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Bullying Among Middle School and High School Students — Massachusetts, 2009

Multiple studies have documented the association between substance use, poor academic achievement, mental health problems, and bullying (*1,2*). A small but growing body of research suggests that family violence also is associated with bullying (*3*). To assess the association between family violence and other risk factors and being involved in or affected by bullying as a bully, victim, or bully-victim (those who reported being both bullies and victims of bullying), the Massachusetts Department of Public Health and CDC analyzed data from the 2009 Massachusetts Youth Health Survey. This report summarizes the results of that analysis, which showed significant differences in risk factors for persons in all three bullying categories, compared with persons who reported being neither bullies nor victims. The adjusted odds ratios (AORs) for middle school students for being physically hurt by a family member were 2.9 for victims, 4.4 for bullies, and 5.0 for bully-victims, and for witnessing violence in the family were 2.6, 2.9, and 3.9, respectively, after adjusting for potential differences by age group, sex, and race/ethnicity. For high school students, the AORs for being physically hurt by a family member were 2.8 for victims, 3.8 for bullies, and 5.4 for bully-victims, and for witnessing violence in the family were 2.3, 2.7, and 6.8, respectively. As schools and health departments continue to address the problem of bullying and its consequences, an understanding of the broad range of associated risk factors is important for creating successful prevention and intervention strategies that include involvement by families.

The Massachusetts Youth Health Survey is an anonymous, paper and pencil survey conducted every 2 years. The survey employs a two-stage cluster sample design. In the first stage, schools are randomly selected to participate. The probability of selection is proportional to the number of students enrolled. In the second sampling stage, classes are randomly selected for participation, and all students in those classes are invited to participate. In 2009, the survey was administered during January–June and completed during one class period in 138 public middle schools and high schools. Sample sizes were 2,859 students from middle schools and 2,948 students from high schools. Response rates among students were 90.6% and 87.2% for middle schools and high schools, respectively. Cooperation rates were 61.6% for middle schools and 76.5% for high schools. Overall response rates were 55.8% for middle school students and 66.7% for high school students. A weight was applied to each survey record to adjust for school nonresponse, student nonresponse, and distribution of students by grade, sex, and race/ethnicity.

Students were asked two questions related to bullying. The first question was "During the past 12 months, how many times have you been bullied at school (being bullied included being repeatedly teased, threatened, hit, kicked, or excluded by another student or group of students)?" Response categories ranged from zero times to 12 or more times. Those who reported being bullied one or more times were categorized as victims. The second question, which immediately followed the first, consisted of two parts. Students were asked "Did you do any of the following in the past 12 months? a) bully or push someone around, and b) initiate or start a physical fight with someone." Response options for the second question were yes or no for each part. Those who responded yes to part "a" were categorized as bullies. Responses to part "b" were not considered in categorizing students as bullies because not enough information was available to determine whether or not initiating a physical fight should be considered bullying.

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Responses to the two bullying questions were combined to create four mutually exclusive categories: 1) bullies were those who responded that they were not bullied but acknowledged that they were bullies, 2) victims were those who responded that they had been bullied but were not bullies, 3) bully-victims were those who responded both that they had been bullied and that they were bullies, and 4) "neither" were those who responded that they had been neither bullied nor were bullies. Students with missing responses to the two bully questions were excluded from analysis (55 middle school students and 39 high school students).

The questionnaires for middle schools and high schools included identical questions regarding demographics and suspected risk factors such as poor grades, mental and physical health, suicidality, experiences with family violence, overweight or obesity, and alcohol, tobacco, and drug use. Percentages of bullies, victims, bully-victims, and neither were calculated for each risk factor (bivariate analysis). Statistically significant differences were determined by whether the weighted estimates had overlapping or nonoverlapping 95% confidence intervals (CIs). In addition, AORs were calculated, controlling for age group, sex, and race/ethnicity using logistic regression for each outcome of interest, with "neither" as the reference group (multivariate analysis). AORs were considered statistically significant if CIs did not contain 1.0.

A greater percentage of middle school students (26.8%) than high school students (15.6%) were categorized as victims of bullying, and for both groups of students, the percentage of victims was greater than the percentage of bullies (7.5% for middle school and 8.4% for high school) and bully-victims (9.6% for middle school and 6.5% for high school) (Table 1). A significantly smaller percentage of middle school students (56.0%) than high school students (69.5%) were categorized as neither bullies nor victims. Among both middle school and high school students, a greater percentage of males (9.9% for middle school and 12.1% for high school) than females (5.0% for middle school and 4.8% for high school) were categorized as bullies. However, a greater percentage of females (29.8% for middle school and 17.8% for high school) than males (24.1% for middle school and 13.3% for high school) were categorized as victims. No significant difference between males and females was observed in the percentage categorized as bully-victims, either in middle school or high school.

Compared with students who were neither bullies nor bullying victims, both middle and high school bully-victims were more than three times as likely to report seriously considering suicide (24.9% versus 4.5% for middle school; 22.5% versus 6.2% for high school), intentionally injuring themselves (40.9% versus 8.4% for middle school; 28.5% versus 8.6% for high school), being physically hurt by a family member (23.2% versus 5.1% for middle school; 20.4% versus 4.7% for high school), and witnessing violence in their family (22.8% versus 6.6% for middle school; 30.6% versus 7.2% for high school) (Table 2).

Exposure to violent family encounters was more common among bully-victims than among bullies, and more common

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TABLE 1. Number and percentage of victims, bullies, and bully-victims, by selected demographic characteristics — Massachusetts Youth Health Survey, 2009

Characteristic	Total no. in sample*	Neither†			Victims§			Bullies¶			Bully-victims**		
		No.	%††	(CI)	No.	%	(CI)	No.	%	(CI)	No.	%	(CI)
Middle school													
Overall	**2,859**	**1569**	**56.0**	**(54.1–58.0)**	**742**	**26.8**	**(24.8–28.8)**	**220**	**7.5**	**(6.2–8.8)**	**273**	**9.6**	**(8.3–10.9)**
Age group (yrs)													
11–12	1,267	716	57.4	(54.6–60.2)	352	28.5	(26.0–31.1)	73	5.5	(4.1–6.9)	107	8.6	(6.8–10.4)
13–16	1,569	846	55.2	(52.5–57.8)	385	25.4	(22.6–28.1)	145	9.2	(7.4–10.9)	162	10.3	(8.7–11.9)
Sex													
Female	1,363	742	55.4	(52.9–57.9)	397	29.8	(26.9–32.6)	70	5.0	(3.7–6.3)	134	9.8	(8.1–11.6)
Male	1,438	797	56.7	(53.9–59.4)	332	24.1	(21.7–26.5)	145	9.9	(7.9–11.9)	133	9.4	(7.5–11.2)
Race/Ethnicity													
White, non-Hispanic	1,727	956	56.1	(53.8–58.4)	502	29.4	(27.0–31.9)	97	5.8	(4.4–7.2)	149	8.7	(7.3–10.1)
Other§§	939	506	55.3	(50.9–59.8)	196	21.1	(17.6–24.6)	111	12.3	(9.9–14.7)	104	11.3	(9.2–13.4)
High school													
Overall	**2,948**	**2,029**	**69.5**	**(67.2–71.7)**	**450**	**15.6**	**(13.8–17.4)**	**246**	**8.4**	**(7.3–9.5)**	**184**	**6.5**	**(5.6–7.4)**
Age group (yrs)													
14–16	1,723	1,124	66.3	(63.9–68.8)	301	17.7	(15.5–19.9)	141	8.4	(6.9–9.9)	127	7.6	(6.2–8.9)
17–18	1,216	902	74.4	(71.6–77.3)	146	12.2	(9.6–14.8)	105	8.5	(6.6–10.4)	56	4.9	(3.6–6.2)
Sex													
Female	1,484	1,068	72.3	(69.2–75.5)	258	17.8	(15.5–20.2)	74	4.8	(3.5–6.1)	74	5.0	(3.8–6.3)
Male	1,412	931	66.9	(64.0–69.8)	181	13.3	(10.8–15.8)	167	12.1	(10.5–13.7)	106	7.7	(6.0–9.4)
Race/Ethnicity													
White, non-Hispanic	1,915	1,299	68.3	(65.7–70.8)	338	17.5	(15.5–19.6)	146	7.9	(6.7–9.1)	116	6.3	(5.2–7.4)
Other	962	690	73.2	(69.6–76.7)	101	10.3	(8.2–12.4)	94	9.8	(7.9–11.6)	62	6.8	(5.1–8.5)

Abbreviation: CI = confidence interval.

* Subgroups might not sum to total number in sample because of missing responses.

† Students who responded 1) zero to the question "During the past 12 months, how many times have you been bullied at school? (being bullied included being repeatedly teased, threatened, hit, kicked, or excluded by another student or group of students)" and 2) no to the question regarding whether they had bullied or pushed someone around.

§ Students who responded 1) one or more to the question "During the past 12 months, how many times have you been bullied at school?" and 2) no to the question regarding whether they had bullied or pushed someone around.

¶ Students who responded 1) yes to the question regarding whether they had bullied or pushed someone around and 2) zero to the question "During the past 12 months, how many times have you been bullied at school?"

** Students who responded 1) one or more to the question "During the past 12 months, how many times have you been bullied at school?" and 2) yes to the question regarding whether they had bullied or pushed someone around.

†† Weighted percentages. Percentages might not sum to 100% because of rounding.

§§ Students who self-identified as Hispanic, regardless of race, and students who self-identified as American Indian or Alaska Native, Asian, black or African American, Native Hawaiian or Other Pacific Islander, or multiracial.

among bullies than victims of bullying. Among middle school students, 23.2% of bully-victims reported being physically hurt by a family member and 22.8% reported witnessing violence, compared with 19.4% and 17.4%, respectively, among bullies and 13.6% and 14.8%, respectively, among victims of bullying. Among high school students, comparisons by category were similar (Table 2).

Sizable percentages of both bullies and bully-victims acknowledged recent use of alcohol (32.7% and 22.7%, respectively, for middle school students; 63.2% and 56.3%, respectively, for high school) and recent use of drugs (32.0% and 19.9%, respectively, for middle school; 47.2% and 41.0%, respectively, for high school). In comparison, smaller percentages of bullying victims and students who had been neither bullies nor victims acknowledged recent use of alcohol (6.9% and 8.1%, respectively, for middle school students; 31.7% and 38.5%, respectively, for high school) and recent use of drugs (5.0% and 4.5%, respectively, for middle school; 19.6% and 23.1%, respectively, for high school) (Table 2).

After the models were adjusted for age group, sex, and race/ethnicity, and AORs were calculated using as referents those students who had been neither bullies nor victims, the odds were significantly elevated for victims, bullies, and bully-victims for the majority of risk factors considered (Table 3). Among middle school students, the AORs for seriously considering suicide were 3.0 for victims, 4.1 for bullies, and 6.6 for bully-victims; for being physically hurt by a family member, 2.9, 4.4, and 5.0, respectively; for intentionally injuring themselves, 2.3, 3.1, and 7.4, respectively; for witnessing violence in the family, 2.6, 2.9, and 3.9, respectively; for feeling sad or hopeless, 2.3, 2.1, 4.2, respectively; and for needing to talk to someone other than a family member about feelings or problems, 2.8, 2.1, and 5.2, respectively. Similar patterns were observed among high school students (Table 3).

TABLE 2. Percentage of victims, bullies, and bully-victims, by selected risk factors — Massachusetts Youth Health Survey, 2009

Risk factor	No.*	Neither† %	Neither† (95% CI)	Victims§ %	Victims§ (95% CI)	Bullies¶ %	Bullies¶ (95% CI)	Bully-victims** %	Bully-victims** (95% CI)
Middle school									
Poor grades (mostly D or F)	2,557	3.9	(2.7–5.1)	4.1	(2.6–5.7)	19.3	(12.4–26.1)	11.0	(6.9–15.2)
Needed to talk to someone other than family member about feeling or problems in past 12 months	2,755	25.3	(22.9–27.7)	45.3	(41.2–49.4)	37.3	(31.0–43.5)	63.8	(57.7–69.9)
Sad or hopeless†† in past 12 months	2,777	11.7	(9.9–13.4)	22.9	(19.1–26.7)	22.6	(15.7–29.6)	36.8	(31.3–42.3)
Seriously considered suicide in past 12 months	2,767	4.5	(3.5–5.4)	11.7	(9.4–14.0)	16.1	(10.8–21.3)	24.9	(19.0–30.8)
Attempted suicide in past 12 months	2,719	2.5	(1.6–3.3)	4.9	(3.3–6.5)	11.3	(7.0–15.5)	16.8	(10.8–22.7)
Intentionally injured self (not suicide attempt) in past 12 months	2,679	8.4	(6.8–10.0)	17.4	(14.8–20.0)	21.5	(13.9–29.0)	40.9	(34.6–47.3)
Rarely or never use seatbelt when passenger§§	2,798	7.2	(5.3–9.1)	6.3	(4.2–8.4)	24.6	(17.9–31.4)	15.4	(10.0–20.8)
Physically hurt by family member in past 12 months	2,723	5.1	(3.9–6.4)	13.6	(10.7–16.5)	19.4	(13.3–25.4)	23.2	(17.5–29.0)
Witnessed violence in family in past 12 months	2,709	6.6	(5.3–7.9)	14.8	(12.0–17.5)	17.4	(12.6–22.3)	22.8	(17.8–27.7)
Alcohol use in past 30 days	2,641	8.1	(6.3–10.0)	6.9	(4.5–9.2)	32.7	(25.9–39.5)	22.7	(16.9–28.4)
Drug use in past 30 days	2,608	4.5	(3.3–5.7)	5.0	(3.3–6.7)	32.0	(25.3–38.7)	19.9	(14.6–25.3)
Smoked cigarettes in past 30 days	2,688	2.8	(1.7–3.8)	2.1	(1.0–3.3)	15.0	(9.0–21.1)	11.5	(7.8–15.1)
Disability (physical, emotional, or learning)	2,230	13.8	(11.9–15.7)	27.5	(22.8–32.1)	21.6	(15.6–27.7)	35.7	(29.3–42.1)
Overweight or obese¶¶	2,167	27.3	(24.3–30.3)	27.1	(22.5–31.6)	32.2	(24.6–39.9)	28.1	(21.6–34.6)
Fair or poor overall health	2,723	2.7	(1.8–3.6)	5.7	(4.0–7.4)	7.2	(3.0–10.5)	12.4	(8.1–16.8)
Parent(s) would be "extremely upset" if found out drank alcohol regularly†††	2,785	87.7	(85.4–89.9)	88.4	(86.0–90.8)	63.3	(55.5–71.2)	73.6	(68.0–79.2)
High school									
Poor grades (mostly D or F)	2,768	5.7	(4.1–7.3)	5.5	(3.0–8.1)	14.7	(9.1–20.3)	12.7	(7.4–17.9)
Needed to talk to someone other than family member about feeling or problems in past 12 months	2,888	44.9	(42.1–47.7)	66.4	(61.6–71.1)	51.4	(43.2–59.7)	61.0	(52.9–69.1)
Sad or hopeless in past 12 months	2,886	17.2	(14.9–19.6)	36.7	(31.4–42.0)	24.8	(19.2–30.5)	39.6	(31.5–47.7)
Seriously considered suicide in past 12 months	2,891	6.2	(5.0–7.4)	20.4	(16.3–24.5)	13.3	(9.8–16.8)	22.5	(16.6–28.5)
Attempted suicide in past 12 months	2,855	2.7	(1.7–3.8)	10.0	(7.0–12.9)	6.4	(3.5–9.2)	11.4	(6.6–16.2)
Intentionally injured self (not suicide attempt) in past 12 months	2,770	8.6	(7.3–9.9)	28.3	(23.9–32.7)	16.8	(12.0–21.6)	28.5	(21.7–35.2)
Rarely or never use seatbelt when passenger	1,995	12.7	(9.5–15.9)	8.2	(4.7–11.6)	27.7	(18.3–37.1)	19.2	(12.5–25.8)
Physically hurt by family member in past 12 months	2,869	4.7	(3.6–5.8)	12.7	(8.2–17.2)	13.6	(9.6–17.7)	20.4	(15.5–25.3)
Witnessed violence in family in past 12 months	2,871	7.2	(5.8–8.5)	14.9	(10.6–19.2)	15.8	(10.2–21.3)	30.6	(23.6–37.7)
Alcohol use in past 30 days	2,848	38.5	(35.2–41.8)	31.7	(26.5–36.8)	63.2	(56.2–70.1)	56.3	(48.9–63.7)
Drug use in past 30 days	2,844	23.1	(19.9–26.3)	19.6	(15.2–24.0)	47.2	(39.4–55.0)	41.0	(34.6–47.5)
Smoked cigarettes in past 30 days	2,871	13.3	(11.1–15.4)	15.7	(12.0–19.4)	28.0	(20.6–35.4)	29.6	(21.3–38.0)
Disability (physical, emotional, or learning)	2,553	22.5	(19.9–25.2)	34.4	(29.5–39.3)	27.4	(21.0–33.8)	45.8	(35.8–55.9)
Overweight or obese	2,624	24.3	(21.3–27.2)	27.7	(23.6–31.9)	28.2	(22.1–34.3)	28.5	(20.4–36.6)
Fair or poor overall health	2,879	6.3	(5.1–7.6)	9.3	(6.6–12.1)	9.0	(5.1–12.9)	8.5	(4.4–12.6)
Parent(s) would be "extremely upset" if found out drank alcohol regularly	2,885	59.2	(56.1–62.3)	68.2	(63.7–72.7)	39.7	(33.3–46.2)	55.1	(48.0–62.1)

Abbreviation: CI = confidence interval.

* Number of respondents who answered both the bullying questions and the risk factor questions.

† Students who responded 1) zero to the question "During the past 12 months, how many times have you been bullied at school? (being bullied included being repeatedly teased, threatened, hit, kicked, or excluded by another student or group of students)" and 2) no to the question regarding whether they had bullied or pushed someone around.

§ Students who responded 1) one or more to the question "During the past 12 months, how many times have you been bullied at school?" and 2) no to the question regarding whether they had bullied or pushed someone around.

¶ Students who responded 1) yes to the question regarding whether they had bullied or pushed someone around and 2) zero to the question "During the past 12 months, how many times have you been bullied at school?"

