccination coverage both among children with at least 1 vaccine dose and among children who were fully vaccinated were similar to state estimates from the National Immunization Survey (NIS) corresponding to five of the six IIS sites during the 2004–05 season and three of the six sites during the 2005–06 season (*3,4*). Although NIS is the gold standard for assessment of childhood vaccination coverage, because of the survey design, NIS does not routinely provide estimates below the county level or estimates soon after the latest influenza season. IIS data enable state immunization programs to assess coverage at the local level during or shortly after the latest season. In this assessment, IIS data for the influenza season evaluated were analyzed within 1 month of submission.

The findings in this report are subject to at least three limitations. First, although the sentinel sites have high rates of participation by health-care providers and enrollment of children, not all providers at each site report administration of influenza vaccine. Anecdotal evidence also suggests that even among providers who regularly report administration of other recommended childhood vaccines, some providers are not yet routinely reporting influenza vaccine doses. Incomplete reporting can result in underestimates of vaccination coverage. Second, although sentinel sites have the capability to collect racial/ethnic information, because these data are not yet routinely collected at all sentinel sites, vaccination coverage could not be analyzed by race/ethnicity. Finally, IIS sentinel-site coverage estimates are not generalizable to the entire state or country and should be viewed as representative of their specific geographic areas only.

IIS data can help public health officials monitor vaccination coverage among children by tracking local data throughout the influenza season. Such tracking can alert local and state public health agencies to gaps in coverage during the influenza season, in time to recommend vaccination for those children who have not been fully vaccinated against influenza.

References

1. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices. MMWR 2006;55(No. RR-10).
2. Ma KK, Schaffner W, Colmenares C, Howser J, Jones J, Poehling KA. Influenza vaccinations of young children increased with media coverage in 2003. Pediatrics 2006;117:e157–63.
3. CDC. Influenza vaccination coverage among children aged 6–23 months—six immunization information system sentinel sites, United States, 2005–06 influenza season. MMWR 2006;55:1329–30.
4. CDC. Influenza vaccination coverage among children aged 6–23 months—United States, 2005–06 influenza season. MMWR 2007;56:959–63.

Laboratory Surveillance for Wild and Vaccine-Derived Polioviruses — Worldwide, January 2006–June 2007

The Global Polio Laboratory Network (GPLN) was established after announcement of the 1988 World Health Assembly resolution to eradicate poliomyelitis. Operating in all six World Health Organization (WHO) regions, the network currently has 146 laboratories that test stool specimens from acute flaccid paralysis (AFP) patients* for polioviruses. The virologic data provided by GPLN underpin the global polio eradication initiative, guiding decisions regarding where targeted immunization activities should be conducted, based on confirmed wild or vaccine-derived poliovirus circulation. The

* Some laboratories also test specimens or isolates collected from non-AFP patient sources (e.g., non-AFP patients, healthy children, and sewage).

data also are used to monitor progress toward polio eradication by documenting the genetic diversity and transmission links of viral isolates. This report updates previous reports (*1*–*6*) and describes GPLN performance and initiatives during January 2006–June 2007.

Laboratory Network Performance

GPLN uses standardized methods, and the quality, timeliness, and accuracy of network results are evaluated against performance targets through an accreditation program administered by WHO that includes proficiency testing and periodic on-site performance reviews. By 2006, WHO had accredited 93% of the network laboratories. Nonaccredited laboratories continue to test specimens, but in parallel with accredited laboratories until any performance problems are resolved. During January 2006–June 2007, GPLN analyzed 208,897 stool specimens, a 55% increase from January 2005–June 2006 (*1*). The number of tests increased primarily as a result of a decision to increase AFP surveillance sensitivity in polio-endemic regions (Africa, Eastern Mediterranean, and South-East Asia), but also as a result of an upsurge in wild poliovirus transmission in Nigeria and India and virus importations into several other countries.

All six WHO regions met the program target of >80% of laboratories providing virus isolation results within 28 days (Table 1). A second target, >80% of laboratories obtaining intratypic differentiation (ITD) (i.e., identification of polioviruses as wild or Sabin vaccine–like) results within 60 days of paralysis onset, was not met in three regions (Africa, Europe, and Western Pacific). However, failure to meet the 60-day target usually resulted from shipping delays that were beyond the control of laboratories.

Detection and Characterization of Wild Polioviruses

During January 2006–June 2007, GPLN confirmed wild polioviruses in 18 countries (Table 2). Only wild poliovirus types 1 (PV1) and 3 (PV3) were detected. Wild poliovirus type 2 (PV2) was last detected in Uttar Pradesh, India, in 1999 and appears to have been eradicated (*7*).

To monitor pathways of virus transmission, GPLN sequences and analyzes the genomic region encoding the major virus surface protein (VP1) (approximately 900 nucleotides) of all wild polioviruses. Detected viruses belonged to four genotypes: South Asia (SOAS) PV1, West Africa B (WEAF-B) PV1, SOAS PV3, and WEAF-B PV3. During January 2006–June 2007, indigenous PV1 and PV3 were identified in four countries (Afghanistan, India, Nigeria, and Pakistan). Imported viruses of Nigerian origin were identified in eight countries (Cameroon, Chad, Ethiopia, Indonesia, Kenya, Niger, Somalia, and Yemen) where polio is not endemic; viruses of Indian origin were identified in six countries (Angola, Bangladesh, Democratic Republic of the Congo, Myanmar, Namibia, and Nepal) where polio is not endemic. Most of the imported virus was PV1 introduced in 2005 (five countries) or 2006 (eight additional countries). Single-case importations of PV3 of Nigerian origin were reported in 2006 in Niger (two episodes), Cameroon, and Chad. Myanmar was the only country with a newly reported PV1 importation in 2007.

Detection of Vaccine-Derived Polioviruses

Vaccine-derived polioviruses (VDPVs) are polioviruses with >1% VP1 nucleotide sequence difference from the parental Sabin vaccine strain of the same type. Concern has increased over the potential for VDPV epidemics since confirmation of

TABLE 1. Number of specimens and poliovirus (PV) isolates, percentage of specimens with nonpolio enterovirus (NPEV) isolated, and timing of results, by World Health Organization (WHO) region and year — Global Polio Laboratory Network, January 2006–June 2007

	January–December 2006						January–June 2007					
		No. of PV isolates		% specimens with NPEV isolated	% results within 28 days	% ITD* results within 60 days		No. of PV isolates		% specimens with NPEV isolated	% results within 28 days	% ITD results within 60 days
WHO region	No. of specimens	Wild	Sabin vaccine–like				No. of specimens	Wild	Sabin vaccine–like			
Africa	26,505	2,261	835	12.1	98.4	60.0	12,133	325	344	12.8	90.0	86.8
Americas	1,991	0	43	8.0	86.0	100.0	656	0	8	9.0	91.0	100.0
Eastern Mediterranean	22,948	212	963	19.0	96.0	93.0	11,356	42	501	17.0	99.0	99.0
Europe	2,814	0	152	4.8	85.8	72.9	1,229	0	55	2.0	92.2	73.3
South-East Asia	71,419	1,186	3,042	20.0	99.0	90.0	39,711	208	1,670	18.0	98.0	91.0
Western Pacific	13,662	1†	368	10.0	96.0	40.0	4,473	1†	81	7.0	93.0	68.0
Total	**139,339**	**3,360**	**5,403**	**16.9**	**97.7**	**79.7**	**69,558**	**576**	**2,659**	**15.9**	**96.3**	**89.9**

* Intratypic differentiation results (i.e., identification of polioviruses as wild or Sabin vaccine–like).
† Paralysis onset was outside of the region: in Nigeria in 2006 and in Pakistan in 2007.

TABLE 2. Number of detected wild poliovirus (WPV) isolates from persons with acute flaccid paralysis, by World Health Organization (WHO) region, country, and year — Global Polio Laboratory Network, January 2006–June 2007

WHO region and country	January–December 2006				January–June 2007			
	No. of WPV isolates	Type*			No. of WPV isolates	Type		
		PV1	PV2	PV3		PV1	PV2	PV3
Africa	2,013	1,593	0	420	294	124	0	170
Angola†	4	4	0	0	14	14	0	0
Cameroon§	4	2	0	2	0	0	0	0
Chad§	2	0	0	2	4	4	0	0
Democratic Republic of the Congo†	21	21	0	0	41	41	0	0
Ethiopia§	29	29	0	0	0	0	0	0
Namibia†	30	30	0	0	0	0	0	0
Nigeria	1,900	1,488	0	412	221	57	0	164
Niger§	23	19	0	4	14	8	0	6
Americas	0	0	0	0	0	0	0	0
Eastern Mediterranean	198	164	0	34	40	30	0	10
Afghanistan	62	60	0	2	6	6	0	0
Pakistan	64	32	0	32	18	8	0	10
Somalia§	70	70	0	0	16	16	0	0
Yemen§	2	2	0	0	0	0	0	0
Europe	0	0	0	0	0	0	0	0
South-East Asia	1,065	1,031	0	34	190	81	0	109
Bangladesh†	30	30	0	0	0	0	0	0
India	1,028	994	0	34	173	64	0	109
Indonesia§	4	4	0	0	0	0	0	0
Nepal†	3	3	0	0	0	0	0	0
Myanmar†	0	0	0	0	17	17	0	0
Western Pacific	0	0	0	0	0	0	0	0
Total	**3,276**	**2,788**	**0**	**488**	**524**	**235**	**0**	**289**

* PV1 = poliovirus type 1; PV2 = poliovirus type 2; PV3 = poliovirus type 3.
† PV1 linked to WPVs that originated in northern India.
§ PV1 or PV3 linked to WPVs that originated in Nigeria.

a VDPV outbreak in Hispaniola in 2000 (*8*). VDPVs are subdivided into three categories: 1) circulating VDPVs (cVDPVs) with transmission resulting in more than one patient with paralysis; 2) VDPVs obtained from persons with primary immunodeficiencies (iVDPVs); and 3) ambiguous VDPVs (aVDPVs) isolated from nonimmunodeficient persons, non-AFP patient sources, or a single AFP patient whose case cannot be assigned to the other two VDPV categories (*9*).

GPLN has screened all Sabin vaccine–related isolates from AFP cases since 1999. During January 2006–June 2007, vaccine-related isolates were observed in 7,311 specimens from AFP cases (Table 3), including 7,190 (98.3%) categorized as Sabin vaccine–like viruses† and 121 (1.7%) categorized as VDPVs; 107 VDPVs were detected during cVDPV outbreaks, 12 were iVDPVs, and two were aVDPVs. The cVDPV outbreaks occurred in Myanmar (four cases of type 1; data as of September 7, 2007) and Nigeria (66 cases of type 2; data as of September 7, 2007); in 2006, two single-case importations of VDPVs from Nigeria were reported in Niger. Four specimens from Nigeria yielded type 2 VDPV and wild poliovirus mixtures (two with wild PV1 and two with wild PV3). Two specimens from one AFP case in Cambodia in 2006 had type 3 VDPVs genetically linked to cVDPVs detected in 2005.

iVDPVs were isolated from seven persons with primary immunodeficiencies during the same period. Three persons had type 2 viruses (detected in Iran, in Syria, and in France in a child of Tunisian origin), one was coinfected with types 1 and 2 VDPVs (in Iran), and three had type 3 VDPVs (in Egypt, Iran, and Kuwait). Six of the immunodeficient persons were paralyzed, and their viruses were detected through AFP surveillance; the seventh was not paralyzed and had iVDPV isolated in France during clinical investigations for a bone marrow transplant.

Type 1 aVDPVs were isolated from single AFP cases in Guangxi (where seven healthy contacts also had VDPVs) and Shanxi, China. aVDPVs also were detected in non-AFP sources: a healthy child in Shanghai, China (type 3) and sewage water in Israel (type 2).

† Sabin vaccine–like polioviruses are those with either concordant Sabin vaccine–like results in ITD tests or <1% sequence difference when compared with Sabin vaccine virus. The presence of a Sabin vaccine–like poliovirus usually is indicative only of coincidental receipt by a person with AFP of the Sabin oral poliovirus vaccine, which is rarely the cause of the AFP.

TABLE 3. Number of Sabin vaccine–related isolates from persons with acute flaccid paralysis, by World Health Organization (WHO) region — Global Polio Laboratory Network, January 2006–June 2007

WHO region	Sabin vaccine–like†	VDPV* cVDPV§ isolates	VDPV* iVDPV¶ isolates	VDPV* aVDPV** isolates	Total
Africa	1,079	100	0	0	**1,179**
Americas	51	0	0	0	**51**
Eastern Mediterranean	701	0	12	0	**713**
Europe	207	0	0	0	**207**
South-East Asia	4,707	5	0	0	**4,712**
Western Pacific	445	2	0	2	**449**
Total	**7,190**	**107**	**12**	**2**	**7,311**

* Vaccine-derived poliovirus: a poliovirus with ≥1% VP1 sequence difference compared with Sabin vaccine virus.
† Either concordant Sabin vaccine–like results in ITD tests or <1% sequence difference compared with Sabin vaccine virus.
§ Circulating VDPV. In the Africa Region, 96 isolates were from 49 acute flaccid paralysis (AFP) cases in Nigeria and four isolates were from two AFP cases in Niger, according to case counts as of June 30, 2007.
¶ VDPV associated with a person with a primary immunodeficiency.
** Ambiguous VDPV isolates that cannot be categorized as either iVDPV or cVDPV.

