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Visual Impairment and Eye Care Among Older Adults — Five States, 2005

Blindness and visual impairment are among the 10 most common causes of disability in the United States (1) and are associated with shorter life expectancy and lower quality of life (2,3). Previously, state-specific prevalences of visual impairment and eye disease were estimated from national prevalences. However, in 2005, five states (Iowa, Louisiana, Ohio, Tennessee, and Texas) provided state-specific estimates by using the new CDC Behavioral Risk Factor Surveillance System (BRFSS) vision module. CDC analyzed data from the module to determine the self-reported prevalence of visual impairment, eye disease, eye injury, and lack of eye-care insurance and eye examination among persons aged ≥ 50 years in each of these five states and among certain sociodemographic populations overall. This report describes the results of that analysis, which indicated variation in disease prevalence and use of eye care among individual states and also among racial/ethnic populations and age groups within the five states combined. The variability among state data suggests that state-specific surveillance of visual impairment and eye care and investigation by states to identify influencing factors might lead to creation of vision programs better suited to individual state needs.

BRFSS is a state-based, random-digit-dialed telephone survey of the noninstitutionalized, U.S. civilian population aged ≥ 18 years. The median Council of American Survey Research Organizations response rate for BRFSS in 2005 was 51.1%, with a range among states of 34.6% to 67.4%. Response rates for the five states using the optional BRFSS vision module in 2005 were as follows: Iowa, 60.2%; Louisiana, 51.4%; Ohio, 49.5%; Tennessee, 59.6%; and Texas, 45.2%. Among the five states, Louisiana provided data only for January–August because of Hurricane Katrina. Respondents were classified as having visual impairment if they answered “a little difficulty,” “moderate difficulty,” “extreme difficulty,” or “unable to do because of eyesight” to the question, “How much difficulty, if

any, do you have in recognizing a friend across the street?” or to the question, “How much difficulty, if any, do you have watching television?”* Three selected eye diseases (i.e., cataract, glaucoma, and macular degeneration) and workplace eye injury were identified if respondents answered “yes” to the relevant questions.† Diabetic retinopathy was identified (from the BRFSS diabetes module) if respondents with diabetes answered “yes” to the question, “Has a doctor ever told you that diabetes has affected your eyes or that you had retinopathy?”

The BRFSS vision module also incorporated questions relating to use of eye care. Respondents were classified as not having eye insurance if they answered “no” to the question, “Do you have any kind of health insurance coverage for eye care?” Respondents were classified as not having had a dilated eye examination in the preceding 12 months if they answered other than “within the past month” or “within the past year (1–12 months ago)” to the question, “When was the last time you had an eye exam in which the pupils were dilated?” They were classified as not having visited an eye-care professional in the preceding 12 months if they answered other than “within

* While wearing glasses or contact lenses, for those who wore them.

† “Have you been told by an eye doctor or other health-care professional that you now have cataracts?” “Have you ever been told by an eye doctor or other health-care professional that you had glaucoma?” “Have you ever been told by an eye doctor or other health-care professional that you had macular degeneration?” “Have you ever had an eye injury that occurred at your workplace while you were doing your work?”

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the past month” or “within the past year” to the question, “When was the last time you visited any eye-care professional?” In addition, respondents were asked the main reason they had not visited an eye-care professional in the preceding 12 months. The analyses were weighted to make estimates representative of the civilian, noninstitutionalized population in the five states.

A total of 13,931 responses[§] were analyzed using statistical software to account for the survey design complexity. Trends were assessed using linear regression by the weighted least squares method.

The self-reported prevalence of visual impairment and eye disease among persons aged ≥ 50 years varied among the five states that used the BRFSS vision module in 2005. The prevalence of visual impairment ranged from 14.3% (95% confidence interval [CI] = 12.9%–15.8%) in Iowa to 20.5% (CI = 18.6%–22.5%) in Ohio (Table 1). Prevalence of cataract ranged from 29.0% (Texas) to 34.3% (Iowa), prevalence of glaucoma ranged from 5.0% (Tennessee) to 7.4% (Louisiana), prevalence of macular degeneration ranged from 3.1% (Tennessee) to 5.4% (Iowa), and prevalence of diabetic retinopathy ranged from 2.7% (Ohio) to 4.3% (Louisiana). The self-reported prevalence of workplace eye injury history ranged from 5.8% (Tennessee) to 9.0% (Iowa) among the five states. With the exception of diabetic retinopathy, women had higher prevalence of visual impairment and eye disease than men. Among age groups, prevalence of cataract and glaucoma increased with age, and prevalence of workplace eye injury history decreased with age ($p < 0.05$).

Having eye-care insurance and use of eye care also varied among the five states (Table 2). The percentage of participants reporting no eye-care insurance ranged from 46.2% (Ohio) to 55.0% (Tennessee). In addition, the percentage reporting they had not had a dilated eye examination during the preceding 12 months ranged from 40.6% (Iowa) to 46.2% (Texas); the percentage reporting no visit to an eye-care professional in the preceding 12 months ranged from 30.4% (Iowa) to 34.8% (Texas). Persons in the five states cited “no reason to go” (range: 42.8% in Louisiana to 60.9% in Iowa) and “cost/insurance” (range: 18.5% in Ohio to 22.1% in Tennessee) as the most common reasons for not having visited an eye-care professional in the preceding 12 months. Overall, persons aged 50–59 years were least likely to report not having eye-care insurance. The percentage of persons who had not had a dilated eye examination or a visit to an eye-care professional in the preceding 12 months decreased with increasing age ($p < 0.05$). Men were more likely than women to report not having had a dilated eye examination or not having had an eye-care visit.

[§]Iowa, 2,749; Louisiana, 1,440; Ohio, 3,967; Tennessee, 2,565; and Texas, 3,210.

TABLE 1. Prevalence of self-reported visual impairment,* selected eye diseases, and workplace eye injury history among persons aged ≥50 years, by state and selected demographic characteristics — Behavioral Risk Factor Surveillance System, five states, 2005