** Students who responded 1) one or more to the question "During the past 12 months, how many times have you been bullied at school?" and 2) yes to the question regarding whether they had bullied or pushed someone around.

†† Students who answered yes to the question "During the past 12 months, did you ever feel so sad or hopeless almost every day for 2 weeks or more in a row that you stopped doing some usual activities?"

§§ Students who responded "never" or "rarely" when asked how often they wore a seatbelt as a passenger. Other choices were "sometimes," "most of the time," and "always."

¶¶ Includes students whose body mass index (BMI) was calculated as at or above the 85th percentile and lower than the 95th percentile (overweight) and students whose BMI was calculated as at or above the 95th percentile (obese) among persons of the same age and sex.

*** Students who responded "fair" or "poor" when asked about their health in general. Other choices were "excellent," "very good," and "good."

††† Students who responded "extremely upset" when asked how their parents would react if they found out their child drank alcohol regularly. Other choices were "fairly upset," "a little upset," and "not upset at all."

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TABLE 3. Adjusted odds ratios (AORs)* for victims, bullies, and bully-victims, by selected risk factors — Massachusetts Youth Health Survey, 2009

Risk factor	Victims†		Bullies§		Bully-victims¶	
	AOR	(95% CI**)	AOR	(95% CI)	AOR	(95% CI)
Middle school						
Poor grades (mostly D or F)	1.0	(0.6–1.8)	5.0	(3.0–8.2)	2.6	(1.6–4.3)
Needed to talk to someone other than family member about feeling or problems in past 12 months	2.8	(2.3–3.5)	2.1	(1.6–2.8)	5.2	(3.7–7.5)
Sad or hopeless** in past 12 months	2.3	(1.8–2.9)	2.1	(1.4–3.5)	4.2	(3.2–5.5)
Seriously considered suicide in past 12 months	3.0	(2.2–4.2)	4.1	(2.5–6.6)	6.6	(4.4–9.9)
Attempted suicide in past 12 months	2.1	(1.3–3.3)	4.4	(2.6–7.7)	7.5	(4.4–12.8)
Intentionally injured self (not suicide attempt) in past 12 months	2.3	(1.8–3.0)	3.1	(1.8–5.1)	7.4	(5.4–10.3)
Rarely or never use seatbelt when passenger††	0.9	(0.6–1.3)	3.8	(2.5–5.9)	1.9	(1.2–3.2)
Physically hurt by family member in past 12 months	2.9	(2.0–4.1)	4.4	(2.7–7.1)	5.0	(3.5–7.2)
Witnessed violence in family in past 12 months	2.6	(1.9–3.5)	2.9	(1.8–4.4)	3.9	(3.0–5.2)
Alcohol use in past 30 days	0.8	(0.5–1.2)	5.3	(3.8–7.5)	2.6	(1.6–4.2)
Drug use in past 30 days	1.2	(0.7–1.8)	9.4	(6.1–14.3)	4.7	(3.1–7.1)
Smoked cigarettes in past 30 days	0.5	(0.2–1.1)	5.1	(3.1–8.3)	3.8	(2.3–6.2)
Disability (physical, emotional, or learning)	2.4	(1.8–3.1)	1.8	(1.2–2.7)	3.3	(2.3–4.6)
Overweight or obese§§	1.0	(0.8–1.4)	1.2	(0.8–1.7)	1.0	(0.7–1.4)
Fair or poor overall health	2.1	(1.4–3.4)	2.6	(1.4–4.9)	4.3	(2.6–7.3)
Parent(s) would be "extremely upset" if found out drank alcohol regularly	1.1	(0.8–1.5)	0.3	(0.2–0.4)	0.5	(0.3–0.7)
High school						
Poor grades (mostly D or F)	1.0	(0.6–1.6)	2.8	(1.8–4.5)	2.1	(1.3–3.4)
Needed to talk to someone other than family member about feeling or problems in past 12 months	2.6	(2.1–3.3)	1.7	(1.2–2.3)	2.5	(1.8–3.4)
Sad or hopeless in past 12 months	3.0	(2.4–3.9)	2.0	(1.5–2.8)	3.7	(2.6–5.3)
Seriously considered suicide in past 12 months	3.9	(2.9–5.3)	2.9	(2.1–4.2)	4.9	(3.2–7.5)
Attempted suicide in past 12 months	4.3	(2.7–6.9)	3.1	(1.6–5.8)	5.7	(2.9–11.1)
Intentionally injured self (not suicide attempt) in past 12 months	4.2	(3.4–5.3)	2.7	(1.9–3.9)	5.3	(3.7–7.4)
Rarely or never use seatbelt when passenger	0.6	(0.4–0.9)	2.5	(1.5–4.3)	1.5	(0.9–2.5)
Physically hurt by family member in past 12 months	2.8	(1.8–4.3)	3.8	(2.5–5.7)	5.4	(3.9–7.5)
Witnessed violence in family in past 12 months	2.3	(1.6–3.4)	2.7	(1.7–4.4)	6.8	(4.5–10.3)
Alcohol use in past 30 days	0.8	(0.6–0.9)	3.0	(2.2–4.1)	2.7	(2.0–3.7)
Drug use in past 30 days	0.9	(0.6–1.1)	3.1	(2.3–4.1)	2.7	(1.9–3.7)
Smoked cigarettes in past 30 days	1.2	(0.9–1.6)	2.8	(2.0–4.0)	3.4	(2.3–5.1)
Disability (physical, emotional, or learning)	1.7	(1.4–2.0)	1.5	(1.1–2.1)	2.9	(1.9–4.2)
Overweight or obese	1.3	(1.0–1.6)	1.1	(0.8–1.6)	1.1	(0.8–1.7)
Fair or poor overall health	1.5	(1.1–2.2)	1.8	(1.1–2.9)	1.5	(0.9–2.4)
Parent(s) would be "extremely upset" if found out drank alcohol regularly	1.4	(1.1–1.7)	0.5	(0.3–0.6)	0.8	(0.6–1.1)

Abbreviation: CI = confidence interval.

* Odds ratios are adjusted for age group, sex, and race/ethnicity. Reference group is those students whose responses categorized them as neither victims nor bullies.

† Students who responded 1) one or more to the question "During the past 12 months, how many times have you been bullied at school?" and 2) no to the question regarding whether they had bullied or pushed someone around.

§ Students who responded 1) yes to the question regarding whether they had bullied or pushed someone around and 2) zero to the question "During the past 12 months, how many times have you been bullied at school?"

¶ Students who responded 1) one or more to the question "During the past 12 months, how many times have you been bullied at school?" and 2) yes to the question regarding whether they had bullied or pushed someone around.

** Students who answered yes to the question "During the past 12 months, did you ever feel so sad or hopeless almost every day for 2 weeks or more in a row that you stopped doing some usual activities?"

†† Students who responded "never" or "rarely" when asked how often they wore a seatbelt as a passenger. Other choices were "sometimes," "most of the time," and "always."

§§ Includes students whose body mass index (BMI) was calculated as at or above the 85th percentile and lower than the 95th percentile (overweight) and students whose BMI was calculated as at or above the 95th percentile (obese) among persons of the same age and sex.

¶¶ Students who responded "fair" or "poor" when asked about their health in general. Other choices were "excellent," "very good," and "good."

*** Students who responded "extremely upset" when asked how their parents would react if they found out their child drank alcohol regularly. Other choices were "fairly upset," "a little upset," and "not upset at all."

Editorial Note

This report presents the first state-specific data on a broad range of risk factors suspected to be associated with bullying among both middle school and high school students. The data indicate sizable prevalences of middle school (43.9%) and high school (30.5%) students involved in or affected by bullying. Among middle school students, 26.8% reported being victims of bullying, 7.5% acknowledged being bullies, and 9.6%

What is already known on this topic?

Studies have documented associations between bullying and substance use, poor academic achievement, and mental health problems, and a limited number of studies have indicated an association with family violence.

What is added by this report?

The findings of increased risk for bullies, victims, and bully-victims of being physically hurt by a family member or witnessing family violence underscore the association between bullying and events outside of the school.

What are the implications for public health practice?

A comprehensive approach that encompasses school officials, students, and their families is needed to prevent bullying among middle school and high school students.

reported being bully-victims. Among high school students, 15.6% reported being victims of bullying, 8.4% acknowledged being bullies, and 6.5% reported being bully-victims.

Multivariate analysis suggested associations between violent family encounters (i.e., being physically hurt or witnessing violence by a family member) and being bullied, bullying, and being a bully-victim. Bully-victims were more likely to report violent family encounters than bullies, and bullies were more likely to report such encounters than victims. This finding expands upon previous documentation of an association between childhood exposure to family violence and subsequent mental health problems (e.g., anxiety and depression) (*4*) and involvement in general physical aggression, dating violence, and weapon-carrying (*5*). The results underscore the importance of primary bullying prevention programs and of comprehensive programs and strategies that involve families. Although evidence of bullying prevention programs changing behavior among U.S. students is mixed (*6*), several violence prevention programs and strategies, including some involving families, have demonstrated effectiveness in decreasing violent behavior.*

The results from this study are consistent with previous findings showing that 1) risks for both depression and suicide are higher among bullies and victims (*7*), 2) many risk factors are more common among bully-victims than students categorized as bullies or victims (*7–9*), and 3) being a bully is associated with alcohol and drug use (*2,9*). These results differ from those presented in some studies (*2,8*), which found males more likely to be bullies and victims. However, in this report, bullying victimization is defined broadly, encompassing physical, verbal, and relational bullying. Because relational bullying, such as social exclusion and spreading rumors, is more prevalent among females (*3*), inclusion of this type of bullying might account for the difference.

The findings in this report are subject to at least five limitations. First, this was a cross-sectional study, and causality cannot be implied. Second, the relatively low overall response rate among middle school students (55.8%) might limit the generalizability of the data, although the sample included classes in 69 middle schools across the state, and no differences were observed by region, urban/rural classification, or student enrollment between schools that chose to participate and those that declined. In addition, the sample was limited to students attending public schools; some data have shown that students attending public schools are more likely than students attending private schools to be bullied (*10*). Third, the definition of being bullied (i.e., being repeatedly teased, threatened, hit, kicked, or excluded by another student or group of students) was much more specific than the definition for bullying (i.e., bully or push someone around), which might account, at least in part, for the greater prevalence of victims than bullies and bully-victims. Fourth, all data were self-reported and subject to recall and social desirability bias. Finally, the sample was limited to students present on the day of survey administration. Those bullied are absent more frequently (*9*) and, therefore, less likely to be included in the sample.

Bullying is a pervasive public health problem requiring comprehensive solutions. Evidence suggests that classroom prevention programs alone in the United States often are unsuccessful in changing bullying behaviors (*6*). In May 2010, Massachusetts joined 44 other states with similar laws by enacting a comprehensive bullying prevention law that covers all types of bullying and requires all school districts to develop, adhere to, and update a plan to address bullying prevention and intervention in consultation with school staff members, families, and community members.

To assist schools in their efforts to implement comprehensive strategies to prevent bullying, other types of violence, and unintentional injuries, CDC developed School Health Guidelines to Prevent Unintentional Injuries and Violence. These guidelines include the following recommendations: 1) establish a social school environment that promotes safety; 2) provide access to health and mental health services; 3) integrate school, family, and community prevention efforts; and 4) provide training to enable staff members to promote safety and prevent violence effectively. Because bullying is associated with many other risk factors, including exposure to violence outside of the school setting, comprehensive strategies that encompass the school, family, and community are most likely to be effective. To assist schools and communities in their efforts to prevent youth violence, including bullying, CDC has launched the national initiative, Striving To Reduce Youth

* Center for the Study and Prevention of Violence. Blueprints for violence prevention. Boulder, CO: University of Colorado at Boulder. Available at http://www.colorado.edu/cspv/blueprints.

Violence Everywhere (STRYVE), which promotes increased awareness that youth violence can be prevented using strategies based on the best available evidence. Links to resources are available on the STRYVE website (http://www.cdc.gov/violenceprevention/stryve).

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State Smoke-Free Laws for Worksites, Restaurants, and Bars — United States, 2000–2010

Secondhand smoke (SHS) exposure causes lung cancer and cardiovascular and respiratory diseases in nonsmoking adults and children, resulting in an estimated 46,000 heart disease deaths and 3,400 lung cancer deaths among U.S. nonsmoking adults each year (*1*). Smoke-free laws that prohibit smoking in all indoor areas of a venue fully protect nonsmokers from involuntary exposure to SHS indoors (*1*). A *Healthy People 2010* objective (27-13) called for enacting laws eliminating smoking in public places and worksites in all 50 states and the District of Columbia (DC); because this objective was not met by 2010, it was retained for *Healthy People 2020* (renumbered as TU-13). To assess progress toward meeting this objective, CDC reviewed state laws restricting smoking in effect as of December 31, 2010. This report summarizes the changes in state smoking restrictions for private-sector worksites, restaurants, and bars that occurred from December 31, 2000 to December 31, 2010. The number of states (including DC) with laws that prohibit smoking in indoor areas of worksites, restaurants, and bars increased from zero in 2000 to 26 in 2010. However, regional disparities remain in policy adoption, with no southern state having adopted a smoke-free law that prohibits smoking in all three venues. The *Healthy People 2020* target on this topic is achievable if current activity in smoke-free policy adoption is sustained nationally and intensified in certain regions, particularly the South.

This report focuses on laws that completely prohibit smoking in private-sector worksites, restaurants, and bars. These three venues were selected because they are a major source of SHS exposure for nonsmoking employees and the public (*1*). CDC considers a state smoke-free law to be comprehensive if it prohibits smoking in these three venues. Some states have enacted laws with less stringent smoking restrictions (e.g., provisions restricting smoking to designated areas or to separately ventilated areas); however, these laws are not effective in eliminating SHS exposure. The Surgeon General has concluded that the only way to fully protect nonsmokers from SHS exposure is to prohibit smoking in all indoor areas, and that separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate SHS exposure (*1*).

Data on state smoking restrictions for this report were obtained from CDC's State Tobacco Activities Tracking and Evaluation (STATE) System database, which contains tobacco-related epidemiologic and economic data and information on state tobacco-related legislation.* State legislation is collected quarterly from an online legal research database of state laws and is analyzed, coded, and entered into the STATE System. The STATE System contains information on state tobacco-related laws, including smoke-free policies, in effect since the fourth quarter of 1995. In addition to information on state smoking restrictions in worksites, restaurants, and bars, the STATE System contains information on state smoking restrictions in other venues, including government worksites, commercial and home-based child care centers, multiunit housing, vehicles, hospitals, prisons, and hotels and motels.

The number of states with comprehensive smoke-free laws in effect increased from zero on December 31, 2000, to 26 states on December 31, 2010 (Table 1). In 2002, Delaware became the first state to implement a comprehensive smoke-free law, followed by New York in 2003, Massachusetts in 2004, and Rhode Island and Washington in 2005. In 2006, comprehensive smoke-free laws went into effect in Colorado, Hawaii, New Jersey, and Ohio, followed by Arizona, DC, Minnesota, and New Mexico in 2007; Illinois, Iowa, and Maryland in 2008; Maine, Montana, Nebraska, Oregon, Utah, and Vermont in 2009; and Kansas, Michigan, South Dakota, and Wisconsin in 2010. The years listed are the years in which the laws took effect; in some cases the laws were enacted in a preceding year. Some state laws were expanded gradually or phased in; in these cases, the year provided is the year when the law first applied to all three of the settings considered in this study. Additionally, while most of these laws were enacted through the state legislative process, Arizona, Ohio, South Dakota, and Washington enacted their laws through ballot measures.

As of December 31, 2010, in addition to the 26 states with comprehensive smoke-free laws, 10 states had enacted laws that prohibit smoking in one or two, but not all three, of the venues included in this study (Table 2). Additionally, eight states had passed less restrictive laws (e.g., laws allowing smoking in designated areas or areas with separate ventilation). Finally, seven states have no statewide smoking restrictions in place for private worksites, restaurants, or bars (Table 2). Of note, only three southern states (Florida, Louisiana, and North Carolina) have laws that prohibit smoking in any two of the three venues examined in this report, and no southern state has a comprehensive state smoke-free law in effect (Figure).

Reported by

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*Additional information on the STATE System is available at http://www.cdc.gov/tobacco/statesystem.

TABLE 1. Effective dates of state comprehensive smoke-free laws* — United States, 2002–2010

State	Effective date†
Delaware	12/1/2002
New York	7/24/2003
Massachusetts	7/5/2004
Rhode Island	3/1/2005
Washington	12/8/2005
New Jersey	4/15/2006
Colorado	7/1/2006
Hawaii	11/16/2006
Ohio	12/7/2006
District of Columbia	1/1/2007
Arizona	5/1/2007
New Mexico	6/15/2007
Minnesota	10/1/2007
Illinois	1/1/2008
Maryland	2/1/2008
Iowa	7/1/2008
Oregon	1/1/2009
Utah	1/1/2009
Nebraska	6/1/2009
Vermont	7/1/2009
Maine	9/11/2009
Montana	10/1/2009
Michigan	5/1/2010
Kansas	7/1/2010
Wisconsin	7/5/2010
South Dakota	11/10/2010

Source: State Tobacco Activities Tracking and Evaluation System, Office on Smoking and Health, CDC.
* States with comprehensive smoke-free laws are those that require worksites, restaurants, and bars to be smoke-free.
† Date when all three venues (worksites, restaurants, and bars) were required by state law to prohibit smoking in all indoor areas.

TABLE 2. State smoking restrictions* for worksites, restaurants, and bars in 25 states that do not have a comprehensive smoke-free law† — United States, December 31, 2010

	Smoking restriction by location		
State	Worksites	Restaurants	Bars
Smoke-free in two locations			
Florida	Smoke-free	Smoke-free	—
Louisiana	Smoke-free	Smoke-free	—
Nevada	Smoke-free	Smoke-free	—
North Carolina	—	Smoke-free	Smoke-free
Smoke-free in one location			
Arkansas	Smoke-free	Designated§	—
Idaho	Designated	Smoke-free	—
New Hampshire	Designated	Smoke-free	—
North Dakota	Smoke-free	Designated	—
Pennsylvania	Smoke-free	Ventilated	—
Tennessee	Smoke-free	Designated§	—
Other restrictions			
Alabama	Designated	—	—
Alaska	—	Designated	—
California	Ventilated	Ventilated	Ventilated
Connecticut	Ventilated	Ventilated	Ventilated
Georgia	Designated	Designated§	Designated§
Missouri	Designated	Designated	Designated
Oklahoma	Designated	Ventilated	—
Virginia	—	Ventilated	Ventilated
No smoking restrictions			
Indiana	—	—	—
Kentucky	—	—	—
Mississippi	—	—	—
South Carolina	—	—	—
Texas	—	—	—
West Virginia	—	—	—
Wyoming	—	—	—

Source: State Tobacco Activities Tracking and Evaluation System, Office on Smoking and Health, CDC.
* Smoke-free = no smoking allowed; ventilated = designated smoking areas allowed if separately ventilated; designated = designated smoking areas required or allowed.
† States with comprehensive smoke-free laws are those that prohibit smoking in worksites, restaurants, and bars.
§ State law allows smoking in venues that prohibit minors.