GPLN Initiatives

Recognizing the role of laboratories in early detection of transmission, GPLN is implementing a plan to increase the speed of poliovirus confirmation. One element of the plan is use of a new test algorithm[§] that was proven through field evaluations in India, Pakistan, and the United States to decrease the time for completing laboratory analyses from 42 to 21 days without compromising poliovirus detection sensitivity. The algorithm was adopted by GPLN in June 2006, with priority given initially to the 43 laboratories located in polio-endemic regions where its use is required. These laboratories will be evaluated against new reporting targets (14 days for virus isolation and 7 days for ITD from date of arrival in the laboratory) beginning January 2008. A second goal is to increase (from 58% to 75%) by December 2007 the percentage of stool specimens from polio-endemic regions that are tested in laboratories with on-site capacity for both virus isolation and ITD. In addition, GPLN plans to expand its use of real-time polymerase chain reaction (PCR) assays to reduce the use of virus cultivation in cell culture and minimize opportunities for breaches of poliovirus containment in the laboratory. The impact of GPLN measures to reduce reporting times already is evident. During January–June 2007, approximately 80% of wild virus importations or outbreaks were detected within 21 days of paralysis onset in the first patient, compared with 50% of importations and outbreaks during the same period in 2006.

§ Available at http://www.who.int/immunization_monitoring/Supplement_polio_lab_manual.pdf.

Reported by: *Polio Eradication Initiative Dept, WHO, Geneva, Switzerland. Div of Viral Diseases, Global Immunization Div, National Center for Immunization and Respiratory Diseases, CDC.*

Editorial Note: GPLN continues to provide important data to monitor progress toward polio eradication and to direct immunization and other services to areas of greatest need. During 2006–2007, GPLN identified specific areas in Nigeria and India as the ultimate sources of wild poliovirus transmission occurring elsewhere, underscoring the need to interrupt transmission in these areas to avoid jeopardizing the polio-free status of other countries. High vaccination coverage must be achieved and maintained in all WHO regions to prevent circulation of endemic or imported wild poliovirus or VDPVs.

The recent outbreak of cVDPV in Nigeria has implications for the GPLN procedure for VDPV detection. All poliovirus isolates are screened using two complementary ITD tests (usually enzyme-linked immunosorbent assay [ELISA] using specific cross-absorbed antisera and diagnostic PCR using strain-specific reagents). Isolates with discordant results from the two tests are flagged for sequencing for definitive identification of VDPVs. Follow-up clinical and epidemiologic investigations are used to categorize the VDPVs (i.e., as cVDPVs, iVDPVs, or aVDPVs). This approach has successfully identified cVDPV outbreaks in five countries (Cambodia, China, Indonesia, Myanmar, and the Philippines) since 2000 but failed to flag multiple type 2 VDPVs from Nigeria and type 2 and type 3 VDPVs from Madagascar (in 2001 and 2005) because they reacted as Sabin vaccine–like in both ITD tests (ELISA and PCR). In Nigeria, sequencing was performed because the temporal and geographic clustering of type 2 Sabin vaccine–like isolates suggested virus circulation. In Madagascar, the viruses had profiles that were not Sabin vaccine–like in a PCR-restriction fragment length polymorphism assay used in a multilaboratory collaborative study of Sabin vaccine–related polioviruses (*10*). Although the GPLN screening procedure appears successful in detecting type 1 VDPVs, recent evidence suggests that it lacks sufficient sensitivity for detection of type 2 and type 3 VDPVs. A real-time PCR assay developed at a Global Specialized Laboratory appears to increase VDPV detection sensitivity for all types and is being evaluated for use by GPLN.

GPLN contributes to the expanding understanding of factors related to the occurrence and spread of VDPVs. GPLN detected several VDPVs in middle- and low-income countries where follow-up investigations led to diagnoses of underlying primary immunodeficiency conditions. Investigators have observed no evidence of prolonged iVDPV excretion or virus spread to family contacts from those patients. The two cases in Niger demonstrate the potential for impor-

tation of VDPVs from areas where they circulate. In Nigeria, four persons excreted both wild poliovirus and VDPV, documenting that coinfection can occur where the viruses cocirculate. Additionally, several Nigerian PV2 viruses had five to nine VP1 nucleotide differences from Sabin vaccine virus type 2, with some mutations shared with isolates classified as VDPV, suggesting they are directly ancestral to the VDPVs. The definition of VDPV might need revision to accommodate such observations.

Greater testing volume, ongoing measures to reduce reporting times in polio-endemic regions, and the need to maintain laboratory support in polio-free regions are the major challenges facing GPLN. Because the newly introduced test algorithm initially places additional burdens (e.g., added complexity and increased costs) on laboratories, WHO is mobilizing the additional necessary resources for GPLN. However, faster confirmation of poliovirus enables more rapid targeted interventions to prevent virus spread, which should reduce the overall costs of immunization programs. More laboratories in polio-free areas are expected to adopt the new algorithm for early detection of VDPVs and wild poliovirus importations. Because of the continuing need for global poliovirus surveillance, WHO continues to advocate with national authorities and partner agencies for continued support for GPLN.

References

1. CDC. Laboratory surveillance for wild and vaccine-derived polioviruses, January 2004–2005. MMWR 2005;54:958–61.
2. CDC. Laboratory surveillance for wild and vaccine-derived polioviruses, January 2003–June 2004. MMWR 2004;53:990–3.
3. CDC. Laboratory surveillance for wild and vaccine-derived polioviruses, January 2002–June 2003. MMWR 2003;52:913–6.
4. CDC. Laboratory surveillance for wild polio virus and vaccine-derived poliovirus, 2000–2001. MMWR 2002;51:369–71.
5. CDC. Developing and expanding contributions of the global laboratory network for poliomyelitis eradication, 1997–1999. MMWR 2000;49:156–60.
6. CDC. Status of the global laboratory network for poliomyelitis eradication, 1994–1996. MMWR 1997;46:692–4.
7. CDC. Apparent global interruption of wild poliovirus 2 transmission. MMWR 2001;50:222–4.
8. Kew O, Morris-Glasgow V, Landaverde M, et al. Outbreak of poliomyelitis in Hispaniola associated with circulating type 1 vaccine–derived poliovirus. Science 2002;296:356–9.
9. CDC. Update on vaccine-derived polioviruses. MMWR 2006;55: 1093–7.
10. Romanenkova NI, Guillot S, Rozaeva NR, Crainic R, Bichurina MA, Delpeyroux F. Use of a multiple restriction fragment length polymorphism method for detecting vaccine-derived polioviruses in clinical samples. J Clin Microbiol 2006;44:4077–84.

Progress in Measles Control — Kenya 2002–2007

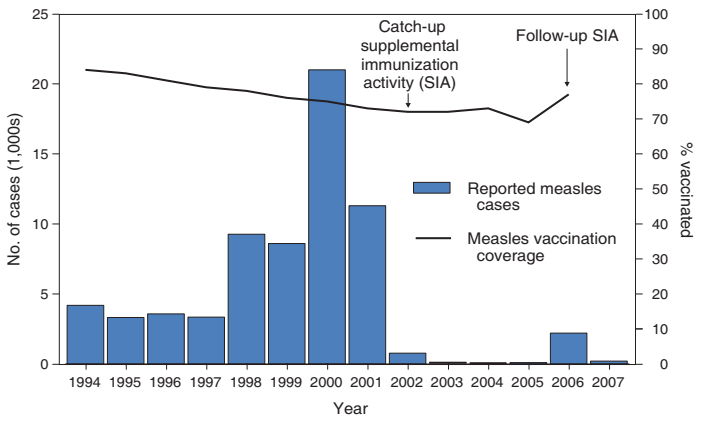
In 2000, countries represented by the World Health Organization (WHO) Regional Office for Africa established a goal to reduce, by the end of 2005, measles mortality to 50% of the 506,000 deaths from measles estimated in 1999 (*1*). Strategies adopted included strengthening routine vaccination, providing a second opportunity for measles vaccination through supplemental immunization activities (SIAs), monitoring disease trends, and improving measles case management. In Kenya, an east African country with a population estimated at 33.4 million in 2005, the Kenya Expanded Programme on Immunization (KEPI) in the Ministry of Health began implementing these strategies in 2002 with a wide age range catch-up SIA* and reduced the number of reported measles cases by >99%, from 11,304 in 2001 to 20 in 2004. A follow-up SIA, initially scheduled for July 2005, was postponed to 2006 to include concurrent distribution of long-lasting insecticide-treated bednets (LLINs).† This report documents progress made in reducing measles morbidity and mortality in Kenya and describes the consequences of a large measles outbreak, beginning in September 2005, on the integrated measles follow-up SIA.

Immunization Activities

KEPI was established within the Kenya Ministry of Health in 1980, with the goal of immunizing all children in the country against six vaccine-preventable diseases.§ National coverage with 1 dose of measles vaccine (provided at age 9 months) increased in the early 1990s to 84% of children aged 12 months but decreased to 72% in 2002 (Figure 1). To accelerate measles control, goals were established in 2002 to achieve and maintain national average measles vaccination coverage at 90%, with every district expected to attain a coverage of >85%. Since then, reported national measles vaccination coverage increased to 77% in 2006 (Figure 1), and the proportion of districts with coverage >85% increased from 10% in 2002 (eight of 77 districts) to 35% in 2006 (27 of 78 districts).¶ To provide a second opportunity for measles vaccination, a nationwide measles catch-up SIA was conducted in June 2002, targeting

* The WHO Regional Office for Africa recommends an initial, nationwide catch-up SIA targeting all children aged 9 months–14 years and periodic nationwide follow-up SIAs targeting all children born since the last SIA.
† LLINs are impregnated with an insecticide that lasts the life of the net. Conventional insecticide-treated bednets require periodic retreatment with insecticide to maintain effectiveness.
§ KEPI target diseases are tuberculosis, diphtheria, tetanus, pertussis, poliomyelitis, and measles.
¶ In 2003, the number of districts in Kenya was increased from 77 to 78.

FIGURE 1. Number of measles cases reported to the World Health Organization (WHO) and WHO/UNICEF best estimate of routine measles vaccination coverage* — Kenya, 1994–2007



* Vaccination coverage at age 12 months. Additional information available at http://www.who.int/vaccines/globalsummary/immunization/countryprofileselect.cfm.

children aged 9 months–14 years; approximately 13 million children were vaccinated, 98% of the estimated target population. A multistage cluster survey provided a similar estimate of national measles SIA coverage at 94%, with seven of nine provinces achieving coverage >90%. The two exceptions were North East Province at 84% and Coast Province at 90%.

Measles Surveillance

After the 2002 measles catch-up SIA, Kenya implemented a system of case-based surveillance for measles within the existing surveillance network for acute flaccid paralysis. In this system, for each suspected measles patient who visits a health facility, a measles case report form is completed, and a blood specimen is taken for measles immunoglobulin M testing at the national measles laboratory. In an outbreak, defined as five or more cases reported from the same health area in a month, specimens are collected from five cases. If three or more test positive, the outbreak is confirmed as measles, untested cases are confirmed by epidemiologic linkage, and specimen collection stops after throat swabs are collected for viral genotyping.

In 2003, a total of 1,791 suspected measles cases were reported through this case-based surveillance system, including 59 cases that were confirmed by laboratory or epidemiologic linkage. In 2004, a total of 1,968 suspected cases were reported, including 20 that were confirmed; in 2005, a total of 1,061 suspected cases were reported, including 151 that were confirmed. During 2003–2005, more than 99% of suspected cases were reported with a blood specimen, and the proportion of districts reporting at least one suspected measles case increased from 69% in 2004 to 99% in 2005.**

Measles Outbreak and Follow-up SIA

A follow-up measles SIA had been planned for July 2005, approximately 36 months after the initial catch-up SIA in June 2002, an interval between SIAs recommended by the African Regional Measles Technical Advisory Group (*2*). However, to expedite meeting the 2005 World Health Assembly target of 80% of children aged <5 years sleeping under an insecticide-treated bednet, the Kenya Ministry of Health and the Inter-Agency Coordinating Committee decided to integrate distribution of LLINs with the measles follow-up SIA. Raising additional funds for procurement and distribution of the LLINs required postponement of the SIA, initially to July 2006.

