



# MMWR™

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### Persons Tested for HIV — United States, 2006

Early diagnosis of human immunodeficiency virus (HIV) infection enables infected persons to obtain medical care that can improve the quality and length of their lives and adopt behaviors to prevent further HIV transmission. However, at the end of 2003, approximately one fourth of the estimated 1 million persons living with HIV remained unaware of their infection (1). Among all persons with HIV infection diagnosed in 2005, 38% received a diagnosis of acquired immunodeficiency syndrome (AIDS) within 1 year of their first positive HIV test (2). To reduce the number of persons with undiagnosed HIV infection, CDC issued recommendations in September 2006 to implement HIV screening as part of routine medical care for all persons aged 13–64 years (3). To establish a baseline for evaluating the effects of these recommendations and other strategies to increase HIV testing, CDC analyzed data from the National Health Interview Survey (NHIS). This report summarizes the results of that analysis, which indicated that testing rates remained nearly flat during 2001–2006. In 2006, 40.4% (an estimated 71.5 million persons) of U.S. adults aged 18–64 years reported ever being tested for HIV infection. In addition, 10.4% (an estimated 17.8 million persons) reported being tested in the preceding 12 months, and 23% of persons who acknowledged having HIV risk factors reported being tested in the preceding 12 months. These findings indicate that many persons in the United States have never been tested for HIV infection. Health-care providers should routinely screen all patients aged 13–64 years for HIV in accordance with CDC recommendations (3). New strategies are warranted to increase HIV testing, particularly among persons who are disproportionately affected by HIV infection.

NHIS is an annual, cross-sectional, multistage probability sample household survey that provides prevalence estimates for a broad range of health measures for the civilian, noninstitutionalized U.S. population (4). Estimates are based on in-person interviews with a nationally representative sample

of adults aged  $\geq 18$  years. In 2006, the response rate was 70.8% (4). This report presents NHIS data for adults aged 18–64 years living in the 50 states and District of Columbia.

Respondents were asked whether they had ever been tested for HIV (excluding tests done for blood donations), and if so, the month and year of their most recent test.\* Additional variables analyzed in 2006 included age, sex, race/ethnicity, region of residence, pregnancy status (of women aged 18–49 years) at the time of interview, HIV risk factor status, and type of testing setting. The survey did not elicit specific HIV-risk behaviors, but asked respondents to indicate whether any of a group of risk categories applied to them, without stating which category.† To examine trends in testing, percentages of persons tested were calculated using annual NHIS data for the period 1987–2006. Estimates were weighted for unequal selection probabilities and nonresponse, using statistical software designed to adjust for the complex sampling design.

\* Persons were asked: “Except for tests you may have had as part of blood donations, have you ever been tested for HIV?” and “Not including blood donations, in what month and year was your last test for HIV (the virus that causes AIDS)?”

† Persons were asked whether any of the following statements were true for them but not which applied to them: “You have hemophilia and have received clotting factor concentrations.” “You are a man who has had sex with other men (even just one time).” “You have taken street drugs by needle (even just one time).” “You have traded sex for money or drugs (even just one time).” “You have tested positive for HIV (the virus that causes AIDS).” or “You have had sex (even just one time) with someone who would answer ‘yes’ to any of these statements.”

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The method used for calculating the percentage of persons tested in this analysis differs from a previous analysis using NHIS data (5). In the previous analysis, respondents with missing data regarding HIV testing status were included in denominators, but lack of data for the numerator assumed they had not been tested. In this analysis, to minimize underestimation, such respondents (4.7% of the sample) were excluded from denominators. Therefore, the results of this analysis cannot be compared directly to the results in the previous report.

