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World No Tobacco Day — May 31, 2011

Tobacco use is the leading preventable cause of death; this year approximately 5 million persons worldwide will die from tobacco-related heart attacks, strokes, cancers, and other diseases (*1*). Sponsored by the World Health Organization (WHO), World No Tobacco Day is observed every year on May 31.

This year, World No Tobacco Day highlights the WHO Framework Convention on Tobacco Control (WHO FCTC) (*1*). Adopted as a resolution at WHO's 1996 World Health Assembly, WHO FCTC took effect in 2005 and is maintained by the United Nations. A total of 172 countries have adopted the treaty (*2*), making WHO FCTC one of the most widely embraced evidence-based treaties in United Nations history.

WHO FCTC urges all countries to ratify the treaty, fully implement its provisions, and adopt its guidelines (*1*), and WHO provides country-level assistance for implementing effective tobacco control measures (*3*). CDC has supported this effort by working with partners to provide technical assistance and infrastructure support for the creation of sustainable surveillance systems (the Global Adult Tobacco Survey and the Global Youth Tobacco Survey). Additional information is available at http://www.who.int/fctc/en/index.html.

References

1. World Health Organization. WHO Framework Convention on Tobacco Control. Geneva, Switzerland: World Health Organization; 2011. Available at http://www.who.int/tobacco/wntd/2011/announcement/en/index.html. Accessed May 19, 2011.
2. World Health Organization. Parties to the WHO Framework Convention on Tobacco Control. Geneva, Switzerland: World Health Organization; 2011. Available at http://www.who.int/fctc/signatories_parties/en/index.html. Accessed May 19, 2011.
3. World Health Organization. WHO report on the global tobacco epidemic, 2008: the MPOWER package. Geneva, Switzerland: World Health Organization; 2011. Available at http://www.who.int/tobacco/mpower/2008/en/index.html. Accessed May 19, 2011.

Cigarette Package Health Warnings and Interest in Quitting Smoking — 14 Countries, 2008–2010

The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) requires health warnings on tobacco product packages sold in countries that ratified the WHO FCTC treaty (*1*). These warnings are expected to 1) describe the harmful effects of tobacco use; 2) be approved by the appropriate national authority; 3) appear on at least 30%, and ideally 50% or more, of the package's principal display areas; 4) be large, clear, visible, and legible in the country's principal language(s); 5) have multiple, rotating messages; and 6) preferably use pictures or pictograms. To assess the effects of cigarette package health warnings on interest in quitting smoking among smokers of manufactured cigarettes aged ≥15 years, this report examines 2008–2010 data from the Global Adult Tobacco Survey (GATS) in 14 WHO FCTC countries. Among men, the prevalence of manufactured cigarette smoking ranged from 9.6% in India to 59.3% in Russia. Among men in 12 of the countries and women in seven countries, >90% of smokers

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reported noticing a package warning in the previous 30 days. The percentage of smokers thinking about quitting because of the warnings was >50% in six countries and >25% in men and women in all countries except Poland. WHO has identified providing tobacco health information, including graphic health warnings on tobacco packages, as a powerful "best buy" in combating noncommunicable disease (*2*). Implementing effective warning labels as a component of a comprehensive approach can help decrease tobacco use and its many health consequences.

GATS is a nationally representative household survey conducted among persons aged ≥15 years using a standardized questionnaire, sample design, data collection method, and analysis protocol to obtain measures on key tobacco control indicators and ensure comparability across countries.* GATS was conducted once in each of the 14 countries during 2008–2010 by national governments, ministries of health, survey-implementing agencies, and international partners. In each country, a multistage cluster sample design is used, with households selected proportional to population size. Data are weighted to reflect the noninstitutionalized population aged ≥15 years in each country. For this analysis, current smokers of manufactured cigarettes† were asked whether they had noticed health warnings on a cigarette package in the previous 30 days, and whether the label led them to think about quitting smoking.§ Responses were analyzed by sex and, within sex strata, by age and education level using bivariate analysis within individual countries. Differences in response estimates were considered statistically significant if 95% confidence intervals did not overlap. Overall response rates ranged from 65.1% in Poland to 97.7% in Russia.

The health warnings on cigarette packages in each country at the time GATS was conducted were described according to WHO FCTC guidelines (*3,4*). All GATS countries had warning labels on cigarette packages describing harmful effects of smoking at the time their survey was conducted. Four of the 14 countries (Brazil, Egypt, Thailand, and Uruguay) had pictorial warnings. A fifth country, India, introduced pictorial warnings in 2009, and had both text and pictorial warnings in circulation when GATS was conducted (Table 1).

In all 14 countries, men were more likely to be cigarette smokers than women. Among men, prevalence of smoking ranged from 9.6% in India to 59.3% in Russia (Table 2). Among women, prevalence of smoking was <25% in all countries and <2% in Bangladesh, China, Egypt, India, Thailand, and Vietnam.

* Additional information and GATS country reports are available at http://www.cdc.gov/tobacco/global/gats.

† Respondents who reported currently smoking manufactured (i.e., commercial) cigarettes on a "daily" or "less than daily" basis. The term "smokers" in this report refers to current smokers of manufactured cigarettes. Smokers of other tobacco products, such as bidis, kreteks, hand-rolled cigarettes, cigars, pipes, and waterpipes who did not also smoke manufactured cigarettes are not included in this analysis.

§ "In the last 30 days, did you notice any health warnings on cigarette packages?" and "In the last 30 days, have warning labels on cigarette packages led you to think about quitting?"

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In all countries except India (78.4%) and Mexico (83.5%), >90% of men reported noticing a health warning on a cigarette package (Table 2). Among women, the percentage who noticed warnings was ≥75% in all countries except China (60.1%) and India (18.9%), and >90% in seven countries. In Bangladesh

TABLE 1. Characteristics of health warning labels on cigarette packages — Global Adult Tobacco Survey (GATS), 14 countries, 2008–2010

Country	Year(s) survey conducted	Warnings appear on each package	Warning describes harmful effects	Warning label is in principal language(s)	Law mandates specific warnings	Law mandates font style, size and color	Percentage of front/back covered by health warning	Rotating warnings/ number of warnings approved by law	Warnings include a picture or pictogram
Bangladesh	2009	Yes	Yes	Yes	Yes	Yes	30/30	Yes/6	No
Brazil	2008	Yes	Yes	Yes	Yes	Yes	0/100	Yes/10	Yes
China	2010	Yes	Yes	Yes/No*	Yes	Yes	30/30	Yes/2	No
Egypt	2009	Yes	Yes	Yes	Yes	Yes	50/50	Yes/4	Yes
India	2009–2010	Yes	Yes	Yes	Yes	Yes	40/0	Yes/2	Yes/No†
Mexico	2009	Yes	No	Yes	No	No	30/100	No	No
Philippines	2009	Yes	Yes	Yes	Yes	No	30/0	Yes/4	No
Poland	2009–2010	Yes	Yes	Yes	Yes	Yes	30/40	Yes/16	No
Russia	2009	Yes	Yes	Yes	Yes	Yes	4/4	Yes/2	No
Thailand	2009	Yes	Yes	Yes	Yes	Yes	50/50	Yes/9	Yes
Turkey	2008	Yes	Yes	Yes	Yes	Yes	30/40	Yes/16	No
Ukraine	2010	Yes	Yes	Yes	Yes	Yes	30/30	Yes/7	No
Uruguay	2009	Yes	Yes	Yes	Yes	Yes	50/50	Yes/6	Yes
Vietnam	2010	Yes	Yes	Yes	Yes	Yes	30/30	Yes/2	No

Sources: Pan American Health Organization. Tobacco control report for the Region of the Americas. Washington, DC: World Health Organization, Pan American Health Organization; 2011. Available at http://new.paho.org/hq/index.php?option=com_content&task=view&id=4457&Itemid=1231&lang=en.

World Health Organization. WHO report on the global tobacco epidemic, 2009: implementing smoke-free environments. Appendix V: country profiles. Geneva, Switzerland: World Health Organization. Available at http://www.who.int/tobacco/mpower/2009/Appendix_V-table_1.pdf.

* China's warning is in Mandarin on the front and in English on the back.
† India mandated pictorial warnings on packages sold after May 31, 2009, but older packages still were in circulation when GATS was conducted.

TABLE 2. Percentage of current smokers of manufactured cigarettes aged ≥15 years who noticed health warning labels on cigarette packages and percentage who, as a result, were thinking about quitting smoking, by selected characteristics — Global Adult Tobacco Survey (GATS), 14 countries, 2008–2010*

	Bangladesh				Brazil				China			
	Men		Women		Men		Women		Men		Women	
	(4,468)†		(5,161)		(18,039)		(21,386)		(6,603)		(6,751)	
Characteristic	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
% current manufactured cigarette smokers	28.3	(26.3–30.4)	0.2	(0.1–0.4)	17.7	(17.0–18.4)	11.1	(10.6–11.7)	50.5	(48.2–52.8)	1.9	(1.5–2.6)
% who noticed health warning labels in past 30 days	91.3	(89.1–93.1)	DS	DS	92.4	(91.2–93.5)	91.8	(90.4–93.0)	90.3	(85.2–93.8)	60.1	(44.4–73.9)
Age group (yrs)												
15–24	93.4	(85.9–97.0)	DS	DS	92.5	(89.0–95.0)	93.4	(88.7–96.2)	91.3	(73.3–97.5)	DS	DS
25–64	92.0	(89.8–93.7)	DS	DS	93.3	(92.0–94.3)	92.2	(90.7–93.5)	91.6	(87.2–94.6)	61.7	(44.6–76.3)
≥65	69.2	(50.4–83.2)	NR	NR	81.5	(74.4–87.0)	82.1	(73.8–88.3)	69.8	(57.2–79.9)	45.9	(27.5–65.4)
Education												
No formal education/Less than primary	85.3	(81.5–88.4)	DS	DS	NA	NA	NA	NA	65.4	(56.9–73.0)	30.6	(17.9–47.3)
Completed primary/Less than secondary	98.3	(96.6–99.2)	DS	DS	NA	NA	NA	NA	88.8	(84.6–92.0)	69.6	(48.7–84.6)
Completed secondary/Completed high school	99.3	(97.0–99.8)	NR	NR	NA	NA	NA	NA	92.9	(85.2–96.7)	77.5	(42.0–94.2)
Completed college/university or above	95.7	(88.7–98.4)	NR	NR	NA	NA	NA	NA	98.1	(94.9–99.3)	DS	DS
% thinking about quitting smoking among those who noticed warning	74.1	(69.9–77.9)	DS	DS	71.8	(69.8–73.8)	76.6	(74.2–78.8)	36.5	(31.3–42.0)	42.5	(32.0–53.6)
Age group (yrs)												
15–24	71.3	(60.4–80.2)	DS	DS	73.5	(68.6–77.8)	74.9	(67.6–81.0)	37.6	(25.3–51.7)	DS	DS
25–64	75.0	(70.7–78.8)	DS	DS	71.7	(69.4–74.0)	77.1	(74.5–79.5)	36.2	(31.5–41.1)	37.6	(26.5–50.1)
≥65	71.6	(52.0–85.4)	NR	NR	67.5	(58.3–75.5)	71.8	(62.1–79.8)	37.9	(29.5–47.0)	DS	DS
Education												
No formal education/Less than primary	75.9	(70.8–80.3)	DS	DS	NA	NA	NA	NA	35.4	(27.2–44.6)	DS	DS
Completed primary/Less than secondary	72.8	(65.9–78.8)	DS	DS	NA	NA	NA	NA	42.7	(35.0–50.7)	DS	DS
Completed secondary/Completed high school	72.9	(61.4–82.0)	NR	NR	NA	NA	NA	NA	36.4	(30.2–43.1)	41.1	(25.2–59.2)
Completed college/university or above	66.9	(49.5–80.6)	NR	NR	NA	NA	NA	NA	27.7	(20.9–35.8)	DS	DS

See table footnotes on page 649.

TABLE 2. (*Continued*) Percentage of current smokers of manufactured cigarettes aged ≥15 years who noticed health warning labels on cigarette packages and percentage who, as a result, were thinking about quitting smoking, by selected characteristics — Global Adult Tobacco Survey (GATS), 14 countries, 2008–2010*

	Egypt				India				Mexico			
	Men		Women		Men		Women		Men		Women	
	(10,062)†		(10,862)		(33,767)		(35,529)		(6,160)		(7,457)	
Characteristic	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
% current manufactured cigarette smokers	31.7	(30.5–33.0)	0.2	(0.1–0.4)	9.6	(9.0–10.3)	0.5	(0.4–0.7)	24.5	(22.8–26.2)	7.5	(6.4–8.8)
% who noticed health warning labels in past 30 days	98.6	(97.9–99.0)	DS	DS	78.4	(75.9–80.7)	18.9	(12.0–28.4)	83.5	(80.6–86.0)	87.6	(83.0–91.1)
Age group (yrs)												
15–24	98.4	(95.4–99.4)	DS	DS	81.2	(75.2–86.0)	36.9	(9.4–76.7)	86.6	(82.1–90.1)	90.8	(79.4–96.2)
25–64	98.7	(98.0–99.1)	DS	DS	78.2	(75.4–80.8)	21.1	(12.8–32.9)	82.7	(79.3–85.6)	86.4	(79.6–91.2)
≥65	98.1	(94.5–99.3)	NR	NR	68.2	(57.2–77.5)	8.3	(3.2–19.8)	73.3	(63.3–81.4)	DS	DS
Education												
No formal education/Less than primary	98.5	(97.1–99.2)	DS	DS	65.4	(60.3–70.1)	13.8	(8.1–22.7)	69.2	(61.2–76.1)	64.4	(46.8–78.8)
Completed primary/Less than secondary	98.3	(95.1–99.4)	DS	DS	80.0	(75.8–83.5)	49.3	(21.7–77.4)	81.2	(75.6–85.7)	82.8	(67.9–91.6)
Completed secondary/Completed high school	98.6	(97.6–99.2)	DS	DS	87.7	(83.5–91.0)	44.8	(13.6–80.8)	88.6	(85.6–91.1)	91.9	(87.3–94.9)
Completed college/university or above	99.1	(97.6–99.6)	DS	DS	89.2	(84.7–92.5)	DS	DS	82.0	(67.4–90.9)	93.9	(76.2–98.7)
% thinking about quitting smoking among those who noticed warning	45.1	(42.7–47.5)	DS	DS	53.7	(50.6–56.8)	76.1	(58.1–88.0)	37.3	(33.5–41.3)	42.6	(35.8–49.7)
Age group (yrs)												
15–24	44.6	(38.0–51.4)	DS	DS	68.0	(60.4–74.7)	DS	DS	36.3	(30.3–42.7)	33.5	(22.0–47.3)
25–64	45.9	(43.2–48.5)	DS	DS	50.3	(47.1–53.5)	72.1	(51.5–86.3)	38.4	(33.4–43.7)	46.0	(38.6–53.7)
≥65	35.3	(27.3–44.3)	NR	NR	45.0	(33.3–57.2)	DS	DS	27.3	(17.4–40.1)	DS	DS
Education												
No formal education/Less than primary	44.8	(40.6–49.0)	DS	DS	52.8	(46.2–59.2)	84.2	(66.4–93.4)	45.7	(35.7–56.0)	32.6	(19.9–48.6)
Completed primary/Less than secondary	43.6	(36.8–50.6)	DS	DS	53.8	(48.6–58.8)	61.1	(21.4–90.0)	38.9	(32.0–46.3)	56.9	(44.8–68.3)
Completed secondary/Completed high school	47.7	(44.2–51.2)	DS	DS	56.0	(50.2–61.6)	73.6	(49.0–89.0)	36.9	(31.9–42.1)	36.9	(29.2–45.3)
Completed college/university or above	37.2	(31.1–43.8)	DS	DS	51.3	(43.4–59.1)	DS	DS	25.0	(15.4–37.8)	53.8	(32.6–73.8)

See table footnotes on page 649.

TABLE 2. (*Continued*) Percentage of current smokers of manufactured cigarettes aged ≥15 years who noticed health warning labels on cigarette packages and percentage who, as a result, were thinking about quitting smoking, by selected characteristics — Global Adult Tobacco Survey (GATS), 14 countries, 2008–2010*

	Philippines				Poland				Russia			
	Men		Women		Men		Women		Men		Women	
	(4,740)†		(4,961)		(3,867)		(3,973)		(6,217)		(5,189)	
Characteristic	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
% current manufactured cigarette smokers	46.6	(44.7–48.6)	7.5	(6.5–8.5)	35.1	(33.2–37.1)	22.9	(21.4–24.5)	59.3	(57.6–61.0)	21.4	(19.3–23.5)
% who noticed health warning labels in past 30 days	91.8	(89.9–93.3)	84.2	(78.8–88.4)	97.0	(95.8–97.9)	96.9	(95.4–97.9)	94.6	(93.1–95.8)	94.7	(92.1–96.5)
Age group (yrs)												
15–24	93.4	(88.9–96.2)	95.9	(87.3–98.8)	95.7	(90.1–98.1)	97.6	(92.6–99.3)	95.7	(92.9–97.5)	93.5	(87.2–96.9)
25–64	92.0	(89.9–93.7)	86.8	(81.2–91.0)	97.4	(96.0–98.3)	96.9	(95.2–98.0)	94.7	(93.1–95.9)	95.9	(93.0–97.6)
≥65	76.3	(62.7–86.1)	55.9	(36.1–74.0)	96.0	(90.4–98.4)	95.3	(72.8–99.4)	90.7	(81.4–95.6)	DS	DS
Education												
No formal education/Less than primary	80.5	(75.2–84.8)	72.4	(62.1–80.7)	DS	DS	DS	DS	DS	DS	NR	NR
Completed primary/Less than secondary	92.1	(87.5–95.0)	84.4	(66.7–93.6)	96.5	(91.9–98.5)	93.1	(84.7–97.0)	90.0	(79.7–95.4)	DS	DS
Completed secondary/Completed high school	97.4	(96.0–98.3)	92.7	(84.8–96.7)	97.1	(95.6–98.0)	97.5	(95.9–98.5)	95.3	(93.7–96.5)	95.1	(92.2–96.9)
Completed college/university or above	98.6	(96.6–99.4)	98.0	(92.0–99.5)	98.2	(94.3–99.4)	96.3	(90.2–98.7)	93.0	(89.3–95.5)	95.1	(91.1–97.3)
% thinking about quitting smoking among those who noticed warning	41.7	(38.8–44.7)	44.6	(37.0–52.4)	16.1	(13.6–19.1)	21.7	(18.4–25.5)	33.6	(30.7–36.6)	33.9	(29.2–39.1)
Age group (yrs)												
15–24	44.9	(38.5–51.5)	45.6	(25.3–67.5)	12.6	(7.6–20.1)	15.4	(8.6–26.0)	37.5	(31.6–43.8)	35.6	(26.6–45.7)
25–64	40.7	(37.6–43.9)	44.4	(35.8–53.4)	16.2	(13.4–19.5)	22.5	(18.8–26.8)	32.5	(29.5–35.7)	33.7	(28.6–39.2)
≥65	40.3	(27.7–54.2)	43.9	(23.0–67.1)	23.2	(14.8–34.4)	25.5	(12.9–44.1)	35.5	(26.9–45.1)	DS	DS
Education												
No formal education/Less than primary	35.8	(30.3–41.8)	44.8	(30.4–60.0)	DS	DS	DS	DS	DS	DS	NR	NR
Completed primary/Less than secondary	37.5	(31.0–44.6)	51.8	(33.0–70.0)	26.5	(19.5–34.9)	37.9	(28.8–48.0)	35.7	(22.7–51.2)	DS	DS
Completed secondary/Completed high school	45.6	(41.5–49.8)	44.5	(33.6–56.0)	15.8	(12.9–19.2)	21.0	(17.2–25.4)	34.7	(31.5–37.9)	38.2	(33.1–43.6)
Completed college/university or above	46.5	(40.4–52.7)	34.1	(19.7–52.2)	7.9	(3.5–16.9)	15.6	(9.1–25.4)	30.1	(25.4–35.1)	26.9	(18.7–37.2)

See table footnotes on page 649.

TABLE 2. (*Continued*) Percentage of current smokers of manufactured cigarettes aged ≥15 years who noticed health warning labels on cigarette packages and percentage who, as a result, were thinking about quitting smoking, by selected characteristics — Global Adult Tobacco Survey (GATS), 14 countries, 2008–2010*

	Thailand				Turkey				Ukraine			
	Men		Women		Men		Women		Men		Women	
	(10,052)†		(10,514)		(4,269)		(4,761)		(4,076)		(4,082)	
Characteristic	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
% current manufactured cigarette smokers	29.6	(28.1–31.1)	1.1	(0.9–1.4)	45.8	(43.7–47.9)	14.9	(13.8–16.2)	49.5	(47.5–51.4)	11.1	(9.8–12.5)
% who noticed health warning labels in past 30 days	99.2	(98.8–99.5)	98.0	(95.2–99.2)	95.3	(93.6–96.6)	94.3	(91.0–96.4)	96.6	(95.3–97.5)	96.8	(91.6–98.8)
Age group (yrs)												
15–24	99.8	(99.2–100.0)	DS	DS	93.9	(88.9–96.7)	96.0	(87.9–98.7)	98.5	(96.2–99.4)	92.5	(65.5–98.8)
25–64	99.1	(98.6–99.4)	99.2	(96.5–99.8)	95.9	(94.1–97.2)	94.0	(90.1–96.4)	96.6	(95.2–97.6)	98.0	(95.6–99.1)
≥65	96.5	(89.9–98.8)	DS	DS	89.2	(78.9–94.9)	DS	DS	90.9	(85.2–94.6)	NR	NR
Education												
No formal education/Less than primary	98.2	(96.8–99.0)	97.1	(88.8–99.3)	90.9	(82.9–95.3)	71.5	(55.1–83.7)	DS	DS	DS	DS
Completed primary/Less than secondary	99.3	(98.3–99.7)	97.1	(88.1–99.4)	95.1	(92.9–96.7)	98.7	(96.6–99.5)	89.4	(80.9–94.4)	DS	DS
Completed secondary/Completed high school	99.6	(99.1–99.8)	99.1	(93.8–99.9)	96.7	(94.0–98.2)	95.5	(89.4–98.2)	96.8	(95.5–97.7)	98.0	(95.3–99.2)
Completed college/university or above	98.7	(94.3–99.7)	DS	DS	93.8	(85.6–97.5)	96.3	(88.6–98.9)	98.4	(95.4–99.4)	98.8	(94.7–99.7)
% thinking about quitting smoking among those who noticed warning	71.4	(68.1–74.5)	66.1	(56.5–74.6)	48.8	(45.5–52.1)	49.5	(45.0–54.1)	58.9	(55.2–62.5)	63.9	(57.4–69.9)
Age group (yrs)												
15–24	69.4	(60.5–77.0)	DS	DS	42.5	(34.7–50.7)	52.2	(39.8–64.3)	56.3	(47.1–65.0)	51.0	(32.8–68.9)
25–64	72.5	(69.3–75.4)	70.5	(60.6–78.7)	50.1	(46.5–53.7)	49.4	(44.3–54.4)	59.8	(56.1–63.3)	67.3	(61.0–73.1)
≥65	59.5	(48.4–69.7)	DS	DS	53.1	(39.7–66.0)	DS	DS	55.7	(46.2–64.8)	NR	NR
Education												
No formal education/Less than primary	72.3	(66.9–77.1)	77.6	(64.9–86.6)	46.5	(35.0–58.5)	54.1	(39.7–67.8)	DS	DS	DS	DS
Completed primary/Less than secondary	73.8	(68.1–78.8)	81.5	(66.2–90.9)	53.3	(49.1–57.5)	52.7	(46.3–59.1)	50.6	(37.8–63.3)	DS	DS
Completed secondary/Completed high school	70.7	(66.0–75.0)	53.4	(36.2–69.9)	44.5	(39.4–49.6)	49.6	(42.6–56.7)	59.4	(55.8–63.0)	62.6	(55.1–69.5)
Completed college/university or above	63.9	(54.9–72.0)	DS	DS	41.7	(33.3–50.7)	28.8	(18.6–41.8)	58.8	(49.6–67.4)	72.9	(62.2–81.4)

See table footnotes below.