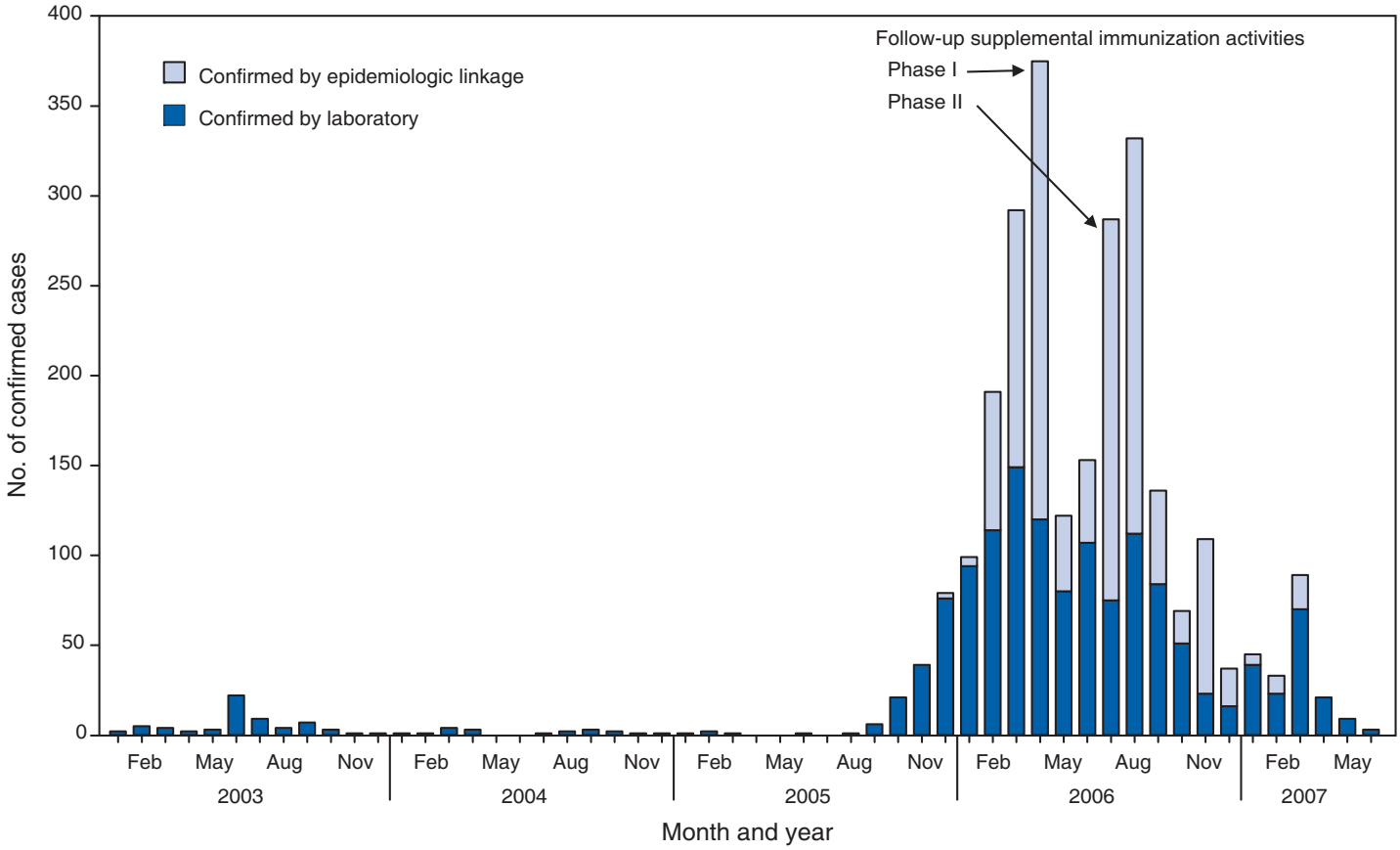
In September 2005, a cluster of laboratory-confirmed measles cases was reported from a predominantly Somali immigrant community in Nairobi. During September 2005–May 2007, this outbreak grew to a total of 2,544 confirmed measles cases reported from 71 (91%) of the 78 districts, with peak monthly totals of 375 and 332 confirmed cases reported in April and August 2006, respectively (Figure 2). Viruses were isolated from specimens collected from approximately 80 persons and identified as genotype B3, with one additional virus from Rift Valley Province identified as D4.

Of the 2,544 confirmed outbreak cases, 944 (37%) were in persons aged 9–59 months, 491 (19%) were in persons aged 5–14 years, and 658 (26%) were in persons aged >15 years. A history of measles vaccination was provided by 466 (18%) of the patients, including 220 (23%) of the 944 children aged 9–59 months and 95 (26%) of the 366 children aged 5–9 years. Vaccination status was unknown for 1,192 persons (47%) (Figure 3). During the outbreak, 24 measles deaths were documented; 17 of the decedents were children aged <5 years, and nine had a history of measles vaccination.

In response to this outbreak, the planned follow-up SIA was moved forward from July to April 2006. Because adequate funds were not available to support a nationwide measles campaign in April and the full shipment of LLINs purchased for the SIA had not arrived, the SIA was divided into two phases. Phase I, conducted during April 29–May 5, covered the 16 districts most affected by measles outbreaks and most at risk for poliovirus importation from neighboring Somalia and

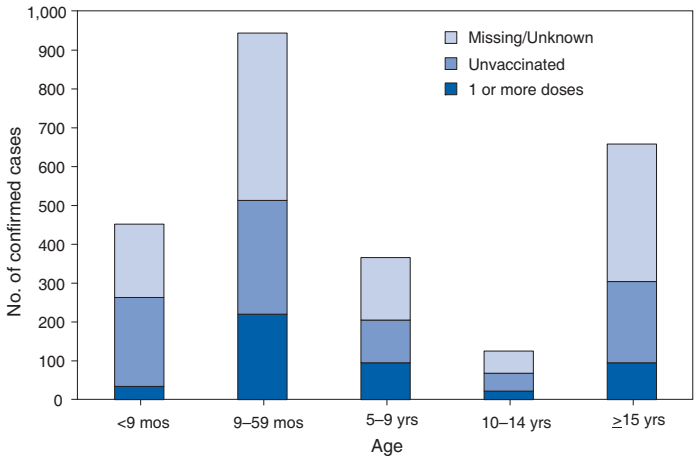
** WHO Regional Office for Africa performance indicators for quality measles surveillance include collection of blood specimens from >80% of persons with suspected measles (to assess specificity) and reporting of at least one suspected measles case with a patient blood specimen from >80% of districts (to assess sensitivity).

FIGURE 2. Number of confirmed measles cases, by month — Kenya, January 2003–June 2007



SOURCE: Measles surveillance case-based database. World Health Organization Regional Office for Africa.

FIGURE 3. Number of confirmed measles cases, by patient age and vaccination status — Kenya, September 2005–May 2007



SOURCE: Measles surveillance case-based database. World Health Organization Regional Office for Africa.

Ethiopia (*3*). All the districts administered measles vaccination to children aged 9–59 months, vitamin A to children aged 6–59 months, and monovalent type 1 oral polio vaccine (mOPV1) to children aged 0–59 months. Each intervention reached more children than expected, based on population estimates; 670,016 received measles vaccine (120% of the 558,699 targeted), 785,180 received mOPV1 (119% of the 663,949 targeted), and 717,829 received vitamin A (120% of the 597,794 targeted).

Phase II was conducted during July 8–12 in the 62 remaining districts. Overall, 4,590,225 children received measles vaccine (110% of the 4,180,330 targeted), and 4,716,471 received vitamin A (105% of the 4,486,266 targeted). Four districts with an estimated combined population of 181,434 (4% of the total) did not achieve 90% reported coverage with measles vaccine. Six districts also provided mOPV1 to 490,974 children (99.6% of the 492,813 targeted).

LLINs were distributed to children aged <5 years in one district in April from preexisting stock and in 21 districts in July after the shipment of LLINs had arrived, reaching

1,741,005 children (104% of the estimated target population of 1,761,582). In September 2006, an additional 2 million LLINs were distributed in the remaining 23 malaria-endemic districts in Kenya. These SIAs were conducted with the support of the Measles Initiative and other partners.[††]

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Editorial Note: Implementation of the WHO Regional Office for Africa strategies for measles mortality reduction achieved in 2004 the goal of reducing deaths caused by measles by half, both regionally and globally, from 1999 to 2005 (*4*). In Kenya, accelerated measles-control activities resulted in a >99% decrease in measles cases to an incidence of approximately six to 29 cases per 1 million population during the 36 months after the catch-up SIA of June 2002. Achieving high levels of vaccination coverage during that SIA, even though routine coverage was <80%, likely led to the rapid reduction in measles.

In multiple countries, integrating high-priority health interventions with vaccination campaigns has attracted political support, allowed for pooling of resources, and increased community participation (*5–7*). Achieving high coverage with insecticide-treated bednets is a key strategy for reducing the burden of malaria. In Kenya, delaying the measles follow-up SIA by 1 year enabled distribution of LLINs to >90% of children aged <5 years in the target districts. Kenya, therefore, joins the ranks of countries that have rapidly increased coverage with insecticide-treated bednets by integrating bednet distribution with measles SIAs (*5–7*).

However, Kenya's experience also highlights a disadvantage of delaying a follow-up SIA beyond the recommended interval. This delay likely resulted in a nationwide measles outbreak in 2005 that ultimately produced approximately 2,500 laboratory-confirmed cases and 24 deaths. Surveillance data indicate that the heaviest burden of disease was in children born after the 2002 catch-up SIA, who would have received a second opportunity for measles vaccination during the follow-up SIA. With <80% routine coverage since 1997 and the delay in the follow-up SIA, population immunity was low enough in Kenya to sustain a large outbreak after a measles importation.

Successful control of measles in Kenya will depend on continued improvement of routine vaccination services; conducting regular, periodic, and high-quality follow-up SIAs; improving measles case management; and monitoring success by using case-based surveillance with laboratory confirmation. The intervals between SIAs must be based not only on disease epidemiology and SIA coverage but also on estimated routine coverage (*2*). In addition, despite the documented advantages of integrating measles SIAs with other life-saving interventions, in some countries, consideration should be given to the risks of delaying measles SIAs to gain the benefits from the other interventions.

[††] Founded in 2001, the Measles Initiative is a partnership formed to reduce measles mortality and is led by the American Red Cross, the United Nations Foundation, CDC, WHO, UNICEF, and the Canadian International Development Agency. The initiative has supported implementation of high-quality measles SIAs since 2000 in approximately 42 African countries. Additional information is available at http://www.measlesinitiative.org. Additional partners supporting the LLIN distribution included the Kenyan Office of the President, Ministry of Education, and Ministry of Gender, Sports, Culture, and Social Services; the Kenyan Red Cross; Rotary International; the Church of Jesus Christ of Latter-Day Saints; the United Kingdom Department for International Development; and numerous Kenyan nongovernmental organizations.

References

1. World Health Organization, United Nations Children's Fund. Measles mortality reduction and regional elimination strategic plan 2001–2005. Geneva, Switzerland: World Health Organization; 2001. Available at http://www.who.int/vaccines-documents/docspdf01/www573.pdf.
2. World Health Organization. Report on the 1st consultation of the Technical Advisory Group on Measles and Rubella Control in the African Region. Harare, Zimbabwe: World Health Organization Regional Office for Africa; 2005. Available at http://www.afro.who.int/measles/reports/tag_report_2005.pdf.
3. World Health Organization. Outbreak news. Poliomyelitis, Ethiopia and Somalia. Wkly Epidemiol Rec 2006;81:350.
4. Wolfson LJ, Strebel PM, Gacic-Dobo M, Hoekstra EJ, McFarland JW, Hersh BS, Measles Initiative. Has the 2005 measles mortality reduction goal been achieved? A natural history modelling study. Lancet 2007; 369:191–200.
5. Grabowsky M, Nobiya T, Ahun M, et al. Distributing insecticide-treated bednets during measles vaccination: a low-cost means of achieving high and equitable coverage. Bull World Health Organ 2005;83:195–201.
6. CDC. Distribution of insecticide-treated bednets during an integrated nationwide immunization campaign—Togo, West Africa, December 2004. MMWR 2005;54:994–6.
7. Grabowsky M, Farrell N, Hawley W, et al. Integrating insecticide-treated bednets into a measles vaccination campaign achieves high, rapid and equitable coverage with direct and voucher-based methods. Trop Med Int Health 2005;10:1151–60.

Notice to Readers

Satellite Broadcast and Webcast: An Innovative Approach to Fighting Disease in Uganda

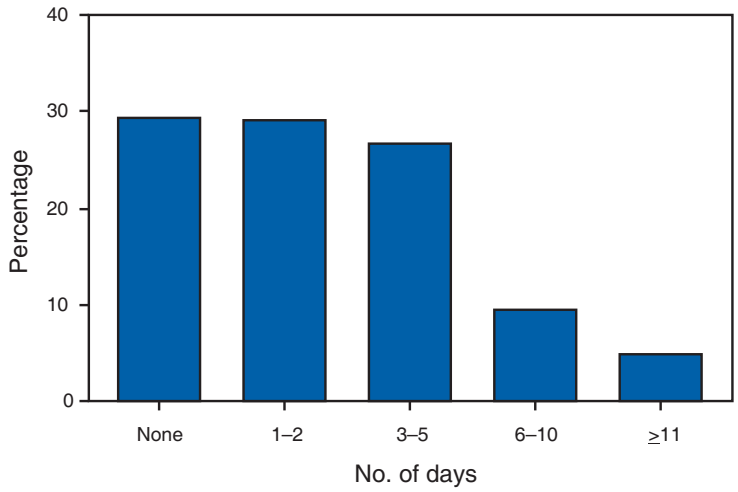
Public Health Grand Rounds, a project sponsored by CDC in collaboration with the University of North Carolina School of Public Health, will air a satellite broadcast and webcast, "Public Health is Global Health: An Innovative Approach to Fighting Disease in Uganda," on September 27, 2007, at 2:00 p.m. EDT. This broadcast will spotlight the accomplishments of the Ugandan Ministry of Health, The AIDS Support Organisation, Population Services International/Uganda, and CDC in improving health through an innovative intervention, The Basic Care Package.

Continuing education credit will be offered to registrants. Information regarding the program and registration is available at http://www.publichealthgrandrounds.unc.edu.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Estimated Percentage of Students Who Missed School During the Preceding 12 Months Because of Illness or Injury,* by Number of Days Missed — National Health Interview Survey,† United States, 2006



* Among students aged 5–17 years. Based on response to the question, "During the past 12 months, that is, since [reference date 12 months ago], about how many days did [name of sample child] miss school because of illness or injury?"
† Estimates are based on household interviews of a sample of the civilian, non-institutionalized U.S. population.

In 2006, an estimated 29% of students aged 5–17 years never missed a day of school during the preceding 12 months because of illness or injury. The majority (56%) missed 1–5 days, 10% missed 6–10 days, and 5% missed ≥11 days of school.