State/Characteristic	Visual impairment		Cataract†		Glaucoma‡		Macular degeneration¶		Diabetic retinopathy**		Workplace eye injury††	
	%	(95% CI)§§	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Iowa	14.3	(12.9–15.8)	34.3	(32.4–36.3)	5.9	(5.0–7.0)	5.4	(4.5–6.4)	3.0	(2.4–3.8)	9.0	(7.8–10.4)
Louisiana¶¶¶	17.7	(15.5–20.1)	30.1	(27.5–32.8)	7.4	(6.1–9.1)	3.7	(2.8–4.9)	4.3	(3.3–5.7)	6.6	(5.2–8.4)
Ohio	20.5	(18.6–22.5)	30.0	(27.9–32.3)	5.2	(4.3–6.3)	3.8	(3.0–4.7)	2.7	(2.1–3.5)	7.0	(5.8–8.5)
Tennessee	17.0	(15.2–18.9)	30.2	(28.0–32.5)	5.0	(4.1–6.2)	3.1	(2.4–4.0)	3.8	(2.9–5.1)	5.8	(4.7–7.1)
Texas	19.8	(18.1–21.5)	29.0	(27.1–30.9)	6.9	(5.9–8.0)	4.7	(3.9–5.6)	3.9	(3.2–4.8)	7.2	(6.1–8.6)
Age (yrs)												
50–59	17.9	(16.3–19.5)	9.9***	(8.7–11.1)	3.4***	(2.7–4.1)	1.6	(1.2–2.2)	3.2	(2.5–3.9)	8.7***	(7.5–10.0)
60–69	18.0	(16.3–19.7)	29.2	(27.2–31.2)	5.8	(4.8–6.9)	2.9	(2.3–3.7)	4.2	(3.4–5.2)	7.9	(6.7–9.3)
70–79	20.2	(18.2–22.3)	56.9	(54.4–59.4)	9.2	(7.9–10.8)	6.4	(5.3–7.7)	4.0	(3.1–5.0)	4.3	(3.3–5.5)
≥80	24.7	(21.8–27.9)	66.8	(63.3–70.1)	13.4	(11.1–16.1)	15.3	(12.7–18.3)	2.5	(1.7–3.7)	3.0	(1.8–4.8)
Sex												
Male	16.0	(14.6–17.5)	24.4	(22.8–26.1)	4.9	(4.1–5.7)	3.5	(2.9–4.3)	3.5	(2.9–4.3)	13.0	(11.6–14.4)
Female	21.5	(20.3–22.8)	34.6	(33.2–36.0)	7.2	(6.4–8.1)	4.8	(4.2–5.4)	3.6	(3.1–4.2)	2.1	(1.7–2.5)
Race/Ethnicity												
White, non-Hispanic	17.7	(16.7–18.8)	30.8	(29.6–32.0)	5.3	(4.8–5.9)	4.3	(3.8–4.9)	2.5	(2.2–3.0)	7.1	(6.4–7.9)
Black, non-Hispanic	23.2	(20.0–26.9)	25.1	(21.9–28.6)	10.2	(8.2–12.7)	2.5	(1.6–3.9)	8.0	(5.9–10.8)	4.0	(2.8–5.6)
Other race	22.0	(16.8–28.2)	29.2	(23.2–35.9)	5.7	(3.6–8.8)	6.3	(3.7–10.6)	4.1†††	(2.2–7.4)	10.9	(7.2–16.0)
Hispanic	25.8	(21.4–30.6)	25.4	(21.3–30.1)	10.3	(7.5–14.0)	3.8	(2.3–6.2)	8.7	(6.3–11.8)	7.5	(4.8–11.5)
Education												
Less than high school	28.4	(25.6–31.4)	38.0§§§	(35.0–41.1)	10.0	(8.1–12.2)	5.3	(4.1–6.9)	5.8§§§	(4.6–7.4)	8.8	(7.0–10.9)
High school graduate	20.2	(18.5–21.9)	31.8	(29.9–33.7)	6.2	(5.2–7.2)	3.9	(3.3–4.7)	4.3	(3.6–5.2)	7.9	(6.7–9.2)
More than high school	15.5	(14.3–16.7)	26.5	(25.1–28.0)	5.0	(4.4–5.8)	4.1	(3.5–4.8)	2.4	(1.9–3.0)	6.1	(5.2–7.0)
Annual household income												
<\$15,000	31.9¶¶¶¶	(28.8–35.3)	39.1¶¶¶¶	(35.9–42.5)	10.7¶¶¶¶	(8.8–13.0)	6.0¶¶¶¶	(4.7–7.7)	5.8¶¶¶¶	(4.5–7.6)	9.1	(7.0–11.7)
\$15,000–\$24,999	23.4	(21.0–26.1)	37.8	(35.1–40.6)	8.1	(6.8–9.8)	5.6	(4.6–6.9)	5.0	(3.9–6.5)	7.3	(5.8–9.1)
\$25,000–\$34,999	18.9	(16.3–21.7)	34.8	(31.5–38.1)	6.1	(4.7–7.9)	4.8	(3.4–6.6)	3.6	(2.6–5.1)	8.7	(6.5–11.5)
\$35,000–\$49,999	17.3	(15.0–19.9)	25.8	(23.0–28.7)	5.0	(3.6–6.7)	3.6	(2.6–5.1)	2.4	(1.5–3.7)	8.9	(7.0–11.1)
≥\$50,000	12.8	(11.4–14.4)	17.5	(15.8–19.3)	2.9	(2.3–3.7)	1.8	(1.3–2.4)	2.0	(1.5–2.8)	6.0	(5.0–7.3)

* Respondents were classified as having visual impairment if they answered "a little difficulty," "moderate difficulty," "extreme difficulty," or "unable to do because of eyesight" to the question: "How much difficulty, if any, do you have in recognizing a friend across the street?" or to the question, "How much difficulty, if any, do you have watching television?"

† Respondents were classified as having cataract if they answered "yes" or "yes, but had them removed" to the question: "Have you been told by an eye doctor or other health-care professional that you now have cataracts?"

‡ Respondents were classified as having glaucoma if they answered "yes" to the question: "Have you ever been told by an eye doctor or other health-care professional that you had glaucoma?"

¶ Respondents were classified as having macular degeneration if they answered "yes" to the question: "Have you ever been told by an eye doctor or other health-care professional that you had macular degeneration?"

** Respondents were classified as having diabetic retinopathy if they answered "yes" to the question: "Has a doctor ever told you that diabetes has affected your eyes or that you had retinopathy?"

†† Respondents were classified as having had a workplace eye injury if they answered "yes" to the question: "Have you ever had an eye injury that occurred at your workplace while you were doing your work?"

§§ Confidence interval.

¶¶ Because of Hurricane Katrina, Louisiana provided data only for January–August.

*** The prevalence of cataract and glaucoma increased and the prevalence of workplace eye injury history decreased with increasing age ($p < 0.05$).

††† Estimates with a relative standard error $> 30\%$. These estimates are considered statistically unreliable and should be interpreted with caution.

§§§ The prevalence of cataract and diabetic retinopathy decreased as education level increased ($p < 0.05$).

¶¶¶¶ The prevalence of visual impairment and eye disease decreased as income level increased ($p < 0.05$).

Having eye-care insurance and use of eye care also varied by race/ethnicity, education, and income ($p < 0.05$). Hispanics were more likely than non-Hispanic whites to report not having eye-care insurance, not having had a dilated eye examination, and not having had an eye-care visit during the preceding 12 months. Respondents with less than a high school education or annual household income $< \$15,000$ were least likely to use eye-care services. Moreover, the percentage without eye-care insurance decreased as education and income levels increased ($p < 0.05$).

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Editorial Note: This report is the first to provide state-specific estimates of the self-reported prevalence of visual impairment, eye disease, and use of eye-care services. The varied prevalences among states suggest needs for state-level surveillance of visual impairment and investigation of potential barriers to eye care to enable development of vision-loss prevention and eye-health promotion programs tailored to individual state needs.

Approximately half of those who did not visit an eye-care professional during the preceding 12 months said they had no reason to go. The lack of concern regarding the need for

TABLE 2. Prevalence of no eye-care insurance, no dilated eye examination, and no visit to an eye-care professional among persons aged ≥ 50 years, by state and selected demographic characteristics — Behavioral Risk Factor Surveillance System, five states, 2005