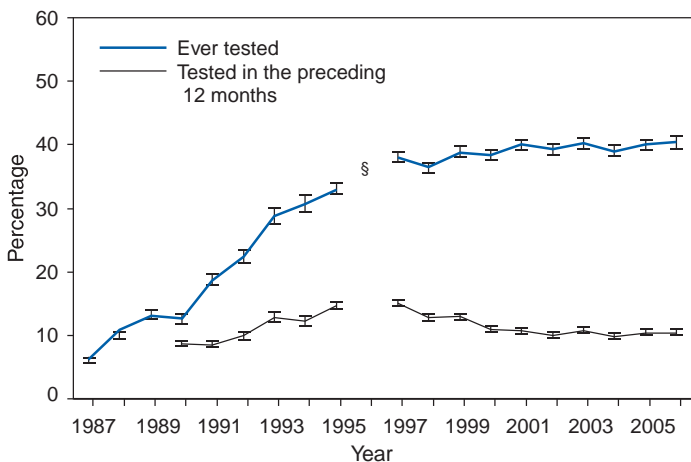
The percentage of persons ever tested for HIV increased from 6.0% in 1987 to 38.0% in 1997, and then ranged from 36.4% to 38.4% during 1998–2000 (Figure). Since 2001, the percentages have remained stable, at approximately 40%. In 2006, 40.4% of respondents (an estimated 71.5 million persons) reported ever being tested for HIV. The percentage of persons who reported being tested for HIV in the preceding 12 months increased from 6.9% in 1990 to 15.0% in 1997, and then declined to 11.0% in 2000. These percentages remained stable at approximately 10% during 2001–2006 (Figure). In 2006, 10.4% of respondents (an estimated 17.8 million persons) reported being tested in the preceding 12 months.

In 2006, greater percentages of persons aged 18–34 years, women, and residents of the South region of the United States reported being tested for HIV during the preceding 12 months than did persons aged 35–64 years, men, and residents of other regions (Table 1). Among racial/ethnic populations, the greatest percentage tested was among non-Hispanic blacks, compared with Hispanics and non-Hispanic whites (21.7% versus 12.6% and 8.0%, respectively). Among women who were pregnant at the time of interview, 60.7% reported being tested for HIV in the preceding 12 months, compared with 12.8% of nonpregnant women. Among respondents who reported having an HIV risk factor, 23.0% reported having been tested for HIV in the preceding 12 months, compared with 10.1% of those who did not report having an HIV risk factor (Table 1).

By testing setting, 82.6% (an estimated 14.6 million persons) of those persons who reported being tested for HIV in the preceding 12 months reported being tested in a clinical setting (Table 2); 53.2% (an estimated 9.4 million persons) reported being tested in a private doctor/health maintenance organization setting, and 17.6% (an estimated 3.1 million persons) reported being tested in a hospital, emergency room, or outpatient clinic. In addition, 16.7% of those persons who reported being tested for HIV in the preceding 12 months were tested at sites that are primarily publicly funded.<sup>§</sup>

<sup>§</sup> Includes certain clinical settings (public health department clinic, drug treatment facility, family planning clinic, prenatal clinic, sexually transmitted disease clinic, community health clinic, and other clinic), and one nonclinical setting (AIDS clinic/counseling and testing site).

**FIGURE.** Percentage of persons aged 18–64 years who reported ever being tested for HIV\* (excluding blood donations) and those persons who were tested for HIV in the preceding 12 months — National Health Interview Survey, United States, 1987–2006



\* Human immunodeficiency virus.  
 † Confidence interval.  
 § Questions regarding HIV testing were not included in the 1996 National Health Interview Survey.

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**Editorial Note:** During 2001–2006, HIV testing rates among adults remained nearly flat. The percentage of persons who reported ever being tested for HIV was approximately 40%. The number of persons being tested during each 12-month period also remained stable. These results suggest that, during 2001–2006, some persons were tested repeatedly while the majority of persons remained untested. The proportion of persons who are tested repeatedly is unknown. However, in 2005, 67% of persons tested at sites that are primarily publicly funded reported having had a previous HIV test (CDC, unpublished data, 2005).