TABLE 2. (*Continued*) Percentage of current smokers of manufactured cigarettes aged ≥15 years who noticed health warning labels on cigarette packages and percentage who, as a result, were thinking about quitting smoking, by selected characteristics — Global Adult Tobacco Survey (GATS), 14 countries, 2008–2010*

	Uruguay				Vietnam			
	Men		Women		Men		Women	
	(2,634)†		(2,947)		(4,356)		(5,569)	
Characteristic	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
% current manufactured cigarette smokers	24.3	(22.0–26.7)	18.6	(16.9–20.4)	39.1	(37.0–41.2)	1.0	(0.6–1.5)
% who noticed health warning labels in past 30 days	97.1	(94.5–98.5)	97.2	(94.3–98.6)	96.1	(94.8–97.1)	75.0	(53.4–88.7)
Age group (yrs)								
15–24	98.1	(87.4–99.7)	98.0	(92.2–99.5)	97.7	(94.3–99.1)	DS	DS
25–64	97.6	(94.6–99.0)	97.2	(93.3–98.8)	95.9	(94.3–97.0)	76.7	(54.2–90.1)
≥65	80.9	(52.1–94.3)	94.4	(82.4–98.4)	95.2	(86.4–98.4)	DS	DS
Education								
No formal education/Less than primary	87.3	(72.6–94.7)	90.9	(75.3–97.0)	89.9	(84.7–93.5)	70.9	(49.9–85.6)
Completed primary/Less than secondary	96.2	(90.0–98.6)	98.3	(95.6–99.3)	96.7	(94.4–98.0)	DS	DS
Completed secondary/Completed high school	99.4	(96.7–99.9)	97.0	(91.0–99.0)	98.0	(96.6–98.9)	DS	DS
Completed college/university or above	100.0	(88.7–100.0)	99.1	(93.7–99.9)	99.1	(96.2–99.8)	DS	DS
% thinking about quitting smoking among those who noticed warning	39.3	(33.6–45.4)	47.9	(42.6–53.3)	73.1	(70.3–75.8)	61.1	(42.1–77.2)
Age group (yrs)								
15–24	50.1	(37.9–62.2)	60.2	(46.3–72.7)	72.1	(63.3–79.6)	DS	DS
25–64	36.8	(30.7–43.2)	45.0	(38.9–51.1)	73.5	(70.5–76.3)	68.0	(48.2–82.9)
≥65	13.9	(5.1–32.5)	45.8	(28.4–64.2)	70.0	(59.5–78.8)	DS	DS
Education								
No formal education/Less than primary	46.7	(29.2–64.9)	68.7	(47.5–84.1)	66.5	(59.8–72.6)	48.1	(27.5–69.2)
Completed primary/Less than secondary	44.5	(35.4–54.0)	63.9	(54.4–72.4)	72.9	(67.4–77.7)	DS	DS
Completed secondary/Completed high school	33.9	(26.2–42.5)	37.3	(30.8–44.3)	75.7	(71.8–79.3)	DS	DS
Completed college/university or above	37.3	(22.0–55.6)	33.3	(20.5–49.1)	74.0	(66.7–80.2)	DS	DS

Abbreviations: CI = confidence interval; DS = data suppressed because cell size <30; NR = no reported cases; NA = Not applicable (GATS countries have varying educational systems. Based on the questionnaire categories used in each country, four approximately comparable categories of education were created. However, Brazil's educational categories could not be coded in this fashion).

* Results presented in this report differ from those presented in previously published GATS fact sheets or country reports (available at http://www.cdc.gov/tobacco/global) because of differing age and education category breakdowns and because this report includes only respondents who reported being current smokers of manufactured cigarettes. Also, in this report, the percentage who thought about quitting was calculated only among those who noticed labels.

† Number sampled.

What is already known on this topic?

Warning the public about the dangers of tobacco is one of the key strategies in the World Health Organization's MPOWER package to combat tobacco use.

What is added by this report?

For the first time, data from all 14 Global Adult Tobacco Survey (GATS) countries are available. In these countries, the prevalence of smoking manufactured cigarettes varies widely and is more common among men. The majority of smokers noticed package warning labels. Among smokers who noticed a health warning, the percentage thinking about quitting because of the warning was >50% in six GATS countries.

What are the implications for public health practice?

Strong health warning labels on cigarette packages are effective in motivating smokers to consider quitting. These findings emphasize the importance of using warnings that are effective in communicating the risks of smoking to all cigarette smokers.

and Egypt, not enough women reported current smoking to calculate this percentage.

Smokers aged ≥65 years were less likely to notice warnings in Bangladesh (men), Brazil (men and women), Mexico (men), Philippines (men and women), Thailand (men), and Ukraine (men) (Table 2). Smokers who had not completed primary school education were less likely to have noticed warnings in Bangladesh (men), China (men and women), India (men), Mexico (women), Philippines (men and women), Turkey (women), and Vietnam (men) (Table 2).

Among smokers who noticed a package warning, the percentage thinking about quitting because of the warning was >50% in six GATS countries (Bangladesh, Brazil, India, Thailand, Ukraine, and Vietnam) and >25% for men and women in all countries except one (Poland). Older male smokers were less likely to think about quitting in India and Uruguay; no other age group differences were noted.

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Editorial Note

This report is the first to provide survey results from all 14 countries that participated in GATS during 2008–2010. In these countries, the prevalence of smoking manufactured cigarettes varied widely and was more common among men. Warning the public about the dangers of tobacco is one of the strategies in WHO's MPOWER package to combat the tobacco epidemic (*3*). Most of these countries had met the minimum WHO FCTC health warning label criteria for cigarette packages at the time GATS was conducted. The majority of smokers noticed the health warnings, and in most countries >25% who noticed the warnings said they were led to think about quitting. These results indicate that package warnings can be effective for various populations and settings, including countries in which cigarette smoking prevalence currently is low.

To be effective, cigarette package warnings must capture smokers' attention and educate them about the health effects of tobacco use (*5*). The WHO FCTC guidelines provide parameters to accomplish these objectives by emphasizing features that increase the salience of warnings (*1,4*). Prominent, pictorial warnings have been found to be the most effective in communicating the harms of smoking in several studies (*4,6*). Smokers who perceive a greater health risk from smoking are more likely to think about quitting and to quit successfully (*6*). Further, evidence indicates that warnings are more likely to be effective if they elicit strong emotions, such as fear, seem personally relevant, and increase confidence in the ability to quit (*4,7*). For example, a comparative analysis of responses to labels in Brazil, Mexico, and Uruguay found that the Brazilian warnings depicting human suffering had the strongest impact on thinking about quitting (*8*). Rotating warnings also is important because the impact of an individual label will decrease over time (*5*). Thus, a warning that is small in total size or font size, has been in circulation for a long time, or lacks informational content that generates an emotional response likely will not have the strongest possible impact.

Graphic warnings have the potential to reach those who do not notice or read text-only warnings; they also have the potential to better evoke emotional responses, increase knowledge of health risks, and reinforce motivations to quit smoking (*9*). Therefore, the WHO FCTC guidelines strongly encourage the use of graphic warnings (*5*). Low education level and older age were associated with not noticing warnings in some countries; virtually all of these countries had text-only warnings. Women were less likely to notice warnings than men in India, China, and Vietnam, countries where cigarette smoking prevalence is very low among women. These findings emphasize the importance of using warnings that are effective in communicating the risks of smoking to all cigarette smokers and using other

evidence-based tobacco control measures that reach populations that are not frequently exposed to cigarette packages.

Warnings were more effective at getting smokers to think about quitting in some countries than in others. Brazil and Thailand, countries with numerous prominent and graphic pictorial warnings in rotation, had among the highest prevalences of smokers thinking about quitting because of the warnings; these warnings received WHO's highest rating (*3*). However, reported thinking about quitting smoking also was relatively high in Bangladesh and Vietnam, where warnings covered less of the package and were text-only. The reasons for these findings are not immediately clear but might relate to the relative importance of package warnings among other contextual factors such as smokers' baseline knowledge about health risks, level of interest in quitting, and level of tobacco dependence, as well as concurrent tobacco control efforts and social norms surrounding tobacco use (*7*). Further research might be helpful in elucidating these factors and in determining the extent to which thinking about quitting because of warnings leads to quit attempts in GATS countries.

The findings in this report are subject to at least five limitations. First, all data were self reported, and social norms (e.g., unacceptability in some countries of women smoking) might have affected responses. Second, the education categories used in Brazil are not comparable to the categories used in this analysis, so Brazil's data were not evaluated for differences in prevalence by education. Third, this analysis included only smokers of manufactured cigarettes; however, other tobacco products (e.g., bidis, kreteks, hand-rolled cigarettes, waterpipes, and smokeless tobacco) are commonly used in India and other GATS countries. Fourth, the prevalence of smoking among women is low in some countries, so analyzing or interpreting results on the impact of package warnings among women was not possible. Finally, GATS was not designed to evaluate the effectiveness of individual health warning labels, and its core questions did not distinguish between the different labels in circulation in a country.

After GATS was conducted, Mexico, Philippines, Turkey, and Ukraine passed legislation requiring pictorial warning labels, and Thailand and Uruguay increased the size of their warnings. Worldwide, a majority of countries now have warnings on cigarette packages, but their features and strength vary (*7*). As of 2010, approximately 30 countries had pictorial warning labels covering at least 50% of the package (*7*), and additional countries were developing such labels.¶ Future GATS will allow tracking of progress toward key tobacco use and control indicators. Smokers view their cigarette packages every time they remove a cigarette; therefore, the cigarette package represents a powerful vehicle to deliver health warnings directly to smokers. Nonsmokers and former smokers also can be discouraged from smoking by viewing comprehensive warnings (*7*).

WHO has identified price increases; smoke-free policies; bans on tobacco advertising, promotion, and sponsorship; and providing tobacco health information via mass media campaigns and graphic health warnings to the public as tobacco "best buys"** because they can reduce tobacco initiation, help to prevent progression from initiation to addiction, increase cessation, decrease consumption, and change social norms (*2*). Providing information about the dangers of using tobacco products with package warnings is a simple and cost-effective strategy to motivate quit attempts, thus helping to prevent the life-threatening effects of tobacco use (*9,10*).

¶ Pictorial health warning labels currently in use are available at http://www.who.int/tobacco/healthwarningsdatabase/en/index.html.

** A "best buy" is an intervention that is not only highly cost-effective but also inexpensive, feasible, and culturally acceptable to implement.

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References

1. World Health Organization. WHO Framework Convention on Tobacco Control. Geneva, Switzerland: World Health Organization; 2005. Available at http://www.who.int/fctc/en. Accessed May 22, 2011.
2. World Health Organization. Global status report on noncommunicable diseases, 2010. Geneva, Switzerland: World Health Organization; 2011. Available at http://www.who.int/nmh/publications/ncd_report2010/en/index.html. Accessed May 22, 2011.
3. World Health Organization. WHO report on the global tobacco epidemic, 2009: implementing smoke-free environments. Geneva, Switzerland: World Health Organization; 2009. Available at http://www.who.int/tobacco/mpower/2009/en/index.html. Accessed May 22, 2011.
4. World Health Organization. Conference of the Parties to the WHO Framework Convention on Tobacco Control, third session. Geneva, Switzerland: World Health Organization; 2009. Available at http://apps.who.int/gb/fctc/pdf/cop3/fctc_cop3_rec1-en.pdf. Accessed May 22, 2011.
5. US Department of Health and Human Services, Food and Drug Administration. Required warnings for cigarette packages and advertisements. Federal Register 2010;75:69524–65.
6. Hammond D, Fong GT, McNeill A, Borland R, Cummings MK. Effectiveness of cigarette warning labels in informing smokers about the risks of smoking: findings from the International Tobacco Control (ITC) Four Country Survey. Tobacco Control, 2006;15(Suppl III):iii19–25.
7. Hammond D. Health warning messages on tobacco products: a review. Tob Control 2011. In press.
8. Thrasher JF, Villalobos V, Szklo A, et al. Assessing the impact of cigarette package health warning labels: a cross-country comparison in Brazil, Uruguay and Mexico. Salud Publica Mex 2010;52(Suppl 2):S206–15.
9. Hammond D, Fong GT, Borland R, Cummings KM, McNeill A, Driezen P. Communicating risk to smokers: the impact of health warnings on cigarette packages. Am J Prev Med 2007;32:202–9.
10. Borland R, Yong H, Wilson N, et al. How reactions to cigarette packet health warnings influence quitting: findings from the ITC four-country survey. Addiction 2009;104:669–75.

Human Jamestown Canyon Virus Infection — Montana, 2009

Jamestown Canyon virus (JCV) is a mosquito-borne zoonotic pathogen belonging to the California serogroup of bunyaviruses. Although JCV is widely distributed throughout temperate North America, reports of human JCV infection in the United States are rare. This is the first report of human JCV infection detected in Montana, one of only 15 cases reported in the United States since 2004, when JCV became reportable. On May 26, 2009, a man aged 51 years with no travel history outside of Montana went to a local emergency department immediately following onset of fever, severe frontal headache, dizziness, left-sided numbness, and tingling. His blood pressure was elevated. Stroke was ruled out, oxygen was administered, medication was prescribed for hypertension, and the patient was sent home. One week later, the patient visited his primary-care physician complaining of continued neurologic symptoms consistent with acute febrile encephalitis and recent mosquito bites. Although West Nile virus (WNV) disease was diagnosed based on detection of WNV-immunoglobulin M (IgM) and G (IgG) antibodies, subsequent testing indicated that the WNV antibodies were from a past infection and that his illness was caused by JCV. The final diagnosis of JCV infection was based on positive JCV-specific IgM enzyme-linked immunosorbent assay (ELISA) results and a fourfold rise in paired sample JCV plaque reduction neutralization test (PRNT) titers. This finding represents a previously unrecognized risk for JCV infection in Montana; clinicians should consider JCV infection when assessing patients for suspected arboviral infections.

Case Report

On May 26, 2009, a previously healthy man aged 51 years with no travel history outside of Montana went to a local emergency department immediately following onset of fever, severe acute frontal headache, dizziness, left-sided numbness, and tingling. No other symptoms were noted. Results of a physical examination were normal, except for an elevated blood pressure of 214/119 mmHg. Blood chemistries and cardiac enzyme tests were within normal limits, except for an elevated glucose of 130 mg/dL (normal: 70–110 mg/dL). Results of an electrocardiogram, magnetic resonance imaging, and computed tomography scan of the brain were normal. Oxygen was administered to the patient, telmisartan was prescribed for hypertension, and he was sent home. A week later, on June 2, the patient visited his primary-care physician complaining of fever, persistent headache, and new onset of muscle pain and weakness. The physician considered the patient's symptoms to be consistent with a neurologic illness and evaluated the patient further for a possible stroke or arboviral infection. A carotid Doppler test showed no evidence of abnormal arterial blood flow. A lumbar puncture performed on June 11 showed clear, colorless cerebrospinal fluid with no leukocytes or erythrocytes, and bacterial culture showed no growth at 72 hours; no tests for virus were performed. The patient was referred to and visited a neurologist on July 6. The neurologist found no evidence of stroke, diagnosed a complex migraine, and prescribed medication for headache management. The patient's symptoms gradually improved, and he reported no residual symptoms 6 months after illness onset.

On visiting his primary-care physician and during interviews conducted by the local health department and Montana Department of Public Health and Human Services (DPHHS), the patient reported recent exposure to mosquitoes while working outdoors around his home, which was located in a rural area of Montana. An acute-phase serum sample collected on June 2 (1 week after symptom onset) tested positive for WNV-specific IgM and IgG by ELISA at the Montana Public Health Laboratory (MTPHL). These laboratory results, in combination with the patient's symptoms and history of recent mosquito bites, supported a presumptive diagnosis of WNV disease.

The acute sample was then sent to CDC's arbovirus diagnostic laboratory (CDC-ADL) in Fort Collins, Colorado, to confirm the diagnosis by PRNT. Testing at CDC-ADL was positive for WNV-specific IgM and IgG antibodies, with a neutralizing titer of 320. Testing also was positive for St. Louis encephalitis virus (SLEV)-specific IgG antibodies, but a negative SLEV-specific IgM antibody test and a neutralizing titer of 10 suggested cross-reactive flaviviral antibodies. An initial convalescent serum sample drawn on June 11 (16 days after symptom onset) also tested positive for WNV-specific IgM and IgG by ELISA at MTPHL but was not available for testing at CDC-ADL. However, another convalescent serum sample was obtained on December 1 (189 days after symptom onset) and was tested at CDC-ADL. Results indicated persistence of WNV-specific IgM and IgG antibodies and stable neutralizing titers (Table). Because the stable titers suggested a previously acquired WNV infection (>6 months before illness onset), WNV avidity testing was obtained from the Viral Zoonoses Section, National Microbiology Laboratory, Public Health Agency of Canada (NML-PHAC), in Winnipeg, Manitoba, Canada. Testing found high-avidity WNV IgG, strongly suggesting that the WNV antibodies were from a past WNV infection (*1*).

In addition to WNV testing, CDC-ADL tested the acute specimen collected on June 2 for antibodies against other

arboviruses. Results were equivocal for IgM and IgG antibodies against La Crosse virus (LACV) by ELISA. Neutralizing titers of 40 against LACV and 80 against JCV suggested a possible recent infection with a California serogroup virus (Table). Follow-up testing on the day 189 sample was negative for LACV IgM antibodies by ELISA, but showed a twofold increase in LACV neutralizing titers and a fourfold increase in JCV titers. These results suggested that the patient's infection most likely was JCV. To confirm the diagnosis, samples were sent to NML-PHAC for testing with their recently developed IgM ELISA assays incorporating JCV antigen. Patient sera obtained June 11 and December 1 were positive for JCV-specific IgM antibodies (Table).

The presence of JCV-specific IgM and the fourfold diagnostic rise in JCV-neutralizing antibody titers confirmed the diagnosis of JCV infection. This finding indicated that JCV is present in Montana and that a risk for human infection exists.

TABLE. Diagnostic test results for three serum samples used to confirm a case of human Jamestown Canyon virus infection — Montana, 2009.

Test*	Acute phase serum	Convalescent phase serum	
	6/2/2009 (7 days post onset)	6/11/2009 (16 days post onset)	12/1/2009 (189 days post onset)
WNV			
IgM ELISA	Positive	Positive	Positive
IgG ELISA	Positive	Positive	Positive
PRNT	320	ND	320
IgG avidity	ND	High	High
SLEV			
IgM MIA	Negative	ND	Negative
IgG ELISA	Positive	ND	Positive
PRNT	10	ND	10
LACV			
IgM ELISA	Equivocal	ND	Negative
IgG ELISA	Equivocal	ND	Indeterminate
PRNT	40	ND	80
JCV			
IgM ELISA	ND	Positive	Positive
PRNT	80	ND	320

Abbreviations: ELISA = enzyme-linked immunosorbent assay; IgG = immunoglobulin G; IgM = immunoglobulin M; JCV = Jamestown Canyon virus; LACV = LaCrosse virus; MIA = microsphere-based immunoassay; ND = not done; PRNT = plaque reduction neutralization test; SLEV = St. Louis encephalitis virus; WNV = West Nile virus.

* Results of testing of the acute phase serum for Western equine encephalitis virus IgM and IgG were negative.

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Editorial Note

Arthropod-borne viruses (i.e., arboviruses) are transmitted to humans primarily through bites from infected mosquitoes or ticks. Most arboviruses of public health importance belong to one of three virus genera: *Flavivirus*, *Alphavirus*, and *Bunyavirus*. Human cases caused by the following domestic arboviruses are nationally reportable to CDC: West Nile, St. Louis encephalitis, Powassan, eastern equine encephalitis, western equine encephalitis, and California serogroup viruses (i.e., La Crosse, Jamestown Canyon, California encephalitis, Keystone, snowshoe hare, and trivittatus).

JCV is distributed throughout temperate North America, where it circulates primarily between deer and various mosquito species (*2–4*). Despite its wide geographic range, only 15 human JCV infections (mean: <3 per year) have been reported in the United States since 2004, when JCV became a reportable condition, and those have originated predominantly from the midwestern and northeastern states. JCV infections initially were described in the early 1970s to cause a mild febrile illness in humans (*5*). Serosurveys in Connecticut and New York have shown evidence of JCV infection in up to 12% of the population (*3,6*). Despite descriptions of mild illness caused by JCV, at least 11 subsequent cases with moderate-to-severe meningoencephalitis have been described; 10 in the early 1980s and one in 2001 (*3,6*). A retrospective study of patients with central nervous system manifestations and serologic findings for California serogroup viruses during 1971–1981 confirmed that 41 of 53 patients (77%) had antibodies to JCV, indicating that JCV originally was underdiagnosed in these patients (*7*). In comparison with clinical illness caused by LACV, JCV has been described as affecting adults and is more likely to cause meningitis (*6,7*). Furthermore, while seasonal distribution of LACV infections in humans generally occurs in August, JCV infections can occur earlier, in May and June, and continue through the end of summer, likely because the seasonal distribution of mosquito vectors differs for each virus (*8*).

Although the Montana patient with JCV infection was suspected to have an acute WNV infection, human cases of WNV infection in Montana typically are not reported until late July, with the majority of cases occurring in late August and early September. The onset of illness for this patient was during late spring, which is consistent with approximately 40% of recognized human JCV infections. The differences in the seasonal distribution of these diseases likely are related to the mosquito species that transmit the viruses. Mosquitoes belonging to snow-melt *Aedes* species are common vectors of JCV, emerge early in spring, and are distributed throughout Montana (*3,9*).

What is already known on this topic?

Jamestown Canyon virus (JCV) circulates widely in North America, primarily between deer and various mosquito species. Reports of human JCV infections in the United States have been rare and are confined primarily to the midwestern and northeastern states. JCV's nonspecific clinical presentation and the limited availability of sensitive tests for JCV might contribute to many human infections going undetected.

What is added by this report?

This first reported human case of JCV in Montana suggests that the geographic distribution of human JCV infection is wider than previously recognized, and that increased JCV surveillance is needed to determine whether mosquito-borne arboviruses other than West Nile virus (WNV) pose a substantial risk to humans in the region.

What are the implications for public health practice?

Clinicians should consider JCV infection in differential diagnoses when an arboviral infection is suspected to be causing a febrile neurologic illness, but WNV testing is inconclusive. Improved and timely arboviral disease diagnostics will aid clinicians in making patient-care and management decisions, help public health professionals perform accurate epidemiologic investigations and target preventive measures, and provide a better understanding of arboviral disease distribution in the United States.