State/Characteristic	No eye-care insurance*		No dilated eye examination†		No visit to an [§] eye-care professional		Reason for no eye-care visit [¶]			
	%	(95% CI)**	%	(95% CI)	%	(95% CI)	No reason to go		Cost/Insurance	
							%	(95% CI)	%	(95% CI)
Iowa	51.8	(49.7–53.9)	40.6	(38.3–42.9)	30.4	(28.5–32.4)	60.9	(57.0–64.6)	20.3	(17.4–23.6)
Louisiana††	50.5	(47.5–53.5)	41.7	(38.3–45.1)	32.0	(29.2–34.9)	42.8	(37.5–48.2)	20.3	(16.4–24.9)
Ohio	46.2	(43.8–48.7)	43.3	(40.6–46.1)	33.1	(30.8–35.4)	55.6	(51.2–59.9)	18.5	(15.4–22.0)
Tennessee	55.0	(52.4–57.6)	42.7	(39.9–45.5)	31.2	(28.9–33.6)	48.1	(43.6–52.7)	22.1	(18.6–26.0)
Texas	52.5	(50.3–54.6)	46.2	(43.8–48.6)	34.8	(32.7–36.9)	49.8	(46.0–53.6)	20.0	(17.1–23.2)
Age (yrs)										
50–59	46.8	(44.8–48.9)	52.7 ^{§§}	(50.4–54.9)	39.8 ^{§§}	(37.8–41.8)	47.0 ^{¶¶}	(43.6–50.3)	22.9	(20.3–25.7)
60–69	55.3	(53.1–57.6)	43.9	(41.4–46.4)	33.2	(31.1–35.3)	53.4	(49.5–57.2)	22.4	(19.3–25.8)
70–79	52.8	(50.3–55.4)	32.1	(29.5–34.9)	25.0	(22.8–27.3)	57.7	(52.5–62.8)	10.7	(7.8–14.6)
≥ 80	53.1	(49.5–56.7)	29.2	(25.7–33.1)	20.7	(17.9–23.9)	62.7	(54.8–70.1)	5.7 ^{***}	(3.1–10.4)
Sex										
Male	49.3	(47.2–51.3)	48.5	(46.2–50.8)	38.2	(36.2–40.2)	58.9	(55.4–62.2)	14.4	(12.1–17.0)
Female	52.3	(50.8–53.8)	40.4	(38.8–42.1)	29.1	(27.8–30.5)	42.9	(40.2–45.7)	26.0	(23.6–28.6)
Race/Ethnicity										
White, non-Hispanic	50.7	(49.4–52.1)	43.3	(41.8–44.8)	32.7	(31.4–33.9)	54.8	(52.4–57.2)	16.7	(15.0–18.4)
Black, non-Hispanic	43.9	(39.8–48.1)	47.0	(42.0–52.1)	33.2	(29.3–37.3)	41.9	(34.8–49.2)	27.5	(21.2–34.8)
Other race	43.8	(36.5–51.4)	44.3	(35.9–53.0)	36.7	(29.4–44.8)	42.0	(29.2–56.0)	26.0	(15.4–40.4)
Hispanic	63.2	(57.9–68.2)	52.3	(45.8–58.7)	38.5	(33.3–43.9)	34.7	(27.0–43.4)	35.9	(27.9–44.7)
Education										
Less than high school	64.5 ^{†††}	(61.4–67.5)	52.6	(48.8–56.4)	41.6	(38.4–45.0)	38.9	(33.9–44.0)	31.5 ^{§§§}	(26.7–36.7)
High school graduate	54.5	(52.4–56.7)	44.4	(42.1–46.8)	33.3	(31.3–35.3)	51.2	(47.5–54.9)	22.1	(19.3–25.3)
More than high school	44.8	(43.1–46.5)	41.8	(40.0–43.7)	30.8	(29.2–32.5)	56.5	(53.2–59.7)	13.5	(11.5–15.8)
Annual household income										
<\$15,000	67.1 ^{†††}	(63.7–70.3)	50.4	(46.4–54.4)	39.1	(35.8–42.5)	35.2 ^{¶¶}	(30.3–40.4)	43.4 ^{§§§}	(37.9–49.1)
\$15,000–\$24,999	59.8	(56.9–62.7)	43.9	(40.6–47.3)	34.0	(31.3–36.8)	41.6	(36.9–46.5)	31.4	(26.8–36.4)
\$25,000–\$34,999	49.7	(46.1–53.3)	44.4	(40.4–48.4)	32.5	(29.1–36.2)	57.4	(50.4–64.1)	18.1	(13.8–23.2)
\$35,000–\$49,999	46.5	(43.1–49.9)	45.5	(41.9–49.2)	33.7	(30.5–37.0)	54.3	(48.2–60.1)	13.7	(10.3–18.1)
\geq \$50,000	40.4	(38.0–42.7)	43.8	(41.3–46.4)	32.3	(30.0–34.6)	61.9	(57.6–66.0)	6.4	(4.7–8.7)

* Respondents who had no health insurance coverage for eye care.

† Respondents who had not had a dilated eye examination in the preceding 12 months.

§ Respondents who had not visited an eye-care professional in the preceding 12 months.

¶ Respondents were asked the main reason they had not visited an eye-care professional in the preceding 12 months. The two most cited reasons were “no reason to go” and “cost/insurance.”

** Confidence interval.

†† Because of Hurricane Katrina, Louisiana provided data only for January–August.

§§ The percentage of persons with no dilated eye examination or visit to an eye-care professional in the preceding 12 months decreased with increasing age ($p < 0.05$).

¶¶ The percentage of persons citing “no reason to go” increased with increasing age and increasing income ($p < 0.05$).

*** Estimates with a relative standard error $> 30\%$. These estimates are considered statistically unreliable and should be interpreted with caution.

††† The percentage of persons not having eye-care insurance decreased as education and income levels increased ($p < 0.05$).

§§§ The percentage of persons citing “cost/insurance” decreased as education and income level increased ($p < 0.05$).

preventive eye care remains a major public health concern. Early detection and timely treatment can prevent visual impairment and progression of conditions leading to blindness. An annual dilated eye examination is recommended for persons with diabetes or aged ≥ 65 years (4); by comparison, approximately 44% of those aged 60–69 years and 32% of those aged 70–79 years had not had a dilated eye examination during the preceding 12 months. Many eye problems are asymptomatic initially, and regular eye examinations can help delay or limit the progression of vision loss and eye diseases (5). In addition, efficacious and cost-effective strategies to detect and treat certain eye diseases exist (6–9). However, in this study, approximately 41%–46% of respondents aged ≥ 50 years had not had a dilated eye examination, and approximately 30%–35% had not visited an eye-care professional during the preceding 12 months. The finding that prevalence of workplace eye injury history decreased with increasing age appears counterintuitive and suggests a need for further study.

This report is subject to at least three limitations. First, the prevalences of visual impairment and eye diseases are self-reported and might be different than objective clinical measurements. Second, the data are collected by telephone survey and might not be representative of persons without landline telephones. Finally, institutionalized populations (e.g., nursing home residents) are not included in BRFSS.

CDC provides resources and technical assistance to state health departments to increase surveillance of visual impairment and eye diseases. The new BRFSS vision module can be used to help public health agencies plan, implement, and evaluate programs on vision-loss prevention and eye-health promotion at national, state, and local levels and can help monitor *Healthy People 2010* objectives regarding eye care. These data can enable CDC and states to better assess the need for eye care, identify groups at high risk for eye disease, reduce health disparities, allocate scarce resources, and target effective intervention activities.

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Public Health Surveillance for Smallpox — United States, 2003–2005

In June 1987, nearly 10 years after the World Health Organization (WHO) declared smallpox eradicated, the Council of State and Territorial Epidemiologists (CSTE) recommended removal of smallpox, a highly contagious viral disease, from the National Notifiable Diseases Surveillance System (NNDSS) (1).^{*} However, the attacks of September 11, 2001, raised concern that smallpox (variola) virus, might exist in laboratories other than two WHO-designated repositories and could be used as an agent of biologic terrorism (2). In response to this concern, CSTE and CDC recommended in June 2003 that smallpox again be made reportable through NNDSS and that all states, territories, and cities add smallpox to their lists of reportable diseases (3). In 2005, CSTE conducted a cross-sectional survey in the United States and its territories to assess key components for surveillance of suspected smallpox disease, including legal reporting require-

ments, laboratory testing, and training and education (e.g., oral presentations and guides). This report summarizes the results of that survey, which indicated that 100% had the capacity to receive and investigate reports, 94% of states had legal requirements to report suspected smallpox disease, 70% had mandatory laboratory reporting of results indicative of smallpox disease, and 68% were providing ongoing training and education of health-care providers and public health staff.

During August–October 2005, CSTE sent an e-mail to all state epidemiologists asking them to participate in the survey, which was available online to all 50 states, the District of Columbia (DC), eight U.S. territories, and health departments of nine large cities. A total of 46 states and DC (92%), one territory (13%), and seven large cities (78%) responded to the survey, for an overall response rate of 81%. The survey respondents were senior-level epidemiologists.

Forty-three of the 46 responding states and DC (94%) and all seven cities indicated having reporting requirements and other components of a surveillance system to detect suspected smallpox disease. In addition, 25 states and DC (55%) and four cities (57%) required reporting of varicella (chickenpox), a potentially severe vesicular or pustular rash illness with certain signs and symptoms similar to smallpox. Participants also reported that other surveillance systems were in place to detect suspected smallpox disease, including 1) syndromic surveillance in 33 states and DC (72%) and six cities (86%) and 2) rash illness surveillance in 29 states and DC (64%) and four cities (57%).