After several years of steady increases in overall testing associated with targeted strategies, the data in this report suggest that progress in HIV testing stalled in the mid- to late- 1990s and new strategies such as expanded screening in health-care settings appear to be warranted. However, barriers to promoting expanded screening in health-care settings exist, including lack of coverage for HIV screening by some health insurance carriers, laws or regulations requiring pretest counseling and written consent in several states, competing priorities in busy clinical settings, and limited resources for care of persons with an HIV-positive test result. In addition, 77.0% of persons with HIV risk factors were not tested in the preceding 12 months; annual testing of persons with HIV risk

**TABLE 1.** Percentage and estimated number of persons aged 18–64 years who reported being tested for HIV\* (excluding blood donations) in the preceding 12 months, by age group, sex, race/ethnicity, region of residence, pregnancy status, and HIV risk status — National Health Interview Survey, United States, 2006

Characteristic	Sample size	% tested (95% CI) <sup>†</sup>	Estimated no. of persons in United States tested (1,000s)	(95% CI)
<b>Age group (yrs)</b>				
18–24	2,533	15.7 (14.1–17.4)	4,254	(3,753–4,755)
25–34	4,077	15.4 (14.1–16.7)	5,601	(5,066–6,136)
35–44	4,271	9.9 (8.9–10.9)	3,897	(3,460–4,335)
45–64	7,180	5.9 (5.3–6.6)	4,022	(3,570–4,474)
<b>Sex</b>				
Men	8,167	9.1 (8.4–9.9)	7,671	(7,028–8,314)
Women	9,894	11.6 (10.9–12.3)	10,104	(9,407–10,801)
<b>Race/Ethnicity</b>				
White, non-Hispanic	10,252	8.0 (7.4–8.5)	9,162	(8,443–9,881)
Black, non-Hispanic	2,978	21.7 (19.6–23.9)	4,420	(3,901–4,939)
Hispanic	3,509	12.6 (11.2–13.9)	3,079	(2,724–3,433)
Other <sup>§</sup>	1,281	10.0 (8.0–11.9)	1,064	(832–1,297)
<b>Region of residence<sup>¶</sup></b>				
Northeast	3,029	10.6 (9.3–11.8)	3,160	(2,701–3,620)
Midwest	3,881	9.1 (8.1–10.1)	3,636	(3,178–4,093)
South	6,902	12.1 (11.2–13.0)	7,833	(7,220–8,446)
West	4,249	8.6 (7.7–9.6)	3,146	(2,758–3,534)
<b>Pregnant at time of interview<sup>**</sup></b>				
Yes	263	60.7 (53.5–67.9)	1,358	(1,116–1,600)
No	6,848	12.8 (11.9–13.7)	7,696	(7,069–8,323)
<b>Had HIV risk factors<sup>††</sup></b>				
Yes	524	23.0 (17.7–28.3)	1,075	(766–1,384)
No	17,162	10.1 (9.6–10.6)	16,430	(15,523–17,339)
<b>Total</b>	<b>18,061</b>	<b>10.4 (9.9–10.9)</b>	<b>17,775</b>	<b>(16,803–18,747)</b>

\* Human immunodeficiency virus.  
 † Confidence interval.  
 § Includes American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, and other races.  
 ¶ **Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.  
 \*\* Pregnancy status was asked of women aged 18–49 years.  
 †† Persons were asked if any of the following statements were true for them but not which applied to them: “You have hemophilia and have received clotting factor concentrations.” “You are a man who has had sex with other men (even just one time).” “You have taken street drugs by needle (even just one time).” “You have traded sex for money or drugs (even just one time).” “You have tested positive for HIV (the virus that causes AIDS).” or “You have had sex (even just one time) with someone who would answer ‘yes’ to any of these statements.”

factors has been recommended by CDC since 2006 (3). Additional testing strategies also are needed in the community to reach persons without access to health care.