SOURCE: Bloom B, Cohen RA. Summary health statistics for U.S. children: National Health Interview Survey, 2006. Vital Health Stat 2007;10(234). Available at http://www.cdc.gov/nchs/nhis.htm.

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending September 15, 2007 (37th Week)*

Disease	Current week	Cum 2007	5-year weekly average†	Total cases reported for previous years 2006	2005	2004	2003	2002	States reporting cases during current week (No.)
Anthrax	—	—	—	1	—	—	—	2	
Botulism:									
foodborne	—	12	0	20	19	16	20	28	
infant	—	59	2	97	85	87	76	69	
other (wound & unspecified)	—	18	1	48	31	30	33	21	
Brucellosis	—	85	2	121	120	114	104	125	
Chancroid	1	20	1	33	17	30	54	67	FL (1)
Cholera	—	1	—	9	8	5	2	2	
Cyclosporiasis§	2	76	2	136	543	171	75	156	MD (1), TX (1)
Diphtheria	—	—	—	—	—	—	1	1	
Domestic arboviral diseases§,¶:									
California serogroup	—	16	7	67	80	112	108	164	
eastern equine	—	3	0	8	21	6	14	10	
Powassan	—	—	—	1	1	1	—	1	
St. Louis	—	3	1	10	13	12	41	28	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis§:									
human granulocytic	10	297	12	646	786	537	362	511	NY (10)
human monocytic	3	314	11	578	506	338	321	216	PA (1), MO (1), FL (1)
human (other & unspecified)	2	96	2	231	112	59	44	23	MO (1), MD (1)
Haemophilus influenzae,**									
invasive disease (age <5 yrs):									
serotype b	—	10	0	29	9	19	32	34	
nonserotype b	4	89	2	175	135	135	117	144	CT (1), NY (1), MN (1), FL (1)
unknown serotype	2	151	3	179	217	177	227	153	NYC (1), UT (1)
Hansen disease§	—	33	1	66	87	105	95	96	
Hantavirus pulmonary syndrome§	1	17	0	40	26	24	26	19	ID (1)
Hemolytic uremic syndrome, postdiarrheal§	5	147	7	288	221	200	178	216	CT (1), OH (2), NE (1), NC (1)
Hepatitis C viral, acute	2	453	21	802	652	713	1,102	1,835	TN (1), TX (1)
HIV infection, pediatric (age <13 yrs)††	—	—	3	52	380	436	504	420	
Influenza-associated pediatric mortality§,§§	—	73	0	43	45	—	N	N	
Listeriosis	7	432	21	875	896	753	696	665	PA (1), IN (1), NC (2), FL (1), CA (2)
Measles¶¶	—	25	1	55	66	37	56	44	
Meningococcal disease, invasive***:									
A, C, Y, & W-135	2	189	3	318	297	—	—	—	NY (1), FL (1)
serogroup B	3	95	2	193	156	—	—	—	MN (1), FL (2)
other serogroup	—	15	0	32	27	—	—	—	
unknown serogroup	2	435	10	651	765	—	—	—	CA (2)
Mumps	3	567	12	6,584	314	258	231	270	NC (1), FL (1), WA (1)
Novel influenza A virus infections	—	—	—	N	N	N	N	N	
Plague	—	4	0	17	8	3	1	2	
Poliomyelitis, paralytic	—	—	0	—	1	—	—	—	
Poliovirus infection, nonparalytic§	—	—	—	N	N	N	N	N	
Psittacosis§	—	5	0	21	16	12	12	18	
Q fever§	1	118	2	169	136	70	71	61	WA (1)
Rabies, human	—	—	0	3	2	7	2	3	
Rubella†††	—	11	0	11	11	10	7	18	
Rubella, congenital syndrome	—	—	—	1	1	—	1	1	
SARS-CoV§,§§§	—	—	—	—	—	—	8	N	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	—	76	1	125	129	132	161	118	
Syphilis, congenital (age <1 yr)	1	271	8	380	329	353	413	412	NY (1)
Tetanus	—	12	1	41	27	34	20	25	
Toxic-shock syndrome (staphylococcal)§	2	53	2	101	90	95	133	109	NY (1), CO (1)
Trichinellosis	—	5	0	15	16	5	6	14	
Tularemia	—	81	3	95	154	134	129	90	
Typhoid fever	5	212	11	353	324	322	356	321	NY (1), PA (1), WI (1), NC (1), CA (1)
Vancomycin-intermediate *Staphylococcus aureus*§	—	9	0	6	2	—	N	N	
Vancomycin-resistant *Staphylococcus aureus*§	—	—	—	1	3	1	N	N	
Vibriosis (noncholera *Vibrio* species infections)§	9	216	3	N	N	N	N	N	NY (1), OH (1), MD (1), GA (2), FL (3), CA (1)
Yellow fever	—	—	—	—	—	—	—	1	

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

* Incidence data for reporting years 2006 and 2007 are provisional, whereas data for 2002, 2003, 2004, and 2005 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. Additional information is available at http://www.cdc.gov/epo/dphsi/phs/files/5yearweeklyaverage.pdf.

§ Not notifiable in all states. Data from states where the condition is not notifiable are excluded from this table, except 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.

** 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. A total of 70 cases were reported for the 2006–07 flu season.

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

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

††† 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.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending September 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Chlamydia†					Coccidioidomycosis					Cryptosporidiosis				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	14,544	20,488	25,327	720,313	716,824	111	128	658	4,897	5,885	688	79	837	6,157	3,646
New England	452	713	1,357	24,173	22,539	—	0	1	2	—	1	4	30	183	289
Connecticut	—	223	829	7,028	6,375	N	0	0	N	N	—	0	30	30	38
Maine§	55	48	74	1,807	1,571	—	0	0	—	—	—	1	6	33	32
Massachusetts	289	304	600	11,047	10,189	—	0	0	—	—	—	1	15	50	147
New Hampshire	52	39	70	1,497	1,349	—	0	1	2	—	—	1	4	37	34
Rhode Island§	33	67	108	2,205	2,203	—	0	0	—	—	—	0	5	6	6
Vermont§	23	19	45	589	852	N	0	0	N	N	1	1	4	27	32
Mid. Atlantic	1,642	2,690	4,284	100,207	87,506	—	0	0	—	—	55	10	108	891	453
New Jersey	203	407	538	14,834	14,266	N	0	0	N	N	—	0	4	9	36
New York (Upstate)	863	514	2,758	18,572	16,694	N	0	0	N	N	19	3	15	150	112
New York City	—	873	1,684	32,171	28,601	N	0	0	N	N	—	1	10	43	99
Pennsylvania	576	797	1,799	34,630	27,945	N	0	0	N	N	36	4	103	689	206
E.N. Central	1,641	3,148	6,221	116,104	121,048	—	1	3	23	34	79	18	80	956	960
Illinois	599	952	1,367	32,625	38,178	—	0	0	—	—	—	2	9	91	167
Indiana	407	393	644	14,682	14,206	—	0	0	—	—	5	1	18	63	44
Michigan	337	717	1,225	25,277	24,443	—	0	3	16	30	2	3	10	115	98
Ohio	117	705	3,651	30,061	29,547	—	0	2	7	4	50	5	61	347	242
Wisconsin	181	372	528	13,459	14,674	N	0	0	N	N	22	6	39	340	409
W.N. Central	552	1,192	1,448	41,027	43,833	—	0	54	3	—	37	11	114	824	609
Iowa	—	163	252	5,895	5,826	N	0	0	N	N	4	2	55	335	142
Kansas	174	147	294	5,770	5,752	N	0	0	N	N	14	1	15	90	61
Minnesota	1	235	314	7,095	9,136	—	0	54	—	—	—	2	25	110	123
Missouri	308	453	628	16,315	16,267	—	0	1	3	—	5	1	14	62	145
Nebraska§	—	103	183	3,122	3,741	N	0	0	N	N	12	1	18	97	66
North Dakota	4	28	69	1,011	1,248	N	0	0	N	N	1	0	11	10	7
South Dakota	65	49	84	1,819	1,863	N	0	0	N	N	1	2	15	120	65
S. Atlantic	5,141	4,026	6,760	143,312	136,356	—	0	1	2	3	44	21	70	704	682
Delaware	54	66	140	2,444	2,525	—	0	0	—	—	1	0	4	13	12
District of Columbia	—	99	167	3,943	2,056	—	0	0	—	—	—	0	2	3	12
Florida	1,352	1,075	1,768	40,721	34,616	N	0	0	N	N	31	11	34	382	281
Georgia	4	663	3,822	17,539	25,233	N	0	0	N	N	5	4	17	123	174
Maryland§	403	400	697	14,264	14,824	—	0	1	2	3	1	0	2	21	12
North Carolina	1,905	562	1,234	21,521	23,506	—	0	0	—	—	4	1	11	59	60
South Carolina§	901	488	3,030	23,425	14,785	N	0	0	N	N	2	1	14	53	88
Virginia§	499	485	685	17,372	16,710	N	0	0	N	N	—	1	4	40	36
West Virginia	23	58	87	2,083	2,101	N	0	0	N	N	—	0	5	10	7
E.S. Central	887	1,438	2,044	49,881	54,433	—	0	0	—	—	45	3	46	332	112
Alabama§	—	363	507	10,246	16,744	N	0	0	N	N	2	1	12	57	34
Kentucky	301	130	691	5,740	6,374	N	0	0	N	N	37	1	27	162	32
Mississippi	—	367	959	14,466	13,504	N	0	0	N	N	—	0	9	51	14
Tennessee§	586	505	695	19,429	17,811	N	0	0	N	N	6	1	10	62	32
W.S. Central	2,276	2,305	3,028	85,071	81,122	—	0	1	1	1	7	5	45	187	217
Arkansas§	208	164	337	5,762	5,752	N	0	0	N	N	—	0	3	7	15
Louisiana	225	359	855	13,576	12,880	—	0	1	1	1	—	1	6	36	58
Oklahoma	311	275	467	9,569	8,220	N	0	0	N	N	7	1	12	76	25
Texas§	1,532	1,490	1,911	56,164	54,270	N	0	0	N	N	—	2	36	68	119
Mountain	610	1,280	2,026	41,749	47,214	65	82	293	2,952	4,109	418	6	566	1,994	262
Arizona	65	454	993	13,801	14,704	64	79	293	2,852	4,001	2	0	6	30	20
Colorado	239	257	416	7,166	11,521	N	0	0	N	N	16	1	25	103	49
Idaho§	—	56	253	2,242	2,034	N	0	0	N	N	61	0	54	179	20
Montana§	—	50	82	1,488	1,787	N	0	0	N	N	—	1	18	48	91
Nevada§	154	185	397	6,709	5,608	1	1	5	41	46	1	0	3	7	7
New Mexico§	—	153	396	5,641	7,059	—	0	2	17	16	—	1	7	61	28
Utah	130	102	209	3,840	3,455	—	1	4	39	44	338	0	498	1,532	12
Wyoming§	22	24	38	862	1,046	—	0	1	3	2	—	0	8	34	35
Pacific	1,343	3,376	4,362	118,789	122,773	46	50	311	1,914	1,738	2	1	14	86	62
Alaska	75	88	157	3,102	3,095	N	0	0	N	N	—	0	2	3	4
California	1,008	2,685	3,627	95,313	96,299	46	50	311	1,914	1,738	—	0	0	—	—
Hawaii	—	101	132	3,633	4,121	N	0	0	N	N	—	0	0	—	4
Oregon§	127	157	394	6,099	6,730	N	0	0	N	N	2	1	14	83	54
Washington	133	324	621	10,642	12,528	N	0	0	N	N	—	0	0	—	—
American Samoa	U	0	32	U	U	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	—	5	207	340	641	—	0	0	—	—	—	0	0	—	—
Puerto Rico	77	121	545	5,300	3,407	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	U	3	7	U	U	U	0	0	U	U	U	0	0	U	U