All 55 respondents reported having the capacity to receive and investigate reports of suspected smallpox disease 24 hours a day and 7 days a week. Forty-one states and DC (89%) had the capacity to receive disease reports primarily by telephone and 33 (70%) primarily by fax. Fifteen (32%) respondents indicated the capacity to receive reports by e-mail and 13 (28%) via the Internet. Of the 46 responding states and DC, 42 (89%) had the ability to investigate reports by telephone, 38 (81%) by e-mail, 33 (70%) by other methods, and 31 (66%) by fax. Field or home visits were reported as the methods least likely to be used for investigation of persons with suspected smallpox (12 [26%] of 46 respondents). For the seven large cities, the patterns for receiving and investigating reports were similar.

For tests related to orthopoxviruses, including smallpox virus, 31 states and DC (68%) reported they would use the CDC laboratory; 30 (64%) would use a state health laboratory, 10 (21%) a neighboring state laboratory, four (9%) another laboratory, and three (6%) an academic facility. Twenty-six states and DC (57%) reported their state public health laboratory could rapidly provide testing by orthopoxvirus nonvariola polymerase chain reaction (PCR)

^{*}Decisions to include or exclude a disease from NNDSS are based on the extent of its associated morbidity and mortality and on its amenability to intervention and control.

assay and viral culture[†]; 22 (47%) could provide testing by orthopoxvirus PCR assay, 10 (21%) by a variola PCR assay, and seven (15%) by electron microscopy.

During 2004, an estimated 69,000 health-care and public health practitioners were trained in smallpox clinical presentation, diagnosis, and surveillance during pre-event and post-event periods by state, territorial, and large-city public health agencies. The primary means for training included presentations (58%) or using CDC materials (56%). An average of 7.8 training sessions (median: two; range: 0–133) were offered by a state public health agency, and 10.4 sessions (median: three; range: 0–116) were offered by local and county public health agencies. Professionals targeted for training were primarily public health personnel (64%), hospital emergency department staff members (44%), and other hospital staff members (45%).

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Editorial Note: As with any notifiable disease, legal requirements for mandatory reporting of smallpox are necessary for complete and timely reporting of suspected or confirmed cases (4,5). These legal requirements are the foundation for state-based surveillance in the event of a terrorist attack, specifically for smallpox and other agents of biologic terrorism (i.e., Category A, B, and C agents as defined by CDC) (6). Most states also have general authority to collect data on matters of public health importance, disease outbreaks, or unusual or unforeseen occurrences (7,8). State reporting requirements, including laboratory reporting requirements, constitute a core set of components for smallpox-specific surveillance that can detect disease quickly and lead to rapid case investigation (9). These components are coupled with increased ability of terrorism-preparedness programs in states to receive and investigate reports, conduct key syndromic or other surveillance to detect smallpox, and conduct ongoing education and training sessions on smallpox recognition and disease surveillance.

Several factors have contributed to the ability of state health departments to conduct surveillance and respond to suspected

smallpox cases. States can mandate reporting by hospitals, laboratories, physicians, and other health entities for a disease within their jurisdiction. In October 2005, CSTE updated its annual NNDSS Queriable Database and noted that smallpox was reportable by law in 46 states and DC (7). Since then, two of the four states in the database that had not indicated smallpox was a reportable condition now have listed it as one of the state's notifiable diseases. The other two states report outbreaks of any kind or an unusual number of cases of any infectious disease, including smallpox.

Increases in federal funds also have affected state preparedness programs. During 2002–2005, state and local health departments received nearly \$3.5 billion in federal funds to bolster state public health preparedness programs. The funds were used in part to strengthen surveillance capacity related to agents of biologic terrorism. Increased funding in terrorism preparedness and emergency response also has increased the number of epidemiologists and increased the capacity for state-level preparedness (9). Furthermore, a greater percentage of states reported substantial to full capacity to monitor health status and to identify and investigate health problems and health hazards in communities (9).

Current reporting requirements and surveillance systems, access to laboratory facilities and modes of communication to receive information, and training of public health professionals and health-care practitioners have enhanced the public health system's capacity for responding to suspected cases of smallpox disease. The findings from the CSTE survey indicate that, in the event of suspected smallpox, the public health infrastructure has components in place to detect, receive reports of, investigate, and confirm or rule out the disease. Given that states have addressed the legal and infrastructure requirements necessary to report smallpox, continued measures should focus on the advancement of 1) reported data from physicians, laboratories, and hospitals to a public health agency, and 2) early-event-detection systems to detect suspected smallpox disease. Finally, because clinicians typically are the first to identify and diagnose disease (10), measures should focus on dissemination of educational and training materials to health-care providers, emergency medical services personnel, and public health practitioners.

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[†] Certain states indicated that their state public health laboratory could perform a viral culture; however, viral culture for variola virus is not recommended for patients with suspicious rash illness, and such a procedure should be conducted only in a designated Biosafety Level 4 laboratory because of the increased risk to unvaccinated laboratory personnel. CDC/Association of Public Health Laboratories guidelines for suspected smallpox and specimen handling are available at <http://www.bt.cdc.gov/agent/smallpox/diagnosis/riskalgorithm> and <http://www.bt.cdc.gov/agent/smallpox/diagnosis/rashtestingprotocol.asp>.

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Immunization Information Systems Progress — United States, 2005

Immunization registries are confidential, computerized information systems that collect and consolidate vaccination data from multiple health-care providers, generate reminder and recall notifications, and assess vaccination coverage within a defined geographic area (1,2). A registry with added capabilities, such as vaccine management, adverse event reporting, lifespan vaccination histories, and linkages with electronic data sources, is called an immunization information system (IIS) (3). This report summarizes data from CDC's 2005 *Immunization Information System Annual Report* (IISAR), a survey of grantees in 50 states, five cities,[†] and the District of Columbia (DC) that receive funding under section 317b of the Public Health Service Act. These data indicated that approximately 56% of U.S. children aged <6 years participated in an IIS, an increase from 48% in 2004. Moreover, 75% percent of public vaccination provider sites and 44% of private vaccination provider sites submitted vaccination data to an IIS during July–December 2005. These findings underscore the need to increase the number of participating children, from the current 13 million to approximately 21 million, to assure 95% participation of children aged <6 years and improve the effectiveness of U.S. immunization programs.

The 2005 IISAR, a self-administered, Internet-based questionnaire, was available to immunization program managers as part of an annual reporting requirement. As in previous years, respondents were asked about the number of children

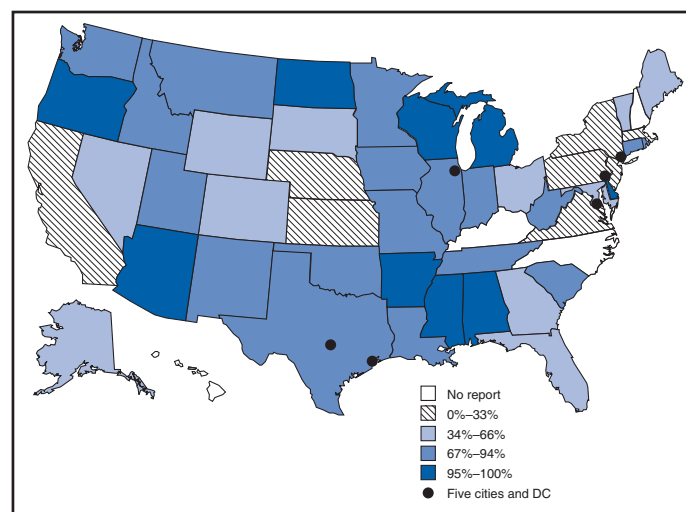
aged <6 years participating in the IIS, the number of health-care provider sites participating in the IIS, and other programmatic and technical capabilities (e.g., data linkages with other public health programs, data use, vaccine management, software and hardware capabilities, and reporting functions). All 56 grantees were asked to complete the questionnaire; 52 reported on the number of children aged <6 years participating in an IIS. Estimates of the total number of children aged <6 years were based on 2005 U.S. census data.