Routine prenatal HIV screening has been recommended by CDC since 1995 and by the American College of Obstetricians and Gynecologists since 1999 (6). However, among women who were pregnant at the time of their NHIS interview in 2006, 60.7% reported being tested for HIV infection

**TABLE 2. Percentage and estimated number of persons aged 18–64 years who reported being tested for HIV\* (excluding blood donations) in the preceding 12 months, by selected testing settings — National Health Interview Survey, United States, 2006**

Testing setting	% tested (N = 18,061)		Estimated no. of persons in United States tested	
		(95% CI) <sup>†</sup>	(1,000s)	(95% CI)
<b>Clinical</b>	<b>82.6</b>	<b>(80.6–84.6)</b>	<b>14,611</b>	<b>(13,855–15,367)</b>
Private doctor/Health maintenance organization	53.2	(50.8–55.7)	9,415	(8,808–10,021)
Hospital, emergency room, outpatient clinic	17.6	(15.6–19.5)	3,106	(2,737–3,473)
Public health department clinic	5.0	(3.9–6.0)	879	(688–1,070)
Drug treatment facility	0.4	(0.0–0.7)	61	(6–115)
Correctional facility	0.4	(0.0–0.8)	68	(0–149)
Family planning clinic	1.7	(1.1–2.3)	304	(195–413)
Prenatal clinic	0.5	(0.2–0.7)	81	(33–129)
Sexually transmitted disease (STD) clinic	0.0	(0.0–0.1)	6	(0–19)
Community health clinic	2.1	(1.5–2.7)	371	(261–481)
Other clinic	1.8	(0.9–2.7)	315	(157–471)
<b>Nonclinical</b>	<b>17.4</b>	<b>(14.2–20.6)</b>	<b>3,083</b>	<b>(2,483–3,684)</b>
AIDS <sup>§</sup> clinic/Counseling and testing site	5.3	(4.0–6.7)	945	(691–1,200)
Home	4.6	(3.5–5.7)	811	(621–1,002)
Employer or insurance company clinic	0.3	(0.1–0.6)	56	(14–99)
Military induction or military service site	2.5	(1.7–3.3)	446	(301–592)
Immigration site	0.7	(0.2–1.3)	127	(32–222)
Other nonclinical setting	3.9	(2.8–5.1)	696	(481–911)
<b>Total</b>	<b>100.0</b>		<b>17,775</b>	<b>(16,803–18,747)</b>
<b>Primarily publicly funded sites<sup>¶</sup></b>	<b>16.7</b>	<b>(14.7–18.6)</b>	<b>2,962</b>	<b>(2,569–3,357)</b>

\* Human immunodeficiency virus.

<sup>†</sup> Confidence interval.<sup>§</sup> Acquired immunodeficiency syndrome.<sup>¶</sup> Includes certain clinical settings (public health department clinic, drug treatment facility, family planning clinic, prenatal clinic, STD clinic, community health clinic, and other clinic), and one nonclinical setting (AIDS clinic/counseling and testing site).

in the preceding 12 months. That percentage is considerably lower than rates of screening reported for other infectious diseases. During 1998–1999, rates of prenatal screening at eight sentinel surveillance sites were >95% for hepatitis B, rubella, and syphilis (7). One possible reason for the relatively lower rate of HIV testing among pregnant women is that HIV testing, unlike these other infectious diseases, is not currently included by the American Medical Association as one of the defined components of the obstetric panel Common Procedural Terminology (CPT) code, which includes blood count, HBsAg, rubella antibody, syphilis screen, and blood type and group.

Although a greater percentage (21.7%) of non-Hispanic blacks reported being tested in the preceding 12 months than non-Hispanic whites or Hispanics, non-Hispanic blacks are disproportionately affected by HIV/AIDS. In 2006, non-Hispanic blacks accounted for 49% of all reported cases of HIV/AIDS (2); in addition, during 1999–2002, the HIV prevalence among non-Hispanic blacks was 2.1%, compared with 0.4% in the overall U.S. population (8).

The findings in this report are subject to at least three limitations. First, NHIS data are self-reported and subject to recall bias and potential underreporting of sensitive information such as

HIV testing, HIV risk factor status, and use of potentially stigmatized health-care services (e.g., sexually transmitted disease clinics). Second, NHIS excludes active military personnel and those who live outside of households (e.g., persons who are incarcerated, in long-term care institutions, or homeless). Certain persons in these populations might be at greater risk for HIV infection than persons in households. Finally, the NHIS sample does not include persons aged 13–17 years, who are included in CDC's 2006 HIV testing recommendations.