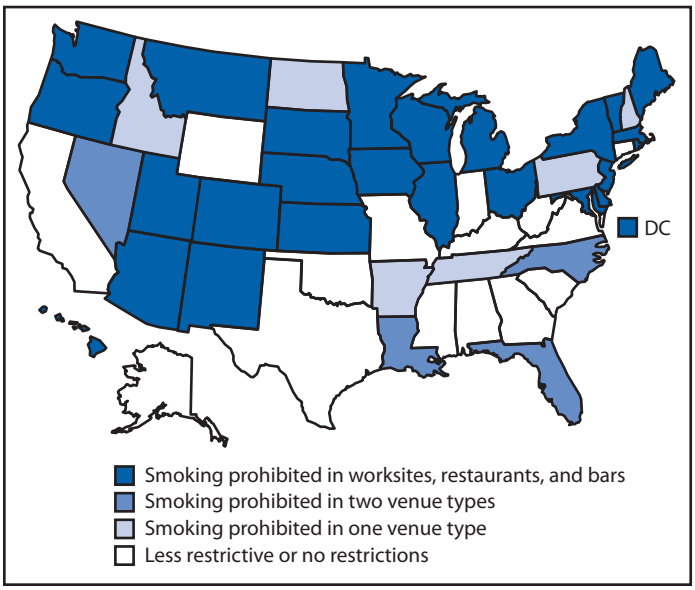
Editorial Note

A *Healthy People 2020*† objective (TU-13) calls for all states to enact laws on smoke-free indoor air that prohibit smoking in public places and worksites. Smoke-free laws substantially improve indoor air quality, reduce SHS exposure and related health problems among nonsmokers, help smokers quit, change social norms regarding the acceptability of smoking, and reduce heart attack and asthma hospitalizations (*1–5*). The findings in this analysis indicate that the United States made considerable progress during the past decade in increasing the number of states with comprehensive smoke-free laws that prohibit smoking in all indoor areas of worksites, restaurants, and bars, and increasing the number of U.S. residents protected by such laws. As of December 31, 2010, 26 states have implemented comprehensive smoke-free laws, and almost half (47.8%) of U.S. residents are covered by comprehensive state or local smoke-free laws.§ Despite this progress, approximately 88 million nonsmokers aged ≥3 years in the United States are exposed to SHS, as determined from levels of serum cotinine (a biological marker for SHS exposure) measured as part of the 2007–2008 National Health and Nutrition Examination Survey (*6*).

Before Delaware passed its smoke-free law in 2002, no state had adopted a comprehensive law making private workplaces, restaurants, and bars smoke-free. California's state smoking restrictions were enacted in 1994, but the law allows exemptions for smoking in ventilated employee smoking rooms, an exemption that remains in effect. Although a Utah law prohibiting smoking in restaurants took effect in 1995, smoking was still allowed in worksites and bars in that state until 2009. Comprehensive smoke-free laws were rare even at the local level until the 2000s. In 1990, the community of San Luis Obispo, California, adopted the first law in the United States eliminating smoking in bars. During the 1990s, smoke-free

† Additional information on *Healthy People 2010* and *Healthy People 2020* is available at http://www.healthypeople.gov.
§ Additional information is available at http://www.no-smoke.org/pdf/SummaryUSPopList.pdf.

FIGURE. State smoke-free indoor air laws in effect for private worksites, restaurants, and bars — United States, December 31, 2010



Source: State Tobacco Activities Tracking and Evaluation System, Office on Smoking and Health, CDC.

bar laws were largely limited to communities in California and Massachusetts.

The progress made during the past decade in enacting comprehensive state smoke-free laws is an extraordinary public health achievement. In the span of 10 years, smoke-free workplaces, restaurants, and bars went from being relatively rare to being the norm in half of the states and DC. Several factors appear to have contributed to this outcome. First, smoke-free laws increasingly were viewed as a worker protection measure that should apply to all employees, including those in restaurants and bars (*1*). Second, as state and local smoke-free laws were enacted across the country, other states and communities learned from the experiences of similar jurisdictions and were able to adapt and implement such laws (*1,7*). For example, New York City's adoption of a comprehensive smoke-free law in 2002 drew substantial news media coverage and established that a smoke-free law could be implemented successfully in a large, diverse, metropolitan setting (*1*). Finally, the Surgeon General's 2006 report, *The Health Consequences of Involuntary Exposure to Tobacco Smoke* (*1*), presented several important conclusions about the health risks associated with SHS exposure and effective protection approaches, generated extensive news media coverage, and was cited by a number of state and local policymakers as influencing their decisions on this topic. Of the 26 states that adopted comprehensive smoke-free laws, 16 did so after this report was released.

Even among the 26 states that have comprehensive smoke-free laws in effect, protections could be extended to locations that are typically exempted from state laws. For example, casino workers are heavily exposed to SHS on the job and could benefit from smoke-free policies that protect them (*8*). In addition, policies that prohibit smoking in the common areas and individual units (i.e., living areas) of apartments could protect nonsmoking residents, including children, from SHS infiltration from adjoining units (*9,10*). This is because SHS from apartment units where smoking occurs can penetrate into units in the same building that are occupied by nonsmokers (*9,10*).

The findings in this report are subject to at least two limitations. First, the STATE System only captures information on certain types of state smoking restrictions, primarily statutory laws and executive orders, and does not include information on state administrative laws, regulations, or implementation guidelines. As a result, the manner in which a state smoking restriction is implemented or enforced in practice might differ from how it is coded in the STATE System. Finally, the STATE System only collects state-level data; it does not capture information on local smoking restrictions.

Despite the substantial progress made nationally in the past decade, southern states lack statewide laws that prohibit smoking in worksites, restaurants, and bars. However, while no southern states have a comprehensive smoke-free law in effect, many communities in these states have adopted comprehensive local smoke-free laws.[¶] All states that have not done so already could protect the health of their residents by adopting laws that prohibit smoking in workplaces, restaurants, and bars. The *Healthy People 2020* target of enacting smoke-free indoor air laws that prohibit smoking in public places and worksites in

What is already known on this topic?

In 2006, the Surgeon General reported that no level of exposure to secondhand smoke (SHS) is risk-free; the only effective way to eliminate involuntary exposure to SHS is to completely eliminate smoking in all indoor areas.

What is added by this report?

The number of states that enacted statewide comprehensive smoke-free policies (i.e., no smoking allowed in workplaces, restaurants, and bars) increased sharply, from zero states in 2000 to 26 states in 2010, and almost half of U.S. residents now are covered by comprehensive state or local smoke-free laws.

What are the implications for public health practice?

If current efforts in statewide smoke-free policy adoption continue, all states could have comprehensive smoke-free policies by 2020. However, this will require accelerated progress in the South, where no state currently has a comprehensive state smoke-free law in effect.

[¶] Additional information is available at http://www.no-smoke.org/pdf/percent-statepops.pdf.

all 50 states and DC can be achieved if such laws continue to be adopted at the current pace, and activities are intensified in southern states.

Acknowledgments

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Grand Rounds: The Opportunity for and Challenges to Malaria Eradication

The Problem

In 2009, malaria, a disease transmitted by the bite of an infective *Anopheles* mosquito, caused an estimated 225 million clinical cases and 781,000 deaths worldwide, of which more than 90% occurred in children aged <5 years in Africa (*1*). Approximately half of the world's population, or 3 billion persons, are at risk for acquiring the illness. Malaria is transmitted most intensely in central and western Africa, where in some areas >40% of children aged <10 years are infected and residents can be bitten by more than one infective mosquito every day of the year (*2*).

Malaria in humans is caused mainly by four species of the intra-erythrocytic parasite *Plasmodium*, of which *Plasmodium falciparum* and *P. vivax* account for most morbidity worldwide. *P. falciparum* malaria is the most dangerous and can be fatal in 15%–20% of cases, even when appropriately treated. Death results from severe anemia, seizures and coma, acute respiratory distress syndrome, and other organ failures. *P. falciparum* also is the species in which resistance to multiple antimalarials has appeared over the past 50 years. The burden of *P. falciparum* includes placental infection that increases the risk for low birth weight and subsequent infant mortality or disability. In countries with a high incidence of malaria, economic growth during 1965–1990 was lower by 1.3% per year, compared with countries without high malaria incidence, even after adjusting for other factors (*3*).

Efforts to combat malaria encompass a continuum from control (reduction of malaria morbidity and mortality) to elimination (cessation of transmission in a defined geographic area) and eradication (global reduction of malaria incidence to zero). The global malaria eradication campaign of the mid-20th century eliminated malaria in 37 of 143 countries where malaria was endemic in 1950, and many other countries substantially decreased malaria incidence and deaths. However, the campaign did not eradicate malaria. Technical setbacks, implementation difficulties, and a paucity of research to find solutions limited success. In 1969, the 22nd World Health Assembly acknowledged the failure of the global eradication campaign, suspended it indefinitely, and consequently placed new emphasis on improving malaria control to minimize the burden of disease. In the late 1980s and early 1990s, efforts to control malaria were hampered as a result of decreased funding and support and the spread of parasites resistant to antimalarial drugs.

Today, malaria control in areas with high incidence is based on strategic implementation and scale-up of proven, cost-effective interventions. The aim is first to rapidly reduce malaria morbidity and mortality, particularly among high-risk groups such as children and pregnant women, followed by progressive reduction of transmission and elimination from malaria-endemic areas (Figure 1). Global eradication remains the ultimate long-term goal, although it is now approached with perhaps a greater appreciation of its challenges.

Currently Recommended Interventions for Malaria Control

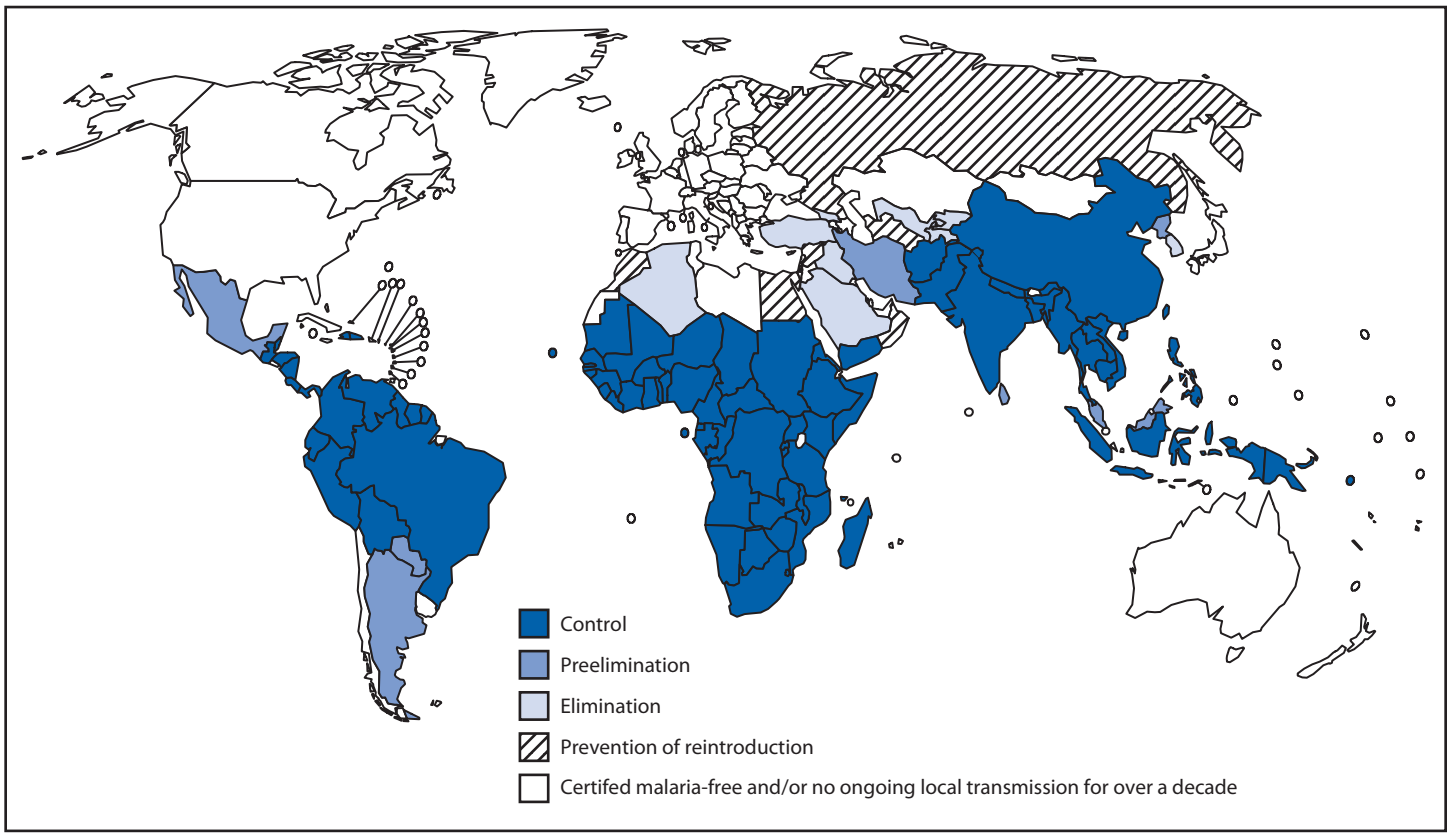
Four proven interventions currently are being scaled up across sub-Saharan Africa: 1) long-lasting insecticide-treated mosquito nets (ITNs), 2) indoor residual spraying (IRS), 3) diagnosis and treatment of infected persons with artemisinin-based combination therapy (ACT), and 4) protection of women with intermittent preventive treatment during pregnancy (IPTp).

ITNs, evaluated through field trials, have demonstrated a protective efficacy of 17% against all-cause childhood mortality in sub-Saharan Africa and could save up to 5.5 lives each year for every 1,000 children protected (*4*). Follow-up field trial data show that the child survival benefit from ITNs can last for up to 6 years (*5*). Additionally, expanding the availability of nets from target groups (pregnant women and children aged <5 years) to cover at least 65% of older children and adults provides some protection even for those without nets (e.g., by reducing mosquito survival and decreasing community parasitemia) (*6*). These findings, and the availability of funding, led to a policy aimed at achieving universal coverage rather than a focus on vulnerable groups (*7*).

IRS is the application of insecticide to the interior walls of houses. Ideally, the insecticide will repel mosquitoes from entering houses and kill them when they rest on treated walls, thus reducing transmission from mosquitoes that bite and rest indoors. Field studies and program experience since the 1950s have demonstrated the effectiveness of IRS in reducing malaria in both stable and unstable (epidemic-prone) malaria transmission settings (*8*). Like ITNs, IRS is most effective when applied communitywide with high coverage rates. IRS and

This is another in a series of occasional MMWR *reports titled CDC Grand Rounds. These reports are based on grand rounds presentations at CDC on high-profile issues in public health science, practice, and policy. Information about CDC Grand Rounds is available at http://www.cdc.gov/about/grand-rounds.*

FIGURE 1. Malaria-free countries and malaria-endemic countries in phases of control,* preelimination, elimination, and prevention of reintroduction — worldwide, 2008



Source: World Health Organization. World malaria report 2009. Available at http://www.who.int/malaria/world_malaria_report_2009/en/index.html.
* China, Philippines, Solomon Islands, Sudan, Vanuatu, and Yemen have localized malaria-free projects.

ITN effectiveness is threatened by the emergence of insecticide resistance (*9*). Novel applications of IRS using rotational (alternating insecticides over time) or mosaic (multiple insecticides in different areas) strategies might preserve the effectiveness of this intervention.

Diagnosis and management of patients with malaria is a cornerstone of malaria control because this can cure clinical disease and blunt transmission. During a period of poor malaria control in the 1990s, *P. falciparum* infection accounted for an estimated 30% of childhood deaths in sub-Saharan Africa (*10*); a large proportion of these malaria-related deaths could be attributed to the high prevalence of parasites resistant to chloroquine, the first-line treatment during this period. In the last decade, a potent new class of drug made from derivatives of artemisinin has been introduced. To forestall the development of resistance to artemisinin derivatives, the World Health Organization (WHO) recommends that the derivatives not be used alone, but rather as artemisinin-based combination therapy (ACT) (using an artemisinin in combination with another antimalarial with a different mode of action); ACT regimens have been adopted as first-line treatment globally (*11*). Rapid and accurate diagnosis enhances malaria case management by directing ACTs to patients with a confirmed diagnosis of malaria. Recently, malaria rapid diagnostic tests based on lateral-flow immunochromatography have been introduced. They can detect malaria parasite antigens from finger-prick blood specimens in 10–15 minutes, and their availability has begun to increase the ability of health-care workers to diagnose cases, especially in rural areas without laboratory capacity.