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Giardiasis					Gonorrhea					*Haemophilus influenzae*, invasive All ages, all serotypes†				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	305	300	1,513	10,734	12,102	4,571	6,762	8,941	234,533	250,442	26	45	184	1,582	1,643
New England	13	25	67	877	986	59	113	259	3,820	3,842	2	3	19	122	129
Connecticut	1	5	25	227	208	—	47	204	1,420	1,503	2	0	6	33	38
Maine§	7	4	10	131	117	1	2	8	92	87	—	0	2	8	16
Massachusetts	—	10	22	356	450	49	50	96	1,861	1,718	—	2	6	58	55
New Hampshire	—	0	3	16	20	2	3	8	111	142	—	0	2	14	9
Rhode Island§	—	0	14	32	72	6	9	18	293	342	—	0	10	7	4
Vermont§	5	3	12	115	119	1	1	5	43	50	—	0	1	2	7
Mid. Atlantic	37	56	127	1,891	2,417	459	723	1,537	26,288	23,282	7	10	27	341	333
New Jersey	—	6	13	142	359	85	120	159	4,296	3,773	—	1	5	46	57
New York (Upstate)	21	24	108	734	818	231	112	1,035	4,526	4,366	4	3	15	99	102
New York City	2	15	32	539	688	—	192	360	6,872	7,145	1	2	6	71	62
Pennsylvania	14	14	34	476	552	143	248	613	10,594	7,998	2	3	10	125	112
E.N. Central	33	46	99	1,515	1,935	655	1,241	2,589	46,912	49,918	1	6	15	198	282
Illinois	—	12	21	389	498	204	348	498	12,185	14,365	—	1	6	47	85
Indiana	N	0	0	N	N	183	161	307	6,247	6,330	—	1	10	43	62
Michigan	4	13	38	392	477	111	296	880	10,389	10,118	—	0	5	20	22
Ohio	22	15	37	546	557	62	318	1,568	13,391	14,167	1	2	5	79	61
Wisconsin	7	7	20	188	403	95	129	181	4,700	4,938	—	0	4	9	52
W.N. Central	23	20	553	690	1,370	180	373	512	13,165	13,747	6	2	24	92	103
Iowa	—	4	16	175	205	—	39	62	1,272	1,301	—	0	1	1	1
Kansas	11	3	8	119	147	48	43	86	1,665	1,602	—	0	2	9	16
Minnesota	—	0	514	12	475	3	61	87	1,883	2,275	5	1	17	40	50
Missouri	6	6	22	234	373	121	199	266	7,214	7,234	1	1	5	27	25
Nebraska§	4	2	8	82	87	—	26	57	885	972	—	0	2	13	7
North Dakota	1	0	16	12	14	—	2	7	63	92	—	0	2	2	4
South Dakota	1	1	6	56	69	8	6	15	183	271	—	0	0	—	—
S. Atlantic	67	57	106	1,931	1,824	1,323	1,641	3,209	55,449	61,424	5	11	34	405	407
Delaware	—	1	3	26	30	23	28	43	951	1,041	1	0	3	6	1
District of Columbia	—	0	7	34	50	—	46	72	1,607	1,235	—	0	2	3	3
Florida	47	24	44	887	731	526	472	717	16,833	17,154	1	3	8	118	127
Georgia	11	11	33	413	444	1	303	2,068	7,196	12,487	2	2	7	78	86
Maryland§	5	4	11	162	157	160	125	227	4,467	5,091	—	2	6	62	56
North Carolina	—	0	0	—	—	104	288	675	9,635	12,308	—	0	9	44	44
South Carolina§	1	2	8	66	75	333	202	1,361	9,907	6,856	1	1	4	38	27
Virginia§	1	10	28	313	320	156	122	236	4,215	4,628	—	1	7	37	47
West Virginia	2	0	21	30	17	20	18	44	638	624	—	0	6	19	16
E.S. Central	13	9	21	357	293	425	567	752	19,411	22,188	1	2	9	93	85
Alabama§	1	4	16	165	135	2	156	242	4,679	7,779	—	0	3	19	18
Kentucky	N	0	0	N	N	161	51	268	2,264	2,283	—	0	1	2	5
Mississippi	N	0	0	N	N	—	148	310	5,455	5,241	—	0	1	7	11
Tennessee§	12	5	16	192	158	262	193	239	7,013	6,885	1	2	6	65	51
W.S. Central	10	7	55	243	224	849	983	1,490	35,336	35,818	—	2	34	76	62
Arkansas§	7	2	13	84	79	65	79	142	2,636	3,006	—	0	2	7	8
Louisiana	—	2	6	62	58	122	222	384	7,887	7,698	—	0	3	5	14
Oklahoma	3	3	42	97	87	132	101	235	3,683	3,121	—	1	29	60	34
Texas§	N	0	0	N	N	530	575	938	21,130	21,993	—	0	3	4	6
Mountain	41	30	67	1,034	1,133	133	248	454	8,288	10,577	4	4	11	169	161
Arizona	1	3	10	107	116	24	106	220	2,940	3,721	1	1	6	56	69
Colorado	24	9	26	338	371	51	55	93	1,748	2,645	1	1	4	42	41
Idaho§	3	3	12	124	121	1	3	20	163	115	—	0	1	4	3
Montana§	4	2	6	67	69	—	1	8	50	145	—	0	1	1	—
Nevada§	—	2	8	75	84	42	47	135	1,665	1,954	—	0	2	9	10
New Mexico§	—	2	6	69	48	—	29	58	1,093	1,303	—	1	3	26	21
Utah	9	6	27	228	297	13	18	34	575	602	2	0	3	28	14
Wyoming§	—	1	4	26	27	2	1	5	54	92	—	0	1	3	3
Pacific	68	60	558	2,196	1,920	488	724	900	25,864	29,646	—	2	16	86	81
Alaska	2	1	17	49	51	11	10	27	341	434	—	0	2	9	10
California	46	43	93	1,501	1,540	437	613	768	22,363	24,461	—	0	10	20	25
Hawaii	1	1	4	49	43	—	11	22	426	710	—	0	2	8	13
Oregon§	6	8	15	286	286	24	23	46	729	1,036	—	1	6	47	33
Washington	13	5	449	311	—	16	63	142	2,005	3,005	—	0	5	2	—
American Samoa	U	0	0	U	U	U	0	2	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	—	0	0	—	—	—	1	38	63	85	—	0	0	—	1
Puerto Rico	—	6	15	165	163	3	6	23	246	214	—	0	2	2	1
U.S. Virgin Islands	U	0	0	U	U	U	1	3	U	U	U	0	0	U	U