Vertical transmission of JCV in mosquitoes, overwintering of the virus in mosquito eggs, and larval maturation in temporary ponds produced by melting snow increase the likelihood of human JCV transmission in the spring (*10*).

Detection of JCV previously has relied on cross-reactive antibodies in the LACV-specific ELISA (*6,7*). Testing of the acute serum sample for this case yielded equivocal anti-LACV IgM results, with a slightly higher neutralizing antibody titer against JCV than LACV. The titers against JCV and LACV were not different enough to determine the etiology. Although the convalescent sample confirmed a fourfold rise in JCV-neutralizing antibody titers, testing of paired acute and convalescent samples using a JCV antigen–specific ELISA was necessary to confirm JCV IgM positive results. The discordant anti-LACV and JCV IgM results suggested that cross-reactivity between LACV and JCV antibodies in the LACV-specific ELISA was incomplete, and that sole reliance on the LACV-specific ELISA to detect JCV can lead to missed JCV infections. In response to this, CDC has developed a JCV-specific IgM ELISA. Currently, testing is available only at CDC on request. As more information about the distribution and frequency of JCV infections and disease is known, testing might be expanded to include regional or state laboratories. The availability of this test will enable clinicians and public health officials to quickly differentiate between arboviral infections, especially within the California serogroup.

Initial diagnostic tests in this case included testing for several arboviral diseases. However, the lack of a readily available diagnostic test specific to JCV delayed the diagnosis and led the clinician to consider noninfectious causes of illness. For the patient, the delayed diagnosis resulted in unnecessary medical procedures, including a carotid Doppler ultrasound, plus several hours of travel, and lost work to seek additional medical evaluation from a specialist. Clinically, patient care might not have differed significantly; however, supportive care, including headache management and patient prognosis, would have been established more quickly. Treatment for JCV infection typically includes supportive care and management of complications, such as relieving increased intracranial pressure. This case underscores the importance of Montana clinicians considering JCV infection in patients with a febrile neurologic illness when an arboviral infection is suspected and WNV testing is inconclusive. Improved and timely diagnosis will aid clinicians in making patient-care and management decisions, help public health professionals perform accurate epidemiologic investigations and implement preventive measures, and provide a better understanding of California serogroup virus distribution.

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References

1. Levett PN, Sonnenberg K, Sidaway F, et al. Use of immunoglobulin G avidity assays for differentiation of primary from previous infections with West Nile virus. J Clin Microbiol 2005;43:5873–5.
2. Andreadis TG, Anderson JF, Armstrong PM, Main AJ. Isolations of Jamestown Canyon virus (Bunyaviridae: *Orthobunyavirus*) from field-collected mosquitoes (Diptera: Culicidae) in Connecticut, USA: a ten-year analysis, 1997–2006. Vector Borne Zoonotic Dis 2008;8:175–88.
3. Armstrong PM, Andreadis TG. Genetic relationships of Jamestown Canyon virus strains infecting mosquitoes collected in Connecticut. Am J Trop Med Hyg 2007;77:1157–62.
4. Wood DM, Dang PT, Ellis RA. The insects and arachnids of Canada, part 6. Hull, QC, Canada: Canadian Government Publishing Centre; 1979. Agriculture Canada publication no. 1696.
5. Thompson WH, Gundersen CB. La Crosse encephalitis: occurrence of disease and control in a suburban area. In: Calisher CH and Thompson WH, eds. California serogroup viruses. New York, NY: Alan R Liss; 1983:225–36.
6. Deibel R, Grimstad PR, Mahdy MS, Artsob H, Calisher CH. Jamestown Canyon virus: the etiologic agent of an emerging human disease? In: Calisher CH and Thompson WH, eds. California serogroup viruses. New York, NY: Alan R Liss; 1983:313–25.

7. Srihongse S, Grayson MA, Deibel R. California serogroup viruses in New York State: the role of subtypes in human infections. Am J Trop Med Hyg 1984;33:1218–27.
8. Grimstad PR. California group virus disease. In: Monath TP, ed. The arboviruses: epidemiology and ecology. Vol. 2. Boca Raton, FL: CRC Press; 1988:99–136.
9. West DF, Black WC. Breeding structure of three snow pool *Aedes* mosquito species in northern Colorado. Heredity 1998;81:371–80.
10. Murdock CC, Olival KJ, Perkins SL. Molecular identification of host feeding patterns of snow-melt mosquitoes (Diptera: Culicidae): potential implications for the transmission ecology of Jamestown Canyon virus. J Med Entomol 2010;47:226–9.

Contribution of Occupational Physical Activity Toward Meeting Recommended Physical Activity Guidelines — United States, 2007

Regular physical activity helps maintain healthy weight and reduces the likelihood of developing chronic diseases. The *2008 Physical Activity Guidelines for Americans* (*1*) are derived from the most recent scientific review of physical activity health benefits and do not differentiate among physical activity for leisure, transportation, work, or other purposes. To examine the potential influence of occupational physical activity on meeting minimum weekly aerobic physical activity guidelines, the Washington State Department of Health (WADOH) analyzed demographic patterns in physical activity levels with and without consideration of occupational physical activity using 2007 Behavioral Risk Factor Surveillance System (BRFSS) data. This report describes the results of that analysis, which indicated that, approximately two thirds (64.3%) of U.S. adults met minimum physical activity guidelines through nonoccupational physical activity. When occupational physical activity (defined as reported work activity of mostly walking or heavy labor) was considered, an additional 6.5% of adults likely met the guidelines. The increase was greatest for Hispanic men (14.4%) and men with less than a high school education (15.9%). Public health agencies conducting surveillance of population physical activity levels also should consider including occupational physical activity, which will help to identify demographic groups for targeted programs that increase physical activity.

BRFSS is a state-based, random-digit–dialed telephone survey of the noninstitutionalized, U.S. civilian adult population. The Council of American Survey Research Organizations (CASRO) median response rate for the 2007 BRFSS survey was 50.6%. Among 430,912 respondents, complete occupational and nonoccupational physical activity data were available for 386,397 respondents from 50 states and the District of Columbia.

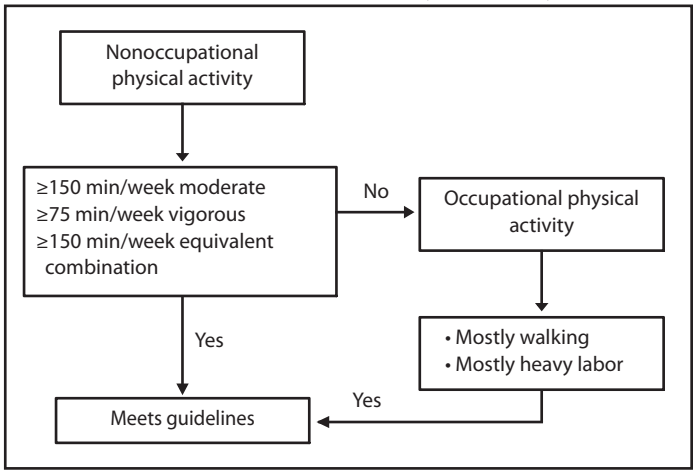
BRFSS collects data on frequency and duration of nonoccupational physical activity, which includes leisure, transportation (e.g., walking), and maintaining a home. WADOH computed the products of activity frequency (days per week) and duration (minutes per day) for moderate-intensity and vigorous-intensity activities. Consistent with the guidelines, WADOH classified respondents as having met guidelines if they reported weekly nonoccupational physical activity of ≥150 minutes of moderate-intensity activity (e.g., brisk walking or gardening), ≥75 minutes of vigorous-intensity activity (e.g., running or heavy yard work), or a combination of moderate-intensity and vigorous-intensity activity (with vigorous-intensity activity minutes multiplied by two) totaling ≥150 minutes.

BRFSS does not collect data on occupational physical activity frequency and duration; instead, respondents who indicate employment are asked whether their activity at work is mostly standing or sitting, mostly walking, or mostly heavy labor or physically demanding work.* For this analysis, respondents who did not meet guidelines through nonoccupational physical activity were coded as meeting the guidelines if they reported mostly walking or mostly heavy labor or physically demanding work (Figure).

WADOH computed age-adjusted prevalence of meeting physical activity guidelines by selected demographic characteristics and calculated age-adjusted prevalence ratios (PRs) for meeting guidelines by fitting two sets of Poisson regressions in which the outcome measures were meeting recommendations (in the first set through nonoccupational activity and in the second set through either nonoccupational or occupational activity). Each Poisson regression contained age and, except for the analysis in which age was the only predictor, an additional predictor variable: race/ethnicity, annual household income, or education. All analyses were stratified by sex and conducted using statistical software that accounted for the complex sampling design.

* Regarding occupational physical activity, respondents were asked the following: "When you are at work, which of the following best describes what you do? Would you say 1) mostly sitting or standing; 2) mostly walking; or 3) mostly heavy labor or physically demanding work?" Responses of "don't know/not sure" and a respondent's refusal to respond ("refused") also were included. Additional information available at http://www.cdc.gov/brfss/questionnaires/pdf-ques/2007brfss.pdf.

FIGURE. Classification for meeting 2008 physical activity guidelines*



* For respondents who meet the *2008 Physical Activity Guidelines for Americans* recommendation for aerobic physical activity through nonoccupational physical activity alone or through either occupational or nonoccupational physical activity.

Approximately two thirds (68.5%) of men met guidelines through nonoccupational physical activity. When occupational physical activity levels also were considered, the proportion meeting guidelines increased from 68.5% to 76.3% (Table 1); 14.8% (95% confidence interval [CI] = 14.4%–15.3%) of men reported "mostly walking," and 14.3% (CI = 13.9%–14.7%) reported "mostly heavy labor" at work. For women, the proportion increased from 60.4% to 65.7% (Table 2); 12.7% (CI = 12.4%–13.0%) of women reported "mostly walking," and 3.4% (CI = 3.3%–3.6%) of women reported "mostly heavy labor" at work. Hispanic men and men with less than a high school education exhibited the greatest absolute gains in the proportion meeting guidelines when occupational physical activity was included (from 60.6% to 75.0% and from 55.7% to 71.6%, respectively). Among Hispanic men, 24.3% (CI = 22.6%–26.2%) reported "mostly walking," and 15.0% (CI = 13.5%–16.5%) reported "mostly heavy labor" at work; among men with less than a high school education 21.2% (CI = 19.4%–23.2%) reported "mostly walking," and 18.4% (CI = 16.8% – 20.0%) reported "mostly heavy labor."

Hispanic men had a lower prevalence of meeting guidelines through nonoccupational physical activity compared with non-Hispanic white men (PR = 0.85) (Table 1). However, when occupational physical activity was included, the PR was attenuated (i.e., it approached 1.0; PR = 0.97). Similarly, men with less than a high school education had lower prevalence of meeting physical activity guidelines through nonoccupational physical activity compared with men with a college degree (PR = 0.75). When occupational physical activity was included, the PR was attenuated (PR = 0.93). Similar patterns in attenuation of PRs were noted when comparing men with reported annual household incomes of ≤$35,000 with those

TABLE 1. Prevalence of men meeting 2008 physical activity guidelines, by occupational/nonoccupational activity* and demographic characteristics — Behavioral Risk Factor Surveillance System, United States, 2007†

		Nonoccupational§				Occupational or nonoccupational¶				
Characteristic	Sample size	%	95% CI	PR**	95% CI	%	95% CI	PR	95% CI	% increase
Overall	**144,930**	**68.5**	**68.0–69.1**	—	—	**76.3**	**75.9–76.8**	—	—	**7.8**
Age group (yrs)	**144,930**									
18–24	6,070	78.3	76.1–80.4	1.36	1.32–1.41	86.4	84.5–88.1	1.46	1.42–1.50	8.1
25–34	14,287	73.6	72.1–75.1	1.28	1.25–1.32	83.8	82.5–85.0	1.41	1.38–1.45	10.2
35–44	23,322	70.3	69.1–71.4	1.22	1.19–1.25	80.2	79.2–81.1	1.35	1.33–1.38	9.9
45–54	30,973	68.2	67.1–69.2	1.19	1.16–1.21	77.2	76.3–78.1	1.30	1.28–1.33	9.0
55–64	31,489	63.5	62.4–64.6	1.10	1.08–1.13	70.1	69.1–71.1	1.18	1.16–1.21	6.6
≥65	38,789	57.5	56.5–58.5	1.00	Referent	59.3	58.3–60.2	1.00	Referent	1.8
Race/Ethnicity	**142,371**									
American Indian/Alaska Native, non-Hispanic	2,354	72.3	68.6–75.7	1.02	0.97–1.17	78.0	74.6–81.0	1.01	0.97–1.05	5.7
Asian, non-Hispanic	2,455	61.4	57.2–65.4	0.86	0.80–0.92	66.8	62.7–70.7	0.86	0.81–0.91	5.4
Black, non-Hispanic	8,801	63.0	61.1–64.9	0.89	0.87–0.92	70.2	68.5–71.9	0.91	0.89–0.93	7.2
Hispanic	8,572	60.6	58.3–62.8	0.85	0.82–0.88	75.0	72.9–77.0	0.97	0.95–1.00	14.4
Native Hawaiian/Other Pacific Islander, non-Hispanic	571	70.6	60.8–78.8	0.95	0.77–1.17	80.2	72.4–86.2	1.03	0.95–1.11	9.6
White, non-Hispanic	119,618	71.2	70.7–71.7	1.00	Referent	77.7	77.3–78.2	1.00	Referent	6.5
Annual household income	**131,907**									
<$25,000	28,790	57.3	55.8–58.7	0.75	0.73–0.78	67.9	66.6–69.1	0.85	0.83–0.87	10.6
$25,000–$34,999	15,992	63.6	61.8–65.4	0.84	0.81–0.86	75.7	74.2–77.0	0.94	0.92–0.96	12.1
$35,000–$49,999	22,137	68.5	67.1–69.9	0.89	0.87–0.92	78.9	77.7–80.0	0.98	0.97–1.00	10.4
$50,000–$74,999	24,335	73.4	72.2–74.6	0.96	0.94–0.98	80.7	79.6–81.7	1.00	0.99–1.02	7.3
≥$75,000	40,653	76.1	75.1–77.0	1.00	Referent	80.3	79.5–81.1	1.00	Referent	4.2
Education	**144,727**									
<High school	13,893	55.7	53.7–57.7	0.75	0.73–0.78	71.6	69.9–73.2	0.93	0.90–0.95	15.9
High school graduate	42,208	65.9	64.9–66.8	0.88	0.87–0.90	76.4	75.6–77.2	0.98	0.97–1.00	10.5
Some college	35,391	68.7	67.6–69.8	0.92	0.90–0.94	76.4	75.4–77.3	0.98	0.97–1.00	7.7
College graduate	53,235	73.5	72.5–74.6	1.00	Referent	77.0	76.0–78.0	1.00	Referent	3.5

Abbreviations: CI = confidence interval; PR = prevalence ratio.

* Respondents who meet the *2008 Physical Activity Guidelines for Americans* recommendation for aerobic physical activity through nonoccupational physical activity alone or through either occupational or nonoccupational physical activity.

† Prevalence estimates, except those by age group, were age-adjusted to the 2000 U.S. standard population by using the following six age groups: 18–24, 25–34, 35–44, 45–54, 55–64, and ≥65 years.

§ Weekly activities outside of work, including leisure, household chores, and transportation, totaling ≥150 minutes of moderate-intensity physical activity or ≥75 minutes of vigorous-intensity physical activity or an equivalent combination of moderate and vigorous physical activity.

¶ Includes 1) occupational physical activity of mostly walking or heavy labor among respondents who did not meet guidelines through nonoccupational physical activity or 2) weekly activities outside of work, including leisure, household chores, and transportation, totaling ≥150 minutes of moderate-intensity physical activity or ≥75 minutes of vigorous-intensity physical activity or an equivalent combination of moderate and vigorous physical activity.

** Prevalence ratio estimated from Poisson regression and adjusted for age, except where age was the only predictor, using the following six age groups: 18–24, 25–34, 35–44, 45–54, 55–64, and ≥65 years.

with reported annual household incomes of ≥$75,000. Among women, inclusion of occupational physical activity minimally changed the age-adjusted PRs for meeting physical activity guidelines by education, race/ethnicity, or annual household income categories (Table 2).

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Editorial Note

As expected, findings from this report provide evidence for a modest contribution of occupational physical activity toward successfully meeting minimum physical activity guidelines among U.S. adults, with a larger impact for some subpopulations than others. National Health Interview Survey (NHIS) data from 1990 and earlier revealed that approximately half of respondents classified as sedentary in leisure time reported ≥1 hour of strenuous occupational activity daily; that report indicated that assessing only leisure activity might underestimate physical activity (*2*). Recent analyses from NHIS are not available because questions regarding the amount of job-related physical activity have not been asked since 1990. The findings presented in this report are consistent with reports of Hispanic persons expending more energy at work than persons of other racial/ethnic groups (*3*). In addition, education and income are strong predictors of leisure-time physical activity, and they remain important predictors of total activity, even though including occupational activity attenuates the association between education and physical activity for men.

TABLE 2. Prevalence of women meeting 2008 physical activity guidelines by occupational/nonoccupational activity* and demographic characteristics — Behavioral Risk Factor Surveillance System, United States, 2007†

		Nonoccupational§				Occupational or nonoccupational¶				
Characteristic	Sample size	%	95% CI	PR**	95% CI	%	95% CI	PR	95% CI	% increase
Overall	**241,467**	**60.4**	**60.0–60.9**	—	—	**65.7**	**65.3–66.1**	—	—	**5.3**
Age group (yrs)	**241,467**									
18–24	8,137	68.1	66.3–69.9	1.47	1.43–1.52	74.2	72.4–75.8	1.57	1.52–1.61	6.1
25–34	26,403	64.9	63.8–66.0	1.40	1.37–1.43	71.2	70.1–72.2	1.50	1.47–1.54	6.3
35–44	38,767	63.8	62.9–64.7	1.38	1.35–1.41	70.4	69.6–71.3	1.49	1.46–1.52	6.6
45–54	49,712	63.8	62.9–64.7	1.34	1.32–1.37	68.5	67.7–69.3	1.45	1.42–1.47	4.7
55–64	48,782	56.5	55.6–57.3	1.22	1.19–1.25	61.2	60.3–62.1	1.29	1.27–1.32	4.7
≥65	69,666	46.3	45.6–47.0	1.00	Referent	47.4	46.6–48.1	1.00	Referent	1.1
Race/Ethnicity	**237,994**									
American Indian/Alaska Native, non-Hispanic	3,536	59.6	55.9–63.3	0.94	0.88–1.01	65.0	61.6–68.2	0.96	0.91–1.02	5.4
Asian, non-Hispanic	3,621	49.5	45.8–53.3	0.77	0.72–0.83	55.3	51.5–59.0	0.81	0.76–0.87	5.8
Black, non-Hispanic	19,943	50.4	49.1–51.7	0.80	0.78–0.82	57.6	56.3–58.8	0.85	0.83–0.87	7.2
Hispanic	15,801	56.0	54.3–57.7	0.88	0.85–0.91	63.2	61.6–64.9	0.93	0.90–0.95	7.2
Native Hawaiian/Other Pacific Islander, non-Hispanic	869	69.0	61.7–75.6	1.03	0.91–1.16	74.0	67.1–80.0	1.03	0.93–1.15	5.0
White, non-Hispanic	194,224	63.3	62.9–63.8	1.00	Referent	67.9	67.4–68.3	1.00	Referent	4.6
Annual household income	**207,560**									
<$25,000	63,905	51.0	49.9–52.0	0.71	0.70–0.73	57.8	56.8–58.8	0.78	0.76–0.79	6.8
$25,000–$34,999	26,870	57.2	55.9–58.6	0.81	0.79–0.83	64.5	63.3–65.8	0.88	0.86–0.90	7.3
$35,000–$49,999	33,503	62.7	61.6–63.8	0.89	0.87–0.90	68.5	67.5–69.6	0.93	0.91–0.95	5.8
$50,000–$74,999	34,278	64.9	63.8–66.0	0.91	0.90–0.93	69.6	68.5–70.6	0.94	0.92–0.96	4.7
≥$75,000	49,004	70.8	69.8–71.7	1.00	Referent	74.3	73.4–75.2	1.00	Referent	3.5
Education	**241,134**									
<High school	23,765	48.8	47.0–50.5	0.72	0.69–0.74	55.9	54.3–57.6	0.77	0.75–0.80	7.1
High school graduate	74,256	56.8	56.0–57.6	0.84	0.83–0.86	63.3	62.5–64.1	0.89	0.88–0.90	6.5
Some college	66,858	61.5	60.7–62.2	0.92	0.90–0.93	66.7	66.0–67.5	0.94	0.93–0.96	5.2
College graduate	76,255	66.9	66.1–67.7	1.00	Referent	70.7	69.9–71.5	1.00	Referent	3.8

Abbreviations: CI = confidence interval; PR = prevalence ratio.

* Respondents who meet the *2008 Physical Activity Guidelines for Americans* recommendation for aerobic physical activity through nonoccupational physical activity alone or through either occupational or nonoccupational physical activity.

† Prevalence estimates, except those by age group, were age-adjusted to the 2000 U.S. standard population by using the following six age groups: 18–24, 25–34, 35–44, 45–54, 55–64, and ≥65 years.

§ Weekly activities outside of work, including leisure, household chores, and transportation, totaling ≥150 minutes of moderate-intensity physical activity or ≥75 minutes of vigorous-intensity physical activity or an equivalent combination of moderate and vigorous physical activity.

¶ Includes 1) occupational physical activity of mostly walking or heavy labor among respondents who did not meet guidelines through nonoccupational physical activity or 2) weekly activities outside of work, including leisure, household chores, and transportation, totaling ≥150 minutes of moderate-intensity physical activity or ≥75 minutes of vigorous-intensity physical activity or an equivalent combination of moderate and vigorous physical activity.

** Prevalence ratio estimated from Poisson regression and adjusted for age, except where age was the only predictor, using the following six age groups: 18–24, 25–34, 35–44, 45–54, 55–64, and ≥65 years.

What is already known on this topic?

Prevalence estimates of physical activity predominately focus on nonoccupational physical activity; however, physical activity at work also can contribute to levels of physical activity sufficient to meet physical activity recommendations.

What is added by this report?

This report is the first to provide estimates based on national surveillance data of the potential contribution of occupational physical activity toward meeting physical activity guidelines described in the *2008 Physical Activity Guidelines for Americans*; when occupational physical activity was considered, an estimated additional 6.5% of adults overall very likely met the guidelines, and, for some groups, an estimated additional 14%–16% met the guidelines.

What are the implications for public health practice?

Pending evaluation of the usefulness of collecting information on occupational physical activity frequency and duration, consideration of occupational physical activity in the monitoring of population physical activity levels can help to identify demographic groups for targeted programs to increase physical activity.