In sub-Saharan Africa, an estimated 28% of women are infected with *P. falciparum* during pregnancy. Because of pregnancy-altered changes in immunity, women living in moderate- to high-transmission areas who are pregnant for the first or second time are at greater risk for adverse events from malaria than women who have had three or more pregnancies (*12*). In these transmission contexts, IPTp, the preventive treatment of all pregnant women with curative regimens of sulfadoxine pyrimethamine (SP) during the second and third trimesters, can decrease both placental malaria parasitemia and maternal anemia (*13*). In many areas where SP is used for IPTp, a high prevalence of parasites with SP resistance genes

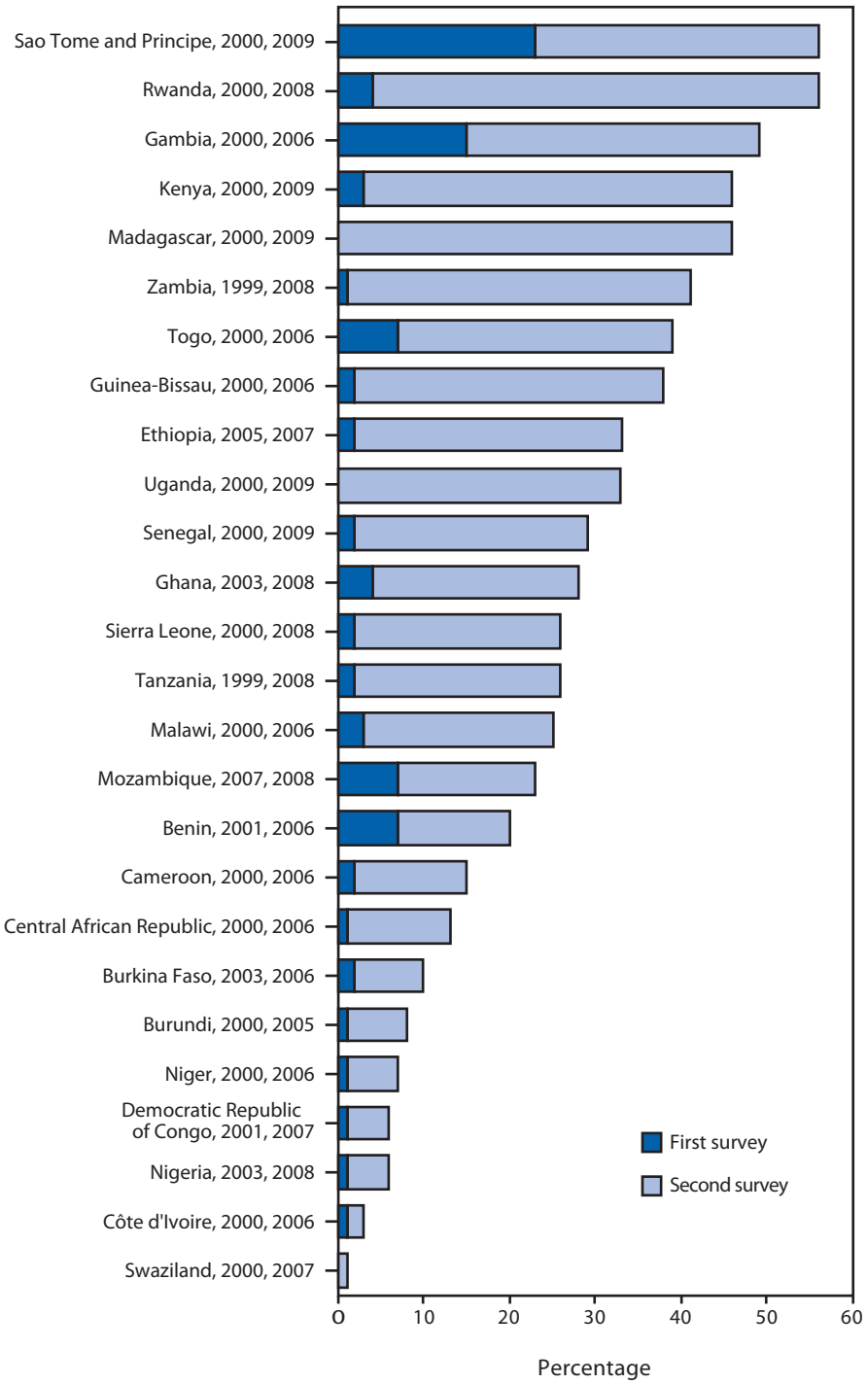
and concomitant failures of SP monotherapy for clinical malaria treatment in children have been observed. Whether SP resistance might alter the effectiveness of SP for IPTp is unclear and underscores the need to continue monitoring its efficacy in curing *P. falciparum* infection in pregnant women and the need for support for research into new medications for IPTp.

Progress and Strategies Toward Malaria Eradication

Developments at the turn of the millennium gave rise to renewed optimism for malaria control. Global partnerships to coordinate work were established, notably the Roll Back Malaria (RBM) partnership (information available at http://www.rollbackmalaria.org). Unprecedented funding for program scale-up became available through donor mechanisms such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria; the World Bank; and the U.S. President's Malaria Initiative. Leaders in malaria-endemic countries committed to malaria control as a national priority through assent to RBM's Abuja Declaration and adoption of UN Millennium Development Goals.

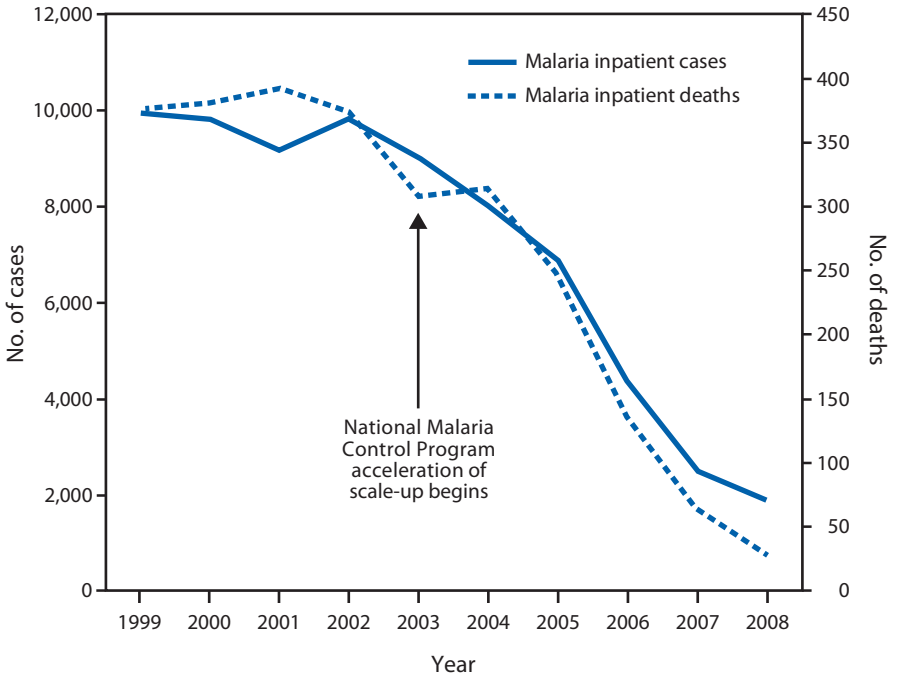
In many countries, more money, applied science, and enhanced global partnerships are beginning to result in decreased malaria. Coverage of key interventions, such as ITNs, is increasing, although most countries have yet to achieve their targets; recent household surveys from African countries such as Rwanda and the Gambia show that approximately 50% or more of children aged <5 years sleep under ITNs. However, coverage is low for other countries, including Nigeria and Democratic Republic of the Congo (Figure 2). Reductions in malaria resulting from scale-up of control efforts have been best seen, so far, in certain areas, such as the islands of Zanzibar, where the National Malaria Control Program accelerated its scale-up efforts beginning in 2003. ACTs were provided free of charge in public health facilities in late 2003, ownership of ITNs reached 72% by 2007, and four rounds of IRS were conducted during 2006–2008. These efforts, combined with improved diagnostic practices, resulted in 70% fewer malaria inpatient cases and deaths in a combined sample of six of the seven hospitals on the islands of Zanzibar during 2006–2008, compared with 2001–2002 (Figure 3) (*14*). In other countries, the effect of malaria control efforts

FIGURE 2. Percentage of children sleeping under an insecticide-treated net in countries with more than one survey, 1999–2009



Source: World Health Organization. World malaria report 2010. Available at http://www.who.int/malaria/world_malaria_report_2010/en/index.html

FIGURE 3. Number of malaria inpatient cases and deaths — six hospitals, Zanzibar, Tanzania, 1999–2008



Sources: Ministry of Health routine surveillance data.
World Health Organization. World malaria report 2009. Available at http://www.who.int/malaria/world_malaria_report_2009/en/index.html.

on a national scale are only beginning to be seen; for example, in seven countries (Ghana, Kenya, Madagascar, Rwanda, Senegal, Tanzania, and Zambia), reductions in all-cause mortality in children aged <5 years ranged from 19%–36% in paired nationwide household surveys following the scale-up of malaria control (*15*). While a variety of factors might be influencing the decline in mortality rates of children, strong and growing evidence indicates that malaria prevention and treatment efforts have played a major role (*16*). Thorough impact assessments are under way in several countries to examine this relationship.

Although current malaria control efforts are showing promising results in some countries, many others have yet to achieve targets (*14*). One reason is the relatively short period that increased resources have been available. Also, even though the funds put toward malaria control have increased substantially since 2003, the total resources available globally to scale-up malaria control interventions fall far short of what is needed. To ensure the maximal effect from implemented interventions, barriers to scale-up should be identified and eliminated, and these efforts should cover all aspects of current interventions, from determining optimal approaches to ITN distribution and IRS implementation to diagnostic and treatment protocols for case management and IPTp policies.

Even when targets for scale-up of recommended interventions are achieved, most experts agree that because of the very high transmission rate in sub-Saharan Africa, additional investments in research and development of new control and elimination tools will be required before malaria can be eradicated. Recently published research recommendations emphasize that the long-term vision for malaria interventions should include new antimalarial medications, evaluation of treatment strategies such as mass drug administration, and novel vector-control approaches (*17*). In regions with less malaria endemicity, elimination might rest on novel molecular assays capable of detecting low numbers of parasites among persons in remote, rural areas; novel diagnostic technology such as real-time fluorescence loop-mediated amplification might make parasite detection possible in the absence of reference laboratory personnel and equipment (*18*).

The availability of vaccines has been critical in targeting diseases for global eradication. Unfortunately, a highly effective vaccine for malaria control has not been found, although several promising candidates are in development. Currently the first Phase III, individually randomized, clinical trial of a malaria vaccine is being conducted, advancing earlier work that demonstrated that the candidate vaccine was associated with a 35% reduction in clinical illness from malaria and a 49% reduction of severe malaria in children for up to 6 months (*19*).

Conclusion

Malaria is an enormous global disease burden, and its eradication is an ambitious goal. Although the tools for malaria control are much improved, to ensure continued progress, national programs, local communities, global health partners, and donors will have to build on initial successes, maintain a prolonged commitment, and invest in strategies for the future. This will require leadership, perseverance, flexibility, and financial support. Research into new medications, insecticides, and vaccines will be required to achieve the eventual goal of eradication. Organizations working toward malaria eradication should be pleased with the progress so far, cautioned by the challenges ahead, and heartened with confidence that the implementing foundation is solid and science is guiding the way.

Reported by

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Announcements

World Malaria Day — April 25, 2011

World Malaria Day is commemorated on April 25, the date in 2000 when 44 African leaders met in Abuja, Nigeria, and signed the Abuja Declaration, committing their countries to cutting malaria deaths in half by 2010. In the decade since, increased funding and efforts have led to a scale-up of effective malaria interventions in many countries. In 2009, malaria caused an estimated 781,000 deaths worldwide, down from an estimated 985,000 in 2000. In 32 of the 56 malaria-endemic countries outside Africa, the number of confirmed malaria cases declined more than 50%. By 2010, 11 countries and one area in the World Health Organization's African Region showed a reduction of more than 50% in confirmed malaria cases or admissions and deaths (*1*).

The theme of World Malaria Day, "Achieving Progress and Impact," highlights the successes worldwide and provides an opportunity to take stock of the current state of malaria globally and to consider how to achieve the U.N Secretary-General's goal of near zero deaths by 2015. CDC contributes to these efforts through the President's Malaria Initiative (PMI), a U.S. government interagency initiative to reduce malaria in 17 countries in sub-Saharan Africa and in the Greater Mekong subregion in Asia. PMI is led by the U.S. Agency for International Development (USAID) and is implemented by USAID and CDC, in collaboration with host ministries of health and local and international partners.

CDC also conducts multidisciplinary strategic and applied research globally to better understand malaria and develop safe, effective interventions that can lead to malaria's elimination and eventual eradication. Additional information regarding CDC's malaria activities is available at http://www.cdc.gov/malaria.

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National Infant Immunization Week — April 23–30, 2011

CDC observes the 17th annual National Infant Immunization Week (NIIW) during April 23–30, 2011. Local and state health departments, national immunization partners, health-care professionals, and community leaders from across the country will collaborate to highlight the achievements and benefits of immunization through community-wide activities and events, including grand rounds and educational training for health-care professionals and parents, media briefings, and immunization clinics.

NIIW is now part of a broad global initiative that is held in conjunction with the Pan American Health Organization's (PAHO) Vaccination Week in the Americas. Ten border states have partnered with PAHO and the United States-Mexico Border Health Commission to bring additional focus to infant immunization in the U.S.-Mexico border region. In addition, the World Health Organization's European, Eastern Mediterranean, and African regions also are observing simultaneous immunization weeks. In all, approximately 100 countries are expected to participate in the week-long campaign to call attention to the critical role that vaccination plays in safeguarding public health globally.

Currently, in the United States, CDC recommends that children aged ≤2 years receive vaccines to protect against 14 diseases (*1*). In September 2010, CDC announced that childhood immunization rates for vaccines routinely recommended for children remain at or near record highs (*2*). Parental acceptance of routine childhood immunization is essential because high vaccination coverage results in decreased rates of vaccine-preventable diseases. Results from a recent survey of U.S. parents with children aged <6 years show that a majority of parents are confident or very confident in vaccine safety (79.0%) and believe that vaccines are important to children's health (79.8%) (*3*). This same survey showed that health-care providers are parents' most important source of information for making decisions regarding vaccination (81.7%). To help facilitate communication between health-care providers and parents about vaccines, vaccine safety, and vaccine-preventable diseases, CDC, the American Academy of Pediatrics, and the American Academy of Family Physicians have developed a series of educational materials called Provider Resources for Vaccine Conversations with Parents (available at http://www.cdc.gov/vaccines/conversations). These resources will be a focus of this week's NIIW educational efforts. Additional information about NIIW is available at http://www.cdc.gov/vaccines/events/niiw.

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Notifiable Diseases and Mortality Tables

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending April 16, 2011 (15th week)*

Disease	Current week	Cum 2011	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2010	2009	2008	2007	2006	
Anthrax	—	—	—	—	1	—	1	1	
Arboviral diseases§,¶:									
California serogroup virus disease	—	—	0	74	55	62	55	67	
Eastern equine encephalitis virus disease	—	—	—	10	4	4	4	8	
Powassan virus disease	—	—	0	8	6	2	7	1	
St. Louis encephalitis virus disease	—	—	0	10	12	13	9	10	
Western equine encephalitis virus disease	—	—	—	—	—	—	—	—	
Babesiosis	—	9	1	NN	NN	NN	NN	NN	
Botulism, total	—	19	2	113	118	145	144	165	
foodborne	—	2	0	7	10	17	32	20	
infant	—	14	2	81	83	109	85	97	
other (wound and unspecified)	—	3	1	25	25	19	27	48	
Brucellosis	1	11	2	117	115	80	131	121	CA (1)
Chancroid	—	5	1	30	28	25	23	33	
Cholera	—	11	0	12	10	5	7	9	
Cyclosporiasis§	1	27	1	173	141	139	93	137	TX (1)
Diphtheria	—	—	—	—	—	—	—	—	
Haemophilus influenzae,** invasive disease (age <5 yrs):									
serotype b	—	1	0	23	35	30	22	29	
nonserotype b	1	33	5	187	236	244	199	175	WA (1)
unknown serotype	1	78	4	233	178	163	180	179	PA (1)
Hansen disease§	—	15	2	69	103	80	101	66	
Hantavirus pulmonary syndrome§	—	4	0	18	20	18	32	40	
Hemolytic uremic syndrome, postdiarrheal§	1	16	3	249	242	330	292	288	CA (1)
Influenza-associated pediatric mortality§,††	4	91	2	61	358	90	77	43	CA (1), MI (1), NYC (2)
Listeriosis	4	110	12	778	851	759	808	884	NC (1), FL (1), CA (2)
Measles§§	6	49	3	61	71	140	43	55	FL (3), TX (1), CA (2)
Meningococcal disease, invasive¶¶:									
A, C, Y, and W-135	1	48	7	263	301	330	325	318	WA (1)
serogroup B	—	37	3	122	174	188	167	193	
other serogroup	—	2	0	10	23	38	35	32	
unknown serogroup	7	149	13	405	482	616	550	651	MO (1), ND (1), DE (1), GA (1), FL (2), NM (1)
Novel influenza A virus infections***	—	1	0	4	43,774	2	4	NN	
Plague	—	1	0	2	8	3	7	17	
Poliomyelitis, paralytic	—	—	—	—	1	—	—	—	
Polio virus Infection, nonparalytic§	—	—	—	—	—	—	—	NN	
Psittacosis§	—	1	0	4	9	8	12	21	
Q fever, total§	—	14	2	119	113	120	171	169	
acute	—	6	1	96	93	106	—	—	
chronic	—	8	0	23	20	14	—	—	
Rabies, human	—	—	0	1	4	2	1	3	
Rubella†††	—	1	0	6	3	16	12	11	
Rubella, congenital syndrome	—	—	0	—	2	—	—	1	
SARS-CoV§	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	—	44	4	165	161	157	132	125	
Syphilis, congenital (age <1 yr)§§§	—	35	8	193	423	431	430	349	
Tetanus	—	—	0	11	18	19	28	41	
Toxic-shock syndrome (staphylococcal)§	4	27	1	77	74	71	92	101	NE (1), CA (3)
Trichinellosis	—	4	0	6	13	39	5	15	
Tularemia	—	4	1	114	93	123	137	95	
Typhoid fever	6	86	7	438	397	449	434	353	MD (2), AZ (1), CA (3)
Vancomycin-intermediate *Staphylococcus aureus*§	2	18	1	99	78	63	37	6	NY (1), MO (1)
Vancomycin-resistant *Staphylococcus aureus*§	—	—	—	2	1	—	2	1	
Vibriosis (noncholera *Vibrio* species infections)§	5	53	4	802	789	588	549	NN	MI (1), FL (4)
Viral hemorrhagic fever¶¶¶	—	—	—	1	NN	NN	NN	NN	
Yellow fever	—	—	—	—	—	—	—	—	

See Table 1 footnotes on next page.