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Hepatitis (viral, acute), by type† A: Current week	A: Previous 52 weeks Med	A: Previous 52 weeks Max	A: Cum 2007	A: Cum 2006	B: Current week	B: Previous 52 weeks Med	B: Previous 52 weeks Max	B: Cum 2007	B: Cum 2006	Legionellosis: Current week	Legionellosis: Previous 52 weeks Med	Legionellosis: Previous 52 weeks Max	Legionellosis: Cum 2007	Legionellosis: Cum 2006
United States	41	52	201	1,879	2,498	33	77	405	2,698	3,082	38	44	109	1,464	1,722
New England	1	2	6	75	144	—	2	5	49	86	1	2	13	82	110
Connecticut	1	0	3	13	31	—	0	5	23	34	1	0	9	27	19
Maine§	—	0	1	2	8	—	0	2	5	17	—	0	1	3	7
Massachusetts	—	1	4	34	70	—	0	1	4	17	—	0	3	14	59
New Hampshire	—	0	3	10	21	—	0	1	5	8	—	0	2	5	9
Rhode Island§	—	0	2	8	8	—	0	3	11	8	—	0	6	26	12
Vermont§	—	0	1	8	6	—	0	1	1	2	—	0	2	7	4
Mid. Atlantic	3	8	20	281	267	6	9	21	312	377	18	13	55	456	579
New Jersey	—	2	5	65	80	—	2	8	60	122	—	1	10	46	80
New York (Upstate)	3	1	11	52	60	4	1	13	63	46	15	4	30	140	194
New York City	—	2	10	101	82	—	2	6	64	88	—	2	24	63	107
Pennsylvania	—	2	5	63	45	2	3	8	125	121	3	5	21	207	198
E.N. Central	6	6	13	201	249	10	9	23	306	363	7	10	25	331	400
Illinois	—	2	6	70	74	—	2	6	84	103	—	2	8	56	87
Indiana	2	0	7	17	17	8	0	21	37	38	—	1	6	27	32
Michigan	2	2	8	54	80	2	2	8	77	105	1	3	10	95	91
Ohio	2	1	4	53	44	—	3	7	96	91	6	3	17	145	158
Wisconsin	—	0	3	7	34	—	0	3	12	26	—	0	3	8	32
W.N. Central	1	2	18	109	100	—	2	15	83	106	—	1	8	53	57
Iowa	—	0	4	26	8	—	0	3	14	17	—	0	1	6	10
Kansas	—	0	1	3	24	—	0	2	7	9	—	0	1	2	7
Minnesota	—	0	17	49	9	—	0	13	16	13	—	0	6	15	11
Missouri	—	0	2	16	37	—	0	5	33	51	—	0	2	20	17
Nebraska§	1	0	2	10	13	—	0	3	9	11	—	0	1	7	8
North Dakota	—	0	3	—	—	—	0	1	—	—	—	0	1	—	—
South Dakota	—	0	1	5	9	—	0	1	4	5	—	0	1	3	4
S. Atlantic	6	10	27	357	373	6	20	56	688	871	8	7	25	252	306
Delaware	—	0	1	4	11	—	0	3	14	35	—	0	2	6	8
District of Columbia	—	0	5	14	5	—	0	2	1	5	—	0	4	1	16
Florida	4	3	11	110	145	3	7	14	246	294	5	2	9	104	120
Georgia	—	1	4	51	43	2	3	7	77	154	1	0	2	15	22
Maryland§	2	1	6	58	44	1	2	7	80	120	1	2	8	49	57
North Carolina	—	0	11	37	61	—	0	16	95	115	—	1	4	31	28
South Carolina§	—	0	4	14	19	—	1	5	43	63	—	0	2	12	3
Virginia§	—	1	5	62	40	—	2	8	95	42	—	1	4	28	44
West Virginia	—	0	2	7	5	—	0	23	37	43	1	0	4	6	8
E.S. Central	—	2	5	75	94	—	6	17	237	235	—	2	7	67	62
Alabama§	—	0	3	13	11	—	2	10	84	68	—	0	1	7	8
Kentucky	—	0	2	15	29	—	1	7	46	52	—	1	6	35	19
Mississippi	—	0	4	7	5	—	0	8	17	9	—	0	1	—	3
Tennessee§	—	1	5	40	49	—	3	8	90	106	—	1	4	25	32
W.S. Central	8	5	43	134	257	6	18	169	554	588	—	2	16	69	53
Arkansas§	—	0	2	8	43	1	1	7	47	49	—	0	3	5	4
Louisiana	—	0	3	19	23	—	1	4	51	46	—	0	1	3	10
Oklahoma	8	0	3	11	4	3	1	24	30	27	—	0	6	5	1
Texas§	—	3	39	96	187	2	14	135	426	466	—	1	13	56	38
Mountain	5	5	15	173	197	1	3	7	122	102	2	2	8	70	91
Arizona	4	3	11	122	109	—	0	3	40	—	2	0	4	22	30
Colorado	—	0	3	20	33	—	0	2	21	28	—	0	2	13	20
Idaho§	—	0	1	3	9	—	0	1	10	10	—	0	3	5	10
Montana§	1	0	2	9	9	—	0	3	—	—	—	0	1	3	5
Nevada§	—	0	2	8	11	1	1	3	28	27	—	0	2	7	5
New Mexico§	—	0	2	6	12	—	0	2	9	17	—	0	2	8	4
Utah	—	0	1	3	12	—	0	4	13	20	—	0	2	9	17
Wyoming§	—	0	1	2	2	—	0	1	1	—	—	0	1	3	—
Pacific	11	12	92	474	817	4	10	106	347	354	2	2	11	84	64
Alaska	—	0	1	3	1	—	0	3	4	3	—	0	1	—	—
California	11	10	40	414	775	4	8	31	263	288	—	1	11	62	64
Hawaii	—	0	2	4	10	—	0	1	2	6	—	0	1	1	—
Oregon§	—	1	2	21	31	—	1	5	44	57	—	0	1	6	—
Washington	—	0	52	32	—	—	0	74	34	—	2	0	2	15	—
American Samoa	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	1	10	45	47	—	1	9	44	45	—	0	2	3	1
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Lyme disease					Malaria					Meningococcal disease, invasive† All serogroups				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	355	244	1,060	12,720	14,536	11	22	105	722	1,020	7	19	87	734	843
New England	122	39	282	2,401	3,471	—	1	5	31	42	—	1	3	32	35
Connecticut	89	12	214	1,419	1,409	—	0	3	1	10	—	0	1	6	9
Maine§	33	3	53	251	136	—	0	2	6	4	—	0	3	5	3
Massachusetts	—	1	25	21	1,293	—	0	3	16	19	—	0	2	17	18
New Hampshire	—	6	70	588	552	—	0	4	6	8	—	0	1	—	3
Rhode Island§	—	0	93	30	1	—	0	1	—	—	—	0	1	1	—
Vermont§	—	1	13	92	80	—	0	2	2	1	—	0	1	3	2
Mid. Atlantic	202	138	553	6,819	7,453	5	5	14	172	253	1	2	8	101	132
New Jersey	2	26	106	1,327	2,063	—	0	3	—	72	—	0	2	11	16
New York (Upstate)	178	50	426	2,314	2,575	2	1	7	43	25	1	0	3	26	31
New York City	—	1	19	87	244	—	3	7	101	121	—	0	4	25	49
Pennsylvania	22	43	273	3,091	2,571	3	1	3	28	35	—	1	5	39	36
E.N. Central	4	7	34	361	1,558	1	2	10	75	123	—	3	9	95	124
Illinois	—	1	10	86	101	—	0	6	28	63	—	0	3	25	30
Indiana	—	0	7	37	20	—	0	2	8	9	—	0	4	18	20
Michigan	—	1	6	40	42	—	0	2	12	17	—	0	3	17	21
Ohio	1	0	4	16	36	1	0	2	18	22	—	1	3	26	36
Wisconsin	3	4	27	182	1,359	—	0	3	9	12	—	0	3	9	17
W.N. Central	—	4	195	286	336	—	0	12	25	32	1	1	5	41	47
Iowa	—	1	10	75	89	—	0	1	3	1	—	0	3	10	12
Kansas	—	0	2	9	4	—	0	1	2	6	—	0	1	1	3
Minnesota	—	1	188	180	230	—	0	12	11	14	1	0	3	13	10
Missouri	—	0	4	15	3	—	0	1	3	6	—	0	3	10	13
Nebraska§	—	0	1	5	9	—	0	1	5	3	—	0	1	2	6
North Dakota	—	0	7	2	—	—	0	1	—	1	—	0	3	2	1
South Dakota	—	0	0	—	1	—	0	1	1	1	—	0	1	3	2
S. Atlantic	21	50	164	2,632	1,592	4	5	13	179	258	3	3	11	124	148
Delaware	5	11	34	548	383	—	0	1	4	5	—	0	1	1	4
District of Columbia	—	0	7	13	37	—	0	2	3	3	—	0	1	—	1
Florida	4	1	5	50	16	4	1	7	46	41	3	1	7	47	57
Georgia	—	0	1	1	7	—	0	5	26	77	—	0	3	16	12
Maryland§	8	25	108	1,375	909	—	1	5	42	59	—	0	2	19	11
North Carolina	—	0	6	31	23	—	0	4	17	20	—	0	6	14	24
South Carolina§	1	0	2	17	14	—	0	1	5	9	—	0	2	12	18
Virginia§	3	10	60	540	195	—	1	4	34	42	—	0	2	13	16
West Virginia	—	0	14	57	8	—	0	1	2	2	—	0	2	2	5
E.S. Central	1	1	5	41	28	—	0	3	27	21	—	1	4	38	31
Alabama§	—	0	3	11	7	—	0	1	4	8	—	0	2	6	5
Kentucky	—	0	2	4	6	—	0	1	7	3	—	0	2	9	7
Mississippi	—	0	0	—	3	—	0	1	2	5	—	0	4	9	4
Tennessee§	1	0	4	26	12	—	0	2	14	5	—	0	2	14	15
W.S. Central	—	1	5	40	15	—	1	29	61	77	—	1	15	78	79
Arkansas§	—	0	0	—	—	—	0	2	—	2	—	0	2	9	9
Louisiana	—	0	1	2	—	—	0	2	13	5	—	0	4	24	31
Oklahoma	—	0	0	—	—	—	0	3	5	7	—	0	4	14	8
Texas§	—	1	5	38	15	—	1	25	43	63	—	0	11	31	31
Mountain	1	1	3	30	19	—	1	6	38	58	—	1	4	45	56
Arizona	—	0	1	2	7	—	0	3	7	19	—	0	2	9	14
Colorado	—	0	1	1	—	—	0	2	12	13	—	0	2	16	18
Idaho§	—	0	2	7	2	—	0	2	2	1	—	0	1	3	3
Montana§	—	0	1	2	—	—	0	1	3	2	—	0	1	1	3
Nevada§	—	0	2	7	2	—	0	1	2	2	—	0	1	4	5
New Mexico§	—	0	1	3	3	—	0	1	2	5	—	0	1	2	3
Utah	1	0	2	5	4	—	0	3	10	16	—	0	2	8	6
Wyoming§	—	0	1	3	1	—	0	0	—	—	—	0	1	2	4
Pacific	4	2	16	110	64	1	3	45	114	156	2	4	48	180	191
Alaska	—	0	1	4	2	—	0	1	2	22	—	0	1	1	3
California	4	2	10	102	56	1	2	7	79	117	2	3	10	128	148
Hawaii	N	0	0	N	N	—	0	1	2	8	—	0	2	7	7
Oregon§	—	0	1	3	6	—	0	3	12	9	—	0	3	27	33
Washington	—	0	8	1	—	—	0	43	19	—	—	0	43	17	—
American Samoa	U	0	0	U	U	U	0	0	U	U	U	0	0	—	—
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	3	—	—	0	1	6	6
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U	U	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are provisional.
† Data for meningococcal disease, invasive caused by serogroups A, C, Y, & 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Pertussis					Rabies, animal					Rocky Mountain spotted fever				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	78	179	1,479	5,790	9,887	35	95	171	3,492	3,966	8	32	211	1,171	1,550
New England	—	26	77	779	1,174	6	12	21	414	311	—	0	10	—	10
Connecticut	—	2	5	42	78	2	4	10	170	139	—	0	0	—	—
Maine†	—	2	15	54	81	—	2	8	55	75	—	0	0	—	—
Massachusetts	—	21	46	613	736	—	0	0	—	—	—	0	1	—	9
New Hampshire	—	1	9	37	156	—	1	4	35	31	—	0	0	—	1
Rhode Island†	—	0	31	6	35	—	0	3	26	19	—	0	9	—	—
Vermont†	—	0	9	27	88	4	2	13	128	47	—	0	0	—	—
Mid. Atlantic	10	23	155	812	1,264	1	13	44	605	377	—	1	6	43	72
New Jersey	—	2	16	81	214	—	0	0	—	—	—	0	2	6	33
New York (Upstate)	7	13	146	431	546	—	—	—	—	—	—	0	1	3	—
New York City	—	2	6	80	70	1	1	5	33	24	—	0	3	16	20
Pennsylvania	3	7	20	220	434	—	12	44	572	353	—	0	2	18	19
E.N. Central	19	33	80	1,069	1,472	11	3	47	314	133	1	1	4	32	54
Illinois	—	3	23	98	380	4	1	15	96	41	—	0	3	17	24
Indiana	—	1	45	46	160	—	0	1	9	11	—	0	2	5	5
Michigan	2	8	39	192	357	3	1	26	150	39	—	0	1	3	2
Ohio	17	15	54	534	410	4	0	11	59	42	1	0	1	7	22
Wisconsin	—	4	24	199	165	—	0	0	—	—	—	0	0	—	1
W.N. Central	8	14	151	454	930	3	5	13	197	251	—	2	12	127	164
Iowa	—	4	16	108	224	—	0	3	26	52	—	0	2	8	5
Kansas	2	3	14	106	207	1	2	7	93	61	—	0	1	1	—
Minnesota	6	0	119	109	136	2	0	5	22	33	—	0	2	1	1
Missouri	—	2	8	46	240	—	0	4	29	55	—	2	12	105	136
Nebraska†	—	1	4	33	78	—	0	0	—	—	—	0	2	9	22
North Dakota	—	0	18	4	25	—	0	6	13	16	—	0	0	—	—
South Dakota	—	1	6	48	20	—	0	2	14	34	—	0	1	3	—
S. Atlantic	28	18	163	661	784	10	40	63	1,481	1,708	4	13	67	616	841
Delaware	—	0	2	9	3	—	0	0	—	—	—	0	2	9	18
District of Columbia	—	0	2	2	3	—	0	0	—	—	—	0	1	1	1
Florida	9	4	18	173	152	—	0	28	96	176	—	0	4	13	10
Georgia	—	1	5	22	66	—	4	23	166	204	—	0	5	19	45
Maryland†	1	2	8	77	108	—	7	18	267	311	2	1	7	49	58
North Carolina	14	2	112	227	141	10	9	19	361	377	—	4	61	390	601
South Carolina†	1	2	9	56	130	—	1	11	46	118	—	1	7	48	31
Virginia†	3	2	17	82	155	—	13	31	499	444	2	2	10	82	74
West Virginia	—	0	19	13	26	—	1	8	46	78	—	0	3	5	3
E.S. Central	—	5	28	267	259	1	3	11	114	186	1	5	19	196	275
Alabama†	—	1	18	59	56	—	0	8	—	58	—	1	9	58	64
Kentucky	—	0	1	5	55	1	0	3	17	20	—	0	2	5	2
Mississippi	—	1	26	135	30	—	0	1	1	4	—	0	2	7	3
Tennessee†	—	2	7	68	118	—	2	7	96	104	1	3	16	126	206
W.S. Central	1	20	226	631	576	—	2	35	69	687	—	1	168	126	93
Arkansas†	—	2	17	113	64	—	0	5	24	24	—	0	53	59	44
Louisiana	—	0	1	14	22	—	0	1	—	4	—	0	1	2	2
Oklahoma	1	0	36	5	18	—	0	22	45	51	—	0	108	45	28
Texas†	—	16	174	499	472	—	0	34	—	608	—	0	7	20	19
Mountain	8	24	61	773	1,983	—	3	28	143	144	2	0	4	26	39
Arizona	—	5	13	159	404	—	2	10	97	107	—	0	2	4	8
Colorado	8	6	17	212	608	—	0	0	—	—	2	0	1	3	4
Idaho†	—	1	5	34	71	—	0	24	—	—	—	0	3	4	12
Montana†	—	1	7	32	101	—	0	3	13	14	—	0	1	1	2
Nevada†	—	0	5	9	61	—	0	2	2	5	—	0	0	—	—
New Mexico†	—	2	8	53	75	—	0	2	8	7	—	0	1	4	7
Utah	—	7	47	255	600	—	0	2	10	7	—	0	0	—	—
Wyoming†	—	0	5	19	63	—	0	4	13	4	—	0	2	10	6
Pacific	4	12	547	344	1,445	3	4	13	155	169	—	0	1	5	2
Alaska	—	0	8	37	63	—	0	6	35	15	N	0	0	N	N
California	—	4	167	99	1,209	2	3	12	112	138	—	0	1	3	—
Hawaii	—	0	2	14	82	N	0	0	N	N	N	0	0	N	N
Oregon†	4	1	11	70	91	1	0	3	8	16	—	0	1	2	2
Washington	—	1	377	124	—	—	0	0	—	—	N	0	0	N	N
American Samoa	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	—	0	2	—	55	—	0	0	—	—	N	0	0	N	N
Puerto Rico	—	0	1	—	1	—	1	5	37	65	N	0	0	N	N
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U