Although the BRFSS occupational physical activity question has been reported as valid and reliable for classifying physical activities at work (*4–6*), the question does not quantify the intensity or duration of continuous occupational physical activity. For this report, the analysis assumed that "mostly walking" included moderate-intensity activity in ≥10-minute intervals for ≥150 minutes per week and "mostly heavy labor" included vigorous-intensity activity in ≥10-minute intervals for ≥75 minutes per week. If the actual time spent in activity of sufficient intensity is less than this, then the effect of occupational physical activity on meeting the minimum aerobic activity guidelines will be overestimated. Relative to a standard work week of 40 hours, these assumptions seem reasonable. Also, a variety of occupational walking activities are in the "moderate" range, and a variety of heavy labor activities are in the "vigorous" range, based on comparisons of energy need while performing a task to energy need at rest (*5,7*). However, a more detailed assessment of occupational physical activities would be needed to confirm these assumptions.

The findings in this report are subject to at least three limitations. First, because the duration of "mostly" walking or heavy physical labor is unavailable, it was not possible to assess whether respondents who did not meet guidelines through nonoccupational activity alone might meet guidelines through the combination of occupational and nonoccupational physical activity. As such, the proportions of persons meeting guidelines might have been underestimated. Second, BRFSS excludes persons in households without landline telephones. Finally, the 2007 BRFSS survey had a low CASRO response rate. These latter two factors can lead to bias, especially if physical activity patterns differ between those with and without landline telephones and between respondents and nonrespondents. The directions of these potential biases are unknown.

As one of the 10 leading health indicators in the United States (*8*), physical activity is monitored at state and national levels to provide information for public health program planning, implementation, and evaluation. The state of Washington has used combined occupational and nonoccupational physical activity data as part of its assessment to target communities for policy and environmental changes. Debate about the health benefits of physical activity at work is ongoing, but the current guidelines do not distinguish between occupational and nonoccupational physical activity. Thus, public health surveillance that includes both occupational and nonoccupational physical activity more accurately describes whether persons meet guidelines than surveillance that includes only nonoccupational physical activity. Because demographic groups vary in amounts of physical activity at work (*9*), surveillance that includes both occupational and nonoccupational physical activity can be used to target groups that could derive health benefits by being more physically active.

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References

1. US Department of Health and Human Services. 2008 physical activity guidelines for Americans. Hyattsville, MD: US Department of Health and Human Services; 2008. Available at http://www.health.gov/paguidelines/guidelines/default.aspx. Accessed July 6, 2010.
2. CDC. Prevalence of leisure-time and occupational physical activity among employed adults in the United States, 1990. MMWR 2000;49:420–4.
3. Ham SA, Yore MM, Kruger J, Heath GW, Moeti R. Physical activity patterns among Latinos in the United States: putting the pieces together. Prev Chronic Dis 2007;4:1–13.
4. Yore MM, Bowles Hr, Ainsworth BE, et al. Single versus multiple item questions on occupational physical activity. J Phys Act Health 2006;1:102–11.
5. Reis JP, Dubose KD, Ainsworth BE, et al. Reliability and validity of the occupational physical activity questionnaire. Med Sci Sports Exerc 2005;37:2075–83.
6. Evenson KR, McGinn AP. Test–retest reliability of adult surveillance measures for physical activity and inactivity. Am J Prev Med 2005;28:470–8.
7. Pate RR, Pratt M, Blair SN, et al. Physical activity and public health: a recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. JAMA 1995;273:402–7.

8. US Department of Health and Human Services. Healthy people 2010 (conference ed, in 2 vols). Washington, DC: US Department of Health and Human Services; 2000. Available at http://www.health.gov/healthypeople.

9. Marquez DX, Neighbors CJ, Bustamante EE. Leisure time and occupational physical activity among racial or ethnic minorities. Med Sci Sports Exerc 2010;42:1086–93.

Recommendations for Use of a Booster Dose of Inactivated Vero Cell Culture-Derived Japanese Encephalitis Vaccine — Advisory Committee on Immunization Practices, 2011

Japanese encephalitis (JE) virus, a mosquito-borne flavivirus, is an important cause of encephalitis in Asia with a case fatality rate of 20%–30% and neurologic or psychiatric sequelae in 30%–50% of survivors (*1*). Travelers to JE-endemic countries and laboratory personnel who work with infectious JE virus are at potential risk for JE virus infection. In 2010, CDC's Advisory Committee on Immunization Practices (ACIP) updated recommendations for prevention of JE. The updated recommendations included information on use of a new inactivated, Vero cell culture–derived JE vaccine (JE-VC [manufactured as Ixiaro]) that was licensed in the United States in 2009. Data on the need for and timing of booster doses with JE-VC were not available when the vaccine was licensed. This report summarizes new data on the persistence of neutralizing antibodies following primary vaccination with JE-VC and the safety and immunogenicity of a booster dose of JE-VC. The report also provides updated guidance to health-care personnel regarding use of a booster dose of JE-VC for U.S. travelers and laboratory personnel. ACIP recommends that if the primary series of JE-VC was administered >1 year previously, a booster dose may be given before potential JE virus exposure.

Background

For most travelers to Asia, the risk for JE is very low but varies based on destination, duration, season, and activities (*2*). ACIP recommends JE vaccine for travelers who plan to spend a month or longer in JE-endemic areas during the JE virus transmission season. JE vaccine should be considered for short-term travelers (<1 month) if they plan to travel outside of an urban area and have an itinerary or activities that will increase the risk of JE virus exposure. JE vaccine also is recommended for laboratory personnel with a potential for exposure to infectious JE virus (*1*).

In 2009, the Food and Drug Administration (FDA) licensed JE-VC for use in persons aged ≥17 years. JE-VC is manufactured by Intercell Biomedical (Livingston, United Kingdom) and is distributed in the United States by Novartis Vaccines (Cambridge, Massachusetts). JE-VC is administered in a 2-dose primary series at 0 and 28 days. Another JE vaccine, an inactivated mouse brain–derived vaccine (JE-VAX [JE-MB]), has been licensed in the U.S since 1992. However, JE-MB is no longer being produced and remaining doses expire in May 2011.

Additional JE-VC study data have become available since the vaccine's licensure. The ACIP JE Vaccines Workgroup reviewed JE-VC clinical trial data on the persistence of neutralizing antibodies following primary vaccination with JE-VC and the safety and immunogenicity of a booster dose of JE-VC. These were primarily from published, peer-reviewed studies; however, unpublished data also were considered. FDA approved an update to the prescribing information for JE-VC in September 2010. No previous guidelines have been given on booster doses with JE-VC. At the February 2011 ACIP meeting, the workgroup presented data supporting use of a booster dose and proposed recommendations for a booster dose. ACIP approved the booster dose recommendations at the meeting.

Persistence of protective neutralizing antibodies after primary vaccination with JE-VC

Three clinical trials have provided data on persistence of protective neutralizing antibodies after a primary 2-dose series of JE-VC. In JE vaccine clinical trials, JE virus neutralizing antibody levels measured by plaque reduction neutralization test (PRNT) can be used as a surrogate for protection. A 50% PRNT ($PRNT_{50}$) titer of ≥10 is accepted as an immunologic correlate of protection from JE in humans (*3*). In a study performed in central Europe (Austria, Germany, and Romania) to evaluate persistence of neutralizing antibodies among subjects who received 2 doses of JE-VC, 95% (172 of 181), 83% (151 of 181), 82% (148 of 181) and 85% (129 of 152) had protective antibodies at 6 months, 12 months, 24 months, and 36 months after receiving the first dose, respectively (Table 1) (*4–6*). A study that used similar methods but was performed in western and northern Europe (Germany and Northern Ireland) found that among adults receiving 2 doses of JE-VC, seroprotection rates were 83% (96 of 116) at 6 months, 58% (67 of 116) at 12 months, and 48% (56 of 116) at 24 months after their first vaccination (Table 1) (*7*). The manufacturer suggested that the different seroprotection rates in the two populations may have resulted from differences in prior vaccination against tick-borne encephalitis (TBE) virus, a related flavivirus. An estimated 75% of subjects in the first study might have received prior TBE vaccine compared with none of the subjects in the second study. A higher JE virus neutralizing antibody response after the first dose of JE-VC previously had been found in subjects with preexisting TBE

antibodies compared with those without TBE antibodies (*8*). In a third clinical trial, conducted in Austria and Germany, at 15 months after the first dose of a 2-dose JE-VC immunization series, 69% (137 of 198) of subjects had a protective neutralizing antibody titer (Table 1) (*9*).

Safety and immunogenicity of a booster dose of JE-VC

Two clinical trials have provided data on the response to a booster dose of JE-VC. In a study conducted in Austria and Germany, 198 adults aged ≥18 years who had received a 2-dose primary series of JE-VC were administered a booster dose 15 months after the first dose (*9*). The percentage of subjects with a protective neutralizing antibody titer increased from 69% (137 of 198) on Day 0 before the booster dose to 100% (198 of 198) at Day 28 after the booster dose. Protective titers were found in 98% (194 of 197) at 6 months and 98% (191 of 194) at 12 months after the booster dose (Table 2). The geometric mean titer (GMT) before the booster was 23 and increased 40-fold to 900 at Day 28 after the booster dose. GMTs were 487 and 361 at 6 and 12 months after the booster, respectively (Table 2). During the 7 days following the booster dose, local adverse events were reported in subject diaries by 31% (60 of 195) of subjects. The most frequent local reactions were tenderness in 19% (37 of 193) and pain in 13% (25 of 195) (Table 3). Systemic adverse events were reported by 23% (44 of 190) of subjects within 7 days of the booster dose. The most commonly reported systemic reactions were headache in 11% (21 of 194) and fatigue in 10% (18 of 188) (*6*). No serious adverse events were reported during the 28 days following the booster dose.

In a second study, a booster dose administered to 40 subjects who had received primary immunization but no longer had protective neutralizing antibody titers resulted in protective titers in all subjects when the booster was administered at 11 months (n = 16) or 23 months (n = 24) after the first dose (*7*). GMTs at 1 month after the booster increased to 676 and to 2,496 in the groups administered the dose at 11 months and 23 months after the first dose, respectively. Among the 16 subjects who received the booster dose at 11 months, all still had seroprotective titers 13 months later.

Guidelines for use of a booster dose of JE-VC

ACIP recommends that if the primary series of JE-VC was administered >1 year previously, a booster dose may be given before potential JE virus exposure. ACIP recommendations should be consulted for information on prevention of JE and settings in which JE vaccine is recommended, can be

TABLE 1. Number and percentage of subjects with a protective Japanese encephalitis (JE) virus neutralizing antibody titer (≥10) and geometric mean titers (GMT) at month 6, 12, 15, 24, and 36 after dose 1 of a 2-dose primary series of inactivated Vero cell culture–derived JE vaccine (JE-VC [manufactured as Ixiaro])

	Months after the first dose of a 2-dose primary series of JE-VC									
	6 mos		12 mos		15 mos		24 mos		36 mos	
Study site	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Austria, Germany, Romania*†§ [N = 181]	172	(95)	151	(83)	—	—	148	(82)	129	(85)¶
Germany, Northern Ireland** [N = 116]	96	(83)	67	(58)	—	—	56	(48)	—	—
Austria, Germany†† [N = 198]	—	—	—	—	137	(69)	—	—	—	—
	GMT	(95% CI)	GMT	(95% CI)	GMT	(95% CI)	GMT	(95% CI)	GMT	(95% CI)
Austria, Germany, Romania*†§ [N = 181]	84	(71–98)	41	(34–49)	—	—	44	(37–53)	44	(37–53)¶
Germany, Northern Ireland** [N = 116]	47	(37–59)	18	(14–23)	—	—	16	(13–21)	—	—
Austria, Germany†† [N = 198]	—	—	—	—	23	(19–27)	—	—	—	—

Abbreviation: CI = confidence interval.

* **Source:** Schuller E, Jilma B, Voicu V, et al. Long-term immunogenicity of the new Vero cell-derived, inactivated Japanese encephalitis virus vaccine IC51: six and 12 month results of a multicenter follow-up phase 3 study. Vaccine 2008;26:4382–6.

† **Source:** European Medicines Agency. Annex 1: summary of product characteristics. Available at http://www.ema.europa.eu/docs/en_GB/document_library/EPAR_-_Product_Information/human/000963/WC500037287.pdf.

§ **Source:** Dubischar-Kastner K. Data supporting the use of a booster dose of Ixiaro. Presentation to Advisory Committee on Immunization Practices (ACIP), February 23, 2011, Atlanta, GA. Available at http://www.cdc.gov/vaccines/recs/acip/downloads/mtg-slides-feb11/03-2-jev-booster.pdf.

¶ n = 152

** **Source:** Dubischar-Kastner K, Eder S, Buerger V, et al. Long-term immunity and immune response to a booster dose following vaccination with the inactivated Japanese encephalitis vaccine Ixiaro, IC51. Vaccine 2010;28:5197–202.

†† **Source:** Eder S, Dubischar-Kastner K, Firbas C, et al. Long term immunity following a booster dose of the inactivated Japanese encephalitis vaccine Ixiaro, IC51. Vaccine 2011;29:2607–12.

TABLE 2. Number and percentage of subjects with a protective Japanese encephalitis virus neutralizing antibody titer (≥10) and the geometric mean titers (GMT) prior to and at day 28, month 6, and month 12 after a booster dose of inactivated Vero cell culture–derived Japanese encephalitis vaccine (JE-VC [manufactured as Ixiaro]) administered 15 months after dose 1 of a 2-dose primary JE-VC series

	Time after administration of the booster dose of JE-VC							
	0 days (N = 198)		28 days (N = 198)		6 months (n = 197)		12 months (n = 194)	
Study site	No.	(%)	No	(%)	No	(%)	No	(%)
Austria, Germany* [N = 198]	137	(69)	198	(100)	194	(98)	191	(98)
	GMT	(95% CI)	GMT	(95% CI)	GMT	(95% CI)	GMT	(95% CI)
	23	(19–27)	900	(742–1091)	487	(391–608)	361	(295–444)

Abbreviation: CI = confidence interval.
* **Source:** Eder S, Dubischar-Kastner K, Firbas C, et al. Long term immunity following a booster dose of the inactivated Japanese encephalitis vaccine Ixiaro, IC51. Vaccine 2011;29:2607–12.

TABLE 3. Number and percentage of local and systemic adverse events occurring within 7 days after a booster dose of inactivated Vero cell culture–derived Japanese encephalitis vaccine (JE-VC [manufactured as Ixiaro]) administered 15 months after dose 1 of a 2-dose primary JE-VC series

Adverse events	No./Total subjects	(%)
Local adverse events		
Tenderness	37/193	(19)
Pain	25/195	(13)
Induration	18/194	(9)
Erythema	12/193	(6)
Edema	4/194	(2)
Any	60/195	(31)
Systemic adverse events		
Headache	21/194	(11)
Fatigue	18/188	(10)
Myalgia	13/194	(7)
Fever	8/195	(4)
Any	44/190	(23)

Sources: Eder S, Dubischar-Kastner K, Firbas C, et al. Long term immunity following a booster dose of the inactivated Japanese encephalitis vaccine Ixiaro, IC51. Vaccine 2011;29:2607–12.

Dubischar-Kastner K. Data supporting the use of a booster dose of Ixiaro. Presentation to Advisory Committee on Immunization Practices (ACIP), February 23, 2011, Atlanta, GA. Available at http://www.cdc.gov/vaccines/recs/acip/downloads/mtg-slides-feb11/03-2-jev-booster.pdf.

considered, or is not recommended (*1*). Data on the response to a booster dose administered >2 years after the primary series of JE-VC are not available. Data on the need for and timing of additional booster doses also are not available.

No data exist on the use of JE-VC as a booster dose after a primary series with inactivated mouse brain-derived JE vaccine (JE-MB [manufactured as JE-Vax]). Adults aged ≥17 years who have received JE-MB previously and require further vaccination against JE virus should receive a 2-dose primary series of JE-VC.

ACIP will review any additional data that are made available. Recommendations will be updated as needed.

Reported by

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References

1. CDC. Japanese encephalitis vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2010;59 (No. RR-1).
2. Shlim DR, Solomon T. Japanese encephalitis vaccine for travelers: exploring the limits of risk. Clin Infect Dis 2002;35:183–8.
3. Hombach J, Solomon T, Kurane I, Jacobson J, Wood D. Report on a WHO consultation on immunological endpoints for evaluation of new Japanese encephalitis vaccines. Vaccine 2005;23:5205–11.
4. Schuller E, Jilma B, Voicu V, et al. Long-term immunogenicity of the new Vero cell-derived, inactivated Japanese encephalitis virus vaccine IC51: six and 12 month results of a multicenter follow-up phase 3 study. Vaccine 2008;26:4382–6.
5. European Medicines Agency. Annex 1: summary of product characteristics. Available at http://www.ema.europa.eu/docs/en_GB/document_library/EPAR_-_Product_Information/human/000963/WC500037287.pdf. Accessed May 22, 2011.
6. Dubischar-Kastner K. Data supporting the use of a booster dose of Ixiaro. Presentation to Advisory Committee on Immunization Practices (ACIP), February 23, 2011, Atlanta, GA. Available at http://www.cdc.gov/vaccines/recs/acip/downloads/mtg-slides-feb11/03-2-jev-booster.pdf. Accessed May 22, 2011.
7. Dubischar-Kastner K, Eder S, Buerger V, et al. Long-term immunity and immune response to a booster dose following vaccination with the inactivated Japanese encephalitis vaccine Ixiaro, IC51. Vaccine 2010;28:5197–202.
8. Schuller E, Klade CS, Heinz FX, et al. Effect of pre-existing anti-tick-borne encephalitis virus immunity on neutralising antibody response to the Vero cell-derived, inactivated Japanese encephalitis virus vaccine candidate IC51. Vaccine 2008;26:6151–6.
9. Eder S, Dubischar-Kastner K, Firbas C, et al. Long term immunity following a booster dose of the inactivated Japanese encephalitis vaccine Ixiaro, IC51. Vaccine 2011;29:2607–12.

Update on Japanese Encephalitis Vaccine for Children — United States, May 2011

Inactivated mouse brain–derived Japanese encephalitis (JE) vaccine (JE-MB [manufactured as JE-Vax]), the only JE vaccine that is licensed for use in children in the United States, is no longer available. This notice provides updated information regarding options for obtaining JE vaccine for U.S. children.

JE among U.S. travelers

JE virus is the leading cause of vaccine-preventable encephalitis in Asia and the western Pacific. For most travelers to Asia, the risk for JE is low but varies on the basis of destination, duration, season, and activities. During the past 4 decades, 17 cases of JE have been reported among U.S. travelers and expatriates, including three cases among U.S. children aged <18 years (*1,2*). JE is a severe disease; 20%–30% of patients die, and 30%–50% of survivors have neurologic or psychiatric sequelae (*3*).

Recommendations for prevention of JE among travelers

The Advisory Committee on Immunization Practices (ACIP) recommends that all travelers, including children, take precautions to avoid mosquito bites to reduce the risk for JE and other vector-borne infectious diseases (*3*). These precautions include using insect repellent, permethrin-impregnated clothing, and bed nets, and staying in accommodations with screened or air-conditioned rooms. Additional information on protection against mosquitoes and other arthropods is available in CDC's *Health Information for International Travel* (Yellow Book) (*4*). For some travelers who will be in a high-risk setting on the basis of season, location, duration, and activities, JE vaccine can reduce the risk for disease further (*3*).

JE vaccine for U.S. children

JE-MB has been licensed in the United States since 1992 for use in adults and children aged ≥1 year. JE-MB has been associated with serious, but rare, allergic and neurologic adverse events (*3*). During 2002–2009, a total of 848,571 doses of JE-MB were distributed in the United States (mean: 106,071 doses per year), of which 534,330 (63%) doses were distributed to military health-care providers (*5*). During this period, an estimated 2,000–3,000 doses of JE-MB were distributed for use in U.S. children each year (Sanofi Pasteur, unpublished data, 2011). However, JE-MB is no longer being produced, and all remaining doses expire in May 2011.

In 2009, the Food and Drug Administration (FDA) approved an inactivated Vero cell culture-derived JE vaccine (JE-VC [manufactured as Ixiaro]) for use in adults aged ≥17 years. One pediatric dose-ranging study has been completed among 60 children aged 12–35 months in India (48 children received JE-VC, and 12 children received another inactivated mouse brain–derived JE vaccine [manufactured as JenceVac]) (*6*). A safety and immunogenicity study is ongoing among approximately 1,900 children aged 2 months–17 years in the Philippines, and a safety and immunogenicity bridging study has been initiated in the United States and other nonendemic countries with a targeted enrollment of approximately 100 children. Despite these ongoing studies, it likely will be several years before JE-VC is licensed in the United States for use in children. JE-VC product information is available online from FDA at http://www.fda.gov/biologicsbloodvaccines/vaccines/approvedproducts/ucm179132.htm.

Current options for obtaining JE vaccine for U.S. children

For U.S. health-care providers interested in obtaining JE vaccine for pediatric patients they judge to be at risk, current options include 1) enroll children in the ongoing clinical trial, 2) administer JE-VC off-label, or 3) receive JE vaccine at an international travelers' health clinic in Asia.

The ongoing pediatric safety and immunogenicity trial with JE-VC is enrolling children aged 2 months–17 years at five U.S. sites (trial identifier NCT01047839). The study is open-label, and all enrollees receive 2 doses of JE-VC administered 28 days apart. A third study visit is required at 56 days after the first dose of vaccine. Additional information about the clinical trial is available online from the National Institutes of Health at http://clinicaltrials.gov/ct2/show/nct01047839. In addition, a list of U.S. clinical trial sites and contact information is available online from CDC at http://www.cdc.gov/ncidod/dvbid/jencephalitis/children.htm.

JE-VC is FDA-licensed for use in adults aged ≥17 years. However, a health-care provider may choose to administer the vaccine off-label in children aged <17 years. Data from the one completed pediatric study have been published (*6*). Additional information about the use of JE-VC in children is available from Novartis Medical Communications by telephone (877-683-4732) or e-mail (vaccineinfo.us@novartis.com).

Several JE vaccines are manufactured and available for pediatric use in Asia but are not licensed in the United States.

Vaccines available at international travelers' health clinics in Asia include another inactivated mouse brain–derived JE vaccine manufactured in South Korea, live attenuated SA 14-14-2 vaccine manufactured in China, or another Vero cell culture-derived JE vaccine manufactured in Japan. The recommended number of doses and schedule varies by vaccine and country. A partial list of international travelers' health clinics in Asia that administer JE vaccines to children is available online from CDC at http://www.cdc.gov/ncidod/dvbid/jencephalitis/children.htm.

References

1. Hills SL, Griggs AC, Fischer M. Japanese encephalitis in travelers from non-endemic countries, 1973–2008. Am J Trop Med Hyg 2010;82:930–6.
2. CDC. Japanese encephalitis in two children—United States, 2010. MMWR 2011;60:276–8.
3. CDC. Japanese encephalitis vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2010;59 (No. RR-1).
4. CDC. Health information for international travel, 2010. Atlanta, GA: US Department of Health and Human Services, CDC; 2009. Available at http://wwwnc.cdc.gov/travel/yellowbook/2010/table-of-contents.htm. Accessed May 19, 2011.
5. Lindsey NP, Staples JE, Jones J, et al. Adverse event reports following Japanese encephalitis vaccination in the U.S., 2000–2009. Vaccine 2010; 29:58–64.
6. Kaltenböck A, Dubischar-Kastner K, Schuller E, Datla M, Klade CS, Kishore TS. Immunogenicity and safety of Ixiaro (IC51) in a phase II study in healthy Indian children between 1 and 3 years of age. Vaccine 2010;28:834–9.