TABLE I. (*Continued*) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending April 16, 2011 (15th week)*

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

* Case counts for reporting years 2010 and 2011 are provisional and subject to change. For further information on interpretation of these data, see http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf.

† 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/osels/ph_surveillance/nndss/phs/files/5yearweeklyaverage.pdf.

§ Not reportable in all states. Data from states where the condition is not reportable are excluded from this table except starting in 2007 for the arboviral diseases, STD data, TB data, and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at http://www.cdc.gov/osels/ph_surveillance/nndss/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 weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Since October 3, 2010, 95 influenza-associated pediatric deaths occurring during the 2010-11 influenza season have been reported.

§§ The six measles cases reported for the current week were imported.

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

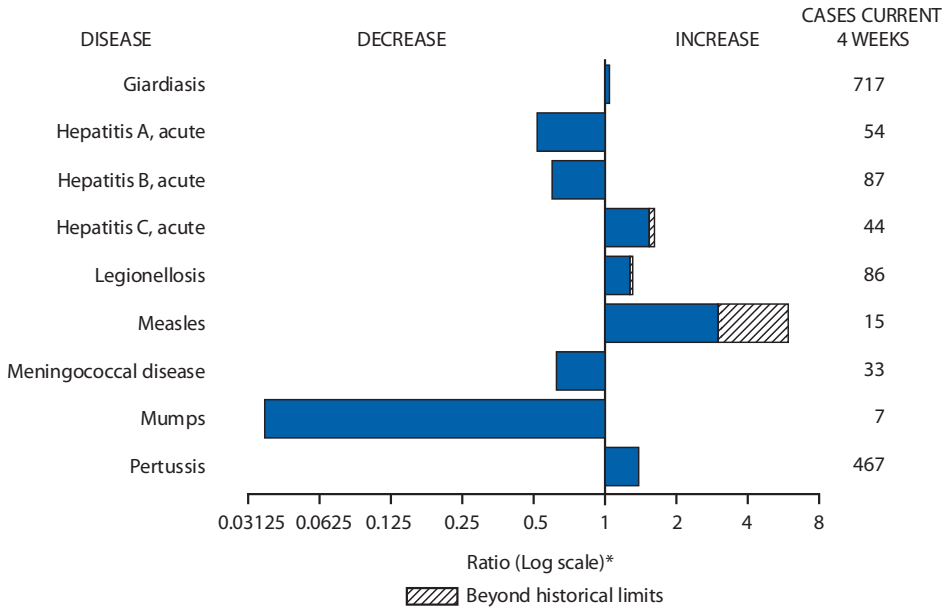
*** CDC discontinued reporting of individual confirmed and probable cases of 2009 pandemic influenza A (H1N1) virus infections on July 24, 2009. During 2009, four cases of human infection with novel influenza A viruses, different from the 2009 pandemic influenza A (H1N1) strain, were reported to CDC. The four cases of novel influenza A virus infection reported to CDC during 2010, and the one case reported during 2011, were identified as swine influenza A (H3N2) virus and are unrelated to the 2009 pandemic influenza A (H1N1) virus. Total case counts for 2009 were provided by the Influenza Division, National Center for Immunization and Respiratory Diseases (NCIRD).

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

§§§ Updated weekly from reports to the Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention.

¶¶¶ There was one case of viral hemorrhagic fever reported during week 12 of 2010. The one case report was confirmed as lassa fever. See Table II for dengue hemorrhagic fever.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals April 16, 2011, 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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TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	*Chlamydia trachomatis* infection					Coccidioidomycosis					Cryptosporidiosis				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	13,325	24,703	28,143	352,521	360,334	136	0	505	3,665	NN	37	122	355	1,019	1,578
New England	626	813	2,046	11,901	10,567	—	0	1	1	NN	—	6	19	56	162
Connecticut	—	180	1,558	1,780	2,291	N	0	0	N	NN	—	0	13	13	77
Maine†	—	56	100	839	720	N	0	0	N	NN	—	0	7	1	13
Massachusetts	466	405	873	6,641	5,743	N	0	0	N	NN	—	3	9	24	33
New Hampshire	39	55	113	871	536	—	0	1	1	NN	—	1	3	9	18
Rhode Island†	82	70	154	1,318	929	—	0	0	—	NN	—	0	2	1	7
Vermont†	39	24	84	452	348	N	0	0	N	NN	—	1	5	8	14
Mid. Atlantic	1,742	3,355	5,178	46,504	47,815	—	0	0	—	NN	4	15	38	153	153
New Jersey	36	515	697	6,501	7,357	N	0	0	N	NN	—	0	4	—	5
New York (Upstate)	695	710	2,028	10,048	8,864	N	0	0	N	NN	—	4	13	37	27
New York City	228	1,172	2,773	15,199	18,186	N	0	0	N	NN	—	2	6	16	14
Pennsylvania	783	957	1,189	14,756	13,408	N	0	0	N	NN	4	8	26	100	107
E.N. Central	625	3,778	6,363	49,469	56,340	—	0	3	13	NN	10	29	130	212	401
Illinois	—	961	1,094	9,631	15,753	N	0	0	N	NN	—	3	21	6	58
Indiana	—	425	2,958	7,874	3,980	N	0	0	N	NN	—	3	10	24	63
Michigan	467	936	1,389	13,799	15,245	—	0	3	6	NN	—	5	18	49	85
Ohio	158	995	1,134	12,937	14,872	—	0	3	7	NN	10	7	24	87	91
Wisconsin	—	428	518	5,228	6,490	N	0	0	N	NN	—	9	65	46	104
W.N. Central	480	1,386	1,603	19,123	21,134	—	0	0	—	NN	—	17	83	75	229
Iowa	7	200	237	2,821	3,217	N	0	0	N	NN	—	4	24	8	57
Kansas	2	187	287	2,559	2,831	N	0	0	N	NN	—	2	9	14	24
Minnesota	—	292	354	3,252	4,511	—	0	0	—	NN	—	0	16	—	57
Missouri	374	511	768	7,788	7,518	—	0	0	—	NN	—	3	30	27	42
Nebraska†	97	94	189	1,606	1,528	N	0	0	N	NN	—	3	26	23	23
North Dakota	—	42	90	332	598	N	0	0	N	NN	—	0	9	—	2
South Dakota	—	62	91	765	931	N	0	0	N	NN	—	1	6	3	24
S. Atlantic	3,248	4,826	6,176	72,527	71,785	—	0	0	—	NN	11	19	39	223	241
Delaware	125	84	220	1,358	1,258	—	0	0	—	NN	—	0	1	2	1
District of Columbia	66	99	158	1,419	1,492	—	0	0	—	NN	—	0	1	2	2
Florida	612	1,457	1,706	20,563	21,187	N	0	0	N	NN	1	7	19	63	96
Georgia	463	699	2,201	11,181	11,296	N	0	0	N	NN	4	5	11	72	81
Maryland†	182	499	1,106	5,620	6,225	—	0	0	—	NN	1	1	3	13	9
North Carolina	644	734	1,436	12,342	13,225	N	0	0	N	NN	—	0	12	23	22
South Carolina†	593	530	847	7,995	7,517	N	0	0	N	NN	—	2	8	29	9
Virginia†	563	666	970	10,845	8,528	N	0	0	N	NN	—	2	9	13	17
West Virginia	—	76	124	1,204	1,057	N	0	0	N	NN	5	0	3	6	4
E.S. Central	1,107	1,767	2,654	24,049	24,007	—	0	0	—	NN	2	4	19	38	59
Alabama†	—	542	1,479	6,351	6,823	N	0	0	N	NN	1	2	13	7	20
Kentucky	413	266	541	3,676	4,301	N	0	0	N	NN	—	1	6	14	21
Mississippi	400	386	780	5,713	5,442	N	0	0	N	NN	—	0	2	6	4
Tennessee†	294	581	797	8,309	7,441	N	0	0	N	NN	1	1	5	11	14
W.S. Central	2,569	3,181	4,243	49,139	50,736	—	0	1	1	NN	—	7	31	37	75
Arkansas†	302	302	440	4,683	4,457	N	0	0	N	NN	—	0	3	5	12
Louisiana	456	369	792	5,520	7,299	—	0	1	1	NN	—	0	6	4	12
Oklahoma	237	245	1,372	3,423	3,624	N	0	0	N	NN	—	1	8	—	9
Texas†	1,574	2,340	3,110	35,513	35,356	N	0	0	N	NN	—	4	24	28	42
Mountain	978	1,540	2,222	20,399	23,788	51	0	422	2,659	NN	4	10	30	104	129
Arizona	106	511	658	2,892	7,725	51	0	417	2,613	NN	—	1	3	7	7
Colorado	565	337	875	7,349	5,762	N	0	0	N	NN	—	3	6	29	32
Idaho†	6	70	199	1,007	1,058	N	0	0	N	NN	3	2	7	20	24
Montana†	17	64	83	919	880	N	0	0	N	NN	1	1	4	10	15
Nevada†	196	193	380	3,139	2,719	—	0	4	23	NN	—	0	7	2	4
New Mexico†	72	194	1,253	2,855	3,094	—	0	4	17	NN	—	2	12	23	25
Utah	13	129	175	1,777	1,961	—	0	2	3	NN	—	1	5	9	16
Wyoming†	3	37	90	461	589	—	0	2	3	NN	—	0	2	4	6
Pacific	1,950	3,791	5,445	59,410	54,162	85	0	103	991	NN	6	12	29	121	129
Alaska	—	118	156	1,539	1,742	N	0	0	N	NN	—	0	3	4	2
California	1,376	2,843	4,717	43,130	40,738	85	0	103	991	NN	5	7	18	67	76
Hawaii	—	106	158	1,018	1,745	N	0	0	N	NN	—	0	0	—	1
Oregon	283	213	496	3,903	3,724	N	0	0	N	NN	1	4	13	48	35
Washington	291	429	891	9,820	6,213	N	0	0	N	NN	—	1	7	2	15
Territories															
American Samoa	—	0	0	—	—	N	0	0	N	NN	N	0	0	N	NN
C.N.M.I.	—	—	—	—	—	—	—	—	—	NN	—	—	—	—	—
Guam	—	9	44	153	59	—	0	0	—	NN	—	0	0	—	—
Puerto Rico	114	104	251	1,713	1,835	N	0	0	N	NN	N	0	0	N	NN
U.S. Virgin Islands	—	12	29	—	125	—	0	0	—	NN	—	0	0	—	—

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† Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Dengue Virus Infection									
	Dengue Fever†					Dengue Hemorrhagic Fever§				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max		
United States	—	6	51	17	80	—	0	2	—	1
New England	—	0	3	—	3	—	0	0	—	—
Connecticut	—	0	0	—	—	—	0	0	—	—
Maine¶	—	0	2	—	3	—	0	0	—	—
Massachusetts	—	0	0	—	—	—	0	0	—	—
New Hampshire	—	0	0	—	—	—	0	0	—	—
Rhode Island¶	—	0	1	—	—	—	0	0	—	—
Vermont¶	—	0	1	—	—	—	0	0	—	—
Mid. Atlantic	—	2	25	7	34	—	0	1	—	1
New Jersey	—	0	5	—	3	—	0	0	—	—
New York (Upstate)	—	0	5	—	5	—	0	1	—	—
New York City	—	1	17	—	20	—	0	1	—	1
Pennsylvania	—	0	3	7	6	—	0	0	—	—
E.N. Central	—	1	7	2	12	—	0	1	—	—
Illinois	—	0	3	—	4	—	0	0	—	—
Indiana	—	0	2	1	2	—	0	0	—	—
Michigan	—	0	2	—	1	—	0	0	—	—
Ohio	—	0	2	—	5	—	0	0	—	—
Wisconsin	—	0	2	1	—	—	0	1	—	—
W.N. Central	—	0	6	—	6	—	0	1	—	—
Iowa	—	0	1	—	—	—	0	0	—	—
Kansas	—	0	1	—	—	—	0	0	—	—
Minnesota	—	0	2	—	5	—	0	0	—	—
Missouri	—	0	0	—	—	—	0	0	—	—
Nebraska¶	—	0	6	—	—	—	0	0	—	—
North Dakota	—	0	0	—	1	—	0	0	—	—
South Dakota	—	0	0	—	—	—	0	1	—	—
S. Atlantic	—	2	19	5	16	—	0	1	—	—
Delaware	—	0	0	—	—	—	0	0	—	—
District of Columbia	—	0	0	—	—	—	0	0	—	—
Florida	—	2	14	5	13	—	0	1	—	—
Georgia	—	0	2	—	1	—	0	0	—	—
Maryland¶	—	0	0	—	—	—	0	0	—	—
North Carolina	—	0	2	—	—	—	0	0	—	—
South Carolina¶	—	0	3	—	—	—	0	0	—	—
Virginia¶	—	0	3	—	2	—	0	0	—	—
West Virginia	—	0	1	—	—	—	0	0	—	—
E.S. Central	—	0	2	—	—	—	0	0	—	—
Alabama¶	—	0	2	—	—	—	0	0	—	—
Kentucky	—	0	1	—	—	—	0	0	—	—
Mississippi	—	0	0	—	—	—	0	0	—	—
Tennessee¶	—	0	1	—	—	—	0	0	—	—
W.S. Central	—	0	1	—	—	—	0	1	—	—
Arkansas¶	—	0	0	—	—	—	0	1	—	—
Louisiana	—	0	0	—	—	—	0	0	—	—
Oklahoma	—	0	1	—	—	—	0	0	—	—
Texas¶	—	0	1	—	—	—	0	0	—	—
Mountain	—	0	2	—	2	—	0	0	—	—
Arizona	—	0	2	—	—	—	0	0	—	—
Colorado	—	0	0	—	—	—	0	0	—	—
Idaho¶	—	0	1	—	—	—	0	0	—	—
Montana¶	—	0	1	—	—	—	0	0	—	—
Nevada¶	—	0	1	—	1	—	0	0	—	—
New Mexico¶	—	0	0	—	1	—	0	0	—	—
Utah	—	0	0	—	—	—	0	0	—	—
Wyoming¶	—	0	0	—	—	—	0	0	—	—
Pacific	—	0	6	3	7	—	0	0	—	—
Alaska	—	0	0	—	1	—	0	0	—	—
California	—	0	5	—	3	—	0	0	—	—
Hawaii	—	0	0	—	—	—	0	0	—	—
Oregon	—	0	0	—	—	—	0	0	—	—
Washington	—	0	2	3	3	—	0	0	—	—
Territories										
American Samoa	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	104	550	191	1,538	—	2	20	1	43
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—