The findings help confirm that new strategies are warranted to increase HIV testing, particularly among persons who are disproportionately affected by HIV infection. These include the 2006 recommendations (3) and CDC's Heightened National Response to the HIV/AIDS Crisis in the African American Community initiative, which is pursuing various efforts to increase testing (9). In addition, as part of the President's Domestic HIV Initiative, in 2007, CDC allocated funds to 23 jurisdictions to expand routine HIV testing in clinical settings, primarily among blacks. The goals for this initiative are to test approximately 1 million persons and identify 20,000 HIV-infected persons who were previously unaware of their infection. Other federal agencies are collaborating to increase testing. The Substance Abuse and Mental Health Ser-

vices Administration has funded 67 grantees in 25 states to increase HIV testing among blacks affected by substance abuse, and the Office of Population Affairs has funded 41 grantees in 34 states to expand HIV testing services in family planning clinics.

The analysis in this report will be used by CDC's Assessment of HIV Testing in Clinical Settings project to establish a baseline for HIV testing levels in clinical settings that can help assess the effect of the 2006 recommendations and the 2007 new initiatives to increase testing. The project also will develop an analysis plan to monitor HIV testing in clinical settings since release of the 2006 recommendations and describe successful strategies used to overcome barriers to testing. HIV testing is an integral part of a comprehensive HIV prevention strategy (10), in which all persons have the opportunity to know their infection status and have access to services needed to prevent transmission and disease progression.

#### Acknowledgments

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#### References

1. Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003 [Abstract T1-B1101]. In: programs and abstracts of the 2005 National HIV Prevention Conference; June 12–15, 2005; Atlanta, GA. Available at <http://www.aegis.com/conferences/nhivpc/2005/t1-b1101.html>.
2. CDC. HIV/AIDS surveillance report, 2006, Vol. 18. Atlanta, GA: US Department of Health and Human Services, CDC; 2008. <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2006report/default.htm>.
3. CDC. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR* 2006;55 (No. RR-14).
4. Pleis JR, Lethbridge-Cejku M. Summary health statistics for U.S. adults: National Health Interview Survey, 2006. *Vital Health Stat* 10 2007;235.
5. CDC. Number of persons tested for HIV—United States, 2002. *MMWR* 2004;53:1110–3.
6. Human Immunodeficiency Virus Screening. Joint Statement of the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists. *Pediatrics* 1999;104(1 Pt 1):128.
7. Schrag SJ, Arnold KE, Mohle-Boetani JC, et al. Prenatal screening for infectious diseases and opportunities for prevention. *Obstet Gynecol* 2003;102:753–60.
8. McQuillan G, Kruszon-Moran D, Kottiri B, et al. Prevalence of HIV in the U.S. household population: the National Health and Nutrition Examination Surveys, 1988 to 2002. *J Acquir Immune Defic Syndr* 2006;41:651–6.
9. CDC. Racial/ethnic disparities in diagnoses of HIV/AIDS—33 states, 2001–2005. *MMWR* 2007;56:189–93.
10. CDC. Advancing HIV prevention: new strategies for a changing epidemic—United States, 2003. *MMWR* 2003;52:329–32.

## Smoking Prevalence Among Women of Reproductive Age — United States, 2006

Cigarette smoking continues to be the leading cause of preventable morbidity and mortality in the United States. Women of reproductive age (18–44 years) who smoke risk adverse pregnancy outcomes and adverse health consequences for themselves. They also are exposing their children to second-hand smoke and modeling behavior that will increase the likelihood that their children will become smokers. CDC analyzed state-specific prevalence of smoking and attempts to quit among women of reproductive age, using 2006 data from the Behavioral Risk Factor Surveillance System (BRFSS). The data indicated a six-fold difference between the state and territory with the highest and lowest prevalence (range: 5.8% [U.S. Virgin Islands (USVI)]–34.7% [Kentucky]). Among women of reproductive age, those aged 18–24 years were most likely to have attempted to quit (68.4%), but least likely to have quit smoking (26.3%). Successful prevention and cessation interventions for this group of women can protect their own and their children's health.