Measles — United States, January–May 20, 2011

On May 24, this report was posted as an MMWR *Early Release on the* MMWR *website (http://www.cdc.gov/mmwr).*

Measles is a highly contagious, acute viral illness that can lead to serious complications and death. Endemic or sustained measles transmission has not occurred in the United States since the late 1990s, despite continued importations (*1*). During 2001–2008, a median of 56 (range: 37–140) measles cases were reported to CDC annually (*2*); during the first 19 weeks of 2011, 118 cases of measles were reported, the highest number reported for this period since 1996. Of the 118 cases, 105 (89%) were associated with importation from other countries, including 46 importations (34 among U.S. residents traveling abroad and 12 among foreign visitors). Among those 46 cases, 40 (87%) were importations from the World Health Organization (WHO) European and South-East Asia regions. Of the 118, 105 (89%) patients were unvaccinated. Forty-seven (40%) patients were hospitalized and nine had pneumonia. The increased number of measles importations into the United States this year underscores the importance of vaccination to prevent measles and its complications.

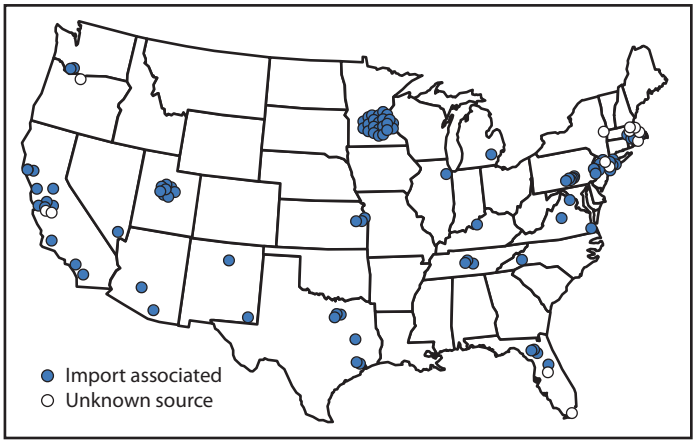
Measles cases are reported by state health departments to CDC, and confirmed cases are reported via the National Notifiable Disease Surveillance System (NNDSS) using standard case definitions (*3*). Cases are considered internationally imported if at least some of the exposure period (7–21 days before rash onset) occurred outside the United States and rash occurred within 21 days of entry into the United States, with no known exposure to measles in the United States during that time. Import-associated cases include 1) internationally imported cases; 2) cases that are related epidemiologically to imported cases; and 3) imported virus cases for which an epidemiologic link has not been identified but the viral genotype detected suggests recent importation.* Laboratory confirmation of measles is made by detection in serum of measles-specific immunoglobulin M antibodies, isolation of measles virus, or detection of measles virus RNA by nucleic acid amplification in an appropriate clinical specimen (e.g., nasopharyngeal/oropharyngeal swabs, nasal aspirates, throat washes, or urine). For this report, persons with reported unknown or undocumented vaccination status are considered unvaccinated. An outbreak of measles is defined as a chain of transmission with three or more confirmed cases.

During January 1–May 20, 2011, a total of 118 cases were reported from 23 states and New York City (Figure 1), the highest reported number for the same period since 1996 (Figure 2). Patients ranged in age from 3 months to 68 years; 18 (15%) were aged <12 months, 24 (20%) were aged 1–4 years, 23 (19%) were aged 5–19 years, and 53 (45%) were aged ≥20 years. Measles was laboratory-confirmed in 105 (89%) cases, and measles virus RNA was detected in 52 (44%) cases. Among the 118 cases, 105 (89%) were import-associated, of which 46 (44%) were importations from at least 15 countries (Table), 49 (47%) were import-linked, and 10 (10%) were imported virus cases. The source of 13 cases not import-associated could not be determined. Among the 46 imported cases, most were among persons who acquired the disease in the WHO European Region (20) or South-East Asia Region (20), and 34 (74%) occurred in U.S. residents traveling abroad.

Of the 118 cases, 47 (40%) resulted in hospitalization. Nine patients had pneumonia, but none had encephalitis and none died. All but one hospitalized patient were unvaccinated. The vaccinated patient reported having received 1 dose of measles-containing vaccine and was hospitalized for observation only. Hospitalization rates were highest among infants and children aged <5 years (52%), but rates also were high among children and adults aged ≥5 years (33%).

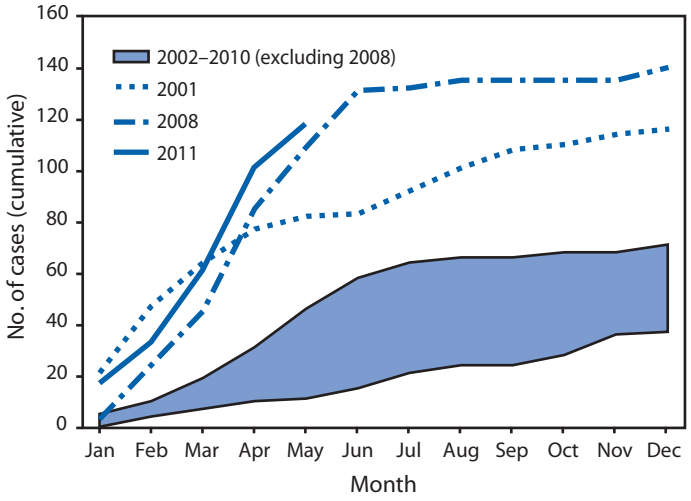
Unvaccinated persons accounted for 105 (89%) of the 118 cases. Among the 45 U.S. residents aged 12 months–19 years who acquired measles, 39 (87%) were unvaccinated, including 24 whose parents claimed a religious or personal exemption and eight who missed opportunities for vaccination. Among the 42 U.S. residents aged ≥20 years who acquired measles, 35 (83%) were unvaccinated, including six who declined vaccination because of philosophical objections to vaccination. Of the

FIGURE 1. Distribution and origin of reported measles cases (N = 118) — United States, January 1–May 20, 2011



* Additional information is available at http://www.cdc.gov/osels/ph_surveillance/nndss/casedef/measles_2010.htm.

FIGURE 2. Cumulative number of measles cases reported, by month of rash onset — United States, 2001–2011



33 U.S. residents who were vaccine-eligible and had traveled abroad, 30 were unvaccinated and one had received only 1 of the 2 recommended doses.

Nine outbreaks accounted for 58 (49%) of the 118 cases. The median outbreak size was four cases (range: 3–21). In six outbreaks, the index case acquired measles abroad; the source of the other three outbreaks could not be determined. Transmission occurred in households, child care centers, shelters, schools, emergency departments, and at a large community event. The largest outbreak occurred among 21 persons in a Minnesota population in which many children were unvaccinated because of parental concerns about the safety of measles, mumps, and rubella (MMR) vaccine. That outbreak resulted in exposure to many persons and infection of at least seven infants too young to receive MMR vaccine (*4*).

Reported by

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Editorial Note

As a result of high vaccination coverage, measles elimination (i.e., the absence of endemic transmission) was achieved in the United States in the late 1990s (*1*) and likely in the rest of the Americas since the early 2000s (*5*). However, as long as measles remains endemic in the rest of the world, importations into the Western Hemisphere will continue.

The unusually large number of importations into the United States in the first 19 weeks of 2011 is related to recent increases in measles in countries visited by U.S. travelers. The most frequent sources of importation in 2011 were countries in the WHO European Region, which has accounted for the majority of measles importations in the United States since 2005 (*2*), and the South-East Asia Region. This year, 33 countries in the WHO European Region have reported an increase in measles. France, the source of most of the importations from the European Region, is experiencing a large outbreak, with approximately 10,000 cases reported during the first 4 months of 2011, including 12 cases of encephalitis, a complication that often results in permanent neurologic sequelae, 360 cases of severe measles pneumonia, and six measles-related deaths (*6*).

Measles can be severe and is highly infectious; following exposure, up to 90% of susceptible persons develop measles. Measles can lead to life-threatening complications. During 1989–1991, a resurgence of measles in the United States resulted in >100 deaths among >55,000 cases reported, reminding U.S. residents of the potential severity of measles, even in the era of modern medical care (*7*). In the years that followed, the United States witnessed the return of subacute sclerosing panencephalitis among U.S. children, a rare, fatal neurologic complication of measles that had all but disappeared after measles vaccine was introduced in the 1960s (*8*).

Children and adults who remain unvaccinated and develop measles also put others in their community at risk. For infants too young for routine vaccination (age <12 months) and persons with medical conditions that contraindicate measles

TABLE. Countries where measles was acquired, by World Health Organization (WHO) region — United States, January–May 20, 2011

WHO region	No. of cases	Country	No. of cases
African	2	Kenya	1
		Nigeria	1
Eastern Mediterranean	2	Pakistan	1
		Jordan	1
European	20	France	11
		France/United Kingdom	1*
		France/Italy/Spain/Germany	1*
		Italy	1
		Poland	1
		Romania	1
		Spain	1
		United Kingdom	3
Americas	1	Dominican Republic	1†
South-East Asia	20	India	14
		Indonesia	1
		Philippines	4
		Philippines/Vietnam/Singapore/Malaysia	1*
Western Pacific	1	China	1

* Patient had visited more than one country where measles are endemic during the incubation period, and exposure could have occurred in any of the countries listed.

† Although the patient acquired measles in the Dominican Republic, the likely source of infection was a French tourist with measles who stayed in an adjacent room at the same resort at the same time as the patient. The genotype identified in this patient was D4, a genotype commonly circulating in France.

What is already known on this topic?

Measles, mumps, and rubella (MMR) vaccine is highly effective in preventing measles and its complications. Sustained measles transmission was eliminated from the United States in the late 1990s, but the disease remains common in many countries globally, and cases of measles are imported into the United States regularly.

What is added by this report?

During the first 19 weeks of 2011, 118 cases of measles were reported in the United States, the highest number for the same period in any year since 1996, and hospitalization rates were high (40%). Importations accounted for 46 (40%) cases, including 34 (74%) cases among U.S. residents who had recently traveled abroad, among 105 import-associated cases.

What are the implications for public health practice?

High 2-dose MMR vaccine coverage is critical for decreasing the risk for reestablishment of endemic measles transmission after importation of measles into the United States. Before any international travel, infants aged 6–11 months should receive 1 dose of MMR vaccine and persons aged ≥12 months should receive 2 doses of MMR vaccine at least 28 days apart or have other evidence of immunity to measles.

immunization, the risk for measles complications is particularly high. These persons depend on high MMR vaccination coverage among those around them to protect them from exposure. In the United States this year, infants aged <12 months accounted for 15% of cases and 15% of hospitalizations. In Europe in recent years, measles has been fatal for several children and adolescents, including some who could not be vaccinated because they were immune compromised.

Rapid control efforts by state and local public health agencies, which are both time intensive and costly, have been a key factor in limiting the size of outbreaks and preventing the spread of measles into communities with increased numbers of unvaccinated persons. Nonetheless, maintenance of high 2-dose MMR vaccination coverage is the most critical factor for sustaining elimination. For measles, even a small decrease in coverage can increase the risk for large outbreaks and endemic transmission, as occurred in the United Kingdom in the past decade (*9*).

Because of ongoing importations of measles to the United States, health-care providers should suspect measles in persons with a febrile rash illness and clinically compatible symptoms (e.g., cough, coryza, and/or conjunctivitis) who have recently traveled abroad or have had contact with travelers. Providers should isolate and report suspected measles cases immediately to their local health department and obtain specimens for measles testing, including viral specimens for confirmation and genotyping.

MMR vaccine is safe and highly effective in preventing measles and its complications. MMR vaccine is recommended routinely for all children at age 12–15 months, with a second dose at age 4–6 years. For adults with no evidence of immunity to measles,[†] 1 dose of MMR vaccine is recommended unless the adult is in a high-risk group (i.e., health care personnel, international travelers, or students at post-high school educational institutions), in which case, 2 doses of MMR vaccine are recommended. Measles is endemic in many countries, and exposures might occur in airports and in countries of travel. All travelers aged ≥6 months are eligible to receive MMR vaccine and should be vaccinated before travel (*10*). Maintaining high immunization rates with MMR vaccine is the cornerstone of outbreak prevention.

[†] Documented receipt of 2 doses of live measles virus-containing vaccine, laboratory evidence of immunity, documentation of physician-diagnosed measles, or birth before 1957.

Acknowledgments

The findings in this report are based, in part, on contributions by Mary McCauley and Paul Chenoweth, National Center for Immunization and Respiratory Diseases, CDC.

References

1. Katz SL, Hinman AR. Summary and conclusions: measles elimination meeting, 16–17 March 2000. J Infect Dis 2004;189(Suppl 1):S43–7.
2. Parker Fiebelkorn A, Redd SB, Gallagher K, et al. Measles in the United States during the postelimination era. J Infect Dis 2010;202:1520–8.
3. CDC. Manual for the surveillance of vaccine-preventable diseases. 4th ed. Atlanta, GA: US Department of Health and Human Services, CDC; 2009. Available at http://www.cdc.gov/vaccines/pubs/surv-manual/default.htm. Accessed May 20, 2011.
4. CDC. Measles outbreak—Hennepin County, Minnesota, February–March 2011. MMWR 2011;60:421.
5. World Health Organization. Global elimination of measles—report by the Secretariate, 16 April 2009. Available at http://apps.who.int/gb/ebwha/pdf_files/EB125/B125_4-en.pdf. Accessed May 20, 2011.
6. Institut de Veille Sanitaire. Epidémie de rougeole en France; Actualisation des données au 20 mai 2011. Available at http://www.invs.sante.fr/surveillance/rougeole/Point_rougeole_200511.pdf. Accessed May 23, 2011.
7. Gindler J, Tinker S, Markowitz L, et al. Acute measles mortality in the United States, 1987–2002. J Infect Dis 2004;189(Suppl 1):S69–77.
8. Bellini WJ, Rota JS, Lowe LE, et al. Subacute sclerosing panencephalitis: more cases of this fatal disease are prevented by measles immunization than was previously recognized. J Infect Dis 2005;192:1686–93.
9. Editorial team. Measles once again endemic in the United Kingdom. Eurosurveillance 2008;13. Available at http://www.eurosurveillance.org/viewarticle.aspx?articleId=18919. Accessed May 20, 2011.
10. Watson JC, Hadler SC, Dykewicz CA, Reef S, Phillips L. Measles, mumps, and rubella–vaccine use and strategies for elimination of measles, rubella, and congenital rubella syndrome and control of mumps: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1998;47(No. RR-8).

Announcement

Preventive Medicine Residency and Fellowship Applications Deadline — September 15, 2011

The Preventive Medicine Residency and Fellowship (PMR/F) programs are accepting applications from physicians for the residency and from veterinarians, dentists, nurses, physician assistants, and international medical graduates for the fellowship. Applicants with public health and applied epidemiologic practice experience who seek to become preventive medicine and population health specialists and public health leaders are encouraged to apply.

The PMR/F prepares clinicians for leadership roles in public health at international, federal, state, and local levels through instruction and supervised practical experiences focused on translating epidemiology to public health practice, management, and policy and program development. Development of leadership and management competency is emphasized. Residents and fellows conduct their training at a CDC location or in a state or local health department.

PMR/F alumni occupy many leadership positions at CDC, at state and local health departments, in academia, and in private-sector agencies. Completion of the residency, which is accredited by the Accreditation Council for Graduate Medical Education for 24 months of training, qualifies graduates to apply for certification by the American Board of Preventive Medicine (ABPM) in Public Health and General Preventive Medicine. Select candidates can be considered for 1 year of residency training that also should qualify for application for ABPM certification. Training for PMF clinicians also is 1 year.

Applications are being accepted for the class that begins in mid-June 2012. Applications must be submitted online by September 15, 2011, and supporting documents must be received in the PMR/F office by that same day. Additional information regarding the programs, eligibility criteria, and application process is available at http://www.cdc.gov/prevmed, by telephone at 404-498-6140, or by e-mail at prevmed@cdc.gov.

Notice to Readers

Updated "N" Indicators for the Year 2010 in National Notifiable Diseases Surveillance System Tables

The 2010 Council of State and Territorial Epidemiologists (CSTE) State Reportable Conditions Assessment (2010 SRCA) has collected data from 55 reporting jurisdictions (50 U.S. states, the District of Columbia, New York City, and three territories [American Samoa, Guam, and Puerto Rico]) to determine which of the nationally notifiable conditions (NNC) were reportable in each reporting jurisdiction in 2010. The 2010 SRCA gathered information regarding whether the condition is 1) explicitly reportable (i.e., listed as a specific disease or as a category of diseases on reportable disease lists), 2) implicitly reportable (i.e., included in a general category of the reportable disease list, such as "rare diseases of public health importance"), or 3) not reportable within each jurisdiction. Only conditions that were explicitly reportable were considered reportable based on the 2010 SRCA methodology.

Results of the 2010 SRCA will be used to indicate whether each NNC is or is not reportable for the specified period and reporting jurisdiction. NNC that are not reportable are noted with an "N" indicator (for "not reportable") in the *MMWR* Table II weekly update (Provisional cases of selected notifiable diseases, United States) and in the *MMWR Summary of Notifiable Diseases—United States, 2010*. This notation will allow readers to distinguish whether 1) no cases were reported even though the condition is reportable or 2) no cases were reported because the condition is not reportable.

The 2010 SRCA data collection and validation concluded in April 2011; results will be used to populate the "N" indicators for National Notifiable Diseases Surveillance System (NNDSS) data in the 2011 *MMWR* tables for the current week and for both the 2010 and 2011 cumulative year columns. The 2011 NNDSS data displayed in the *MMWR* weekly provisional tables will reflect reporting requirements gathered from the 2010 SRCA until 2011 SRCA official results are available.

Erratum

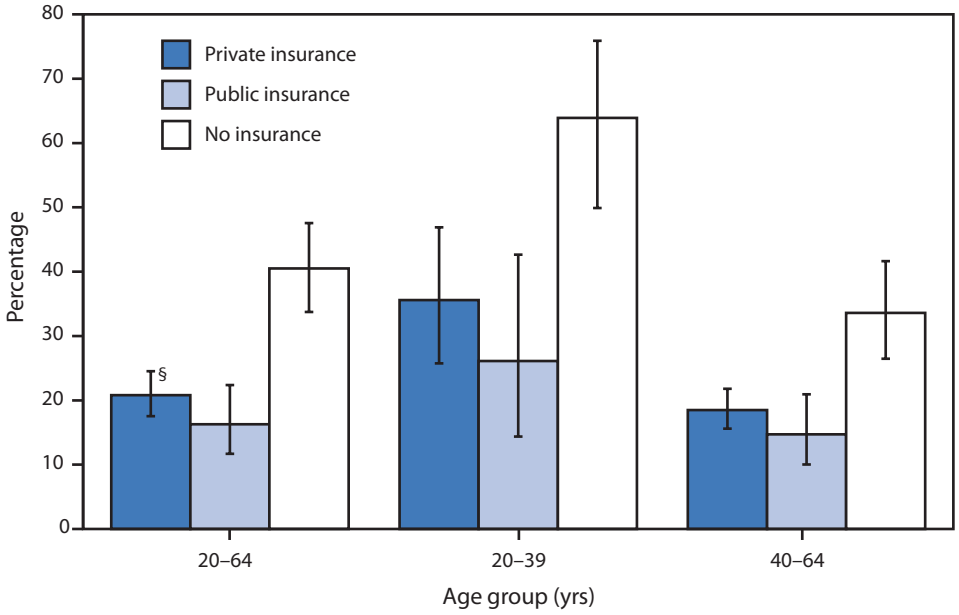
Vol. 60, No. RR-3

In the *MMWR Recommendations and Reports* "Updated Norovirus Outbreak Management and Disease Prevention Guidelines," an error occurred on page 9. The second sentence under the heading "Environmental Specimens" should read: "If a food or a water source is strongly suspected as the source of an outbreak, a sample should be obtained as early as possible with respect to the time of exposure, **and CDC or FDA should be contacted for further guidance on testing. Food samples should be stored frozen at -4°F (-20°C), and water samples should be stored refrigerated or chilled on ice at 39°F (4°C).**"

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Adults Aged 20–64 Years with Hypertension Whose Condition Was Undiagnosed,* by Health Insurance Status† and Age Group — National Health and Nutrition Examination Survey, United States, 2005–2008



* Hypertension was defined as systolic blood pressure ≥140 mmHg or diastolic blood pressure ≥90 mmHg or currently taking medication to lower blood pressure, based on positive responses to the following questions: "Because of your high blood pressure/hypertension have you ever been told to take prescribed medicine?" and "Are you now taking a prescribed medicine?" Undiagnosed hypertension was a finding of hypertension and a negative response to the following question: "Have you ever been told by a doctor or other health professional that you had hypertension, also called high blood pressure?"

† Health insurance coverage is at the time of interview. Public coverage includes Medicaid, Children's Health Insurance Program (CHIP) state-sponsored or other government-sponsored health plan, Medicare (disability), or military health plan (TRICARE, VA, or CHAMP-VA). Persons with both public and private insurance coverage were included in the private coverage category only.

§ 95% confidence interval.

During 2005–2008, among U.S. adults aged 20–64 years with hypertension, 40% of those with no health insurance had hypertension that was undiagnosed, compared with 21% of those with private insurance and 16% of those with public insurance. In the 20–39 years and 40–64 years age groups, undiagnosed hypertension also was more common among persons with no health insurance compared with those with private or public insurance.

Sources: National Health and Nutrition Examination Survey, 2005–2008 data. Available at http://www.cdc.gov/nchs/nhanes.htm.

Schober SE, Makuc DM, Zhang C, Kennedy-Stephenson J, Burt V. Health insurance affects diagnosis and control of hypercholesterolemia and hypertension among adults aged 20–64: United States, 2005–2008. NCHS data brief no. 57. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2011. Available at http://www.cdc.gov/nchs/data/databriefs/db57.pdf.