The findings indicated that, of approximately 23 million U.S. children aged <6 years, an estimated 13 million (56%) participated in an IIS. Eleven (20%) IIS grantees (Alabama, Arkansas, Arizona, Delaware, Michigan, Mississippi, New York City, North Dakota, Oregon, Philadelphia, and Wisconsin) had >95% of children aged <6 years participating in an IIS (Figure). Eleven (20%) other IIS grantees (DC, Idaho, Iowa, Louisiana, Missouri, Montana, Oklahoma, Rhode Island, Tennessee, Utah, and Washington) had participation ranging from 81% to 94%.

Approximately 75% of public vaccination provider sites and 44% of private vaccination provider sites submitted vaccination data to an IIS during July–December 2005.[§] Twenty-two (39%) grantees reported that >95% of public vaccination

[§] Number of provider vaccination sites (public and private) is based on grantee self-reports.

FIGURE. Percentage of children aged <6 years participating* in a grantee† immunization information system — United States, five cities, and the District of Columbia (DC),[§] 2005



SOURCE: 2005 *Immunization Information System Annual Report*.

* Participation is defined as having two or more vaccinations recorded in an immunization information system.

† Grantees include 50 states, five cities, and DC, funded under section 317b of the Public Health Service Act.

§ Chicago, Illinois (34%–66%); DC (67%–94%); Houston, Texas (34%–66%); New York City, New York (95%–100%); Philadelphia, Pennsylvania (95%–100%); San Antonio, Texas (67%–94%); United States (56%).

* Participation is defined as having two or more recorded vaccinations.

† Chicago, Illinois; Houston, Texas; New York City, New York; Philadelphia, Pennsylvania; and San Antonio, Texas.

provider sites submitted vaccination data to an IIS; eight (14%) reported submission of vaccination data by 81%–94% of public provider vaccination sites. Eight (14%) grantees (Arkansas, Connecticut, DC, Mississippi, North Dakota, Philadelphia, San Antonio, and South Dakota,) reported that >95% of private vaccination provider sites submitted vaccination data to an IIS; five (9%) (Arizona, Delaware, Michigan, Oregon, and Wisconsin) reported data submission by 81%–94% of private provider vaccination sites.

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Editorial Note: In 2005, approximately 56% of U.S. children aged <6 years participated in an IIS, an increase from 48% in 2004, or approximately 2 million more children (3). In addition, IIS private-provider–site participation increased from 39% in 2004 to 44% in 2005.

IISs are being used increasingly as a decision-making tool for immunization programs and health-care providers to generate patient reminders and recalls, perform vaccine inventory management and distribution tasks, conduct routine public health surveillance, conduct school assessments, and identify clusters of undervaccinated children. Data from IISs have been used by immunization programs to make more effective and timely decisions. For example, during a routine Vaccines for Children Program site visit, the Oregon Immunization Program discovered that one vaccine (diphtheria and tetanus toxoids and acellular pertussis vaccine [DTaP]) was not being stored at proper temperatures in a pediatric clinic. According to data in the Oregon IIS, approximately 3,100 children had received 1 or more doses of DTaP or TriHIBit[®] (Sanofi Pasteur, Swiftwater, Pennsylvania) vaccine during the period in which the vaccines were improperly stored. Within 8 days, Oregon IIS staff members had coordinated with the clinic to compile the necessary information to conduct a patient recall. An estimated 3,100 families received notices to return for revaccination; 1,280 (41%) children returned to the clinic and received 1 or more doses of vaccine containing diphtheria and tetanus within 90 days after the notice was mailed.

The ability to share and exchange data with other information systems also has increased the usefulness of IISs for health insurance providers, health department clinics, Medicaid, and schools. The ability to use IIS data to comply with school-entry laws has ensured up-to-date vaccinations for children

and improved the quality of IIS data. In 2005, a total of 38 (75%) grantees provided elementary schools with access to IIS data to monitor, document, and comply with school entry laws.

In 2003, the Georgia Registry of Immunization Transactions and Services (GRITS) formed a partnership with the Houston Hot Shots Coalition in Houston County, Georgia, to increase use of GRITS in kindergarten classes and elementary schools in Houston County. Before 2003, annual kindergarten up-to-date vaccination rates for the Houston County Board of Education ranged from 67% to 90%. After implementing the partnership's recommendation to use GRITS for the 2003–04 school year audit, the rate for all 22 elementary schools was 100%. As a result of this success, the coalition presented the school superintendent with a proposal that GRITS be the official school-vaccination record for all students and that all students entering Houston County schools have their vaccination records validated by GRITS. The coalition proposal was approved by the school superintendent and implemented for the 2006–07 school year.

In DC, the Department of Health collaborated with DC Public Schools (DCPS) and other partners on the DC School Immunization Project, which successfully monitored and documented school vaccination rates for the estimated 54,000 children enrolled in DCPS. The project objectives were to 1) use local partnerships to link traditional and high-technology quality-improvement strategies to overcome limited resources and achieve higher school vaccination rates; 2) identify and track vaccination levels for all public school children; and 3) use the IIS for quality improvement and improvement of overall vaccination rates and accuracy. DCPS provided the IIS with weekly enrollment files, which kept IIS staff members informed about new enrollees and allowed them to update vaccination rates. In addition, health insurance providers in the DC area provided the IIS with electronic enrollment data monthly, and the IIS provided updated information on the vaccination status of enrollees, including a list, by school, of enrolled students who met vaccination requirements. Before 2001, IISs were used for assessing DCPS vaccination compliance for entry to school and middle schools only. After implementing schoolwide policies to use IISs, the proportion of students with documentation of DCPS-required vaccinations increased from 40% in June 2001 to 96% in June 2006. At the end of the 2005–2006 school year, 155 (98%) of 158 schools in DCPS had compliance rates of ≥90%, and 28 had rates of 100%.

The findings in this report are subject to at least two limitations. First, data from the 2005 IISAR are self-reported, which might have resulted in reporting bias. Second, because some grantees did not report data, the IIS participation rates for

[§] Combination *Haemophilus influenzae* B conjugate vaccine (ACTHib[®] [Sanofi Pasteur]) reconstituted with DTaP (Tripedia[®] [Sanofi Pasteur]).

children aged <6 years and providers might be underestimated or overestimated.

Immunization programs that use IIS data have improved the quality of vaccination activities in various settings in Oregon, Georgia, and DC. These examples illustrate the usefulness of IIS data for assessing program activities and measuring progress toward reaching immunization program goals. As participation in IIS increases and data quality improves, data from IIS will improve the effectiveness and efficiency of immunization programs throughout the United States.

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Brief Report

Influenza Vaccination Coverage Among Children Aged 6–23 Months — Six Immunization Information System Sentinel Sites, United States, 2005–06 Influenza Season

Beginning with the 2004–05 influenza season, the Advisory Committee on Immunization Practices (ACIP) recommended that all children aged 6–23 months receive influenza vaccinations annually (1). Other children recommended to receive influenza vaccinations include those aged 6 months–18 years who have certain high-risk medical conditions, those on chronic aspirin therapy, those who are household contacts of persons at high risk for influenza complications, and, since 2006, all children aged 24–59 months (1). Previously unvaccinated children aged <9 years need 2 doses administered at least 1 month apart to be considered fully vaccinated (1). This report assesses influenza vaccination coverage among children aged 6–23 months during the 2005–06 influenza season by using data from six immunization information system (IIS) sentinel sites. The findings demonstrate that vaccination coverage with 1 or more doses varied widely (range: 6.6% to 60.4%) among sites, with coverage increasing from the preceding influenza season in four of the six sites. However, <23% of children in five of the sites were fully vaccinated, underscoring the need for increased measures to improve the proportion of children who are fully vaccinated.

This report is based on data from IISs, which are confidential, computerized systems that maintain vaccine administration information and have other important capabilities (e.g., vaccine management, adverse event reporting, assistance in disease surveillance activities, and linkages with electronic data sources). CDC collaborates with IIS sentinel sites in five states (Arizona, Michigan, Minnesota, Montana, and Oregon) and the District of Columbia to promote population-based analysis of IIS data for immunization program assessment and evaluation. The sites represent geographically contiguous counties or census tracts for which IIS data are collected on $\geq 10,000$ children aged <6 years, representing >95% of the population in that age group in that area. Sentinel sites also have approximately 90% of the vaccine provider locations in the geographic area as IIS participants.