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† Dengue Fever includes cases that meet criteria for Dengue Fever with hemorrhage, other clinical and unknown case classifications.
§ DHF includes cases that meet criteria for dengue shock syndrome (DSS), a more severe form of DHF.
¶ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Ehrlichiosis/Anaplasmosis†														
	Ehrlichia chaffeensis					*Anaplasma phagocytophilum*					Undetermined				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	4	8	79	18	50	3	13	59	9	30	—	1	10	4	3
New England	—	0	2	—	1	—	1	7	1	7	—	0	1	—	—
Connecticut	—	0	0	—	—	—	0	6	—	—	—	0	0	—	—
Maine§	—	0	1	—	1	—	0	2	1	3	—	0	0	—	—
Massachusetts	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
New Hampshire	—	0	1	—	—	—	0	2	—	1	—	0	1	—	—
Rhode Island§	—	0	1	—	—	—	0	6	—	3	—	0	0	—	—
Vermont§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	—	0	10	1	8	1	4	15	3	2	—	0	1	1	1
New Jersey	—	0	0	—	—	—	0	0	—	1	—	0	0	—	—
New York (Upstate)	—	0	10	—	4	1	4	15	3	1	—	0	1	1	1
New York City	—	0	3	1	3	—	0	2	—	—	—	0	0	—	—
Pennsylvania	—	0	0	—	1	—	0	0	—	—	—	0	0	—	—
E.N. Central	—	0	4	2	5	—	4	41	—	16	—	1	7	2	2
Illinois	—	0	2	1	1	—	0	2	—	—	—	0	2	1	—
Indiana	—	0	0	—	—	—	0	0	—	—	—	0	3	1	2
Michigan	—	0	1	—	—	—	0	0	—	—	—	0	1	—	—
Ohio	—	0	3	1	—	—	0	1	—	—	—	0	0	—	—
Wisconsin	—	0	1	—	4	—	4	41	—	16	—	0	4	—	—
W.N. Central	—	1	13	2	1	—	0	3	—	—	—	0	3	—	—
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
Minnesota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Missouri	—	1	13	2	1	—	0	3	—	—	—	0	3	—	—
Nebraska§	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
South Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
S. Atlantic	4	3	18	12	30	2	1	7	4	5	—	0	1	—	—
Delaware	—	0	3	1	1	—	0	1	—	—	—	0	0	—	—
District of Columbia	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Florida	—	0	2	2	1	—	0	1	—	—	—	0	0	—	—
Georgia	—	0	4	1	3	—	0	1	—	—	—	0	1	—	—
Maryland§	—	0	3	2	4	—	0	2	—	3	—	0	1	—	—
North Carolina	3	1	13	5	21	2	0	4	4	2	—	0	0	—	—
South Carolina§	—	0	2	—	—	—	0	1	—	—	—	0	0	—	—
Virginia§	1	1	8	1	—	—	0	2	—	—	—	0	1	—	—
West Virginia	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
E.S. Central	—	1	11	1	2	—	0	2	1	—	—	0	1	—	—
Alabama§	—	0	3	—	1	—	0	2	1	—	—	0	0	—	—
Kentucky	—	0	2	—	—	—	0	0	—	—	—	0	0	—	—
Mississippi	—	0	1	—	—	—	0	1	—	—	—	0	0	—	—
Tennessee§	—	0	7	1	1	—	0	2	—	—	—	0	1	—	—
W.S. Central	—	0	66	—	2	—	0	7	—	—	—	0	1	—	—
Arkansas§	—	0	5	—	—	—	0	2	—	—	—	0	0	—	—
Louisiana	—	0	0	—	1	—	0	0	—	—	—	0	0	—	—
Oklahoma	—	0	61	—	—	—	0	5	—	—	—	0	0	—	—
Texas§	—	0	1	—	1	—	0	1	—	—	—	0	1	—	—
Mountain	—	0	0	—	—	—	0	0	—	—	—	0	1	1	—
Arizona	—	0	0	—	—	—	0	0	—	—	—	0	1	1	—
Colorado	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Idaho§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Montana§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Nevada§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
New Mexico§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Utah	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Wyoming§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Pacific	—	0	1	—	1	—	0	0	—	—	—	0	1	—	—
Alaska	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
California	—	0	1	—	1	—	0	0	—	—	—	0	1	—	—
Hawaii	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Oregon	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Washington	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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† Cumulative total *E. ewingii* cases reported for year 2010 = 11, and 1 case report for 2011.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Giardiasis					Gonorrhea					*Haemophilus influenzae*, invasive† All ages, all serotypes				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	202	321	501	3,492	4,756	2,639	5,801	6,570	77,839	81,748	19	58	124	891	995
New England	2	26	54	240	339	67	102	206	1,396	1,374	1	3	9	46	43
Connecticut	—	3	12	—	1	—	38	169	499	612	—	0	6	—	—
Maine§	1	3	11	29	50	—	2	7	44	69	—	0	2	7	1
Massachusetts	—	14	25	147	179	55	49	81	704	561	—	2	6	30	31
New Hampshire	—	2	10	18	44	2	3	7	33	41	—	0	1	4	5
Rhode Island§	—	1	7	7	19	9	5	15	108	81	—	0	2	3	5
Vermont§	1	4	10	39	46	1	0	17	8	10	1	0	3	2	1
Mid. Atlantic	32	61	106	691	810	296	717	1,165	10,012	9,482	5	11	26	179	215
New Jersey	—	3	18	—	105	7	117	173	1,691	1,549	—	2	5	30	31
New York (Upstate)	15	23	58	265	277	96	110	260	1,520	1,384	—	3	15	42	55
New York City	4	17	33	229	221	35	234	535	3,200	3,414	—	2	5	36	45
Pennsylvania	13	15	27	197	207	158	264	366	3,601	3,135	5	4	11	71	84
E.N. Central	14	52	91	537	869	155	1,036	1,975	13,063	14,785	1	10	20	153	167
Illinois	—	10	32	80	207	—	251	328	2,384	3,626	—	3	9	41	45
Indiana	—	5	11	55	110	—	113	999	2,170	1,148	—	1	7	19	31
Michigan	1	11	25	120	192	98	249	488	3,509	4,131	—	1	3	22	13
Ohio	13	17	29	218	235	57	318	383	3,964	4,624	1	2	6	54	37
Wisconsin	—	8	34	64	125	—	94	156	1,036	1,256	—	1	5	17	41
W.N. Central	13	24	102	266	386	99	287	366	3,861	3,997	—	2	7	29	55
Iowa	4	5	11	62	69	1	35	57	491	498	—	0	0	—	1
Kansas	2	3	10	38	62	—	40	62	467	543	—	0	2	2	7
Minnesota	—	0	75	—	61	—	37	62	418	649	—	0	4	—	16
Missouri	3	8	26	100	93	73	143	181	1,992	1,837	—	1	4	16	23
Nebraska§	4	4	9	54	65	25	22	50	342	321	—	0	3	10	3
North Dakota	—	0	5	—	6	—	3	11	32	48	—	0	2	1	5
South Dakota	—	2	8	12	30	—	9	20	119	101	—	0	0	—	—
S. Atlantic	82	71	121	754	967	829	1,375	1,808	19,021	20,836	7	15	26	227	239
Delaware	—	0	5	7	9	17	18	48	286	288	—	0	1	1	2
District of Columbia	—	0	5	7	12	20	34	66	508	587	—	0	1	—	—
Florida	24	39	75	333	490	158	377	486	5,135	5,653	6	4	9	84	64
Georgia	45	13	39	251	205	155	229	668	3,271	3,548	—	3	7	46	57
Maryland§	3	4	11	59	91	48	136	243	1,464	1,741	—	1	5	20	15
North Carolina	N	0	0	N	N	181	248	596	4,221	4,257	—	2	9	24	36
South Carolina§	1	3	9	28	31	172	155	261	2,268	2,241	1	1	5	23	33
Virginia§	1	8	32	58	119	78	127	223	1,623	2,382	—	2	6	29	26
West Virginia	8	0	6	11	10	—	14	26	245	139	—	0	9	—	6
E.S. Central	1	4	11	35	88	277	483	696	6,323	6,452	—	3	10	54	58
Alabama§	1	4	11	33	48	—	161	381	1,879	1,991	—	1	4	19	6
Kentucky	N	0	0	N	N	117	71	160	988	1,104	—	1	3	11	11
Mississippi	N	0	0	N	N	96	111	216	1,489	1,514	—	0	2	4	5
Tennessee§	—	0	4	2	40	64	146	194	1,967	1,843	—	1	4	20	36
W.S. Central	—	6	14	44	96	513	869	1,223	12,441	13,510	3	3	23	49	50
Arkansas§	—	2	7	24	28	78	95	138	1,406	1,276	2	0	3	12	8
Louisiana	—	3	8	20	40	58	97	284	1,451	1,987	—	0	4	19	11
Oklahoma	—	0	5	—	28	65	80	332	1,007	1,068	—	1	19	17	27
Texas§	N	0	0	N	N	312	600	866	8,577	9,179	1	0	1	1	4
Mountain	25	30	57	282	473	98	188	230	2,353	2,636	1	5	12	97	124
Arizona	2	3	8	32	45	29	58	83	518	931	—	2	6	41	51
Colorado	18	12	27	122	197	40	51	93	678	789	—	1	5	20	28
Idaho§	2	4	9	38	62	1	2	14	42	33	1	0	2	4	6
Montana§	3	1	6	10	38	—	2	5	23	38	—	0	1	2	—
Nevada§	—	2	11	24	16	24	35	103	626	454	—	0	2	8	4
New Mexico§	—	2	6	13	20	4	26	100	397	291	—	1	4	16	15
Utah	—	5	13	32	78	—	5	15	55	89	—	0	3	6	15
Wyoming§	—	0	5	11	17	—	1	4	14	11	—	0	1	—	5
Pacific	33	52	132	643	728	305	641	809	9,369	8,676	1	3	20	57	44
Alaska	—	2	6	15	28	—	21	36	251	424	—	0	2	7	9
California	23	32	57	433	458	247	522	684	7,390	6,993	—	0	16	9	—
Hawaii	—	1	4	5	19	—	13	26	133	207	—	0	2	8	9
Oregon	4	8	20	113	147	28	19	29	336	319	—	2	6	32	24
Washington	6	8	71	77	76	30	61	115	1,259	733	1	0	2	1	2
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	1	—	1	—	0	5	6	4	—	0	0	—	—
Puerto Rico	—	0	8	8	21	11	6	14	112	73	—	0	0	—	1
U.S. Virgin Islands	—	0	0	—	—	—	3	7	—	24	—	0	0	—	—