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 May 21, 2011 (20th 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	75	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	—	13	1	NN	NN	NN	NN	NN	
Botulism, total	3	26	2	107	118	145	144	165	
foodborne	1	4	0	7	10	17	32	20	NY (1)
infant	2	18	1	75	83	109	85	97	PA (1), VA (1)
other (wound and unspecified)	—	4	0	25	25	19	27	48	
Brucellosis	2	19	3	117	115	80	131	121	FL (1), CA (1)
Chancroid	1	11	0	30	28	25	23	33	CA (1)
Cholera	—	17	0	12	10	5	7	9	
Cyclosporiasis§	3	40	2	180	141	139	93	137	NY (1), TX (2)
Diphtheria	—	—	—	—	—	—	—	—	
Haemophilus influenzae,** invasive disease (age <5 yrs):									
serotype b	—	2	0	23	35	30	22	29	
nonserotype b	1	44	4	198	236	244	199	175	GA (1)
unknown serotype	1	99	4	223	178	163	180	179	PA (1)
Hansen disease§	—	20	1	70	103	80	101	66	
Hantavirus pulmonary syndrome§	—	6	1	20	20	18	32	40	
Hemolytic uremic syndrome, postdiarrheal§	1	27	4	259	242	330	292	288	TN (1)
Influenza-associated pediatric mortality§,††	—	101	2	61	358	90	77	43	
Listeriosis	2	148	11	818	851	759	808	884	MD (1), CO (1)
Measles§§	2	83	3	64	71	140	43	55	FL (1), CA (1)
Meningococcal disease, invasive¶¶:									
A, C, Y, and W-135	2	74	6	276	301	330	325	318	OH (1), NE (1)
serogroup B	1	46	3	133	174	188	167	193	WA (1)
other serogroup	—	4	1	11	23	38	35	32	
unknown serogroup	5	202	10	414	482	616	550	651	PA (1), VA (1), AZ (1), CA (2)
Novel influenza A virus infections***	—	1	0	4	43,774	2	4	NN	
Plague	—	—	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§	—	23	3	133	113	120	171	169	
acute	—	13	2	108	93	106	—	—	
chronic	—	10	0	25	20	14	—	—	
Rabies, human	—	—	—	2	4	2	1	3	
Rubella†††	—	1	0	7	3	16	12	11	
Rubella, congenital syndrome	—	—	—	—	2	—	—	1	
SARS-CoV§	—	—	—	—	—	—	—	—	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	2	53	4	159	161	157	132	125	NY (1), OH (1)
Syphilis, congenital (age <1 yr)§§§	—	56	6	363	423	431	430	349	
Tetanus	—	2	0	11	18	19	28	41	
Toxic-shock syndrome (staphylococcal)§	1	35	1	81	74	71	92	101	NE (1)
Trichinellosis	1	6	0	7	13	39	5	15	ME (1)
Tularemia	—	8	3	124	93	123	137	95	
Typhoid fever	4	124	7	466	397	449	434	353	TX (1), CO (1), CA (2)
Vancomycin-intermediate *Staphylococcus aureus*§	1	21	1	91	78	63	37	6	FL (1)
Vancomycin-resistant *Staphylococcus aureus*§	—	—	—	2	1	—	2	1	
Vibriosis (noncholera *Vibrio* species infections)§	4	108	7	847	789	588	549	NN	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 May 21, 2011 (20th 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, 105 influenza-associated pediatric deaths occurring during the 2010-11 influenza season have been reported.

§§ Of the two measles cases reported for the current week, one was imported and one was indigenous.

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

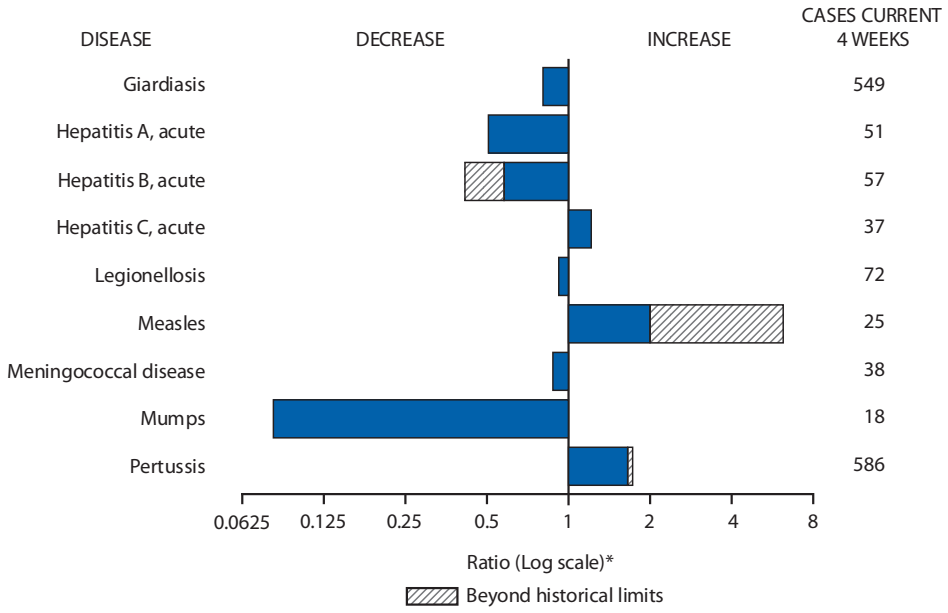
*** CDC discontinued reporting of individual confirmed and probable cases of 2009 pandemic influenza A (H1N1) virus infections on July 24, 2009. During 2009, four cases of human infection with novel influenza A viruses, different from the 2009 pandemic influenza A (H1N1) strain, were reported to CDC. 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 May 21, 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.

Notifiable Disease Data Team and 122 Cities Mortality Data Team

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TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending May 21, 2011, and May 22, 2010 (20th 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	15,504	25,440	31,173	479,022	492,436	73	0	569	5,622	NN	49	122	369	1,444	2,205
New England	643	841	2,043	15,548	14,763	—	0	1	1	NN	—	6	21	73	198
Connecticut	—	234	1,557	2,620	3,387	—	0	0	—	NN	—	0	16	16	77
Maine†	—	55	100	1,137	957	—	0	0	—	NN	—	0	7	2	22
Massachusetts	558	404	860	8,458	7,827	—	0	0	—	NN	—	3	9	32	44
New Hampshire	59	53	112	1,132	787	—	0	1	1	NN	—	1	3	9	27
Rhode Island†	—	67	154	1,620	1,347	—	0	0	—	NN	—	0	2	1	8
Vermont†	26	26	84	581	458	—	0	0	—	NN	—	1	5	13	20
Mid. Atlantic	1,576	3,309	5,068	62,480	64,904	—	0	0	—	NN	8	14	38	218	223
New Jersey	183	492	684	8,357	10,174	—	0	0	—	NN	—	1	4	9	9
New York (Upstate)	668	710	2,099	13,664	12,355	—	0	0	—	NN	2	3	13	48	47
New York City	190	1,163	2,612	20,963	24,418	—	0	0	—	NN	—	2	6	22	21
Pennsylvania	535	949	1,183	19,496	17,957	—	0	0	—	NN	6	8	26	139	146
E.N. Central	1,126	3,971	7,039	68,263	77,638	1	0	3	16	NN	11	29	130	340	560
Illinois	—	1,108	1,320	12,201	23,058	—	0	0	—	NN	—	2	21	3	78
Indiana	151	447	3,376	11,032	5,955	—	0	0	—	NN	—	3	10	36	86
Michigan	592	942	1,398	18,497	20,045	1	0	3	9	NN	3	5	18	73	110
Ohio	211	1,000	1,136	18,164	19,877	—	0	3	7	NN	6	7	24	125	126
Wisconsin	172	453	557	8,369	8,703	—	0	0	—	NN	2	9	65	103	160
W.N. Central	467	1,411	1,610	26,895	28,123	—	0	1	1	NN	8	15	99	105	342
Iowa	16	203	240	3,896	4,236	—	0	0	—	NN	—	4	25	16	73
Kansas	25	187	287	3,721	3,757	—	0	0	—	NN	—	1	6	6	29
Minnesota	—	292	354	4,625	6,033	—	0	0	—	NN	—	3	22	—	115
Missouri	426	521	771	10,674	10,074	—	0	0	—	NN	1	3	29	36	51
Nebraska†	—	98	218	2,181	1,995	—	0	1	1	NN	7	3	26	40	39
North Dakota	—	42	90	571	814	—	0	0	—	NN	—	0	9	—	3
South Dakota	—	63	93	1,227	1,214	—	0	0	—	NN	—	1	6	7	32
S. Atlantic	4,978	5,007	6,194	100,075	99,144	—	0	1	1	NN	11	18	52	273	335
Delaware	63	83	220	1,735	1,657	—	0	0	—	NN	—	0	1	2	2
District of Columbia	105	105	180	1,947	2,051	—	0	0	—	NN	—	0	1	3	2
Florida	737	1,466	1,706	28,556	28,672	—	0	0	—	NN	4	6	19	80	133
Georgia	678	825	2,416	14,809	18,114	—	0	0	—	NN	4	5	11	90	110
Maryland†	486	485	1,125	8,459	8,553	—	0	1	1	NN	3	1	3	17	12
North Carolina	1,446	756	1,436	18,022	17,149	—	0	0	—	NN	—	0	16	23	24
South Carolina†	735	517	946	11,017	9,831	—	0	0	—	NN	—	2	8	31	17
Virginia†	669	658	970	13,922	11,672	—	0	0	—	NN	—	2	9	20	29
West Virginia	59	75	122	1,608	1,445	—	0	0	—	NN	—	0	5	7	6
E.S. Central	1,383	1,820	3,314	35,599	34,129	—	0	0	—	NN	1	4	19	51	73
Alabama†	344	548	1,552	10,406	9,191	—	0	0	—	NN	—	1	13	7	28
Kentucky	478	268	2,352	5,976	5,911	—	0	0	—	NN	1	1	6	19	23
Mississippi	308	394	780	7,898	8,725	—	0	0	—	NN	—	0	2	8	4
Tennessee†	253	590	795	11,319	10,302	—	0	0	—	NN	—	1	5	17	18
W.S. Central	2,759	3,296	4,723	61,249	69,397	—	0	1	1	NN	3	8	33	68	108
Arkansas†	322	303	440	6,309	6,008	—	0	0	—	NN	—	0	3	5	13
Louisiana	747	368	1,052	3,030	11,442	—	0	1	1	NN	—	0	6	10	16
Oklahoma	313	233	1,371	4,556	5,076	—	0	0	—	NN	—	1	8	—	17
Texas†	1,377	2,350	3,107	47,354	46,871	—	0	0	—	NN	3	4	24	53	62
Mountain	722	1,665	2,154	32,332	32,066	61	0	424	4,231	NN	3	10	30	151	184
Arizona	153	519	678	9,288	10,449	59	0	419	4,167	NN	—	1	3	9	13
Colorado	413	413	849	10,096	7,370	—	0	0	—	NN	—	2	10	45	47
Idaho†	—	66	199	1,019	1,467	—	0	0	—	NN	1	2	7	30	31
Montana†	—	64	85	1,271	1,204	—	0	1	1	NN	2	1	5	20	23
Nevada†	152	193	380	4,100	3,907	2	0	4	34	NN	—	0	7	3	5
New Mexico†	—	195	1,183	3,751	4,221	—	0	4	23	NN	—	2	12	29	31
Utah	—	129	175	2,110	2,622	—	0	2	3	NN	—	1	5	9	23
Wyoming†	4	39	90	697	826	—	0	2	3	NN	—	0	3	6	11
Pacific	1,850	3,802	6,559	76,581	72,272	11	0	145	1,371	NN	4	12	27	165	182
Alaska	—	116	157	2,158	2,408	—	0	0	—	NN	—	0	3	4	2
California	1,282	2,921	5,763	58,931	54,317	11	0	145	1,370	NN	2	7	19	94	106
Hawaii	—	108	141	1,762	2,460	—	0	0	—	NN	—	0	0	—	1
Oregon	260	235	524	5,295	4,750	—	0	1	1	NN	2	4	13	64	51
Washington	308	412	520	8,435	8,337	—	0	0	—	NN	—	1	9	3	22
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	NN	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	NN	—	—	—	—	—
Guam	—	9	44	189	78	—	0	0	—	NN	—	0	0	—	—
Puerto Rico	119	105	353	2,399	2,499	—	0	0	—	NN	N	0	0	N	N
U.S. Virgin Islands	—	14	25	220	207	—	0	0	—	NN	—	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.
† Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending May 21, 2011, and May 22, 2010 (20th 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	—	5	47	25	98	—	0	2	—	3
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	—	1	22	7	36	—	0	1	—	2
New Jersey	—	0	0	—	—	—	0	0	—	—
New York (Upstate)	—	0	5	—	5	—	0	1	—	1
New York City	—	1	17	—	25	—	0	1	—	1
Pennsylvania	—	0	3	7	6	—	0	0	—	—
E.N. Central	—	1	7	4	12	—	0	1	—	—
Illinois	—	0	3	1	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	2	—	—	0	1	—	—
W.N. Central	—	0	6	—	8	—	0	1	—	—
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	1	—	—	—	0	0	—	—
Minnesota	—	0	1	—	7	—	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	18	9	29	—	0	1	—	1
Delaware	—	0	0	—	—	—	0	0	—	—
District of Columbia	—	0	0	—	—	—	0	0	—	—
Florida	—	2	14	8	27	—	0	1	—	1
Georgia	—	0	0	—	—	—	0	0	—	—
Maryland¶	—	0	0	—	—	—	0	0	—	—
North Carolina	—	0	2	1	—	—	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	0	—	—	—	0	0	—	—
Mississippi	—	0	0	—	—	—	0	0	—	—
Tennessee¶	—	0	1	—	—	—	0	0	—	—
W.S. Central	—	0	1	—	—	—	0	0	—	—
Arkansas¶	—	0	0	—	—	—	0	0	—	—
Louisiana	—	0	0	—	—	—	0	0	—	—
Oklahoma	—	0	1	—	—	—	0	0	—	—
Texas¶	—	0	1	—	—	—	0	0	—	—
Mountain	—	0	2	1	2	—	0	0	—	—
Arizona	—	0	2	1	1	—	0	0	—	—
Colorado	—	0	0	—	—	—	0	0	—	—
Idaho¶	—	0	0	—	—	—	0	0	—	—
Montana¶	—	0	0	—	—	—	0	0	—	—
Nevada¶	—	0	1	—	1	—	0	0	—	—
New Mexico¶	—	0	0	—	—	—	0	0	—	—
Utah	—	0	0	—	—	—	0	0	—	—
Wyoming¶	—	0	0	—	—	—	0	0	—	—
Pacific	—	0	7	4	8	—	0	0	—	—
Alaska	—	0	0	—	—	—	0	0	—	—
California	—	0	5	1	5	—	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	—	88	550	191	2,035	—	2	20	1	53
U.S. Virgin Islands	—	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.
† 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 May 21, 2011, and May 22, 2010 (20th 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	6	7	109	48	109	5	21	145	24	186	—	1	13	9	15
New England	1	0	2	2	2	1	1	10	2	18	—	0	1	—	—
Connecticut	—	0	0	—	—	—	0	6	—	5	—	0	0	—	—
Maine§	—	0	1	1	2	—	0	2	1	4	—	0	0	—	—
Massachusetts	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
New Hampshire	1	0	1	1	—	1	0	2	1	5	—	0	1	—	—
Rhode Island§	—	0	1	—	—	—	0	6	—	4	—	0	0	—	—
Vermont§	—	0	0	—	—	—	0	1	—	—	—	0	0	—	—
Mid. Atlantic	1	1	8	5	20	1	5	17	5	20	—	0	2	1	1
New Jersey	—	0	6	—	15	—	1	7	—	14	—	0	1	—	—
New York (Upstate)	1	0	7	3	4	1	3	14	5	6	—	0	2	1	1
New York City	—	0	2	2	—	—	0	3	—	—	—	0	0	—	—
Pennsylvania	—	0	1	—	1	—	0	1	—	—	—	0	1	—	—
E.N. Central	—	0	4	2	12	1	5	45	2	65	—	1	6	3	8
Illinois	—	0	2	1	6	—	0	2	—	—	—	0	2	1	—
Indiana	—	0	0	—	—	—	0	0	—	—	—	0	3	1	7
Michigan	—	0	1	—	—	—	0	0	—	—	—	0	1	1	—
Ohio	—	0	3	1	—	1	0	1	1	—	—	0	0	—	—
Wisconsin	—	0	2	—	6	—	4	45	1	65	—	0	3	—	1
W.N. Central	1	1	13	12	15	1	4	77	4	74	—	0	11	1	—
Iowa	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Kansas	—	0	2	1	—	—	0	1	—	—	—	0	0	—	—
Minnesota	—	0	12	—	—	—	4	75	1	74	—	0	11	—	—
Missouri	1	0	13	11	15	1	0	2	3	—	—	0	3	1	—
Nebraska§	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
North Dakota	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
South Dakota	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
S. Atlantic	2	3	18	22	43	—	1	7	7	8	—	0	1	—	—
Delaware	1	0	3	4	4	—	0	1	—	1	—	0	0	—	—
District of Columbia	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Florida	—	0	2	4	2	—	0	1	1	—	—	0	0	—	—
Georgia	—	0	2	1	9	—	0	1	1	—	—	0	1	—	—
Maryland§	—	0	3	2	4	—	0	2	—	4	—	0	1	—	—
North Carolina	—	1	13	6	19	—	0	4	5	1	—	0	0	—	—
South Carolina§	—	0	2	—	—	—	0	1	—	—	—	0	0	—	—
Virginia§	1	1	8	5	5	—	0	2	—	2	—	0	1	—	—
West Virginia	—	0	1	—	—	—	0	0	—	—	—	0	0	—	—
E.S. Central	1	0	11	5	9	1	0	2	4	1	—	0	2	1	4
Alabama§	—	0	3	—	1	1	0	2	2	—	N	0	0	N	N
Kentucky	—	0	2	2	1	—	0	0	—	—	—	0	1	—	—
Mississippi	—	0	1	—	—	—	0	1	—	—	—	0	1	—	1
Tennessee§	1	0	7	3	7	—	0	2	2	1	—	0	1	1	3
W.S. Central	—	0	87	—	7	—	0	9	—	—	—	0	1	—	—
Arkansas§	—	0	5	—	—	—	0	2	—	—	—	0	0	—	—
Louisiana	—	0	0	—	1	—	0	0	—	—	—	0	0	—	—
Oklahoma	—	0	82	—	5	—	0	7	—	—	—	0	0	—	—
Texas§	—	0	1	—	1	—	0	1	—	—	—	0	1	—	—
Mountain	—	0	0	—	—	—	0	0	—	—	—	0	1	2	—
Arizona	—	0	0	—	—	—	0	0	—	—	—	0	1	2	—
Colorado	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Idaho§	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Montana§	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Nevada§	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
New Mexico§	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Utah	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Wyoming§	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Pacific	—	0	1	—	1	—	0	0	—	—	—	0	1	1	2
Alaska	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
California	—	0	1	—	1	—	0	0	—	—	—	0	1	1	2
Hawaii	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Oregon	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Washington	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Territories															
American Samoa	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
Puerto Rico	N	0	0	N	N	N	0	0	N	N	N	0	0	N	N
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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† Cumulative total *E. ewingii* cases reported for year 2010 = 10, and 2 cases reported 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 May 21, 2011, and May 22, 2010 (20th 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	134	341	542	4,714	6,709	3,465	5,914	7,485	105,013	112,609	43	58	141	1,213	1,283
New England	5	28	55	361	563	76	101	206	1,781	1,941	—	3	9	65	75
Connecticut	—	5	12	61	107	—	41	150	680	894	—	0	6	6	12
Maine§	1	3	11	37	66	—	3	7	60	80	—	0	2	9	3
Massachusetts	—	14	25	176	237	71	49	80	858	789	—	2	6	37	43
New Hampshire	1	2	10	24	66	2	3	7	47	61	—	0	2	8	7
Rhode Island§	—	1	7	7	23	—	6	15	120	106	—	0	2	3	7
Vermont§	3	3	10	56	64	3	0	17	16	11	—	0	3	2	3
Mid. Atlantic	29	61	106	929	1,133	389	708	1,121	13,381	12,785	11	11	32	237	248
New Jersey	—	7	22	45	158	43	116	172	2,190	2,124	—	2	7	34	40
New York (Upstate)	13	22	72	329	387	109	111	271	2,073	1,916	1	3	18	61	66
New York City	6	17	30	293	321	28	235	497	4,345	4,498	2	2	5	44	44
Pennsylvania	10	15	27	262	267	209	259	365	4,773	4,247	8	4	11	98	98
E.N. Central	17	52	94	760	1,175	294	1,051	2,091	17,808	20,696	4	10	19	214	196
Illinois	—	10	32	126	272	—	297	369	3,046	5,584	1	3	9	56	64
Indiana	—	5	11	79	138	23	117	1,018	2,867	1,655	—	1	7	34	41
Michigan	1	11	25	168	248	165	248	490	4,642	5,489	—	1	4	27	15
Ohio	16	17	29	283	320	64	325	383	5,589	6,180	3	2	6	67	50
Wisconsin	—	9	35	104	197	42	97	130	1,664	1,788	—	1	5	30	26
W.N. Central	8	32	73	311	698	117	293	363	5,430	5,365	5	4	9	46	85
Iowa	2	5	12	78	101	3	36	57	696	664	—	0	0	—	1
Kansas	—	3	10	27	81	2	40	62	697	752	—	0	2	4	10
Minnesota	—	11	33	—	262	—	38	62	615	829	—	1	5	—	32
Missouri	1	8	26	119	133	112	143	181	2,736	2,500	5	1	5	25	32
Nebraska§	5	4	9	66	75	—	22	49	432	429	—	0	3	16	5
North Dakota	—	0	6	—	8	—	3	11	54	66	—	0	2	1	5
South Dakota	—	1	5	21	38	—	10	20	200	125	—	0	0	—	—
S. Atlantic	31	70	127	971	1,317	1,276	1,427	1,879	26,242	29,106	14	15	28	315	314
Delaware	—	0	5	7	10	13	17	48	361	386	—	0	1	1	3
District of Columbia	—	1	5	9	17	38	39	70	718	740	—	0	0	—	—
Florida	18	36	75	422	687	231	383	486	7,177	7,586	6	5	12	118	84
Georgia	6	14	51	327	265	216	277	891	4,375	5,908	4	3	7	66	72
Maryland§	2	4	11	74	125	92	133	246	2,109	2,390	—	1	5	23	21
North Carolina	N	0	0	N	N	339	266	596	5,916	5,668	3	2	9	38	43
South Carolina§	—	2	9	35	45	213	155	257	3,099	2,957	—	1	5	24	44
Virginia§	5	8	32	83	155	125	121	189	2,154	3,285	1	1	8	45	39
West Virginia	—	0	8	14	13	9	14	26	333	186	—	0	9	—	8
E.S. Central	2	4	11	53	57	361	495	1,007	9,380	9,106	1	3	10	77	77
Alabama§	2	4	11	53	57	100	161	403	3,119	2,699	—	1	4	25	8
Kentucky	N	0	0	N	N	120	73	712	1,553	1,480	—	1	4	13	14
Mississippi	N	0	0	N	N	72	116	216	2,053	2,371	—	0	2	5	6
Tennessee§	N	0	0	N	N	69	142	194	2,655	2,556	1	1	4	34	49
W.S. Central	—	5	17	64	132	602	861	1,664	15,247	18,542	2	3	26	60	60
Arkansas§	—	2	9	34	37	85	99	138	1,883	1,735	—	0	3	13	9
Louisiana	—	3	12	30	55	177	112	509	835	3,176	—	0	4	22	15
Oklahoma	—	0	5	—	40	79	79	332	1,292	1,449	2	1	19	24	31
Texas§	N	0	0	N	N	261	598	867	11,237	12,182	—	0	4	1	5
Mountain	13	29	58	383	620	82	191	255	3,587	3,551	4	5	12	124	158
Arizona	—	3	8	43	53	24	64	92	1,240	1,233	—	2	6	55	62
Colorado	7	12	27	179	261	33	49	92	863	1,000	2	1	5	26	39
Idaho§	4	4	9	49	85	—	2	14	42	41	1	0	2	7	7
Montana§	—	1	6	15	50	—	1	5	28	46	—	0	1	2	1
Nevada§	1	2	11	27	23	25	33	103	779	689	—	0	2	8	5
New Mexico§	1	2	6	18	30	—	27	98	550	395	1	1	4	20	21
Utah	—	5	13	40	98	—	4	10	66	134	—	0	3	6	18
Wyoming§	—	1	5	12	20	—	1	4	19	13	—	0	1	—	5
Pacific	29	51	129	882	1,014	268	628	807	12,157	11,517	2	3	10	75	70
Alaska	—	2	6	22	36	—	21	34	376	561	—	0	2	9	12
California	17	33	68	595	619	239	520	695	9,991	9,302	—	0	6	12	13
Hawaii	—	1	4	13	23	—	14	26	236	254	—	0	2	11	11
Oregon	2	8	20	152	190	7	22	40	479	396	2	1	6	42	30
Washington	10	9	57	100	146	22	59	86	1,075	1,004	—	0	2	1	4
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	1	—	1	—	0	5	6	5	—	0	0	—	—
Puerto Rico	—	0	8	8	29	5	6	12	139	106	—	0	0	—	1
U.S. Virgin Islands	—	0	0	—	—	—	3	7	44	37	—	0	0	—	—