BRFSS is a state-based, random-digit-dialed telephone survey of the noninstitutionalized, U.S. civilian population aged  $\geq 18$  years. Estimates were weighted by age and sex distribution for each state and area population, data were adjusted for nonresponse, and 95% confidence intervals were calculated. Statistical software was used to account for the complex sampling design. Aggregated data were examined to determine the prevalence of current smokers, percentage of ever smokers who had quit, and quit attempts by age, race/ethnicity, education, and marital status among women of reproductive age. Puerto Rico and USVI were excluded in the calculation of median prevalence rates for current smoking, percentage ever smokers who had quit, and quit attempts. Median response rate across 50 states and the District of Columbia was 51.4% (range: 35.1% [New Jersey] to 66.0% [Nebraska]).

Respondents were asked, "Have you smoked at least 100 cigarettes in your entire life?" and "Do you now smoke cigarettes every day, some days, or not at all?" Current smokers were defined as those who reported having smoked  $\geq 100$  cigarettes during their lifetime and who currently smoke every day or some days. Former smokers were defined as those who reported having smoked  $\geq 100$  cigarettes during their lifetime and currently do not smoke. Never smokers were defined as those who reported not smoking  $\geq 100$  cigarettes during their lifetime. Quit attempt was defined as the percentage of daily smokers (a subset of current smokers) who had quit for at least 1 day in the past year because they were trying to quit

smoking. The percentage of ever smokers who had quit is the number of former smokers divided by the number of ever smokers. The analysis only included women aged 18–44 years.

Median state prevalence of current smoking was 22.4% (Table 1). Smoking prevalence was highest among non-Hispanic whites (24.5%), those with a high school diploma (29.4%), those with less than a high school diploma (28.3%), and divorced, widowed, or separated women (34.7%), but did not differ by age group (Table 2).

The percentage of ever smokers who had quit varied among states and territories. USVI (51.0%) and California (50.4%) had the highest rates, whereas Louisiana (26.8%) and Mississippi (27.3%) had the lowest rates. Among ever smokers who had quit, college graduates (59.7%) and married women (49.6%) had the highest percentages, and women aged 18–24 years (26.3%), non-Hispanic blacks (24.5%), and those with less than a high school diploma (24.7%) had the lowest percentages.

For daily smokers who made a quit attempt, the highest percentages occurred among women aged 18–24 years (68.4%) and non-Hispanic blacks (68.1%). The highest proportion of those who made a quit attempt in the previous year lived in Delaware (67.7%), followed by Puerto Rico (66.6%); the lowest proportions were in Arizona (33.6%) and Kentucky (43.4%).

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**Editorial Note:** The prevalence of smoking among women of reproductive age (aged 18–44 years) in 2006 is similar to results obtained from the Pregnancy Risk Assessment and Monitoring System (PRAMS), which measures the range of maternal tobacco use from 26 reporting areas (2004: 12.3% [Utah] to 39.5% [West Virginia]) (1). A gradual decline in the median state smoking prevalence among women of reproductive age occurred from 1996 (25.9%) to 2006 (22.4%). The 22.4% median smoking prevalence for women of reproductive age reported here is higher than the 18.5% median smoking prevalence reported for women aged  $\geq 18$  years in a separate study of the general population (2). However, prevalence of current smoking, percentage of ever smokers who had quit smoking, and percentage of quit attempts by selected demographics were similar to the prevalences reported in that study. These comparisons are not exact because of a difference in the age range examined in these two studies.