Vaccination coverage was estimated for September 1, 2005–March 31, 2006, among children who were aged 6–23 months during the entire period (i.e., children born during April 1, 2004–March 1, 2005). Two measures of vaccination coverage were reported: 1) receipt of 1 or more doses of influenza vaccine during September 2005–March 2006 and 2) receipt of 2 or more doses of influenza vaccine (i.e., fully vaccinated). Children were considered fully vaccinated if they had 1) received no dose of influenza vaccine before September 1, 2005, but then received 2 doses during September 1, 2005–March 31, 2006, or 2) received 1 or more doses of influenza vaccine before September 1, 2005, and then received 1 or more additional doses during September 1, 2005–March 31, 2006.

Vaccination coverage with 1 or more doses among children aged 6–23 months ranged from 6.6% to 60.4% in the sentinel sites (Table). Percentages of children who were fully vaccinated ranged from 2.3% to 43.4%. Compared with the 2004–05 influenza season (2), vaccination coverage with 1 or more doses increased at four sentinel sites and decreased at two sites (Table). The percentage of children who were fully vaccinated remained the same at one sentinel site, decreased at one site, and increased at four sites.

National Immunization Survey (NIS) estimates for the 2005–06 influenza season are not yet available; however, previous IIS estimates of influenza vaccination coverage among children have been similar to NIS results (Table) (3). During the 2005–06 season, the disparity in vaccination coverage among the IIS sentinel sites was likely a result of the degree of vaccine promotion in each locale and the likelihood of reporting the administered doses to the IIS. For example, health-care workers at Site F indicated that anecdotal evidence and previous NIS estimates suggest that the low reported vaccination coverage likely reflects underreporting of influenza vaccination to the IIS rather than the actual coverage.

TABLE. Influenza vaccination coverage levels among children aged 6–23 months — six immunization information system (IIS) sentinel sites (2004–05 and 2005–06 influenza seasons) and National Immunization Survey (NIS) (2004–05 influenza season), United States

IIS sentinel site	2004–05 influenza season						2005–06 influenza season	
	1 or more doses of influenza vaccine			Fully vaccinated			1 or more doses of influenza vaccine	Fully vaccinated
	IIS sentinel sites	NIS		IIS sentinel sites	NIS		IIS sentinel sites	IIS sentinel sites
	%	%	(95% CI)*	%	%	(95% CI)	%	%
A	30.0	26.7	(21.0–32.4)	13.1	12.4	(8.4–16.4)	38.5	22.6
B	34.5	33.9	(26.4–41.4)	15.4	18.7	(12.9–24.5)	38.9	20.4
C	26.5	32.5	(24.4–40.6)	11.4	16.9	(10.4–23.4)	33.4	17.9
D	47.6	50.6	(41.1–60.1)	18.5	25.1	(16.9–33.3)	42.9	5.7
E	35.6	30.3	(22.0–38.6)	18.5	13.1	(7.3–18.9)	60.4	43.4
F	8.2	31.1	(23.3–38.9)	2.1	12.2	(7.1–17.3)	6.6	2.3

* Confidence interval.

Although limitations exist regarding the use of IIS data, state health departments should consider the IIS as a means for rapidly assessing influenza vaccination coverage. Prompt reporting of influenza vaccinations to the IIS can enable local or statewide assessments during the current influenza season, aiding measures to increase the proportion of fully vaccinated children.

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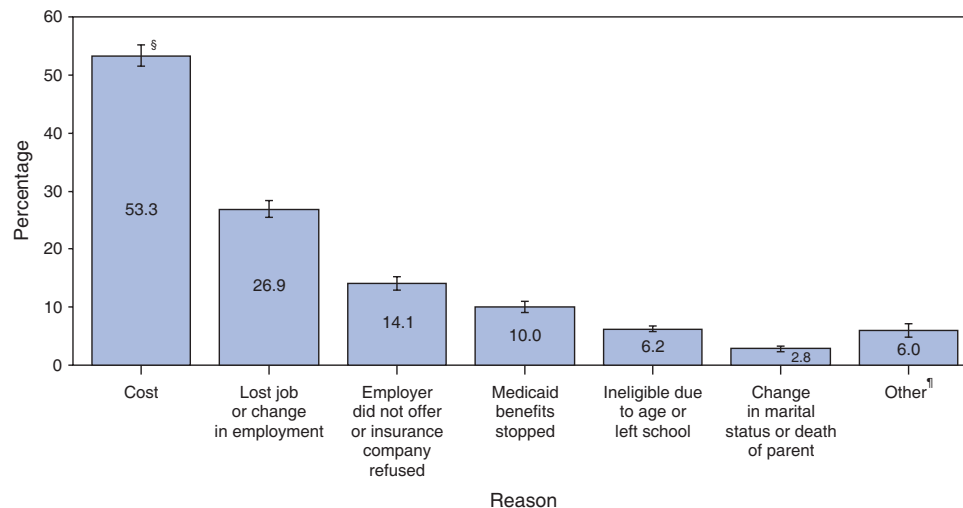
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QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Reasons for No Health Insurance Coverage* Among Uninsured Persons Aged <65 Years — National Health Interview Survey, United States, 2004†



* Based on response to a survey question regarding the reasons a household member stopped being covered by health insurance or did not have health insurance. Persons might be counted in more than one category.

† Estimates are age adjusted using the 2000 projected U.S. population as the standard population and using four age groups: 0–11 years, 12–17 years, 18–44 years, and 45–64 years. Estimates are based on household interviews of a sample of the civilian, noninstitutionalized U.S. population.

§ 95% confidence interval.

¶ Includes moved, self-employed, never had coverage, did not want or need coverage, and other unspecified reasons.

Overall, approximately 17% (41 million) of persons aged <65 years had no health insurance at the time of interview. Of these, approximately one half did not have coverage because of cost, and one fourth did not have coverage because of loss of a job or a change in employment. Approximately 14% of uninsured persons did not have coverage because their employer did not offer it or the insurance company refused coverage, and 10% did not have coverage because of cessation of Medicaid benefits. Less than 3% of persons without health insurance did not have coverage because of a change in marital status or death of a parent.

SOURCE: Adams PF, Barnes PM. Summary health statistics for the U.S. population: National Health Interview Survey, 2004. National Center for Health Statistics. Vital Health Stat 2006;10(229). Available at http://www.cdc.gov/nchs/data/series/sr_10/sr10_229.pdf.

TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending December 9, 2006 (49th Week)*