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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 May 21, 2011, and May 22, 2010 (20th 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	12	28	74	420	607	9	60	165	810	1,188	8	17	36	333	293
New England	—	1	6	12	52	1	0	4	20	28	—	1	4	18	24
Connecticut	—	0	4	5	12	—	0	3	6	8	—	0	4	12	11
Maine†	—	0	1	1	3	1	0	2	5	8	—	0	2	3	2
Massachusetts	—	0	5	3	32	—	0	3	8	7	—	0	1	1	11
New Hampshire	—	0	1	—	—	—	0	1	1	4	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	2	—
Mid. Atlantic	3	4	12	68	94	3	5	11	100	125	—	1	6	25	34
New Jersey	—	1	4	7	27	—	1	5	23	36	—	0	4	—	7
New York (Upstate)	3	1	4	20	21	1	1	9	18	18	—	1	4	15	16
New York City	—	1	6	23	26	—	1	4	27	38	—	0	1	—	1
Pennsylvania	—	1	3	18	20	2	1	3	32	33	—	0	2	10	10
E.N. Central	1	4	9	65	81	—	7	23	105	191	1	2	9	79	35
Illinois	—	1	3	10	24	—	2	7	24	44	—	0	1	1	—
Indiana	—	0	3	8	9	—	1	6	12	28	—	0	4	29	13
Michigan	—	1	5	23	25	—	2	5	34	52	1	1	6	46	17
Ohio	1	1	5	22	14	—	1	16	25	45	—	0	1	2	3
Wisconsin	—	0	2	2	9	—	1	3	10	22	—	0	1	1	2
W.N. Central	—	1	25	15	21	—	2	16	48	51	—	0	6	3	6
Iowa	—	0	3	1	4	—	0	1	4	10	—	0	0	—	—
Kansas	—	0	2	3	7	—	0	2	5	3	—	0	1	—	—
Minnesota	—	0	22	2	1	—	0	15	2	2	—	0	6	—	3
Missouri	—	0	1	4	7	—	2	3	30	27	—	0	1	—	2
Nebraska†	—	0	4	3	2	—	0	3	6	9	—	0	1	2	1
North Dakota	—	0	3	—	—	—	0	0	—	—	—	0	0	—	—
South Dakota	—	0	2	2	—	—	0	1	1	—	—	0	1	1	—
S. Atlantic	3	5	14	85	132	4	15	33	231	341	2	4	8	68	69
Delaware	—	0	1	1	5	—	0	2	—	15	U	0	0	U	U
District of Columbia	—	0	0	—	1	—	0	0	—	3	—	0	0	—	2
Florida	1	2	7	34	44	3	4	11	78	116	—	1	5	20	20
Georgia	1	1	4	23	14	—	2	8	38	72	—	1	3	12	8
Maryland†	—	0	2	8	11	—	1	4	22	31	1	0	2	12	9
North Carolina	1	0	4	8	25	1	2	16	55	29	1	1	4	19	18
South Carolina†	—	0	1	3	16	—	1	4	12	19	—	0	1	—	—
Virginia†	—	1	6	8	15	—	2	7	26	32	—	0	2	5	6
West Virginia	—	0	5	—	1	—	0	18	—	24	—	0	5	—	6
E.S. Central	1	0	6	8	17	—	8	14	143	116	1	3	8	58	52
Alabama†	—	0	2	—	4	—	1	4	33	26	—	0	1	3	1
Kentucky	—	0	6	2	9	—	3	8	45	37	—	2	6	27	36
Mississippi	—	0	1	2	1	—	1	3	10	12	U	0	0	U	U
Tennessee†	1	0	2	4	3	—	3	8	55	41	1	1	5	28	15
W.S. Central	4	2	15	30	51	1	9	65	85	174	—	2	11	36	23
Arkansas†	—	0	1	—	—	—	1	4	15	25	—	0	0	—	—
Louisiana	—	0	1	1	4	—	1	4	18	21	—	0	2	4	—
Oklahoma	—	0	4	1	—	—	2	14	16	25	—	1	10	19	9
Texas†	4	2	11	28	47	1	4	45	36	103	—	0	3	13	14
Mountain	—	2	8	29	67	—	2	7	29	54	2	1	4	18	24
Arizona	—	0	4	7	31	—	0	2	9	12	U	0	0	U	U
Colorado	—	0	2	8	16	—	0	5	3	14	1	0	3	2	7
Idaho†	—	0	2	4	4	—	0	1	2	4	1	0	2	7	6
Montana†	—	0	1	2	4	—	0	0	—	—	—	0	1	1	—
Nevada†	—	0	3	4	6	—	1	3	12	16	—	0	2	6	1
New Mexico†	—	0	1	3	3	—	0	2	2	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	—	6	15	108	92	—	5	25	49	108	2	1	9	28	26
Alaska	—	0	1	1	—	—	0	1	2	1	U	0	0	U	U
California	—	5	15	93	73	—	3	22	22	74	—	0	4	13	11
Hawaii	—	0	2	4	4	—	0	1	4	3	U	0	0	U	U
Oregon	—	0	1	3	8	—	1	3	14	18	—	0	3	7	8
Washington	—	0	2	7	7	—	1	4	7	12	2	0	5	8	7
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	5	8	10	—	1	8	28	18	—	0	7	10	19
Puerto Rico	—	0	2	2	8	—	0	2	1	10	N	0	0	N	N
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 May 21, 2011, and May 22, 2010 (20th 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	18	61	126	600	790	154	361	1,828	2,965	5,914	16	30	114	349	463
New England	—	4	16	28	45	—	105	503	467	2,209	—	1	20	13	28
Connecticut	—	0	6	2	10	—	34	213	203	872	—	0	20	—	—
Maine†	—	0	3	3	2	—	10	62	64	136	—	0	1	1	2
Massachusetts	—	2	10	17	24	—	23	223	94	752	—	0	4	9	21
New Hampshire	—	0	5	2	3	—	15	69	83	388	—	0	2	1	1
Rhode Island†	—	0	4	1	5	—	1	40	4	23	—	0	4	—	3
Vermont†	—	0	2	3	1	—	3	28	19	38	—	0	1	2	1
Mid. Atlantic	5	15	53	134	182	115	149	662	1,628	2,063	6	9	22	84	145
New Jersey	—	2	18	1	31	—	42	234	387	902	—	1	6	8	28
New York (Upstate)	3	5	19	59	46	27	36	159	271	386	1	1	6	12	26
New York City	1	2	17	25	38	—	9	31	2	179	1	5	13	45	67
Pennsylvania	1	5	19	49	67	88	57	279	968	596	4	1	3	19	24
E.N. Central	2	11	42	111	154	3	26	373	202	474	1	3	9	41	41
Illinois	—	2	15	12	24	—	1	18	4	15	—	1	6	15	19
Indiana	—	1	4	13	21	—	0	7	3	19	—	0	2	2	4
Michigan	—	2	20	23	28	1	1	14	5	5	—	0	4	7	4
Ohio	2	4	15	63	61	—	0	9	6	6	1	1	5	16	13
Wisconsin	—	0	5	—	20	2	22	345	184	429	—	0	2	1	1
W.N. Central	—	2	9	13	27	—	13	188	4	207	—	1	45	3	21
Iowa	—	0	2	2	2	—	0	10	2	13	—	0	2	—	6
Kansas	—	0	2	2	3	—	0	1	1	5	—	0	2	2	3
Minnesota	—	0	8	—	9	—	11	181	—	186	—	0	45	—	3
Missouri	—	1	4	8	6	—	0	1	—	—	—	0	3	—	3
Nebraska†	—	0	2	—	2	—	0	2	1	3	—	0	1	1	6
North Dakota	—	0	1	—	2	—	0	10	—	—	—	0	1	—	—
South Dakota	—	0	2	1	3	—	0	1	—	—	—	0	2	—	—
S. Atlantic	5	9	27	117	156	32	57	178	582	852	3	7	41	109	135
Delaware	—	0	3	2	5	5	10	33	169	215	—	0	1	2	2
District of Columbia	—	0	4	—	7	—	1	5	6	8	—	0	2	5	5
Florida	2	3	9	54	57	—	1	8	15	20	1	2	7	31	45
Georgia	—	1	4	3	25	—	0	2	1	3	2	1	7	23	21
Maryland†	—	2	6	19	32	10	18	104	214	398	—	1	21	21	23
North Carolina	2	1	7	21	12	—	1	9	13	30	—	0	13	9	18
South Carolina†	—	0	2	4	2	—	0	3	3	13	—	0	1	—	1
Virginia†	1	1	9	14	14	17	17	82	161	151	—	1	5	18	20
West Virginia	—	0	3	—	2	—	0	29	—	14	—	0	1	—	—
E.S. Central	4	2	10	35	37	—	0	4	9	14	1	0	3	8	6
Alabama†	—	0	2	6	4	—	0	2	5	—	—	0	1	2	1
Kentucky	1	0	4	8	8	—	0	1	—	1	1	0	1	4	2
Mississippi	—	0	3	3	2	—	0	0	—	—	—	0	2	1	—
Tennessee†	3	1	6	18	23	—	0	4	4	13	—	0	2	1	3
W.S. Central	1	3	13	21	32	—	1	29	11	26	—	1	18	16	26
Arkansas†	—	0	2	—	4	—	0	0	—	—	—	0	1	1	1
Louisiana	—	0	3	6	1	—	0	1	—	—	—	0	1	—	1
Oklahoma	—	0	3	1	3	—	0	0	—	—	—	0	1	2	3
Texas†	1	2	11	14	24	—	1	29	11	26	—	1	17	13	21
Mountain	—	2	10	29	57	—	0	3	3	4	1	1	4	18	19
Arizona	—	1	7	11	17	—	0	1	2	—	1	0	3	7	7
Colorado	—	0	2	3	14	—	0	1	—	—	—	0	3	5	6
Idaho†	—	0	1	1	—	—	0	2	—	2	—	0	1	1	—
Montana†	—	0	1	—	1	—	0	1	—	—	—	0	1	—	1
Nevada†	—	0	2	7	11	—	0	1	—	—	—	0	2	3	2
New Mexico†	—	0	2	2	2	—	0	2	1	1	—	0	1	2	—
Utah	—	0	2	4	10	—	0	1	—	1	—	0	0	—	3
Wyoming†	—	0	2	1	2	—	0	0	—	—	—	0	0	—	—
Pacific	1	5	21	112	100	4	3	11	59	65	4	4	10	57	42
Alaska	—	0	2	—	—	—	0	1	—	1	—	0	2	2	2
California	1	4	15	100	91	4	2	9	41	38	3	2	10	42	28
Hawaii	—	0	1	1	—	N	0	0	N	N	—	0	1	2	1
Oregon	—	0	3	3	2	—	0	3	18	25	—	0	3	5	4
Washington	—	0	6	8	7	—	0	4	—	1	1	0	5	6	7
Territories															
American Samoa	N	0	0	N	N	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	0	—	4
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 May 21, 2011, and May 22, 2010 (20th 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	15	53	326	359	4	12	217	136	1,576	183	548	2,925	4,917	4,959
New England	—	0	4	19	6	—	0	2	1	16	2	10	24	128	112
Connecticut	—	0	1	3	—	—	0	0	—	11	2	1	8	17	18
Maine§	—	0	1	3	1	—	0	1	—	1	—	1	8	44	5
Massachusetts	—	0	2	9	2	—	0	2	1	4	—	5	13	48	79
New Hampshire	—	0	1	1	—	—	0	2	—	—	—	0	3	15	3
Rhode Island§	—	0	1	—	—	—	0	0	—	—	—	0	7	3	4
Vermont§	—	0	3	3	3	—	0	0	—	—	—	0	4	1	3
Mid. Atlantic	1	1	5	30	35	1	4	209	15	1,375	13	39	125	466	251
New Jersey	—	0	1	—	10	—	1	11	8	269	—	3	10	39	51
New York (Upstate)	—	0	4	7	6	1	0	5	3	627	4	12	81	137	84
New York City	—	0	3	13	9	—	0	201	4	465	—	1	19	7	7
Pennsylvania	1	0	2	10	10	—	0	16	—	14	9	20	70	283	109
E.N. Central	1	2	6	40	63	—	1	7	37	32	14	113	198	1,191	1,214
Illinois	—	0	3	11	13	—	1	3	23	10	—	22	52	212	207
Indiana	—	0	2	6	15	—	0	1	—	2	—	11	26	77	172
Michigan	—	0	4	5	8	—	0	1	6	12	5	30	57	411	352
Ohio	1	0	2	13	16	—	0	5	8	7	9	33	80	373	413
Wisconsin	—	0	2	5	11	—	0	1	—	1	—	13	26	118	70
W.N. Central	1	1	4	24	22	—	0	7	15	58	109	36	501	359	395
Iowa	—	0	1	6	5	—	0	7	3	21	—	11	36	56	151
Kansas	—	0	2	2	1	—	0	1	3	3	—	2	9	29	57
Minnesota	—	0	2	—	2	—	0	4	1	3	108	0	469	108	5
Missouri	—	0	2	8	10	—	0	3	6	8	—	7	43	109	135
Nebraska§	1	0	2	6	4	—	0	1	1	22	1	4	13	35	30
North Dakota	—	0	1	1	—	—	0	1	1	—	—	0	30	20	—
South Dakota	—	0	1	1	—	—	0	1	—	1	—	0	2	2	17
S. Atlantic	1	2	7	57	69	—	0	4	9	31	8	38	106	479	485
Delaware	—	0	1	1	—	—	0	0	—	—	—	0	4	10	—
District of Columbia	—	0	1	—	—	—	0	1	—	2	—	0	2	2	3
Florida	—	1	5	24	36	—	0	2	2	6	4	6	28	107	84
Georgia	—	0	2	4	5	—	0	2	1	1	2	4	13	71	74
Maryland§	—	0	1	5	2	—	0	1	—	7	—	2	6	36	50
North Carolina	—	0	3	10	9	—	0	2	4	5	1	3	35	94	130
South Carolina§	—	0	1	4	5	—	0	1	—	3	—	6	25	52	84
Virginia§	1	0	2	9	11	—	0	2	2	5	1	7	41	107	53
West Virginia	—	0	1	—	1	—	0	0	—	2	—	0	41	—	7
E.S. Central	—	1	3	14	19	1	0	2	4	6	1	12	35	135	310
Alabama§	—	0	1	7	4	—	0	2	1	4	—	3	8	43	83
Kentucky	—	0	2	—	8	—	0	1	—	—	—	3	16	40	118
Mississippi	—	0	1	2	2	—	0	1	2	—	—	1	10	5	21
Tennessee§	—	0	2	5	5	1	0	1	1	2	1	3	11	47	88
W.S. Central	—	1	12	27	42	1	2	15	40	31	18	51	297	375	1,090
Arkansas§	—	0	1	6	5	—	0	1	—	1	1	2	18	19	57
Louisiana	—	0	2	5	11	—	0	2	—	3	—	1	3	10	16
Oklahoma	—	0	2	4	12	—	0	1	1	—	—	1	92	17	5
Texas§	—	1	10	12	14	1	1	14	39	27	17	42	187	329	1,012
Mountain	1	1	6	25	24	1	0	4	2	7	10	43	100	800	425
Arizona	1	0	2	8	7	—	0	1	—	2	1	13	29	315	164
Colorado	—	0	4	2	6	1	0	1	1	5	7	13	63	291	50
Idaho§	—	0	1	3	3	—	0	1	—	—	1	2	15	33	55
Montana§	—	0	2	3	1	—	0	0	—	—	—	2	16	52	8
Nevada§	—	0	1	3	4	—	0	1	—	—	1	0	7	12	4
New Mexico§	—	0	1	1	2	—	0	2	1	—	—	2	11	47	32
Utah	—	0	1	5	1	—	0	1	—	—	—	6	16	48	108
Wyoming§	—	0	1	—	—	—	0	1	—	—	—	0	2	2	4
Pacific	3	3	26	90	79	—	0	5	13	20	8	146	1,710	984	677
Alaska	—	0	1	1	1	—	0	1	1	1	—	0	6	14	11
California	2	2	17	62	49	—	0	4	7	13	1	128	1,569	768	493
Hawaii	—	0	1	3	1	—	0	1	2	1	—	1	6	14	22
Oregon	—	1	3	16	14	—	0	1	3	1	—	5	12	85	98
Washington	1	0	8	8	14	—	0	2	—	4	7	9	131	103	53
Territories															
American Samoa	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	3	32	12	293	—	0	14	31	—
Puerto Rico	—	0	0	—	—	—	0	1	—	—	—	0	1	1	1
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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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 May 21, 2011, and May 22, 2010 (20th 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	48	61	167	684	1,591	410	975	1,810	9,730	12,100	52	102	258	1,107	1,125
New England	4	4	18	37	107	2	29	160	445	1,006	—	2	18	36	96
Connecticut	—	0	14	—	54	—	0	138	138	491	—	0	18	18	60
Maine§	3	1	3	18	25	1	3	8	43	30	—	0	3	3	3
Massachusetts	—	0	0	—	—	—	18	52	204	367	—	1	9	5	23
New Hampshire	—	0	6	5	4	—	3	12	35	57	—	0	3	8	8
Rhode Island§	—	0	4	2	5	—	2	17	10	43	—	0	1	—	—
Vermont§	1	1	3	12	19	1	1	5	15	18	—	0	2	2	2
Mid. Atlantic	8	16	33	100	415	44	92	217	1,087	1,479	2	10	30	115	115
New Jersey	—	0	0	—	—	—	21	57	79	279	—	2	9	15	28
New York (Upstate)	8	8	19	100	171	24	25	63	302	341	—	4	12	37	40
New York City	—	0	4	—	118	1	21	53	279	353	—	1	6	18	10
Pennsylvania	—	6	17	—	126	19	31	80	427	506	2	3	13	45	37
E.N. Central	4	2	27	25	35	27	85	265	1,062	1,614	2	11	48	139	191
Illinois	—	1	11	5	15	—	29	124	335	545	—	2	9	11	38
Indiana	—	0	0	—	—	—	13	62	109	187	—	3	10	27	22
Michigan	1	1	5	8	14	4	14	49	173	253	—	2	7	36	54
Ohio	3	0	12	12	6	23	24	47	334	409	2	2	11	43	36
Wisconsin	N	0	0	N	N	—	11	57	111	220	—	2	16	22	41
W.N. Central	—	3	40	26	85	21	48	121	574	748	4	14	49	112	175
Iowa	—	0	3	—	6	3	9	34	134	109	—	2	16	27	26
Kansas	—	1	4	12	24	3	7	19	91	106	—	1	5	18	15
Minnesota	—	0	34	—	13	—	9	30	—	228	—	4	20	—	41
Missouri	—	0	6	—	17	12	15	43	250	199	2	4	12	47	67
Nebraska§	—	1	3	10	22	3	4	13	57	58	2	1	6	17	18
North Dakota	—	0	6	4	3	—	0	13	—	6	—	0	10	—	—
South Dakota	—	0	0	—	—	—	3	17	42	42	—	0	4	3	8
S. Atlantic	31	19	37	390	472	170	261	624	2,817	2,825	25	17	31	304	163
Delaware	—	0	0	—	—	—	3	11	33	30	—	0	2	3	1
District of Columbia	—	0	0	—	—	—	1	7	10	36	—	0	2	1	3
Florida	—	0	29	41	121	81	108	226	1,191	1,315	11	6	15	142	56
Georgia	—	0	0	—	—	29	43	142	492	409	—	2	7	32	20
Maryland§	10	6	14	112	144	17	18	54	225	258	3	2	8	32	21
North Carolina	—	0	0	—	—	34	26	241	410	317	4	2	10	39	13
South Carolina§	N	0	0	N	N	—	25	99	197	193	—	0	4	9	6
Virginia§	21	12	27	237	178	9	21	68	240	204	7	3	9	45	40
West Virginia	—	0	7	—	29	—	1	14	19	63	—	0	4	1	3
E.S. Central	—	3	7	45	76	21	57	176	599	618	2	5	22	62	53
Alabama§	—	1	7	29	35	7	20	52	175	184	—	1	4	13	14
Kentucky	—	0	4	3	3	8	11	32	114	120	1	1	6	9	7
Mississippi	—	0	0	—	—	—	17	66	111	136	—	0	12	4	7
Tennessee§	—	1	4	13	38	6	18	53	199	178	1	2	7	36	25
W.S. Central	1	11	54	45	333	31	145	515	1,007	1,210	3	7	144	67	58
Arkansas§	—	0	10	33	11	13	13	43	149	92	—	1	4	8	13
Louisiana	—	0	0	—	—	—	19	52	141	288	—	0	2	3	6
Oklahoma	1	0	30	12	4	11	12	95	127	116	1	1	48	10	2
Texas§	—	11	30	—	318	7	95	381	590	714	2	5	95	46	37
Mountain	—	1	5	3	17	25	48	113	681	842	6	10	33	119	138
Arizona	N	0	2	N	N	1	16	43	227	255	1	1	14	27	23
Colorado	—	0	0	—	—	11	10	24	167	196	1	3	21	15	47
Idaho§	—	0	2	—	1	3	3	9	54	49	3	2	7	24	13
Montana§	N	0	0	N	N	2	1	6	29	33	1	1	3	8	15
Nevada§	—	0	2	—	—	8	4	21	61	67	—	0	6	14	9
New Mexico§	—	0	2	3	4	—	5	19	57	92	—	1	6	12	14
Utah	—	0	3	—	—	—	5	17	65	132	—	2	8	17	13
Wyoming§	—	0	4	—	12	—	1	8	21	18	—	0	3	2	4
Pacific	—	1	14	13	51	69	115	288	1,458	1,758	8	12	46	153	136
Alaska	—	0	2	9	11	—	1	4	23	29	—	0	1	—	1
California	—	0	12	—	36	47	81	232	1,088	1,191	4	7	36	109	62
Hawaii	—	0	0	—	—	2	6	13	102	108	—	0	3	2	14
Oregon	—	0	2	4	4	—	8	20	112	232	1	2	11	21	12
Washington	—	0	14	—	—	20	16	42	133	198	3	3	20	21	47
Territories															
American Samoa	N	0	0	N	N	—	0	1	—	1	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	3	6	1	—	0	0	—	—
Puerto Rico	—	0	2	10	21	—	5	21	22	194	—	0	0	—	—
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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† 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 May 21, 2011, and May 22, 2010 (20th 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	169	273	741	3,067	4,991	—	2	10	20	24	10	26	237	149	211
New England	—	4	17	62	153	—	0	0	—	—	—	0	1	1	1
Connecticut	—	0	13	13	69	—	0	0	—	—	—	0	0	—	—
Maine§	—	0	3	5	3	—	0	0	—	—	—	0	1	—	1
Massachusetts	—	2	16	42	69	—	0	0	—	—	—	0	0	—	—
New Hampshire	—	0	2	—	4	—	0	0	—	—	—	0	1	—	—
Rhode Island§	—	0	4	—	7	—	0	0	—	—	—	0	1	1	—
Vermont§	—	0	1	2	1	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	1	17	74	178	675	—	0	1	2	1	—	1	7	5	13
New Jersey	—	4	16	24	130	—	0	0	—	1	—	0	5	—	10
New York (Upstate)	—	3	15	40	65	—	0	1	—	—	—	0	3	1	2
New York City	—	5	14	79	125	—	0	0	—	—	—	0	2	2	1
Pennsylvania	1	5	56	35	355	—	0	1	2	—	—	0	3	2	—
E.N. Central	6	19	37	197	817	—	0	1	—	—	—	1	10	6	21
Illinois	—	7	20	56	560	—	0	1	—	—	—	0	5	3	11
Indiana§	—	1	5	25	22	—	0	1	—	—	—	0	5	—	6
Michigan	—	4	10	44	85	—	0	0	—	—	—	0	1	1	—
Ohio	6	5	18	72	109	—	0	0	—	—	—	0	2	2	3
Wisconsin	—	0	4	—	41	—	0	0	—	—	—	0	1	—	1
W.N. Central	3	17	81	139	1,105	—	0	2	2	1	5	4	17	32	43
Iowa	—	1	4	7	22	—	0	0	—	—	—	0	1	1	2
Kansas§	—	4	12	24	106	—	0	0	—	—	—	0	0	—	—
Minnesota	—	0	4	—	17	—	0	0	—	—	—	0	2	—	—
Missouri	3	10	65	104	945	—	0	2	2	1	5	4	17	31	40
Nebraska§	—	0	10	3	11	—	0	1	—	—	—	0	1	—	1
North Dakota	—	0	0	—	—	—	0	0	—	—	—	0	1	—	—
South Dakota	—	0	2	1	4	—	0	0	—	—	—	0	0	—	—
S. Atlantic	104	61	122	1,129	694	—	1	7	10	14	4	6	59	39	66
Delaware§	—	0	2	—	30	—	0	0	—	1	—	0	3	5	5
District of Columbia	—	0	3	6	15	—	0	1	1	—	—	0	0	—	—
Florida§	81	31	63	805	239	—	0	1	1	1	—	0	2	2	4
Georgia	16	14	26	159	249	—	0	6	4	10	—	0	0	—	—
Maryland§	3	2	8	33	41	—	0	1	1	—	2	0	5	5	8
North Carolina	3	3	36	79	52	—	0	3	1	2	—	2	47	12	36
South Carolina§	—	1	5	15	28	—	0	1	2	—	—	0	2	4	3
Virginia§	1	2	8	30	39	—	0	2	—	—	2	2	12	11	10
West Virginia	—	0	66	2	1	—	0	0	—	—	—	0	0	—	—
E.S. Central	4	14	29	165	256	—	0	3	—	5	1	5	30	41	47
Alabama§	1	5	15	61	34	—	0	1	—	—	1	1	9	11	7
Kentucky	3	2	19	28	111	—	0	1	—	4	—	0	0	—	—
Mississippi	—	1	5	36	13	—	0	0	—	—	—	0	4	—	3
Tennessee§	—	4	14	40	98	—	0	2	—	1	—	4	20	30	37
W.S. Central	35	55	502	598	749	—	0	7	—	1	—	2	227	4	17
Arkansas§	1	2	7	23	15	—	0	2	—	—	—	0	28	1	5
Louisiana	—	5	13	49	85	—	0	0	—	—	—	0	1	—	—
Oklahoma	5	3	160	39	121	—	0	4	—	—	—	0	194	2	8
Texas§	29	44	338	487	528	—	0	1	—	1	—	0	5	1	4
Mountain	5	17	32	264	209	—	0	5	6	—	—	0	7	21	3
Arizona	1	7	19	66	113	—	0	4	6	—	—	0	7	21	—
Colorado§	—	2	8	33	23	—	0	1	—	—	—	0	1	—	—
Idaho§	—	0	3	7	7	—	0	0	—	—	—	0	1	—	1
Montana§	2	0	15	88	4	—	0	1	—	—	—	0	1	—	—
Nevada§	1	0	6	7	11	—	0	0	—	—	—	0	0	—	—
New Mexico§	—	3	10	46	41	—	0	0	—	—	—	0	0	—	1
Utah	—	1	4	16	10	—	0	0	—	—	—	0	1	—	1
Wyoming§	1	0	0	1	—	—	0	0	—	—	—	0	1	—	—
Pacific	11	23	63	335	333	—	0	2	—	2	—	0	1	—	—
Alaska	—	0	1	1	—	N	0	0	N	N	N	0	0	N	N
California	8	19	59	256	265	—	0	2	—	2	—	0	0	—	—
Hawaii	1	1	4	26	22	N	0	0	N	N	N	0	0	N	N
Oregon	—	1	4	25	22	—	0	0	—	—	—	0	1	—	—
Washington	2	1	22	27	24	—	0	1	—	—	—	0	0	—	—
Territories															
American Samoa	—	1	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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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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† 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 May 21, 2011, and May 22, 2010 (20th 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	196	261	986	6,084	7,670	12	24	123	458	959	82	252	354	4,078	4,962
New England	3	11	79	176	405	—	1	5	18	61	1	9	19	139	175
Connecticut	—	0	49	7	186	—	0	3	6	21	—	1	8	18	36
Maine§	1	2	13	58	64	—	0	1	2	5	—	0	3	8	14
Massachusetts	—	0	5	14	44	—	0	3	6	31	1	5	14	87	108
New Hampshire	—	2	8	51	64	—	0	1	1	3	—	0	3	12	6
Rhode Island§	—	0	36	8	8	—	0	3	—	—	—	0	4	10	9
Vermont§	2	1	6	38	39	—	0	1	3	1	—	0	2	4	2
Mid. Atlantic	7	19	75	400	507	2	3	27	53	103	10	30	46	471	646
New Jersey	—	2	7	39	66	—	1	5	21	32	5	4	10	67	94
New York (Upstate)	3	2	10	41	84	2	1	9	23	62	2	2	20	68	36
New York City	4	13	42	320	357	—	0	14	9	9	—	14	29	207	371
Pennsylvania	N	0	0	N	N	N	0	0	N	N	3	7	16	129	145
E.N. Central	49	62	108	1,502	1,607	1	4	12	85	145	—	29	56	317	735
Illinois	N	0	0	N	N	N	0	0	N	N	—	14	23	52	369
Indiana	2	9	29	279	356	—	0	4	13	31	—	3	14	49	54
Michigan	10	14	29	336	365	—	1	4	20	46	—	4	10	72	114
Ohio	36	25	45	667	635	1	2	7	44	49	—	9	21	128	178
Wisconsin	1	9	24	220	251	—	0	3	8	19	—	1	3	16	20
W.N. Central	3	7	41	62	429	—	1	5	4	59	—	7	18	110	102
Iowa	N	0	0	N	N	N	0	0	N	N	—	0	3	5	6
Kansas	N	0	0	N	N	N	0	0	N	N	—	0	3	5	6
Minnesota	—	4	24	—	340	—	1	5	—	50	—	3	10	45	24
Missouri	N	0	0	N	N	N	0	1	N	N	—	2	9	53	62
Nebraska§	3	2	9	62	66	—	0	1	4	9	—	0	2	2	4
North Dakota	—	0	14	—	23	—	0	1	—	—	—	0	0	—	—
South Dakota	N	0	0	N	N	N	0	0	N	N	—	0	1	—	—
S. Atlantic	33	70	173	1,554	2,223	2	7	25	116	267	27	63	166	1,109	1,134
Delaware	—	1	6	28	19	—	0	1	—	—	1	0	4	5	3
District of Columbia	—	1	4	26	48	—	0	1	3	7	2	3	8	71	52
Florida	22	24	68	756	830	2	3	13	67	104	3	23	44	405	408
Georgia	2	14	54	206	731	—	2	7	17	83	3	11	118	152	224
Maryland§	9	9	32	286	257	—	1	4	14	31	5	8	17	169	88
North Carolina	N	0	0	N	N	N	0	0	N	N	4	7	19	141	192
South Carolina§	—	8	25	252	284	—	1	3	15	32	6	3	10	80	52
Virginia§	N	0	0	N	N	N	0	0	N	N	3	4	16	86	112
West Virginia	—	0	14	—	54	—	0	6	—	10	—	0	2	—	3
E.S. Central	10	20	40	471	556	1	1	4	26	56	12	14	39	227	349
Alabama§	N	0	0	N	N	N	0	0	N	N	2	3	11	41	111
Kentucky	N	0	0	N	N	N	0	0	N	N	3	3	16	43	43
Mississippi	N	0	0	N	N	N	0	0	N	N	6	3	16	50	80
Tennessee§	10	20	36	471	556	1	1	4	26	56	1	5	11	93	115
W.S. Central	74	32	377	959	909	5	4	38	88	115	18	37	71	598	744
Arkansas§	4	3	27	123	91	—	0	3	10	11	5	3	10	70	102
Louisiana	—	3	11	97	55	—	0	2	8	15	2	8	36	108	151
Oklahoma	N	0	0	N	N	N	0	0	N	N	2	1	6	21	34
Texas§	70	26	333	739	763	5	3	27	70	89	9	23	33	399	457
Mountain	17	31	75	891	969	1	3	8	63	137	4	12	24	196	199
Arizona	3	12	43	437	484	—	1	5	29	61	2	4	9	71	80
Colorado	12	10	23	244	272	1	1	3	15	40	1	2	8	44	48
Idaho§	N	0	0	N	N	N	0	0	N	N	—	0	2	3	2
Montana§	N	0	0	N	N	N	0	0	N	N	—	0	2	1	—
Nevada§	N	0	0	N	N	N	0	0	N	N	1	2	9	51	34
New Mexico§	2	3	13	132	89	—	0	2	9	13	—	1	4	21	10
Utah	—	4	8	63	114	—	0	3	10	21	—	0	5	5	25
Wyoming§	—	0	15	15	10	—	0	1	—	2	—	0	0	—	—
Pacific	—	2	24	69	65	—	0	5	5	16	10	52	66	911	878
Alaska	—	2	11	68	65	—	0	2	5	16	—	0	1	—	2
California	N	0	0	N	N	N	0	0	N	N	6	42	57	742	750
Hawaii	—	0	3	1	—	—	0	0	—	—	—	0	5	5	16
Oregon	N	0	0	N	N	N	0	0	N	N	—	1	7	37	26
Washington	N	0	0	N	N	N	0	0	N	N	4	6	13	127	84
Territories															
American Samoa	N	0	0	N	N	N	0	0	N	N	—	0	0	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guam	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—	3	4	15	82	81
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—	—	0	0	—	—