In this analysis, large variations among states were observed in smoking prevalence, the percentage of ever

**TABLE 1. Prevalence of current smokers,\* percentage of ever smokers who had quit,† and percentage of daily smokers who made a quit attempt in the past year,‡ among women of reproductive age (18–44 years), by state — Behavioral Risk Factor Surveillance System, United States, 2006**

State/Area	Current smokers		Ever smokers who had quit		Daily smokers who made a quit attempt	
	%	(95% CI) <sup>¶</sup>	%	(95% CI)	%	(95% CI)
Alabama	23.4	(19.6–27.2)	38.4	(31.9–45.0)	58.0	(48.3–67.7)
Alaska	26.8	(21.5–32.1)	41.9	(33.7–50.0)	58.0	(43.4–72.6)
Arizona	14.9	(11.0–18.8)	44.5	(34.4–54.5)	33.6	(19.1–48.1)
Arkansas	26.7	(23.5–29.8)	35.4	(30.2–40.7)	58.8	(51.0–66.6)
California	12.1	(10.0–14.2)	50.4	(44.0–56.7)	49.3	(38.5–60.1)
Colorado	19.2	(16.8–21.7)	43.0	(37.9–48.0)	56.7	(48.2–65.1)
Connecticut	18.5	(16.1–20.9)	48.6	(43.7–53.5)	52.5	(43.9–61.1)
Delaware	24.5	(19.8–29.2)	39.8	(32.4–47.1)	67.7	(56.4–79.1)
District of Columbia	14.8	(12.0–17.7)	49.3	(42.3–56.3)	66.4	(54.0–78.8)
Florida	22.4	(19.8–24.9)	35.4	(30.7–40.1)	52.7	(45.0–60.4)
Georgia	19.5	(17.1–21.9)	38.7	(33.4–44.0)	58.9	(51.2–66.7)
Hawaii	19.3	(16.3–22.2)	43.9	(37.9–50.0)	55.2	(44.8–65.7)
Idaho	17.8	(15.1–20.4)	43.5	(37.4–49.6)	52.7	(43.4–62.1)
Illinois	19.5	(16.5–22.4)	43.2	(37.1–49.3)	56.6	(46.6–66.7)
Indiana	27.0	(24.1–30.0)	32.5	(28.0–36.9)	48.6	(41.2–56.0)
Iowa	24.8	(21.7–28.0)	37.8	(32.5–43.1)	45.5	(37.0–54.0)
Kansas	19.0	(16.6–21.3)	43.3	(38.3–48.2)	61.4	(54.0–68.9)
Kentucky	34.7	(31.1–38.4)	28.9	(23.8–34.0)	43.4	(36.5–50.2)
Louisiana	25.2	(22.7–27.7)	26.8	(22.8–30.8)	57.3	(51.0–63.5)
Maine	26.7	(22.7–30.6)	41.5	(35.8–47.3)	61.1	(52.3–69.9)
Maryland	17.0	(14.9–19.1)	43.1	(38.2–48.1)	60.3	(52.9–67.8)
Massachusetts	20.0	(17.5–22.5)	44.2	(39.6–48.8)	49.2	(41.5–56.9)
Michigan	24.5	(21.6–27.5)	35.6	(30.5–40.6)	62.7	(55.0–70.4)
Minnesota	22.7	(19.2–26.1)	43.4	(37.2–49.6)	61.8	(52.3–71.4)
Mississippi	26.3	(23.2–29.3)	27.3	(22.5–32.0)	64.4	(57.3–71.5)
Missouri	27.5	(23.4–31.6)	35.6	(29.2–42.1)	62.6	(53.8–71.5)
Montana	25.0	(21.8–28.3)	34.8	(29.4–40.2)	60.0	(51.0–69.0)
Nebraska	21.9	(18.9–24.8)	39.8	(34.1–45.5)	58.6	(50.5–66.8)
Nevada	20.3	(15.8–24.8)	43.7	(34.1–53.4)	53.6	(40.2–67.0)
New Hampshire	22.3	(19.4–25.3)	45.1	(40.0–50.1)	60.5	(52.2–68.8)
New Jersey	16.6	(14.6–18.6)	46.9	(42.5–51.4)	58.8	(50.9–66.7)
New Mexico	19.8	(17.0–22.6)	41.4	(35.7–47.2)	65.8	(57.4–74.1)
New York	22.1	(19.2–25.1)	36.2	(31.2–41.3)	59.6	(51.0–68.2)
North Carolina	22.6	(20.7–24.5)	36.8	(33.3–40.4)	56.1	(50.9–61.3)
North Dakota	23.6	(19.7–27.4)	35.8	(29.2–42.5)	52.4	(40.9–63.9)
Ohio	24.9	(20.2–29.5)	36.0	(27.8–44.2)	58.0	(45.8–70.3)
Oklahoma	25.7	(23.1–28.4)	31.9	(27.5–36.4)	55.3	(48.5–62.1)
Oregon	22.1	(19.0–25.2)	37.3	(31.6–42.9)	56.9	(47.5–66.3)
Pennsylvania	26.2	(23.0–29.3)	39.3	(34.3–44.4)	56.0	(48.1–63.9)
Rhode Island	23.7	(19.8–27.7)	40.6	(34.0–47.3)	60.3	(48.9–71.7)
South Carolina	22.3	(19.8–24.8)	39.8	(35.1–44.5)	53.0	(45.5–60.5)
South Dakota	22.6	(19.4–25.9)	40.9	(35.0–46.9)	59.7	(49.8–69.5)
Tennessee	24.9	(21.0–28.8)	35.4	(29.0–41.7)	63.7	(54.6–72.8)
Texas	15.9	(12.9–18.9)	39.3	(31.7–46.9)	58.1	(46.5–69.7)
Utah	10.0	(7.8–12.2)	49.8	(41.9–57.6)	57.8	(44.6–71.1)
Vermont	22.0	(19.2–24.9)	45.7	(40.5–50.9)	56.3	(48.2–64.4)
Virginia	23.6	(19.9–27.3)	37.0	(30.7–43.3)	62.3	(52.5–72.0)
Washington	18.1	(16.6–19.6)	47.2	(44.1–50.4)	57.1	(51.9–62.3)
West Virginia	34.0	(29.7–38.4)	32.2	(26.1–38.2)	55.4	(46.8–64.1)
Wisconsin	24.1	(20.7–27.5)	43.1	(37.1–49.2)	55.1	(46.1–64.1)
Wyoming	22.4	(19.2–25.6)	41.5	(35.6–47.5)	58.7	(49.7–67.6)
<b>Median</b>	<b>22.4</b>		<b>39.8</b>		<b>58.0</b>	
Puerto Rico	10.2	(8.1–12.3)	43.6	(35.6–51.6)	66.6	(54.1–79.2)
U.S. Virgin Islands	5.8	(4.0–7.6)	51.0	(39.8–62.2)	52.0	(32.7–71.4)