Disease	Current week	Cum 2006	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2005	2004	2003	2002	2001	
Anthrax	—	1	0	—	—	—	2	23	
Botulism:									
foodborne	—	13	1	19	16	20	28	39	
infant	—	76	2	90	87	76	69	97	
other (wound & unspecified)	1	45	1	33	30	33	21	19	CA (1)
Brucellosis	—	102	2	122	114	104	125	136	
Chancroid	—	27	1	17	30	54	67	38	
Cholera	—	6	0	8	5	2	2	3	
Cyclosporiasis§	—	114	2	716	171	75	156	147	
Diphtheria	—	—	—	—	—	1	1	2	
Domestic arboviral diseases§¶:									
California serogroup	—	7	1	80	112	108	164	128	
eastern equine	—	—	0	21	6	14	10	9	
Powassan	—	—	—	1	1	—	1	N	
St. Louis	—	3	0	13	12	41	28	79	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis§:									
human granulocytic	17	420	9	790	537	362	511	261	CT (1), NY (16)
human monocytic	7	385	5	521	338	321	216	142	NY (7)
human (other & unspecified)	—	171	1	122	59	44	23	6	
<i>Haemophilus influenzae</i> **,									
invasive disease (age <5 yrs):									
serotype b	—	8	0	9	19	32	34	—	
nonserotype b	—	78	2	135	135	117	144	—	
unknown serotype	1	189	3	217	177	227	153	—	GA (1)
Hansen disease§	—	68	2	88	105	95	96	79	
Hantavirus pulmonary syndrome§	—	29	0	29	24	26	19	8	
Hemolytic uremic syndrome, postdiarrheal§	2	225	4	221	200	178	216	202	NC (1), OK (1)
Hepatitis C viral, acute (1), OK (1), TX (1), CA (2)	13	705	28	751	713	1,102	1,835	3,976	NY (1), MI (3), MO (1), DC (1), NC (1), TN (1), LA
HIV infection, pediatric (age <13 yrs)§,††	—	52	6	380	436	504	420	543	
Influenza-associated pediatric mortality§§§	—	40	0	45	—	N	N	N	
Listeriosis	13	683	13	892	753	696	665	613	RI (1), NY (7), PA (1), IN (1), NC (1), FL (1), AL (1)
Measles¶¶	—	45	0	66	37	56	44	116	
Meningococcal disease, invasive***:									
A, C, Y, & W-135 serogroup B	1	207	5	297	—	—	—	—	TX (1)
other serogroup	2	123	4	157	—	—	—	—	IN (1), FL (1)
Mumps	1	21	0	27	—	—	—	—	MN (1)
Plague	9	6,221	5	314	258	231	270	266	PA (1), OH (2), KS (2), MD (2), FL (1), AL (1)
Poliomyelitis, paralytic	—	16	0	8	3	1	2	2	
Psittacosis§	—	—	—	1	—	—	—	—	
Q fever§	—	19	0	19	12	12	18	25	
Rabies, human	1	142	1	139	70	71	61	26	MN (1)
Rubella	—	2	0	2	7	2	3	1	
Rubella, congenital syndrome	—	9	0	11	10	7	18	23	
SARS-CoV§,†††	—	1	0	1	—	1	1	3	
Smallpox§	—	—	—	—	—	8	N	N	
Streptococcal toxic-shock syndrome§	—	—	—	—	—	—	—	—	
<i>Streptococcus pneumoniae</i> §	1	86	2	129	132	161	118	77	MN (1)
invasive disease (age <5 yrs)	18	1,011	19	1,257	1,162	845	513	498	NY (3), OH (7), IN (1), MN (2), KS (1), DC (1), OK (1), AZ (2)
Syphilis, congenital (age <1 yr)	1	253	8	361	353	413	412	441	AZ (1)
Tetanus	—	19	1	27	34	20	25	37	
Toxic-shock syndrome (other than streptococcal)§	—	91	2	96	95	133	109	127	
Trichinellosis	—	11	0	19	5	6	14	22	
Tularemia§	—	83	2	154	134	129	90	129	
Typhoid fever	5	253	5	324	322	356	321	368	PA (1), MD (1), WA (1), CA (2)
Vancomycin-intermediate <i>Staphylococcus aureus</i> §	—	3	—	2	—	N	N	N	
Vancomycin-resistant <i>Staphylococcus aureus</i> §	—	—	—	3	1	N	N	N	
Yellow fever	—	—	—	—	—	—	1	—	

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

* Incidence data for reporting year 2006 are provisional, whereas data for 2001, 2002, 2003, 2004, and 2005 are finalized.

† Calculated by summing the incidence counts for the current week, the two weeks preceding the current week, and the two weeks following the current week, for a total of 5 preceding years. Additional information is available at <http://www.cdc.gov/epo/dphsi/phs/files/5yearweeklyaverage.pdf>.

§ Not notifiable in all states.

¶ Includes both neuroinvasive and non-neuroinvasive. Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases (proposed) (ArboNET Surveillance).

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

†† Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed). Implementation of HIV reporting influences the number of cases reported. Pediatric HIV data will not be updated monthly for the remainder of this year due to upgrading of the national HIV/AIDS surveillance data management system. Data for HIV/AIDS are available in Table IV quarterly.

§§ Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases (proposed).

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

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

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 9, 2006, and December 10, 2005 (49th Week)*

Reporting area	Lyme disease					Malaria				
	Current week	Previous 52 weeks		Cum 2006	Cum 2005	Current week	Previous 52 weeks		Cum 2006	Cum 2005
		Med	Max				Med	Max		
United States	154	230	2,153	16,464	20,754	8	26	125	1,202	1,319
New England	13	27	780	2,856	3,885	1	0	11	47	70
Connecticut	11	9	753	1,661	996	—	0	3	11	20
Maine†	—	2	34	280	243	—	0	1	4	5
Massachusetts	—	0	12	33	2,311	—	0	3	19	36
New Hampshire	2	4	94	551	245	—	0	3	10	6
Rhode Island†	—	0	93	235	37	1	0	8	2	2
Vermont†	—	1	15	96	53	—	0	1	1	1
Mid. Atlantic	88	128	1,176	9,257	11,760	—	5	13	269	343
New Jersey	—	22	173	1,918	3,330	—	0	3	28	76
New York (Upstate)	59	58	1,150	3,907	3,829	—	1	11	46	49
New York City	—	1	18	163	394	—	3	9	150	183
Pennsylvania	29	38	231	3,269	4,207	—	1	4	45	35
E.N. Central	—	10	150	1,443	1,723	—	2	7	117	144
Illinois	—	0	0	—	127	—	1	4	45	73
Indiana	—	0	3	21	30	—	0	3	11	8
Michigan	—	1	5	53	60	—	0	2	16	22
Ohio	—	1	5	42	55	—	0	3	27	26
Wisconsin	—	10	146	1,327	1,451	—	0	2	18	15
W.N. Central	40	6	169	812	913	1	0	32	61	46
Iowa	—	1	8	87	91	—	0	1	2	8
Kansas	—	0	2	4	3	—	0	2	7	7
Minnesota	40	2	167	698	799	1	0	30	39	11
Missouri	—	0	2	11	15	—	0	1	6	17
Nebraska†	—	0	2	11	3	—	0	1	5	3
North Dakota	—	0	3	—	—	—	0	1	1	—
South Dakota	—	0	1	1	2	—	0	1	1	—
S. Atlantic	11	28	116	1,810	2,222	4	7	15	310	295
Delaware	—	7	28	456	635	—	0	1	5	3
District of Columbia	3	0	7	59	8	—	0	2	5	11
Florida	3	1	5	56	44	1	1	4	60	61
Georgia	—	0	1	7	6	2	1	6	80	48
Maryland†	5	13	73	877	1,204	1	1	5	68	98
North Carolina	—	0	4	29	44	—	0	8	28	30
South Carolina†	—	0	2	18	20	—	0	2	10	10
Virginia†	—	4	28	294	244	—	1	9	52	31
West Virginia	—	0	44	14	17	—	0	1	2	3
E.S. Central	1	0	3	36	36	—	0	3	24	30
Alabama†	1	0	3	16	3	—	0	2	11	6
Kentucky	—	0	2	7	5	—	0	1	4	10
Mississippi	—	0	1	1	—	—	0	1	4	—
Tennessee†	—	0	2	12	28	—	0	2	5	14
W.S. Central	—	0	3	18	76	—	2	31	83	119
Arkansas	—	0	1	—	4	—	0	1	2	6
Louisiana	—	0	0	—	3	—	0	1	5	5
Oklahoma	—	0	0	—	—	—	0	2	7	10
Texas†	—	0	3	18	69	—	1	29	69	98
Mountain	—	0	3	25	21	—	1	9	67	52
Arizona	—	0	2	7	8	—	0	9	23	13
Colorado	—	0	1	1	—	—	0	2	16	24
Idaho†	—	0	2	6	2	—	0	1	1	—
Montana†	—	0	0	—	—	—	0	1	2	—
Nevada†	—	0	1	2	3	—	0	1	4	3
New Mexico†	—	0	1	2	3	—	0	1	4	3
Utah	—	0	1	6	2	—	0	2	17	7
Wyoming†	—	0	1	1	3	—	0	0	—	2
Pacific	1	4	13	207	118	2	4	13	224	220
Alaska	—	0	1	3	4	—	0	4	23	6
California	1	3	12	187	83	1	4	10	148	165
Hawaii	N	0	0	N	N	—	0	2	8	18
Oregon†	—	0	2	14	21	—	0	2	12	13
Washington	—	0	3	3	10	1	0	5	33	18
American Samoa	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	0	0	U	U	U	0	0	U	U
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	N	0	0	N	N	—	0	1	1	4
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.