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† 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 May 21, 2011, and May 22, 2010 (20th 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	172	239	584	4,575	7,341	—	1	71	—	1	—	0	53	—	7
New England	2	19	46	336	454	—	0	3	—	—	—	0	2	—	—
Connecticut	2	5	15	91	133	—	0	2	—	—	—	0	2	—	—
Maine¶	—	4	16	88	98	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	5	17	103	119	—	0	2	—	—	—	0	1	—	—
New Hampshire	—	2	9	9	57	—	0	1	—	—	—	0	0	—	—
Rhode Island¶	—	0	4	6	11	—	0	0	—	—	—	0	0	—	—
Vermont¶	—	2	13	39	36	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	34	27	62	529	756	—	0	19	—	—	—	0	13	—	—
New Jersey	—	8	23	132	284	—	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	34	18	41	397	471	—	0	3	—	—	—	0	3	—	—
E.N. Central	49	69	153	1,403	2,631	—	0	15	—	—	—	0	7	—	—
Illinois	6	18	41	358	660	—	0	10	—	—	—	0	4	—	—
Indiana¶	5	5	19	109	236	—	0	2	—	—	—	0	2	—	—
Michigan	13	21	43	436	807	—	0	6	—	—	—	0	1	—	—
Ohio	25	21	58	499	671	—	0	1	—	—	—	0	1	—	—
Wisconsin	—	4	22	1	257	—	0	0	—	—	—	0	1	—	—
W.N. Central	—	11	35	172	395	—	0	7	—	—	—	0	11	—	3
Iowa	N	0	0	N	N	—	0	1	—	—	—	0	2	—	—
Kansas¶	—	2	8	53	178	—	0	1	—	—	—	0	3	—	2
Minnesota	—	0	0	—	—	—	0	1	—	—	—	0	3	—	—
Missouri	—	7	24	90	183	—	0	1	—	—	—	0	0	—	—
Nebraska¶	—	0	5	1	1	—	0	3	—	—	—	0	7	—	1
North Dakota	—	0	10	16	23	—	0	2	—	—	—	0	2	—	—
South Dakota	—	1	7	12	10	—	0	2	—	—	—	0	3	—	—
S. Atlantic	28	32	99	629	1,030	—	0	6	—	—	—	0	4	—	3
Delaware¶	—	0	4	4	13	—	0	0	—	—	—	0	0	—	—
District of Columbia	—	0	3	8	8	—	0	1	—	—	—	0	1	—	—
Florida¶	20	15	57	440	533	—	0	3	—	—	—	0	1	—	—
Georgia	N	0	0	N	N	—	0	1	—	—	—	0	3	—	3
Maryland¶	N	0	0	N	N	—	0	3	—	—	—	0	2	—	—
North Carolina	N	0	0	N	N	—	0	0	—	—	—	0	0	—	—
South Carolina¶	—	0	6	—	71	—	0	1	—	—	—	0	0	—	—
Virginia¶	8	9	29	177	202	—	0	1	—	—	—	0	1	—	—
West Virginia	—	4	23	—	203	—	0	0	—	—	—	0	0	—	—
E.S. Central	6	6	15	140	144	—	0	1	—	1	—	0	3	—	1
Alabama¶	6	5	14	132	142	—	0	1	—	—	—	0	1	—	1
Kentucky	N	0	0	N	N	—	0	1	—	—	—	0	1	—	—
Mississippi	—	0	3	8	2	—	0	1	—	1	—	0	2	—	—
Tennessee¶	N	0	0	N	N	—	0	1	—	—	—	0	2	—	—
W.S. Central	48	42	258	948	1,315	—	0	16	—	—	—	0	3	—	—
Arkansas¶	—	3	17	82	108	—	0	3	—	—	—	0	1	—	—
Louisiana	—	1	5	18	34	—	0	3	—	—	—	0	1	—	—
Oklahoma	N	0	0	N	N	—	0	1	—	—	—	0	0	—	—
Texas¶	48	37	247	848	1,173	—	0	15	—	—	—	0	2	—	—
Mountain	5	15	50	339	570	—	0	18	—	—	—	0	15	—	—
Arizona	—	0	0	—	—	—	0	13	—	—	—	0	9	—	—
Colorado¶	5	6	31	123	203	—	0	5	—	—	—	0	11	—	—
Idaho¶	N	0	0	N	N	—	0	0	—	—	—	0	1	—	—
Montana¶	—	2	28	84	101	—	0	0	—	—	—	0	0	—	—
Nevada¶	N	0	0	N	N	—	0	0	—	—	—	0	1	—	—
New Mexico¶	—	1	8	18	53	—	0	6	—	—	—	0	2	—	—
Utah	—	4	26	107	203	—	0	1	—	—	—	0	1	—	—
Wyoming¶	—	0	3	7	10	—	0	1	—	—	—	0	1	—	—
Pacific	—	3	22	79	46	—	0	8	—	—	—	0	6	—	—
Alaska	—	1	5	24	18	—	0	0	—	—	—	0	0	—	—
California	—	0	19	35	13	—	0	8	—	—	—	0	6	—	—
Hawaii	—	1	4	20	15	—	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	4	16	8	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	5	30	50	185	—	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 May 21, 2011 (20th week)

Reporting area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45–64	25–44	1–24	<1	
New England	446	315	90	24	5	12	47
Boston, MA	103	63	32	7	—	1	11
Bridgeport, CT	30	19	6	3	—	2	3
Cambridge, MA	19	16	2	1	—	—	5
Fall River, MA	16	14	1	—	—	1	1
Hartford, CT	53	37	10	2	1	3	3
Lowell, MA	20	12	6	2	—	—	2
Lynn, MA	6	6	—	—	—	—	1
New Bedford, MA	25	23	2	—	—	—	2
New Haven, CT	34	21	7	3	2	1	3
Providence, RI	53	42	7	3	1	—	6
Somerville, MA	4	3	1	—	—	—	—
Springfield, MA	21	14	4	—	—	3	1
Waterbury, CT	24	18	5	—	1	—	4
Worcester, MA	38	27	7	3	—	1	5
Mid. Atlantic	2,043	1,383	460	117	39	44	99
Albany, NY	46	29	13	2	—	2	4
Allentown, PA	26	26	—	—	—	—	5
Buffalo, NY	88	52	21	8	4	3	5
Camden, NJ	19	13	3	1	1	1	1
Elizabeth, NJ	20	10	8	1	—	1	4
Erie, PA	56	45	10	1	—	—	4
Jersey City, NJ	12	9	1	2	—	—	1
New York City, NY	1,023	710	232	50	15	16	38
Newark, NJ	24	10	11	3	—	—	2
Paterson, NJ	8	5	3	—	—	—	—
Philadelphia, PA	419	255	103	33	13	15	19
Pittsburgh, PA§	36	25	9	2	—	—	5
Reading, PA	24	15	4	5	—	—	2
Rochester, NY	68	45	15	1	1	6	1
Schenectady, NY	23	18	3	2	—	—	1
Scranton, PA	31	26	4	—	1	—	1
Syracuse, NY	68	49	12	5	2	—	4
Trenton, NJ	24	17	5	1	1	—	—
Utica, NY	18	15	2	—	1	—	1
Yonkers, NY	10	9	1	—	—	—	1
E.N. Central	2,056	1,385	473	120	37	41	154
Akron, OH	51	25	14	5	2	5	3
Canton, OH	35	28	6	1	—	—	5
Chicago, IL	226	141	56	24	5	—	14
Cincinnati, OH	84	56	15	4	3	6	6
Cleveland, OH	280	205	63	9	2	1	25
Columbus, OH	210	131	60	14	1	4	11
Dayton, OH	128	100	24	1	1	2	11
Detroit, MI	171	97	47	18	5	4	6
Evansville, IN	48	35	7	5	—	1	4
Fort Wayne, IN	52	36	13	1	2	—	4
Gary, IN	11	5	1	5	—	—	1
Grand Rapids, MI	62	46	7	3	4	2	11
Indianapolis, IN	209	126	57	16	4	6	23
Lansing, MI	57	45	11	—	1	—	6
Milwaukee, WI	77	48	17	3	3	6	2
Peoria, IL	63	47	12	2	1	1	5
Rockford, IL	65	40	21	4	—	—	2
South Bend, IN	66	45	15	2	3	1	4
Toledo, OH	90	68	19	3	—	—	11
Youngstown, OH	71	61	8	—	—	2	—
W.N. Central	527	349	128	26	11	13	49
Des Moines, IA	60	39	15	4	2	—	6
Duluth, MN	30	23	7	—	—	—	5
Kansas City, KS	29	12	12	4	—	1	3
Kansas City, MO	62	39	18	5	—	—	4
Lincoln, NE	47	36	7	2	—	2	5
Minneapolis, MN	67	33	20	5	5	4	8
Omaha, NE	83	67	11	2	1	2	10
St. Louis, MO	12	6	5	—	—	1	—
St. Paul, MN	47	35	11	—	1	—	3
Wichita, KS	90	59	22	4	2	3	5
S. Atlantic	1,182	739	301	84	34	24	106
Atlanta, GA	143	86	36	15	3	3	8
Baltimore, MD	148	86	46	8	5	3	17
Charlotte, NC	135	100	24	7	3	1	24
Jacksonville, FL	173	110	45	12	2	4	14
Miami, FL	101	58	28	10	3	2	7
Norfolk, VA	41	27	8	—	4	2	2
Richmond, VA	60	38	15	4	3	—	6
Savannah, GA	48	31	10	4	1	2	7
St. Petersburg, FL	43	27	11	3	1	1	—
Tampa, FL	178	113	43	13	5	4	11
Washington, D.C.	100	54	32	8	4	2	10
Wilmington, DE	12	9	3	—	—	—	—
E.S. Central	934	582	254	58	20	20	47
Birmingham, AL	219	143	51	11	11	3	11
Chattanooga, TN	93	58	26	8	1	—	—
Knoxville, TN	110	71	28	9	—	2	5
Lexington, KY	100	63	30	5	—	2	8
Memphis, TN	150	83	51	10	2	4	11
Mobile, AL	81	56	16	5	3	1	3
Montgomery, AL	39	23	11	4	—	1	3
Nashville, TN	142	85	41	6	3	7	6
W.S. Central	1,254	819	295	84	28	28	90
Austin, TX	84	53	21	8	1	1	4
Baton Rouge, LA	64	46	10	6	2	—	—
Corpus Christi, TX	57	36	17	2	2	—	5
Dallas, TX	218	121	77	13	4	3	17
El Paso, TX	82	63	14	4	—	1	10
Fort Worth, TX	U	U	U	U	U	U	U
Houston, TX	181	118	36	12	5	10	16
Little Rock, AR	90	57	20	9	2	2	—
New Orleans, LA	U	U	U	U	U	U	U
San Antonio, TX	290	182	69	23	9	7	26
Shreveport, LA	81	64	13	2	1	1	5
Tulsa, OK	107	79	18	5	2	3	7
Mountain	1,054	708	235	63	26	19	68
Albuquerque, NM	162	99	36	19	3	5	16
Boise, ID	70	56	9	1	2	2	3
Colorado Springs, CO	68	39	16	8	5	—	4
Denver, CO	82	51	21	6	2	2	9
Las Vegas, NV	300	197	78	14	5	5	16
Ogden, UT	23	16	3	2	2	—	3
Phoenix, AZ	U	U	U	U	U	U	U
Pueblo, CO	45	33	10	1	1	—	1
Salt Lake City, UT	121	92	19	4	3	3	6
Tucson, AZ	183	125	43	8	3	2	10
Pacific	1,636	1,143	359	83	28	23	159
Berkeley, CA	13	8	3	—	—	2	1
Fresno, CA	120	88	19	11	2	—	6
Glendale, CA	34	29	4	1	—	—	9
Honolulu, HI	48	34	12	2	—	—	7
Long Beach, CA	81	48	26	5	1	1	8
Los Angeles, CA	241	153	62	20	5	1	27
Pasadena, CA	35	27	7	—	—	1	2
Portland, OR	106	74	24	7	—	1	8
Sacramento, CA	195	125	55	7	3	5	20
San Diego, CA	164	127	26	3	2	6	15
San Francisco, CA	108	74	27	5	1	1	19
San Jose, CA	182	128	37	11	4	2	20
Santa Cruz, CA	21	13	5	2	1	—	2
Seattle, WA	116	87	19	5	3	2	1
Spokane, WA	64	54	9	1	—	—	8
Tacoma, WA	108	74	24	3	6	1	6
Total¶	**11,132**	**7,423**	**2,595**	**659**	**228**	**224**	**819**

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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