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U: Unavailable. —: No reported cases. N: Not reportable. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
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† 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 April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Hepatitis (viral, acute), by type														
	A					B					C				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	9	28	44	308	442	19	60	148	596	857	11	15	32	220	224
New England	—	1	6	12	30	—	0	4	9	23	—	0	4	7	21
Connecticut	—	0	4	5	—	—	0	2	2	5	—	0	4	3	11
Maine†	—	0	1	1	2	—	0	1	2	7	—	0	2	2	—
Massachusetts	—	0	5	3	23	—	0	2	4	5	—	0	1	1	10
New Hampshire	—	0	1	—	—	—	0	2	1	5	N	0	0	N	N
Rhode Island†	—	0	1	1	5	U	0	0	U	U	U	0	0	U	U
Vermont†	—	0	1	2	—	—	0	1	—	1	—	0	1	1	—
Mid. Atlantic	1	3	10	44	60	2	5	10	65	83	1	1	5	17	22
New Jersey	—	0	1	1	8	—	1	5	8	21	—	0	2	—	5
New York (Upstate)	1	1	4	12	15	1	1	8	13	11	1	1	4	12	9
New York City	—	1	7	17	23	—	1	4	20	30	—	0	1	—	—
Pennsylvania	—	1	3	14	14	1	2	5	24	21	—	0	3	5	8
E.N. Central	—	4	9	49	70	1	9	23	85	161	3	2	6	49	22
Illinois	—	1	3	6	16	—	2	7	18	31	—	0	1	1	—
Indiana	—	0	3	7	7	—	1	6	8	24	—	1	4	20	7
Michigan	—	1	5	18	18	1	2	5	28	38	3	1	4	27	10
Ohio	—	1	5	17	10	—	1	16	24	33	—	0	1	1	3
Wisconsin	—	0	1	1	19	—	1	5	7	35	—	0	2	—	2
W.N. Central	1	1	13	13	17	1	2	8	32	41	—	0	8	2	5
Iowa	—	0	3	1	4	—	0	1	3	7	—	0	0	—	—
Kansas	—	0	2	2	6	—	0	1	3	2	—	0	1	—	—
Minnesota	—	0	12	2	1	—	0	7	1	2	—	0	6	—	3
Missouri	—	0	2	3	4	—	1	3	19	22	—	0	2	—	2
Nebraska†	1	0	4	3	2	1	0	3	5	8	—	0	1	2	—
North Dakota	—	0	3	—	—	—	0	0	—	—	—	0	0	—	—
South Dakota	—	0	2	2	—	—	0	1	1	—	—	0	0	—	—
S. Atlantic	3	6	14	63	94	10	17	33	173	223	1	4	8	48	54
Delaware	—	0	1	1	4	—	0	2	—	10	U	0	0	U	U
District of Columbia	—	0	0	—	1	—	0	1	—	2	—	0	0	—	2
Florida	2	2	7	24	31	7	5	11	63	78	1	1	5	15	14
Georgia	—	1	4	17	8	—	2	8	29	53	—	0	3	7	5
Maryland†	1	0	3	9	6	—	1	4	14	23	—	1	3	7	8
North Carolina	—	0	4	3	19	2	2	16	35	18	—	1	4	15	16
South Carolina†	—	0	1	2	16	1	1	4	10	12	—	0	1	—	—
Virginia†	—	1	6	7	8	—	2	7	22	20	—	0	2	4	4
West Virginia	—	0	5	—	1	—	0	18	—	7	—	0	5	—	5
E.S. Central	—	0	6	7	14	2	8	14	116	86	—	3	8	37	37
Alabama†	—	0	2	—	4	1	1	4	27	19	—	0	1	2	1
Kentucky	—	0	6	2	6	—	3	8	35	28	—	2	6	16	29
Mississippi	—	0	1	2	1	—	0	3	7	7	U	0	0	U	U
Tennessee†	—	0	2	3	3	1	3	8	47	32	—	1	5	19	7
W.S. Central	—	2	13	20	39	3	9	61	62	102	2	2	12	25	18
Arkansas†	—	0	1	—	—	—	1	4	9	12	—	0	0	—	—
Louisiana	—	0	2	1	3	—	1	4	12	17	—	0	2	4	1
Oklahoma	—	0	4	1	—	1	2	14	14	13	1	1	11	13	7
Texas†	—	2	9	18	36	2	4	43	27	60	1	0	3	8	10
Mountain	1	2	8	22	48	—	2	7	21	45	1	1	4	13	22
Arizona	—	1	4	7	22	—	0	2	5	13	U	0	0	U	U
Colorado	—	1	2	6	10	—	0	5	1	10	—	0	3	1	6
Idaho†	1	0	2	3	2	—	0	1	2	3	1	0	2	6	5
Montana†	—	0	1	2	3	—	0	0	—	—	—	0	1	1	—
Nevada†	—	0	2	1	6	—	1	3	11	11	—	0	1	3	1
New Mexico†	—	0	1	2	2	—	0	1	1	2	—	0	1	2	7
Utah	—	0	2	—	3	—	0	1	1	6	—	0	2	—	3
Wyoming†	—	0	3	1	—	—	0	1	—	—	—	0	0	—	—
Pacific	3	5	16	78	70	—	5	23	33	93	3	1	8	22	23
Alaska	—	0	1	1	—	—	0	1	2	1	U	0	0	U	U
California	3	4	16	67	54	—	3	18	13	67	1	0	4	11	9
Hawaii	—	0	1	2	4	—	0	1	2	2	U	0	0	U	U
Oregon	—	0	1	2	8	—	1	3	10	15	—	0	3	6	8
Washington	—	0	2	6	4	—	1	5	6	8	2	0	5	5	6
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	5	6	7	—	1	8	22	16	—	0	7	9	12
Puerto Rico	—	0	2	2	4	—	0	2	1	8	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Legionellosis					Lyme disease					Malaria				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	21	57	122	463	597	72	411	1,676	1,688	3,992	12	27	81	244	323
New England	—	4	16	22	27	—	128	504	166	1,299	—	1	11	10	18
Connecticut	—	0	6	—	—	—	43	213	—	549	—	0	11	—	—
Maine†	—	0	3	3	—	—	11	62	41	57	—	0	1	1	—
Massachusetts	—	2	10	14	20	—	40	223	53	431	—	1	4	6	16
New Hampshire	—	0	5	2	1	—	20	69	52	228	—	0	2	1	1
Rhode Island†	—	0	4	1	5	—	1	40	4	14	—	0	4	—	1
Vermont†	—	0	2	2	1	—	4	28	16	20	—	0	1	2	—
Mid. Atlantic	5	13	48	108	128	45	180	737	1,027	1,832	—	7	18	61	80
New Jersey	—	0	11	1	21	—	42	220	206	559	—	0	1	—	—
New York (Upstate)	4	5	19	49	34	28	36	159	174	244	—	1	6	10	19
New York City	—	2	17	22	30	—	1	10	2	44	—	4	14	41	45
Pennsylvania	1	6	19	36	43	17	92	386	645	985	—	1	3	10	16
E.N. Central	2	12	44	86	147	—	26	330	28	184	3	3	9	24	34
Illinois	—	2	15	9	19	—	1	18	3	10	—	1	7	5	17
Indiana	—	1	6	9	29	—	0	7	1	13	—	0	2	2	4
Michigan	—	3	20	19	20	—	1	14	4	1	—	0	4	4	3
Ohio	2	4	15	49	50	—	0	9	5	5	3	1	5	12	9
Wisconsin	—	0	5	—	29	—	23	302	15	155	—	0	2	1	1
W.N. Central	1	2	9	9	20	—	1	11	2	4	—	1	4	2	18
Iowa	—	0	2	1	2	—	0	10	1	2	—	0	2	—	4
Kansas	—	0	2	1	2	—	0	1	1	1	—	0	2	1	3
Minnesota	—	0	8	—	4	—	0	0	—	—	—	0	0	—	3
Missouri	1	0	4	6	6	—	0	1	—	—	—	0	3	—	3
Nebraska†	—	0	2	—	2	—	0	2	—	1	—	0	1	1	5
North Dakota	—	0	1	—	2	—	0	5	—	—	—	0	1	—	—
South Dakota	—	0	2	1	2	—	0	1	—	—	—	0	2	—	—
S. Atlantic	5	10	27	81	104	27	57	178	411	599	3	7	44	79	104
Delaware	—	0	3	1	3	3	10	33	107	157	—	0	1	—	1
District of Columbia	—	0	4	—	1	—	0	4	3	3	—	0	2	3	4
Florida	2	3	9	41	45	4	1	8	18	16	2	2	7	25	35
Georgia	1	1	4	3	14	—	0	2	1	2	—	1	7	12	16
Maryland†	1	2	6	13	25	10	22	106	159	269	1	1	24	15	15
North Carolina	—	1	7	10	5	1	0	9	10	37	—	0	13	8	20
South Carolina†	—	0	2	3	1	—	0	3	1	12	—	0	1	—	1
Virginia†	1	1	9	10	9	9	18	82	112	93	—	1	5	16	12
West Virginia	—	0	3	—	1	—	0	29	—	10	—	0	1	—	—
E.S. Central	—	2	10	18	24	—	0	4	6	10	—	0	3	5	4
Alabama†	—	0	2	4	3	—	0	2	3	—	—	0	1	1	1
Kentucky	—	0	4	4	8	—	0	1	—	1	—	0	1	2	2
Mississippi	—	0	3	2	2	—	0	0	—	—	—	0	2	1	—
Tennessee†	—	1	6	8	11	—	0	4	3	9	—	0	2	1	1
W.S. Central	—	3	8	17	19	—	2	22	6	15	1	1	17	12	20
Arkansas†	—	0	2	—	1	—	0	0	—	—	—	0	1	—	1
Louisiana	—	0	3	6	1	—	0	1	—	—	—	0	1	—	1
Oklahoma	—	0	3	1	—	—	0	0	—	—	1	0	1	2	2
Texas†	—	2	7	10	17	—	2	22	6	15	—	1	16	10	16
Mountain	1	3	10	20	44	—	0	3	2	2	—	1	4	11	16
Arizona	—	1	7	7	11	—	0	1	1	—	—	0	3	3	6
Colorado	1	0	2	2	11	—	0	1	—	—	—	0	3	3	5
Idaho†	—	0	1	1	—	—	0	2	—	1	—	0	1	—	—
Montana†	—	0	1	—	1	—	0	1	—	—	—	0	1	—	—
Nevada†	—	0	2	3	10	—	0	1	—	—	—	0	2	3	2
New Mexico†	—	0	2	2	2	—	0	2	1	—	—	0	1	2	—
Utah	—	0	2	4	9	—	0	1	—	1	—	0	0	—	3
Wyoming†	—	0	2	1	—	—	0	0	—	—	—	0	0	—	—
Pacific	7	5	15	102	84	—	3	11	40	47	5	4	10	40	29
Alaska	—	0	2	—	—	—	0	1	—	1	—	0	2	2	1
California	7	4	14	91	76	—	2	8	27	27	3	2	9	30	21
Hawaii	—	0	1	1	—	N	0	0	N	N	—	0	1	—	—
Oregon	—	0	3	2	1	—	0	3	13	19	—	0	3	3	2
Washington	—	0	5	8	7	—	0	3	—	—	2	0	5	5	5
Territories															
American Samoa	—	0	0	—	—	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	N	0	0	N	N	—	0	1	—	3
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Meningococcal disease, invasive† All serogroups					Mumps					Pertussis				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	8	14	38	236	285	2	13	220	94	1,089	95	544	2,175	3,630	3,382
New England	—	0	3	11	4	—	0	2	1	15	1	10	24	102	76
Connecticut	—	0	1	1	—	—	0	1	—	10	—	1	8	—	10
Maine§	—	0	1	3	—	—	0	1	—	1	1	1	8	41	5
Massachusetts	—	0	2	7	2	—	0	2	1	4	—	5	13	45	53
New Hampshire	—	0	0	—	—	—	0	1	—	—	—	0	3	12	3
Rhode Island§	—	0	1	—	—	—	0	0	—	—	—	0	7	3	3
Vermont§	—	0	1	—	2	—	0	0	—	—	—	0	4	1	2
Mid. Atlantic	—	1	5	26	27	—	4	209	10	978	11	38	122	370	182
New Jersey	—	0	1	—	9	—	1	14	5	234	—	2	9	11	36
New York (Upstate)	—	0	4	7	3	—	0	18	1	590	8	12	85	123	63
New York City	—	0	3	11	7	—	0	201	4	143	—	0	12	7	3
Pennsylvania	—	0	2	8	8	—	0	16	—	11	3	20	70	229	80
E.N. Central	—	2	9	31	52	—	1	7	20	32	15	114	194	922	834
Illinois	—	0	3	10	8	—	1	2	10	6	—	22	52	146	123
Indiana	—	0	2	4	12	—	0	1	—	2	—	12	26	68	94
Michigan	—	0	4	3	6	—	0	1	3	11	2	31	57	304	228
Ohio	—	1	2	11	12	—	0	5	7	5	13	34	80	313	299
Wisconsin	—	0	3	3	14	—	0	2	—	8	—	12	24	91	90
W.N. Central	2	1	5	16	18	—	1	14	12	16	5	36	416	208	250
Iowa	—	0	1	3	5	—	0	7	1	5	—	11	34	44	62
Kansas	—	0	2	1	1	—	0	1	3	1	—	2	9	23	41
Minnesota	—	0	0	—	2	—	0	4	—	3	—	0	408	—	—
Missouri	1	0	4	7	8	—	0	3	6	5	3	7	44	95	111
Nebraska§	—	0	2	3	2	—	0	10	1	2	2	4	13	31	21
North Dakota	1	0	1	1	—	—	0	1	1	—	—	0	30	13	—
South Dakota	—	0	1	1	—	—	0	1	—	—	—	0	2	2	15
S. Atlantic	4	2	6	41	60	2	0	4	5	24	14	38	103	402	370
Delaware	1	0	1	1	1	—	0	0	—	—	—	0	4	6	—
District of Columbia	—	0	0	—	—	—	0	0	—	2	—	0	2	1	1
Florida	2	1	3	15	29	2	0	2	3	5	5	6	28	91	52
Georgia	1	0	2	2	4	—	0	2	1	—	—	5	13	61	55
Maryland§	—	0	1	3	2	—	0	1	—	5	—	2	6	27	44
North Carolina	—	0	3	8	8	—	0	2	—	2	7	3	35	84	126
South Carolina§	—	0	1	4	4	—	0	1	—	3	—	6	25	43	53
Virginia§	—	0	2	8	11	—	0	2	1	5	2	7	39	89	33
West Virginia	—	0	1	—	1	—	0	0	—	2	—	0	41	—	6
E.S. Central	—	1	3	11	13	—	0	2	3	3	1	13	35	110	238
Alabama§	—	0	1	6	2	—	0	2	1	1	—	4	8	30	58
Kentucky	—	0	2	—	6	—	0	1	—	—	—	4	16	38	97
Mississippi	—	0	1	2	2	—	0	1	2	—	—	1	8	5	17
Tennessee§	—	0	2	3	3	—	0	1	—	2	1	3	11	37	66
W.S. Central	—	1	11	23	34	—	2	16	36	13	23	54	263	256	800
Arkansas§	—	0	1	6	3	—	0	1	—	1	—	2	17	15	45
Louisiana	—	0	1	5	8	—	0	2	—	1	—	1	3	3	11
Oklahoma	—	0	2	3	12	—	0	1	1	—	6	1	92	17	3
Texas§	—	1	9	9	11	—	2	15	35	11	17	44	157	221	741
Mountain	1	1	6	19	19	—	0	4	1	4	13	41	99	623	307
Arizona	—	0	2	7	6	—	0	1	—	1	3	12	29	225	118
Colorado	—	0	4	1	4	—	0	1	—	3	10	12	63	236	34
Idaho§	—	0	1	3	1	—	0	1	—	—	—	2	15	29	43
Montana§	—	0	2	2	1	—	0	0	—	—	—	2	16	46	5
Nevada§	—	0	1	2	4	—	0	1	—	—	—	0	7	8	1
New Mexico§	1	0	1	1	2	—	0	2	1	—	—	2	11	29	29
Utah	—	0	1	3	1	—	0	1	—	—	—	6	16	48	76
Wyoming§	—	0	1	—	—	—	0	1	—	—	—	0	2	2	1
Pacific	1	3	15	58	58	—	0	18	6	4	12	150	1,101	637	325
Alaska	—	0	1	—	—	—	0	1	1	1	—	1	6	14	6
California	—	2	10	38	43	—	0	18	—	—	11	130	959	475	202
Hawaii	—	0	1	2	1	—	0	1	2	1	—	1	6	8	17
Oregon	—	1	3	14	10	—	0	1	3	1	1	5	12	53	70
Washington	1	0	4	4	4	—	0	2	—	1	—	10	132	87	30
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	1	15	12	7	—	0	14	28	—
Puerto Rico	—	0	0	—	—	—	0	1	—	—	—	0	1	1	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Rabies, animal					Salmonellosis					Shiga toxin-producing *E. coli* (STEC)†				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	16	56	148	435	896	344	933	1,766	6,435	8,397	39	92	217	725	724
New England	1	4	18	24	60	4	33	110	311	835	—	2	13	19	86
Connecticut	—	2	11	—	19	—	0	88	88	490	—	0	9	9	60
Maine§	—	1	3	10	19	4	3	8	33	21	—	0	3	1	1
Massachusetts	—	0	0	—	—	—	21	52	150	250	—	1	9	3	16
New Hampshire	1	0	6	4	4	—	3	12	21	34	—	0	2	6	8
Rhode Island§	—	0	4	2	3	—	2	18	10	28	—	0	1	—	—
Vermont§	—	1	3	8	15	—	1	5	9	12	—	0	2	—	1
Mid. Atlantic	6	17	33	65	303	29	95	218	689	974	4	9	32	81	76
New Jersey	—	0	0	—	—	—	14	57	58	176	—	1	9	11	18
New York (Upstate)	6	8	19	65	120	13	26	63	188	205	3	4	12	28	20
New York City	—	0	4	—	87	1	23	56	186	248	—	1	7	12	10
Pennsylvania	—	7	17	—	96	15	31	81	257	345	1	3	13	30	28
E.N. Central	—	2	27	12	13	19	91	253	641	1,017	1	13	44	94	130
Illinois	—	1	11	4	5	—	34	124	177	344	—	2	9	9	24
Indiana	—	0	0	—	—	—	13	62	58	128	—	2	10	17	12
Michigan	—	1	5	4	5	3	15	49	118	182	—	3	16	24	40
Ohio	—	0	12	4	3	16	24	47	227	253	1	3	11	30	17
Wisconsin	—	0	0	—	—	—	10	48	61	110	—	3	17	14	37
W.N. Central	3	4	36	19	59	29	44	97	364	468	4	11	39	65	80
Iowa	—	0	3	—	3	1	10	34	92	59	—	2	16	13	15
Kansas	1	1	4	10	22	9	7	18	61	72	—	1	5	14	9
Minnesota	—	0	34	—	9	—	0	32	—	117	—	0	7	—	20
Missouri	—	0	6	—	7	15	14	44	159	136	2	4	27	25	22
Nebraska§	1	1	4	5	15	4	4	13	34	42	2	1	6	12	9
North Dakota	1	0	3	4	3	—	0	13	—	8	—	0	10	—	—
South Dakota	—	0	0	—	—	—	3	17	18	34	—	0	4	1	5
S. Atlantic	—	20	38	223	355	132	262	619	1,907	2,200	15	16	31	212	115
Delaware	—	0	0	—	—	1	3	11	25	22	—	0	2	3	1
District of Columbia	—	0	0	—	—	—	1	6	5	22	—	0	1	1	2
Florida	—	0	24	35	121	71	108	226	789	968	6	5	15	100	48
Georgia	—	0	0	—	—	5	43	142	349	273	—	2	7	19	16
Maryland§	—	6	15	55	98	15	18	57	147	182	2	2	9	24	15
North Carolina	—	0	0	—	—	14	26	240	272	431	3	2	10	28	9
South Carolina§	—	0	0	—	—	5	25	99	135	126	1	0	4	7	3
Virginia§	—	12	25	133	116	10	21	68	168	131	2	3	9	29	20
West Virginia	—	1	7	—	20	11	1	14	17	45	1	0	4	1	1
E.S. Central	1	3	7	43	41	13	55	177	436	407	2	5	22	47	37
Alabama§	1	1	7	27	9	—	20	52	127	140	—	1	4	10	11
Kentucky	—	0	4	3	2	7	11	32	84	70	—	1	6	8	3
Mississippi	—	0	1	—	—	—	18	67	92	70	—	0	12	3	4
Tennessee§	—	1	4	13	30	6	17	53	133	127	2	2	7	26	19
W.S. Central	4	0	30	31	10	26	132	469	606	737	1	8	100	46	34
Arkansas§	4	0	10	21	6	13	12	43	94	56	—	1	5	5	5
Louisiana	—	0	0	—	—	—	19	49	76	194	—	0	2	2	4
Oklahoma	—	0	30	10	4	11	12	95	77	61	1	0	40	7	1
Texas§	—	0	0	—	—	2	84	345	359	426	—	5	60	32	24
Mountain	1	1	7	5	14	20	51	113	465	594	4	11	33	65	89
Arizona	—	0	0	—	—	2	16	43	148	200	—	1	14	23	17
Colorado	—	0	0	—	—	10	10	24	116	136	1	3	21	6	24
Idaho§	—	0	2	—	1	1	3	9	44	37	3	2	7	12	10
Montana§	—	0	3	2	—	5	1	6	19	24	—	1	3	2	10
Nevada§	—	0	2	—	—	2	5	22	39	38	—	0	5	2	5
New Mexico§	1	0	2	3	3	—	6	19	43	68	—	0	6	6	10
Utah	—	0	2	—	—	—	5	17	46	76	—	2	8	14	11
Wyoming§	—	0	4	—	10	—	1	8	10	15	—	0	3	—	2
Pacific	—	1	13	13	41	72	117	291	1,016	1,165	8	12	52	96	77
Alaska	—	0	2	9	9	—	1	4	16	19	—	0	1	—	1
California	—	0	12	—	28	47	79	217	762	844	6	6	32	67	46
Hawaii	—	0	0	—	—	—	6	14	70	79	—	0	3	1	13
Oregon	—	0	2	4	4	1	8	48	75	138	—	2	11	14	8
Washington	—	0	0	—	—	24	14	71	93	85	2	2	18	14	9
Territories															
American Samoa	N	0	0	N	N	—	0	1	—	1	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	3	4	—	—	0	0	—	—
Puerto Rico	—	0	3	6	16	—	7	21	15	154	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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† 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 April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Shigellosis					Spotted Fever Rickettsiosis (including RMSF)†									
						Confirmed					Probable				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	113	274	530	2,158	3,703	—	2	10	15	13	2	28	192	73	106
New England	—	4	17	50	134	—	0	0	—	—	—	0	1	1	1
Connecticut	—	0	8	8	69	—	0	0	—	—	—	0	0	—	—
Maine§	—	0	3	5	3	—	0	0	—	—	—	0	1	—	1
Massachusetts	—	3	16	36	54	—	0	0	—	—	—	0	0	—	—
New Hampshire	—	0	2	—	3	—	0	0	—	—	—	0	1	—	—
Rhode Island§	—	0	4	—	4	—	0	0	—	—	—	0	1	1	—
Vermont§	—	0	1	1	1	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	8	23	70	141	524	—	0	1	1	—	—	1	4	3	7
New Jersey	—	4	16	20	88	—	0	0	—	—	—	0	0	—	—
New York (Upstate)	6	3	15	33	46	—	0	1	—	—	—	0	3	—	1
New York City	1	5	14	63	94	—	0	1	—	—	—	0	4	2	6
Pennsylvania	1	9	55	25	296	—	0	1	1	—	—	0	3	1	—
E.N. Central	3	22	45	142	748	—	0	1	—	—	—	1	10	4	2
Illinois	—	7	20	43	512	—	0	1	—	—	—	0	5	1	1
Indiana§	—	1	4	15	12	—	0	1	—	—	—	0	5	—	1
Michigan	1	5	10	33	59	—	0	0	—	—	—	0	1	1	—
Ohio	2	5	18	51	72	—	0	0	—	—	—	0	2	2	—
Wisconsin	—	1	21	—	93	—	0	0	—	—	—	0	1	—	—
W.N. Central	4	19	81	99	784	—	0	4	2	—	—	4	21	12	11
Iowa	—	1	4	4	14	—	0	0	—	—	—	0	1	1	—
Kansas§	1	4	13	21	58	—	0	1	—	—	—	0	0	—	—
Minnesota	—	0	0	—	14	—	0	0	—	—	—	0	0	—	—
Missouri	3	11	66	70	690	—	0	4	2	—	—	4	20	11	11
Nebraska§	—	1	10	3	5	—	0	1	—	—	—	0	1	—	—
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	1	—	—
South Dakota	—	0	2	1	3	—	0	0	—	—	—	0	0	—	—
S. Atlantic	45	59	122	762	476	—	1	7	6	9	1	6	60	23	64
Delaware§	—	0	2	—	27	—	0	0	—	1	—	0	3	2	5
District of Columbia	—	0	3	6	8	—	0	1	—	—	—	0	0	—	—
Florida§	36	28	55	516	167	—	0	1	1	—	—	0	2	1	1
Georgia	1	16	27	117	164	—	0	6	2	4	—	0	0	—	—
Maryland§	4	2	8	25	28	—	0	1	1	1	—	0	5	1	6
North Carolina	1	3	36	62	37	—	0	3	1	3	—	2	48	12	48
South Carolina§	—	1	5	11	24	—	0	1	1	—	—	0	2	1	2
Virginia§	1	2	8	23	21	—	0	2	—	—	1	2	12	6	2
West Virginia	2	0	66	2	—	—	0	0	—	—	—	0	0	—	—
E.S. Central	5	14	40	119	138	—	0	3	—	2	1	5	29	11	12
Alabama§	2	5	14	48	20	—	0	1	—	—	—	1	8	5	2
Kentucky	3	2	28	15	44	—	0	2	—	1	—	0	0	—	—
Mississippi	—	1	6	23	10	—	0	0	—	—	—	0	3	—	—
Tennessee§	—	4	14	33	64	—	0	2	—	1	1	4	20	6	10
W.S. Central	24	54	290	378	500	—	0	7	—	1	—	2	184	3	8
Arkansas§	2	1	6	11	11	—	0	2	—	—	—	1	29	1	3
Louisiana	—	5	13	30	50	—	0	0	—	—	—	0	1	—	—
Oklahoma	1	3	46	27	76	—	0	4	—	—	—	0	152	1	1
Texas§	21	44	240	310	363	—	0	1	—	1	—	0	3	1	4
Mountain	9	16	32	199	160	—	0	5	6	—	—	0	7	16	1
Arizona	3	8	19	46	90	—	0	4	6	—	—	0	7	16	—
Colorado§	3	2	8	27	19	—	0	1	—	—	—	0	1	—	—
Idaho§	—	0	3	6	4	—	0	0	—	—	—	0	1	—	—
Montana§	3	0	15	73	3	—	0	1	—	—	—	0	1	—	—
Nevada§	—	0	6	6	8	—	0	0	—	—	—	0	0	—	—
New Mexico§	—	3	10	33	27	—	0	0	—	—	—	0	0	—	1
Utah	—	1	4	8	9	—	0	0	—	—	—	0	1	—	—
Wyoming§	—	0	0	—	—	—	0	0	—	—	—	0	1	—	—
Pacific	15	22	73	268	239	—	0	2	—	1	—	0	1	—	—
Alaska	—	0	1	1	—	N	0	0	N	N	N	0	0	N	N
California	7	19	58	210	194	—	0	2	—	1	—	0	0	—	—
Hawaii	—	1	4	18	13	N	0	0	N	N	N	0	0	N	N
Oregon	2	1	4	21	21	—	0	0	—	—	—	0	1	—	—
Washington	6	1	17	18	11	—	0	0	—	—	—	0	0	—	—
Territories															
American Samoa	—	1	1	1	—	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	1	1	—	N	0	0	N	N	N	0	0	N	N
Puerto Rico	—	0	1	—	1	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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† Illnesses with similar clinical presentation that result from Spotted fever group rickettsia infections are reported as Spotted fever rickettsioses. Rocky Mountain spotted fever (RMSF) caused by Rickettsia rickettsii, is the most common and well-known spotted fever.
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	*Streptococcus pneumoniae*,† invasive disease										Syphilis, primary and secondary				
	All ages					Age <5									
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	190	296	867	5,087	6,212	13	32	98	437	928	92	254	353	2,917	3,635
New England	3	7	68	84	164	—	1	4	9	31	5	9	20	109	119
Connecticut	—	0	46	—	—	—	0	3	—	—	—	1	8	13	20
Maine§	2	2	13	45	48	—	0	1	2	4	—	0	3	5	11
Massachusetts	—	0	5	11	36	—	0	3	5	23	3	6	15	69	75
New Hampshire	—	0	7	—	47	—	0	0	—	3	—	0	2	9	5
Rhode Island§	—	1	36	8	—	—	0	3	—	—	—	0	4	9	6
Vermont§	1	1	5	20	33	—	0	1	2	1	2	0	1	4	2
Mid. Atlantic	15	31	60	548	438	—	5	19	60	118	13	30	46	309	506
New Jersey	—	1	8	22	41	—	1	5	14	21	—	4	10	44	71
New York (Upstate)	—	2	11	29	61	—	1	9	17	47	7	2	18	51	26
New York City	4	14	33	262	149	—	1	14	9	28	—	14	29	117	297
Pennsylvania	11	12	23	235	187	—	1	5	20	22	6	7	16	97	112
E.N. Central	32	61	105	1,099	1,227	2	5	12	80	163	—	30	53	241	549
Illinois	—	2	6	25	48	—	1	4	25	42	—	12	25	46	283
Indiana	—	11	28	199	280	—	0	4	7	26	—	4	14	37	44
Michigan	2	14	29	229	272	—	1	4	13	41	—	4	9	46	81
Ohio	30	25	45	509	488	2	2	5	28	36	—	10	21	102	125
Wisconsin	—	7	19	137	139	—	0	4	7	18	—	1	3	10	16
W.N. Central	3	9	59	150	338	—	1	9	24	71	—	7	18	83	83
Iowa	—	0	0	—	—	—	0	0	—	—	—	0	3	3	4
Kansas	—	2	6	32	46	—	0	2	2	8	—	0	3	4	5
Minnesota	—	0	46	—	180	—	0	6	—	33	—	3	10	32	19
Missouri	1	3	10	70	46	—	0	4	19	18	—	3	9	42	52
Nebraska§	2	2	9	48	52	—	0	1	3	8	—	0	2	2	3
North Dakota	—	0	11	—	4	—	0	1	—	—	—	0	0	—	—
South Dakota	—	0	2	—	10	—	0	2	—	4	—	0	1	—	—
S. Atlantic	68	71	171	1,294	1,829	7	8	25	111	237	36	61	153	785	795
Delaware	—	1	4	26	11	—	0	1	—	—	—	0	4	4	2
District of Columbia	1	0	2	5	13	—	0	2	1	3	3	3	15	50	41
Florida	36	26	68	636	684	6	3	13	56	92	3	23	44	287	293
Georgia	4	17	53	161	620	—	2	7	15	70	—	12	108	99	119
Maryland§	10	9	32	234	199	—	1	4	11	24	5	7	16	112	64
North Carolina	—	0	0	—	—	—	0	0	—	—	11	6	19	106	145
South Carolina§	17	8	25	216	239	1	1	4	12	23	8	3	10	63	41
Virginia§	—	1	4	16	24	—	1	4	16	22	6	4	16	64	87
West Virginia	—	0	14	—	39	—	0	6	—	3	—	0	2	—	3
E.S. Central	17	24	45	457	547	1	2	7	28	49	7	16	39	148	247
Alabama§	—	0	0	—	—	—	0	0	—	—	—	4	11	29	79
Kentucky	1	4	11	61	65	—	0	3	7	4	6	2	12	30	24
Mississippi	—	1	8	4	28	—	0	2	—	5	1	3	16	31	55
Tennessee§	16	20	36	392	454	1	1	6	21	40	—	5	17	58	89
W.S. Central	22	31	343	584	709	1	4	30	62	120	19	37	71	433	546
Arkansas§	6	3	23	102	64	—	0	3	10	9	2	3	10	45	74
Louisiana	—	2	10	74	48	—	0	2	6	15	1	8	36	60	97
Oklahoma	—	1	8	13	24	—	1	8	13	24	—	2	6	13	23
Texas§	16	25	310	395	573	1	3	19	33	72	16	23	33	315	352
Mountain	27	33	75	753	842	2	3	8	56	121	2	12	24	101	144
Arizona	4	12	39	355	418	1	1	5	25	55	—	4	9	7	59
Colorado	18	10	23	173	207	—	1	3	8	31	—	2	8	28	37
Idaho§	1	0	2	4	6	1	0	2	3	2	—	0	2	3	2
Montana§	1	0	2	4	6	—	0	1	—	—	—	0	2	1	—
Nevada§	3	2	8	46	32	—	0	1	3	3	1	2	9	39	23
New Mexico§	—	3	13	106	71	—	0	2	7	12	1	1	4	18	8
Utah	—	4	8	54	94	—	0	3	10	16	—	1	5	5	15
Wyoming§	—	0	15	11	8	—	0	1	—	2	—	0	0	—	—
Pacific	3	6	24	118	118	—	0	5	7	18	10	49	66	708	646
Alaska	—	2	11	45	54	—	0	2	3	14	—	0	1	—	2
California	3	3	23	72	64	—	0	5	4	4	6	41	57	559	545
Hawaii	—	0	3	1	—	—	0	0	—	—	—	0	5	1	13
Oregon	—	0	0	—	—	—	0	0	—	—	1	1	7	28	19
Washington	—	0	0	—	—	—	0	0	—	—	3	6	14	120	67
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	3	4	15	65	54
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Case counts for reporting year 2010 and 2011 are provisional and subject to change. For further information on interpretation of these data, see http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf. Data for TB are displayed in Table IV, which appears quarterly.
† Includes drug resistant and susceptible cases of invasive Streptococcus pneumoniae disease among children <5 years and among all ages. Case definition: Isolation of S. pneumoniae from a normally sterile body site (e.g., blood or cerebrospinal fluid).
§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 16, 2011, and April 17, 2010 (15th week)*