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U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Salmonellosis					Shiga toxin-producing *E. coli* (STEC)†					Shigellosis				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	681	841	2,338	27,624	29,615	66	73	336	2,698	2,782	219	335	1,287	10,508	8,802
New England	1	34	322	1,403	1,717	—	3	54	168	228	—	3	33	147	224
Connecticut	—	0	307	307	503	—	0	49	49	75	—	0	30	30	67
Maine§	—	2	14	88	90	—	0	4	24	31	—	0	5	13	3
Massachusetts	—	21	60	775	865	—	1	10	74	81	—	2	8	91	138
New Hampshire	—	3	15	118	147	—	0	3	8	21	—	0	2	5	4
Rhode Island§	—	2	20	58	67	—	0	2	5	6	—	0	3	5	9
Vermont§	1	1	6	57	45	—	0	3	8	14	—	0	2	3	3
Mid. Atlantic	66	100	186	3,572	3,761	13	8	63	279	338	6	11	47	470	695
New Jersey	—	12	41	283	830	—	1	20	15	93	—	2	6	59	259
New York (Upstate)	36	29	112	1,007	823	10	3	15	138	117	6	3	42	101	173
New York City	4	24	49	954	909	—	0	4	25	36	—	5	12	174	194
Pennsylvania	26	33	69	1,328	1,199	3	3	47	101	92	—	1	21	136	69
E.N. Central	81	102	182	3,789	4,064	18	9	41	363	501	50	32	120	1,486	976
Illinois	—	30	121	1,090	1,168	—	1	8	29	85	—	10	32	316	465
Indiana	30	15	54	518	616	3	1	9	56	58	2	2	17	79	97
Michigan	6	18	30	617	748	—	1	5	53	70	—	1	6	45	124
Ohio	38	26	65	982	868	10	3	13	113	120	45	7	104	874	114
Wisconsin	7	16	50	582	664	5	3	15	112	168	3	4	13	172	176
W.N. Central	31	48	102	1,784	1,862	7	12	45	459	469	23	38	156	1,337	1,167
Iowa	—	9	26	320	337	—	2	38	110	109	—	2	14	59	73
Kansas	14	7	20	289	260	2	0	4	39	19	—	1	10	20	94
Minnesota	—	12	44	435	447	—	4	26	152	127	—	5	24	162	86
Missouri	12	13	24	442	535	5	2	9	74	127	21	18	72	966	527
Nebraska§	5	4	11	161	150	—	1	11	57	53	2	1	7	18	102
North Dakota	—	0	23	22	21	—	0	12	1	3	—	0	127	5	54
South Dakota	—	3	11	115	112	—	0	5	26	31	—	3	30	107	231
S. Atlantic	328	221	417	7,409	7,464	14	15	37	469	415	49	89	174	3,315	1,969
Delaware	1	3	10	112	110	—	0	3	12	7	—	0	1	7	7
District of Columbia	—	0	4	16	43	—	0	1	1	1	—	0	5	4	12
Florida	160	85	176	2,938	3,043	6	2	8	105	63	26	46	76	1,756	903
Georgia	45	32	72	1,233	1,251	1	1	6	59	62	17	35	94	1,207	706
Maryland§	19	15	36	611	528	—	2	10	67	76	1	2	9	80	92
North Carolina	71	29	108	1,028	1,019	7	2	24	100	72	—	0	14	59	115
South Carolina§	21	18	51	665	691	—	0	2	10	10	5	1	7	86	74
Virginia§	7	20	39	675	697	—	3	10	102	117	—	3	10	109	58
West Virginia	4	2	31	131	82	—	0	5	13	7	—	0	6	7	2
E.S. Central	17	54	134	1,949	1,890	8	4	25	202	210	15	22	89	1,173	447
Alabama§	6	14	78	552	523	—	1	18	54	16	4	10	67	417	122
Kentucky	5	9	23	379	312	2	1	8	63	65	7	3	32	277	165
Mississippi	—	12	101	451	525	—	0	2	4	7	—	4	76	346	61
Tennessee§	6	17	34	567	530	6	2	8	81	122	4	3	14	133	99
W.S. Central	43	83	595	2,515	3,329	—	3	73	117	141	27	39	655	1,163	1,235
Arkansas§	1	14	45	427	586	—	1	7	22	23	1	2	10	69	70
Louisiana	—	15	48	486	702	—	0	2	3	13	—	9	25	331	146
Oklahoma	42	8	103	363	326	—	0	17	16	13	3	3	63	88	88
Texas§	—	44	470	1,239	1,715	—	2	68	76	92	23	23	580	675	931
Mountain	48	45	90	1,596	1,883	2	8	32	340	389	23	18	84	588	873
Arizona	21	13	44	486	574	—	2	9	78	74	11	9	37	331	446
Colorado	22	10	21	400	486	—	1	9	61	88	4	3	15	76	150
Idaho§	1	3	7	94	129	2	2	16	92	68	—	0	2	8	14
Montana§	—	2	6	69	101	—	0	0	—	—	—	1	13	18	7
Nevada§	2	4	10	125	159	—	0	5	16	22	7	0	20	32	88
New Mexico§	—	5	12	175	194	—	1	3	29	35	—	2	15	75	116
Utah	2	4	14	196	203	—	1	9	64	87	1	1	4	19	44
Wyoming§	—	1	4	51	37	—	0	2	—	15	—	1	19	29	8
Pacific	66	106	890	3,607	3,645	4	5	164	301	91	26	26	256	829	1,216
Alaska	3	1	5	60	57	N	0	0	N	N	—	0	2	7	7
California	51	86	260	2,710	3,120	2	1	15	149	N	24	21	84	672	1,076
Hawaii	—	5	16	176	164	—	0	4	18	12	—	0	3	21	35
Oregon§	1	7	15	234	302	2	1	10	61	79	—	1	6	53	98
Washington	11	8	625	427	2	—	0	162	73	—	2	1	170	76	—
American Samoa	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	—	0	0	—	—	N	0	0	N	N	—	0	0	—	—
Puerto Rico	—	14	66	446	377	—	0	0	—	—	—	0	4	18	33
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Streptococcal disease, invasive, group A					*Streptococcus pneumoniae*, invasive disease, nondrug resistant† Age <5 years				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max		
United States	50	94	261	3,735	4,073	13	31	108	1,101	926
New England	—	6	27	297	266	—	3	11	76	78
Connecticut	—	0	23	91	70	—	0	6	—	23
Maine§	—	0	3	21	15	—	0	1	1	—
Massachusetts	—	3	12	141	133	—	2	6	58	45
New Hampshire	—	0	4	29	31	—	0	2	7	6
Rhode Island§	—	0	12	—	5	—	0	2	8	4
Vermont§	—	0	2	15	12	—	0	1	2	—
Mid. Atlantic	11	17	41	709	743	—	5	27	183	128
New Jersey	—	2	9	93	124	—	1	4	25	47
New York (Upstate)	7	5	27	237	239	—	2	15	76	66
New York City	—	4	13	170	134	—	1	25	82	15
Pennsylvania	4	5	11	209	246	N	0	0	N	N
E.N. Central	7	16	32	648	792	—	5	14	165	246
Illinois	—	4	13	168	242	—	1	6	38	63
Indiana	4	2	17	105	96	—	0	10	15	45
Michigan	1	4	10	160	163	—	1	4	56	54
Ohio	2	4	14	187	199	—	1	7	47	48
Wisconsin	—	1	6	28	92	—	0	2	9	36
W.N. Central	1	5	32	245	265	2	2	8	77	73
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	3	28	45	—	0	1	1	11
Minnesota	—	0	29	124	121	2	1	6	53	43
Missouri	—	2	6	54	56	—	0	2	13	11
Nebraska§	1	0	3	21	23	—	0	2	9	5
North Dakota	—	0	2	11	10	—	0	2	1	3
South Dakota	—	0	2	7	10	—	0	0	—	—
S. Atlantic	18	21	52	949	910	6	4	14	208	60
Delaware	—	0	1	9	10	—	0	0	—	—
District of Columbia	—	0	3	8	10	—	0	1	—	1
Florida	3	6	16	230	216	3	0	5	47	—
Georgia	8	5	13	185	187	—	0	5	44	—
Maryland§	2	4	10	166	171	1	1	6	48	49
North Carolina	4	1	22	135	135	—	0	0	—	—
South Carolina§	—	1	7	78	54	2	0	3	33	—
Virginia§	1	2	11	117	105	—	0	4	29	—
West Virginia	—	0	3	21	22	—	0	4	7	10
E.S. Central	2	4	13	166	166	2	1	6	70	16
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	—	1	3	32	38	—	0	0	—	—
Mississippi	N	0	0	N	N	—	0	2	3	16
Tennessee§	2	3	13	134	128	2	1	6	67	—
W.S. Central	2	6	90	240	312	3	4	43	160	161
Arkansas§	—	0	2	17	23	1	0	2	8	18
Louisiana	—	0	4	16	15	—	0	4	24	19
Oklahoma	—	1	23	56	78	1	1	13	39	34
Texas§	2	3	64	151	196	1	2	27	89	90
Mountain	6	9	21	377	536	—	4	11	138	146
Arizona	3	3	11	121	279	—	2	7	79	82
Colorado	3	3	9	124	95	—	1	4	34	36
Idaho§	—	0	2	12	8	—	0	1	2	1
Montana§	N	0	0	N	N	N	0	0	N	N
Nevada§	—	0	1	2	—	—	0	1	1	2
New Mexico§	—	1	5	41	100	—	0	4	18	25
Utah	—	2	7	72	51	—	0	2	4	—
Wyoming§	—	0	1	5	3	—	0	0	—	—
Pacific	3	3	9	104	83	—	1	4	24	18
Alaska	3	0	3	30	N	—	0	2	22	—
California	N	0	0	N	N	N	0	0	N	N
Hawaii	—	2	9	74	83	—	0	2	2	18
Oregon§	N	0	0	N	N	N	0	0	N	N
Washington	N	0	0	N	N	N	0	0	N	N
American Samoa	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U
Guam	—	0	0	—	—	N	0	0	N	N
Puerto Rico	—	0	0	—	—	N	0	0	N	N
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	*Streptococcus pneumoniae*, invasive disease, drug resistant†										Syphilis, primary and secondary				
	All ages					Age <5 years									
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	28	48	256	1,661	1,759	9	8	35	307	271	153	198	310	7,039	6,680
New England	—	1	12	35	98	—	0	3	6	3	4	4	13	171	152
Connecticut	—	0	5	—	73	—	0	0	—	—	—	0	10	24	33
Maine§	—	0	2	9	6	—	0	2	1	1	—	0	2	5	8
Massachusetts	—	0	0	—	—	—	0	0	—	—	4	2	8	105	91
New Hampshire	—	0	0	—	—	—	0	0	—	—	—	0	3	22	10
Rhode Island§	—	0	4	14	9	—	0	1	3	—	—	0	5	14	8
Vermont§	—	0	2	12	10	—	0	1	2	2	—	0	1	1	2
Mid. Atlantic	2	2	9	99	109	—	0	5	21	14	12	28	44	1,082	797
New Jersey	—	0	0	—	—	—	0	0	—	—	8	4	8	139	122
New York (Upstate)	—	1	5	34	35	—	0	4	7	7	2	3	14	100	100
New York City	—	0	0	—	—	—	0	0	—	—	—	16	34	660	381
Pennsylvania	2	2	6	65	74	—	0	2	14	7	2	5	10	183	194
E.N. Central	7	9	40	397	380	2	1	7	55	58	14	15	27	545	635
Illinois	—	0	4	13	19	—	0	1	2	5	3	7	13	244	307
Indiana	2	2	31	102	100	2	0	5	17	16	—	1	6	37	61
Michigan	—	0	1	2	15	—	0	1	1	2	4	2	8	81	84
Ohio	5	5	38	280	246	—	1	5	35	35	7	3	9	139	134
Wisconsin	N	0	0	N	N	—	0	0	—	—	—	1	4	44	49
W.N. Central	—	2	124	111	32	—	0	15	9	1	8	6	13	248	209
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	3	11	13
Kansas	—	0	11	63	—	—	0	2	5	—	—	0	3	15	17
Minnesota	—	0	123	—	1	—	0	15	—	—	—	1	5	50	37
Missouri	—	1	5	40	30	—	0	1	—	1	8	3	11	163	127
Nebraska§	—	0	1	2	—	—	0	0	—	—	—	0	2	2	4
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	1
South Dakota	—	0	3	6	1	—	0	1	4	—	—	0	3	7	10
S. Atlantic	16	21	59	755	848	6	4	15	159	131	55	46	180	1,655	1,510
Delaware	1	0	1	7	—	—	0	1	2	—	—	0	3	9	16
District of Columbia	—	0	2	5	19	—	0	0	—	2	—	2	12	115	81
Florida	6	11	29	437	451	2	2	8	93	84	30	15	26	601	532
Georgia	9	7	17	258	284	4	1	10	56	45	—	7	153	241	273
Maryland§	—	0	1	1	—	—	0	0	—	—	6	6	15	219	224
North Carolina	—	0	0	—	—	—	0	0	—	—	3	5	23	237	214
South Carolina§	—	0	0	—	—	—	0	0	—	—	—	2	11	70	49
Virginia§	N	0	0	N	N	—	0	0	—	—	16	4	17	158	114
West Virginia	—	1	17	47	94	—	0	1	8	—	—	0	1	5	7
E.S. Central	3	3	9	114	150	1	0	3	26	27	11	16	30	583	489
Alabama§	N	0	0	N	N	—	0	0	—	—	—	6	16	227	225
Kentucky	—	0	2	17	29	—	0	1	2	6	2	1	7	41	50
Mississippi	—	0	2	—	20	—	0	0	—	—	—	2	9	76	45
Tennessee§	3	2	8	97	101	1	0	3	24	21	9	6	14	239	169
W.S. Central	—	2	11	107	65	—	0	3	15	6	40	32	55	1,223	1,059
Arkansas§	—	0	1	1	9	—	0	0	—	2	10	1	8	84	55
Louisiana	—	1	4	49	56	—	0	2	6	4	3	8	29	292	176
Oklahoma	—	0	9	57	—	—	0	2	9	—	—	1	4	38	51
Texas§	—	0	0	—	—	—	0	0	—	—	27	21	39	809	777
Mountain	—	1	5	43	77	—	0	3	14	31	2	7	19	232	357
Arizona	—	0	0	—	—	—	0	0	—	—	—	2	12	83	134
Colorado	—	0	0	—	—	—	0	0	—	—	1	1	5	30	55
Idaho§	N	0	0	N	N	—	0	0	—	—	—	0	1	1	3
Montana§	—	0	0	—	—	—	0	0	—	—	—	0	1	1	1
Nevada§	—	0	3	16	16	—	0	2	5	1	1	2	6	76	100
New Mexico§	—	0	0	—	—	—	0	0	—	—	—	1	7	34	52
Utah	—	0	5	15	31	—	0	3	8	21	—	0	2	6	12
Wyoming§	—	0	2	12	30	—	0	1	1	9	—	0	1	1	—
Pacific	—	0	0	—	—	—	0	1	2	—	7	38	57	1,300	1,472
Alaska	—	0	0	—	—	—	0	0	—	—	—	0	1	5	7
California	N	0	0	N	N	—	0	0	—	—	3	35	54	1,180	1,301
Hawaii	—	0	0	—	—	—	0	1	2	—	—	0	1	5	15
Oregon§	N	0	0	N	N	—	0	0	—	—	—	0	6	13	14
Washington	N	0	0	N	N	—	0	0	—	—	4	2	12	97	135
American Samoa	U	0	0	U	U	U	0	1	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	N	0	0	N	N	—	0	0	—	—	—	0	1	3	—
Puerto Rico	N	0	0	N	N	—	0	0	—	—	9	3	11	113	98
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U

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* Incidence data for reporting years 2006 and 2007 are 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 15, 2007, and September 16, 2006 (37th Week)*