U: Unavailable. —: No reported cases. N: Not notifiable.

Cum: Cumulative year-to-date counts.

Med: Median.

Max: Maximum.

*: Incidence data for reporting year 2006 is provisional.

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 9, 2006, and December 10, 2005 (49th Week)*

Table with 15 columns: Reporting area, Rabies, animal (Current week, Previous 52 weeks Med, Max, Cum 2006, Cum 2005), Rocky Mountain spotted fever (Current week, Previous 52 weeks Med, Max, Cum 2006, Cum 2005), Salmonellosis (Current week, Previous 52 weeks Med, Max, Cum 2006, Cum 2005).

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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending December 9, 2006, and December 10, 2005 (49th Week)*

Reporting area	West Nile virus disease†									
	Neuroinvasive					Non-neuroinvasive				
	Current week	Previous 52 weeks		Cum 2006	Cum 2005	Current week	Previous 52 weeks		Cum 2006	Cum 2005
		Med	Max				Med	Max		
United States	—	0	66	471	1,191	—	1	383	2,454	1,683
New England	—	0	2	3	9	—	0	2	3	4
Connecticut	—	0	2	3	4	—	0	1	2	2
Maine§	—	0	0	—	—	—	0	0	—	—
Massachusetts	—	0	0	—	4	—	0	1	1	2
New Hampshire	—	0	0	—	—	—	0	0	—	—
Rhode Island§	—	0	0	—	1	—	0	0	—	—
Vermont§	—	0	0	—	—	—	0	0	—	—
Mid. Atlantic	—	0	2	6	47	—	0	4	10	22
New Jersey	—	0	0	—	3	—	0	1	2	3
New York (Upstate)	—	0	1	3	19	—	0	1	3	5
New York City	—	0	1	2	11	—	0	2	4	3
Pennsylvania	—	0	1	1	14	—	0	1	1	11
E.N. Central	—	0	16	74	259	—	0	22	99	156
Illinois	—	0	10	44	137	—	0	19	70	115
Indiana	—	0	2	7	11	—	0	2	7	12
Michigan	—	0	3	14	54	—	0	1	2	8
Ohio	—	0	3	9	46	—	0	3	11	15
Wisconsin	—	0	0	—	11	—	0	2	9	6
W.N. Central	—	0	16	81	169	—	0	79	477	463
Iowa	—	0	3	9	14	—	0	4	13	23
Kansas	—	0	0	—	17	—	0	3	13	N
Minnesota	—	0	5	19	18	—	0	7	35	27
Missouri	—	0	1	4	17	—	0	2	12	13
Nebraska§	—	0	7	20	55	—	0	37	212	133
North Dakota	—	0	3	8	12	—	0	28	117	74
South Dakota	—	0	5	21	36	—	0	22	75	193
S. Atlantic	—	0	1	5	34	—	0	4	7	29
Delaware	—	0	0	—	1	—	0	0	—	1
District of Columbia	—	0	0	—	3	—	0	1	1	2
Florida	—	0	0	—	10	—	0	0	—	11
Georgia	—	0	0	—	9	—	0	3	5	11
Maryland§	—	0	1	5	4	—	0	1	1	1
North Carolina	—	0	0	—	2	—	0	0	—	2
South Carolina§	—	0	0	—	5	—	0	0	—	—
Virginia§	—	0	0	—	—	—	0	0	—	1
West Virginia	—	0	0	—	—	N	0	0	N	N
E.S. Central	—	0	4	14	65	—	0	16	94	38
Alabama§	—	0	1	1	6	—	0	0	—	4
Kentucky	—	0	0	—	5	—	0	1	1	—
Mississippi	—	0	3	9	39	—	0	16	91	31
Tennessee§	—	0	2	4	15	—	0	2	2	3
W.S. Central	—	0	19	81	157	—	0	26	208	150
Arkansas	—	0	0	—	13	—	0	2	5	15
Louisiana	—	0	0	—	—	—	0	9	81	54
Oklahoma	—	0	1	1	17	—	0	4	18	14
Texas§	—	0	19	80	127	—	0	15	104	67
Mountain	—	0	29	161	145	—	0	222	1,321	240
Arizona	—	0	5	21	52	—	0	12	58	61
Colorado	—	0	7	34	21	—	0	51	269	85
Idaho§	—	0	11	46	3	—	0	151	752	10
Montana§	—	0	2	11	8	—	0	7	21	17
Nevada§	—	0	3	13	14	—	0	13	75	17
New Mexico§	—	0	1	2	20	—	0	1	5	13
Utah	—	0	5	28	21	—	0	17	101	31
Wyoming§	—	0	3	6	6	—	0	8	40	6
Pacific	—	0	6	46	306	—	0	45	235	581
Alaska	—	0	0	—	—	—	0	0	—	—
California	—	0	6	44	305	—	0	33	182	575
Hawaii	—	0	0	—	—	—	0	0	—	—
Oregon§	—	0	1	2	1	—	0	12	50	6
Washington	—	0	0	—	—	—	0	2	3	—
American Samoa	U	0	0	U	U	U	0	0	U	U
C.N.M.I.	U	0	0	U	U	U	0	0	U	U
Guam	—	0	0	—	—	—	0	0	—	—
Puerto Rico	—	0	0	—	—	—	0	0	—	—
U.S. Virgin Islands	—	0	0	—	—	—	0	0	—	—

C.N.M.I.: Commonwealth of Northern Mariana Islands.

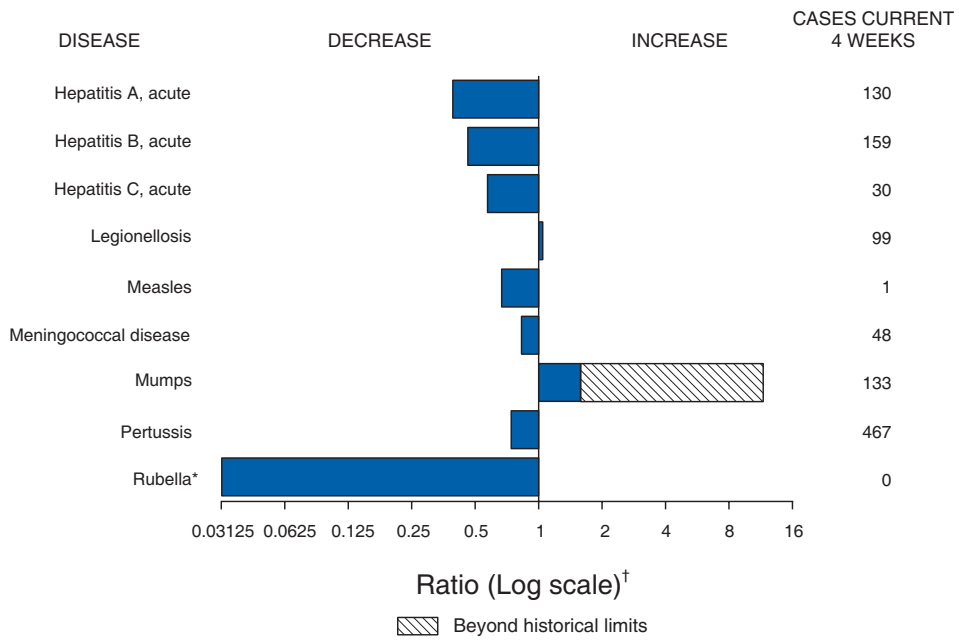
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§ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals December 9, 2006, with historical data



* No rubella cases were reported for the current 4-week period yielding a ratio for week 49 of zero (0).

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

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