Reporting area	Varicella (chickenpox)					West Nile virus disease†									
						Neuroinvasive					Nonneuroinvasive§				
	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010	Current week	Previous 52 weeks		Cum 2011	Cum 2010
		Med	Max				Med	Max				Med	Max		
United States	140	239	574	3,176	5,178	—	1	71	—	1	—	1	53	—	3
New England	1	19	46	200	329	—	0	3	—	—	—	0	2	—	—
Connecticut	—	4	20	—	76	—	0	2	—	—	—	0	2	—	—
Maine¶	—	4	16	67	83	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	5	17	84	86	—	0	2	—	—	—	0	1	—	—
New Hampshire	—	2	9	9	48	—	0	1	—	—	—	0	0	—	—
Rhode Island¶	—	0	4	6	8	—	0	0	—	—	—	0	0	—	—
Vermont¶	1	2	13	34	28	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	31	25	62	355	553	—	0	19	—	—	—	0	13	—	—
New Jersey	—	7	30	86	203	—	0	3	—	—	—	0	6	—	—
New York (Upstate)	N	0	0	N	N	—	0	9	—	—	—	0	7	—	—
New York City	—	0	0	—	1	—	0	7	—	—	—	0	4	—	—
Pennsylvania	31	19	41	269	349	—	0	3	—	—	—	0	3	—	—
E.N. Central	40	71	154	1,036	1,870	—	0	15	—	—	—	0	7	—	—
Illinois	4	18	43	232	493	—	0	10	—	—	—	0	4	—	—
Indiana¶	8	5	24	83	178	—	0	2	—	—	—	0	2	—	—
Michigan	6	25	53	334	605	—	0	6	—	—	—	0	1	—	—
Ohio	22	21	58	386	470	—	0	1	—	—	—	0	1	—	—
Wisconsin	—	5	22	1	124	—	0	0	—	—	—	0	1	—	—
W.N. Central	—	11	32	69	292	—	0	7	—	—	—	0	11	—	1
Iowa	N	0	0	N	N	—	0	1	—	—	—	0	2	—	—
Kansas¶	—	2	19	45	133	—	0	1	—	—	—	0	3	—	1
Minnesota	—	0	0	—	—	—	0	1	—	—	—	0	3	—	—
Missouri	—	7	23	10	131	—	0	1	—	—	—	0	0	—	—
Nebraska¶	N	0	0	N	N	—	0	3	—	—	—	0	7	—	—
North Dakota	—	0	10	11	20	—	0	2	—	—	—	0	2	—	—
South Dakota	—	1	7	3	8	—	0	2	—	—	—	0	3	—	—
S. Atlantic	29	32	100	428	628	—	0	6	—	—	—	0	4	—	2
Delaware¶	—	0	4	4	3	—	0	0	—	—	—	0	0	—	—
District of Columbia	—	0	2	5	5	—	0	1	—	—	—	0	1	—	—
Florida¶	29	15	57	316	319	—	0	3	—	—	—	0	1	—	—
Georgia	N	0	0	N	N	—	0	1	—	—	—	0	3	—	2
Maryland¶	N	0	0	N	N	—	0	3	—	—	—	0	2	—	—
North Carolina	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
South Carolina¶	—	0	13	—	45	—	0	1	—	—	—	0	0	—	—
Virginia¶	—	9	29	103	128	—	0	1	—	—	—	0	1	—	—
West Virginia	—	5	26	—	128	—	0	0	—	—	—	0	0	—	—
E.S. Central	4	6	22	99	80	—	0	1	—	1	—	0	3	—	—
Alabama¶	4	5	22	94	79	—	0	1	—	—	—	0	1	—	—
Kentucky	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
Mississippi	—	0	2	5	1	—	0	1	—	1	—	0	2	—	—
Tennessee¶	N	0	0	N	N	—	0	1	—	—	—	0	2	—	—
W.S. Central	30	41	202	642	969	—	0	16	—	—	—	0	3	—	—
Arkansas¶	1	3	17	60	81	—	0	3	—	—	—	0	1	—	—
Louisiana	—	1	4	13	24	—	0	3	—	—	—	0	1	—	—
Oklahoma	N	0	0	N	N	—	0	1	—	—	—	0	0	—	—
Texas¶	29	37	191	569	864	—	0	15	—	—	—	0	2	—	—
Mountain	5	17	50	291	430	—	0	18	—	—	—	0	15	—	—
Arizona	—	0	0	—	—	—	0	13	—	—	—	0	9	—	—
Colorado¶	4	7	31	111	147	—	0	5	—	—	—	0	11	—	—
Idaho¶	N	0	0	N	N	—	0	0	—	—	—	0	1	—	—
Montana¶	1	3	28	77	78	—	0	0	—	—	—	0	0	—	—
Nevada¶	N	0	0	N	N	—	0	0	—	—	—	0	1	—	—
New Mexico¶	—	1	8	11	32	—	0	6	—	—	—	0	2	—	—
Utah	—	5	26	92	168	—	0	1	—	—	—	0	1	—	—
Wyoming¶	—	0	3	—	5	—	0	1	—	—	—	0	1	—	—
Pacific	—	2	16	56	27	—	0	8	—	—	—	0	6	—	—
Alaska	—	1	5	22	13	—	0	0	—	—	—	0	0	—	—
California	—	0	13	24	2	—	0	8	—	—	—	0	6	—	—
Hawaii	—	1	4	10	12	—	0	0	—	—	—	0	0	—	—
Oregon	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
Washington	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
Territories															
American Samoa	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	2	8	4	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	8	30	49	133	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.
U: Unavailable. —: No reported cases. N: Not reportable. NN: Not Nationally Notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.
* Case counts for reporting year 2010 and 2011 are provisional and subject to change. For further information on interpretation of these data, see http://www.cdc.gov/osels/ph_surveillance/nndss/phs/files/ProvisionalNationa%20NotifiableDiseasesSurveillanceData20100927.pdf. Data for TB are displayed in Table IV, which appears quarterly.
† Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (ArboNET Surveillance). Data for California serogroup, eastern equine, Powassan, St. Louis, and western equine diseases are available in Table I.
§ Not reportable in all states. Data from states where the condition is not reportable are excluded from this table, except starting in 2007 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at http://www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm.
¶ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE III. Deaths in 122 U.S. cities,* week ending April 16, 2011 (15th week)

Reporting area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45–64	25–44	1–24	<1	
New England	520	363	102	34	15	6	58
Boston, MA	132	90	31	6	5	—	17
Bridgeport, CT	25	18	4	2	1	—	3
Cambridge, MA	20	13	6	—	1	—	—
Fall River, MA	19	16	1	2	—	—	2
Hartford, CT	49	29	12	5	1	2	6
Lowell, MA	26	18	7	1	—	—	2
Lynn, MA	7	6	—	1	—	—	—
New Bedford, MA	33	21	4	7	1	—	5
New Haven, CT	27	16	8	1	2	—	4
Providence, RI	62	46	14	1	—	1	5
Somerville, MA	5	4	1	—	—	—	—
Springfield, MA	39	29	5	2	1	2	2
Waterbury, CT	23	18	1	4	—	—	5
Worcester, MA	53	39	8	2	3	1	7
Mid. Atlantic	1,875	1,311	413	95	36	20	103
Albany, NY	47	37	9	—	1	—	1
Allentown, PA	35	28	6	—	—	1	4
Buffalo, NY	75	49	19	4	3	—	7
Camden, NJ	27	17	7	2	—	1	1
Elizabeth, NJ	10	4	4	1	1	—	—
Erie, PA	56	46	9	1	—	—	4
Jersey City, NJ	20	17	3	—	—	—	2
New York City, NY	1,063	746	233	52	21	11	47
Newark, NJ	35	20	7	4	3	1	1
Paterson, NJ	17	12	2	1	1	1	2
Philadelphia, PA	147	89	38	16	3	1	5
Pittsburgh, PA§	46	33	11	2	—	—	3
Reading, PA	27	20	6	1	—	—	2
Rochester, NY	95	61	24	4	2	4	9
Schenectady, NY	18	12	6	—	—	—	3
Scranton, PA	27	26	1	—	—	—	4
Syracuse, NY	64	47	14	3	—	—	5
Trenton, NJ	28	19	5	3	1	—	—
Utica, NY	19	15	3	1	—	—	1
Yonkers, NY	19	13	6	—	—	—	2
E.N. Central	1,971	1,308	484	116	35	28	156
Akron, OH	56	35	13	3	3	2	6
Canton, OH	35	24	8	2	1	—	4
Chicago, IL	247	148	75	19	5	—	18
Cincinnati, OH	99	51	25	9	5	9	7
Cleveland, OH	235	170	53	10	1	1	12
Columbus, OH	240	152	63	17	2	6	18
Dayton, OH	138	99	28	10	1	—	7
Detroit, MI	134	69	48	12	3	2	4
Evansville, IN	34	24	8	2	—	—	4
Fort Wayne, IN	61	46	11	4	—	—	7
Gary, IN	8	4	3	1	—	—	1
Grand Rapids, MI	50	36	12	1	—	1	5
Indianapolis, IN	157	102	36	9	5	5	12
Lansing, MI	61	47	11	1	1	1	9
Milwaukee, WI	93	63	23	5	1	1	9
Peoria, IL	43	30	8	2	3	—	4
Rockford, IL	49	39	7	2	1	—	6
South Bend, IN	64	46	12	4	2	—	5
Toledo, OH	103	71	30	1	1	—	7
Youngstown, OH	64	52	10	2	—	—	11
W.N. Central	495	354	100	22	10	9	34
Des Moines, IA	98	73	15	4	4	2	7
Duluth, MN	U	U	U	U	U	U	U
Kansas City, KS	30	18	8	4	—	—	—
Kansas City, MO	106	83	15	4	4	—	6
Lincoln, NE	56	45	9	1	1	—	3
Minneapolis, MN	U	U	U	U	U	U	U
Omaha, NE	103	75	26	2	—	—	13
St. Louis, MO	18	5	5	5	1	2	1
St. Paul, MN	U	U	U	U	U	U	U
Wichita, KS	84	55	22	2	—	5	4
S. Atlantic	1,129	725	281	72	29	22	90
Atlanta, GA	130	77	31	20	1	1	7
Baltimore, MD	156	98	39	8	7	4	20
Charlotte, NC	134	83	32	8	6	5	9
Jacksonville, FL	134	92	36	5	—	1	11
Miami, FL	84	60	18	3	3	—	7
Norfolk, VA	50	37	7	1	2	3	—
Richmond, VA	70	40	23	4	1	2	5
Savannah, GA	48	28	14	5	1	—	6
St. Petersburg, FL	53	35	11	3	2	2	9
Tampa, FL	149	105	31	9	2	2	7
Washington, D.C.	103	57	35	5	4	2	9
Wilmington, DE	18	13	4	1	—	—	—
E.S. Central	867	580	198	60	18	11	73
Birmingham, AL	177	108	43	18	4	4	19
Chattanooga, TN	83	59	19	5	—	—	4
Knoxville, TN	96	73	13	5	4	1	12
Lexington, KY	57	44	9	4	—	—	2
Memphis, TN	150	89	43	10	4	4	15
Mobile, AL	86	61	19	4	2	—	4
Montgomery, AL	35	23	11	1	—	—	2
Nashville, TN	183	123	41	13	4	2	15
W.S. Central	1,247	793	303	97	28	26	95
Austin, TX	86	52	28	4	2	—	9
Baton Rouge, LA	76	49	15	7	5	—	—
Corpus Christi, TX	63	47	15	1	—	—	3
Dallas, TX	169	107	36	16	2	8	9
El Paso, TX	131	84	33	7	3	4	24
Fort Worth, TX	U	U	U	U	U	U	U
Houston, TX	224	126	52	29	8	9	17
Little Rock, AR	80	51	24	3	—	2	—
New Orleans, LA	U	U	U	U	U	U	U
San Antonio, TX	213	138	52	17	4	2	18
Shreveport, LA	53	35	17	1	—	—	3
Tulsa, OK	152	104	31	12	4	1	12
Mountain	1,021	683	227	70	23	18	69
Albuquerque, NM	121	79	24	11	5	2	6
Boise, ID	57	47	6	3	1	—	10
Colorado Springs, CO	90	69	13	4	—	4	—
Denver, CO	109	65	34	6	2	2	6
Las Vegas, NV	306	187	84	25	7	3	19
Ogden, UT	33	22	6	1	2	2	3
Phoenix, AZ	U	U	U	U	U	U	U
Pueblo, CO	34	27	4	2	1	—	2
Salt Lake City, UT	108	65	27	10	2	4	11
Tucson, AZ	163	122	29	8	3	1	12
Pacific	1,803	1,255	401	96	28	23	173
Berkeley, CA	11	9	1	—	—	1	1
Fresno, CA	113	81	22	7	—	3	10
Glendale, CA	34	29	5	—	—	—	7
Honolulu, HI	94	59	28	4	1	2	6
Long Beach, CA	70	51	13	3	2	1	13
Los Angeles, CA	267	178	63	16	6	4	31
Pasadena, CA	35	27	7	—	—	1	9
Portland, OR	138	101	25	6	5	1	13
Sacramento, CA	217	155	48	6	3	5	14
San Diego, CA	137	96	26	12	3	—	14
San Francisco, CA	106	76	21	8	1	—	11
San Jose, CA	201	143	45	9	2	2	19
Santa Cruz, CA	33	23	7	3	—	—	4
Seattle, WA	114	76	27	9	—	2	7
Spokane, WA	81	56	19	5	1	—	5
Tacoma, WA	152	95	44	8	4	1	9
Total¶	**10,928**	**7,372**	**2,509**	**662**	**222**	**163**	**851**

U: Unavailable. —: No reported cases.

* Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of >100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

† Pneumonia and influenza.

§ Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶ Total includes unknown ages.

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