Reporting area	Varicella (chickenpox)					West Nile virus disease†									
						Neuroinvasive					Nonneuroinvasive§				
	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006	Current week	Previous 52 weeks		Cum 2007	Cum 2006
		Med	Max				Med	Max				Med	Max		
United States	365	795	2,813	25,925	32,627	1	1	98	573	1,352	6	2	224	1,409	2,553
New England	8	18	124	504	3,217	—	0	2	4	9	—	0	2	3	3
Connecticut	—	0	76	2	1,149	—	0	2	3	7	—	0	1	1	2
Maine¶	—	0	7	—	176	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	1	—	1,141	—	0	1	1	2	—	0	2	2	1
New Hampshire	1	8	17	221	252	—	0	0	—	—	—	0	0	—	—
Rhode Island¶	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Vermont¶	7	9	66	281	499	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	97	111	195	3,346	3,461	—	0	2	5	24	—	0	0	—	12
New Jersey	N	0	0	N	N	—	0	0	—	2	—	0	0	—	3
New York (Upstate)	N	0	0	N	N	—	0	1	—	7	—	0	0	—	4
New York City	—	0	0	—	—	—	0	2	4	8	—	0	0	—	4
Pennsylvania	97	111	195	3,346	3,461	—	0	1	1	7	—	0	0	—	1
E.N. Central	66	229	568	7,258	10,531	—	0	26	27	221	—	0	11	15	156
Illinois	—	2	11	105	100	—	0	11	20	118	—	0	4	8	81
Indiana	—	0	0	—	—	—	0	3	3	22	—	0	6	4	45
Michigan	14	97	258	2,921	3,145	—	0	9	1	40	—	0	2	—	12
Ohio	52	107	449	3,435	6,508	—	0	4	1	30	—	0	2	2	9
Wisconsin	—	19	80	797	778	—	0	1	2	11	—	0	1	1	9
W.N. Central	4	32	136	1,234	1,320	1	0	35	159	214	1	0	94	511	459
Iowa	N	0	0	N	N	—	0	3	6	21	—	0	3	8	15
Kansas	1	8	52	439	252	—	0	3	9	15	—	0	6	17	11
Minnesota	—	0	0	—	—	1	0	11	32	31	1	0	11	46	33
Missouri	3	16	78	649	985	—	0	7	25	47	—	0	1	5	9
Nebraska¶	N	0	0	N	N	—	0	3	8	43	—	0	13	62	202
North Dakota	—	0	60	84	44	—	0	9	38	20	—	0	44	241	117
South Dakota	—	1	15	62	39	—	0	8	41	37	—	0	28	132	72
S. Atlantic	62	100	239	3,584	3,229	—	0	6	21	16	—	0	3	14	11
Delaware	—	1	6	33	51	—	0	0	—	—	—	0	0	—	—
District of Columbia	—	0	8	14	27	—	0	0	—	—	—	0	1	—	1
Florida	35	18	77	897	N	—	0	1	3	3	—	0	0	—	—
Georgia	N	0	0	N	N	—	0	5	14	2	—	0	3	10	5
Maryland¶	N	0	0	N	N	—	0	2	1	10	—	0	1	2	1
North Carolina	—	0	0	—	—	—	0	1	—	—	—	0	0	—	—
South Carolina¶	1	18	72	715	841	—	0	1	1	—	—	0	1	2	—
Virginia¶	20	28	190	1,157	1,238	—	0	1	2	—	—	0	1	—	4
West Virginia	6	23	50	768	1,072	—	0	0	—	1	—	0	0	—	—
E.S. Central	11	4	571	367	27	—	0	8	37	109	—	0	8	40	87
Alabama¶	11	4	571	364	26	—	0	2	12	8	—	0	1	1	—
Kentucky	N	0	0	N	N	—	0	1	2	4	—	0	0	—	1
Mississippi	—	0	2	3	1	—	0	7	21	82	—	0	8	38	80
Tennessee¶	N	0	0	N	N	—	0	1	2	15	—	0	1	1	6
W.S. Central	92	170	1,640	7,678	8,879	—	0	19	84	344	—	0	14	37	193
Arkansas¶	1	13	105	542	630	—	0	2	7	24	—	0	1	1	5
Louisiana	—	2	11	94	181	—	0	6	1	82	—	0	8	1	69
Oklahoma	—	0	0	—	—	—	0	9	30	22	—	0	7	24	14
Texas¶	91	158	1,534	7,042	8,068	—	0	11	46	216	—	0	5	11	105
Mountain	25	56	131	1,926	1,963	—	0	28	145	338	2	1	107	638	1,383
Arizona	—	0	0	—	—	—	0	10	10	21	1	0	14	21	27
Colorado	24	22	62	760	1,035	—	0	13	60	65	—	0	48	269	268
Idaho¶	N	0	0	N	N	—	0	2	1	135	—	0	29	69	830
Montana¶	1	5	40	301	N	—	0	11	32	12	1	0	22	103	22
Nevada¶	—	0	1	1	9	—	0	1	2	34	—	0	3	7	88
New Mexico¶	—	5	37	300	313	—	0	6	19	2	—	0	4	12	3
Utah	—	15	73	546	572	—	0	5	10	55	—	0	6	16	98
Wyoming¶	—	0	11	18	34	—	0	4	11	14	—	0	29	141	47
Pacific	—	0	9	28	—	—	0	16	91	77	3	0	20	151	249
Alaska	—	0	9	28	N	—	0	0	—	—	—	0	0	—	—
California	—	0	0	—	N	—	0	15	88	72	3	0	19	143	186
Hawaii	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Oregon¶	N	0	0	N	N	—	0	1	3	5	—	0	2	8	60
Washington	N	0	0	N	N	—	0	0	—	—	—	0	0	—	3
American Samoa	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	—	—	U	U	U	—	—	U	U	U	—	—	U	U
Guam	—	6	30	144	169	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	11	30	467	425	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	U	0	0	U	U	U	0	0	U	U	U	0	0	U	U

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Incidence data for reporting years 2006 and 2007 are provisional.
† 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 notifiable in all states. Data from states where the condition is not notifiable are excluded from this table, except 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 15, 2007 (37th Week)

Reporting Area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
New England	523	319	140	35	10	17	37
Boston, MA	140	76	46	10	3	4	13
Bridgeport, CT	23	11	8	1	2	1	4
Cambridge, MA	15	12	1	1	—	—	2
Fall River, MA	26	16	7	3	—	—	1
Hartford, CT	47	24	13	6	—	4	4
Lowell, MA	16	12	4	—	—	—	1
Lynn, MA	15	13	2	—	—	—	—
New Bedford, MA	22	13	7	2	—	—	1
New Haven, CT	48	30	10	3	3	2	2
Providence, RI	52	33	14	4	—	1	2
Somerville, MA	3	2	—	—	1	—	—
Springfield, MA	39	27	7	3	1	1	1
Waterbury, CT	24	17	7	—	—	—	4
Worcester, MA	53	33	14	2	—	4	2
Mid. Atlantic	1,881	1,283	408	126	29	32	104
Albany, NY	39	25	6	5	1	2	3
Allentown, PA	24	18	4	—	2	—	—
Buffalo, NY	84	51	23	6	1	3	4
Camden, NJ	11	3	3	2	—	3	1
Elizabeth, NJ	18	13	4	1	—	—	—
Erie, PA	49	41	6	1	—	1	2
Jersey City, NJ	18	14	4	—	—	—	1
New York City, NY	1,038	711	226	77	10	11	42
Newark, NJ	18	7	5	4	2	—	3
Paterson, NJ	27	9	12	2	3	1	4
Philadelphia, PA	189	113	54	13	2	7	18
Pittsburgh, PA§	27	22	3	1	—	1	2
Reading, PA	37	31	5	1	—	—	3
Rochester, NY	138	105	21	5	5	2	14
Schenectady, NY	13	7	5	1	—	—	1
Scranton, PA	21	16	4	—	1	—	—
Syracuse, NY	77	59	12	3	2	1	5
Trenton, NJ	22	15	4	3	—	—	—
Utica, NY	10	6	4	—	—	—	—
Yonkers, NY	21	17	3	1	—	—	1
E.N. Central	2,139	1,362	531	141	52	53	135
Akron, OH	61	44	12	4	1	—	4
Canton, OH	56	43	10	1	1	1	6
Chicago, IL	392	222	117	35	11	7	21
Cincinnati, OH	83	40	27	9	1	6	6
Cleveland, OH	240	163	57	10	8	2	10
Columbus, OH	194	117	43	15	7	12	20
Dayton, OH	133	89	32	10	2	—	7
Detroit, MI	168	91	54	14	4	5	16
Evansville, IN	57	39	11	4	1	2	2
Fort Wayne, IN	75	48	20	4	2	1	4
Gary, IN	6	2	3	1	—	—	—
Grand Rapids, MI	56	36	14	1	1	4	7
Indianapolis, IN	183	119	39	12	3	10	13
Lansing, MI	28	18	8	1	1	—	1
Milwaukee, WI	94	61	24	7	2	—	5
Peoria, IL	40	27	8	1	2	2	6
Rockford, IL	40	30	8	1	1	—	—
South Bend, IN	73	52	15	3	2	1	—
Toledo, OH	114	83	24	5	2	—	5
Youngstown, OH	46	38	5	3	—	—	2
W.N. Central	636	399	146	45	23	23	43
Des Moines, IA	64	39	20	2	1	2	4
Duluth, MN	34	24	5	5	—	—	3
Kansas City, KS	32	18	11	2	1	—	3
Kansas City, MO	96	69	13	3	5	6	5
Lincoln, NE	35	25	9	1	—	—	4
Minneapolis, MN	67	32	21	7	6	1	3
Omaha, NE	89	60	21	5	1	2	5
St. Louis, MO	82	40	20	9	6	7	6
St. Paul, MN	59	42	13	1	1	2	2
Wichita, KS	78	50	13	10	2	3	8
S. Atlantic	1,272	786	308	103	41	34	69
Atlanta, GA	136	77	37	13	3	6	5
Baltimore, MD	143	68	41	22	9	3	7
Charlotte, NC	121	85	20	7	7	2	11
Jacksonville, FL	229	145	56	20	6	2	17
Miami, FL	80	45	18	10	1	6	2
Norfolk, VA	44	25	6	6	3	4	—
Richmond, VA	65	41	17	6	—	1	4
Savannah, GA	64	39	18	4	3	—	3
St. Petersburg, FL	43	29	9	1	2	2	2
Tampa, FL	204	140	52	8	3	1	11
Washington, D.C.	129	81	33	4	4	7	6
Wilmington, DE	14	11	1	2	—	—	1
E.S. Central	714	465	163	52	18	16	49
Birmingham, AL	150	100	35	10	2	3	15
Chattanooga, TN	86	62	16	3	4	1	3
Knoxville, TN	82	53	19	7	2	1	4
Lexington, KY	45	26	14	3	1	1	5
Memphis, TN	95	60	24	5	1	5	7
Mobile, AL	53	28	13	10	2	—	2
Montgomery, AL	51	29	15	2	4	1	5
Nashville, TN	152	107	27	12	2	4	8
W.S. Central	1,393	882	335	105	36	35	74
Austin, TX	70	41	14	9	3	3	4
Baton Rouge, LA	U	U	U	U	U	U	U
Corpus Christi, TX	63	41	19	2	1	—	4
Dallas, TX	189	110	51	17	8	3	9
El Paso, TX	104	65	24	9	2	4	4
Fort Worth, TX	129	87	34	3	3	2	10
Houston, TX	348	204	94	31	7	12	18
Little Rock, AR	78	50	16	5	3	4	4
New Orleans, LA¶	U	U	U	U	U	U	U
San Antonio, TX	191	131	42	13	3	2	9
Shreveport, LA	84	51	23	8	1	1	5
Tulsa, OK	137	102	18	8	5	4	7
Mountain	857	540	197	70	28	20	44
Albuquerque, NM	U	U	U	U	U	U	U
Boise, ID	48	34	10	1	2	1	4
Colorado Springs, CO	60	37	13	7	2	1	1
Denver, CO	77	29	31	12	3	2	—
Las Vegas, NV	220	142	52	18	3	5	15
Ogden, UT	26	21	4	1	—	—	1
Phoenix, AZ	179	103	40	15	12	8	6
Pueblo, CO	39	33	6	—	—	—	4
Salt Lake City, UT	120	78	23	13	3	3	8
Tucson, AZ	88	63	18	3	3	—	5
Pacific	1,344	897	310	80	28	28	93
Berkeley, CA	14	7	3	2	—	2	—
Fresno, CA	106	64	26	10	3	3	5
Glendale, CA	U	U	U	U	U	U	U
Honolulu, HI	73	53	13	4	—	3	7
Long Beach, CA	74	49	16	4	4	1	11
Los Angeles, CA	U	U	U	U	U	U	U
Pasadena, CA	15	9	3	2	—	1	1
Portland, OR	123	86	27	5	1	3	14
Sacramento, CA	185	113	52	12	2	6	5
San Diego, CA	189	127	44	13	3	2	14
San Francisco, CA	119	72	33	8	3	3	9
San Jose, CA	156	113	28	7	5	3	12
Santa Cruz, CA	24	11	9	3	1	—	—
Seattle, WA	102	71	24	5	2	—	6
Spokane, WA	55	37	15	1	1	1	7
Tacoma, WA	109	85	17	4	3	—	2
Total	10,759**	6,933	2,538	757	265	258	648

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.

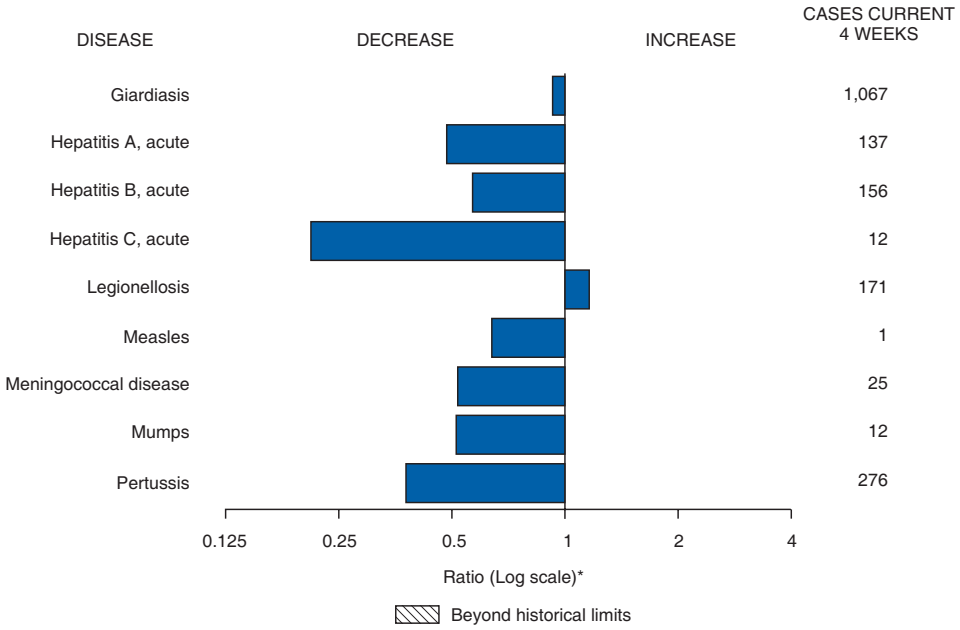
† Pneumonia and influenza.

§ 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.

¶ Because of Hurricane Katrina, weekly reporting of deaths has been temporarily disrupted.

** Total includes unknown ages.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals September 15, 2007, with historical data



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

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