\* Women aged 18–44 years who reported having smoked  $\geq 100$  cigarettes during their lifetime and who currently smoke every day or some days.

† Percentage of women ever smokers (i.e. persons who reported having smoked  $\geq 100$  cigarettes during their lifetime) who reported no current smoking.

‡ Percentage of women who smoke every day and who had quit at least 1 day in the past year.

¶ Confidence interval.

**TABLE 2. Prevalence of current smokers,\* percentage of ever smokers who had quit,† and percentage of daily smokers who made a quit attempt in the past year,‡ among women of reproductive age (18–44 years), by selected characteristics — Behavioral Risk Factor Surveillance System, United States, 2006**

Characteristic	Current smokers		Ever smokers who had quit		Daily smokers who made a quit attempt	
	%	(95% CI)*	%	(95% CI)	%	(95% CI)
<b>Age group (yrs)</b>						
18–24	21.9	(20.3–23.4)	26.3	(23.2–29.3)	68.4	(64.8–72.0)
25–35	19.7	(18.8–20.5)	40.9	(39.2–42.6)	60.5	(58.2–62.7)
36–44	20.2	(19.4–21.0)	46.2	(44.6–47.9)	58.3	(56.1–60.5)
<b>Race/Ethnicity</b>						
White, non-Hispanic	24.5	(23.7–25.2)	40.4	(39.1–41.6)	61.0	(59.3–62.7)
Black, non-Hispanic	16.3	(14.8–17.8)	24.5	(21.3–27.7)	68.1	(63.5–72.7)
Hispanic	10.5	(9.3–11.7)	45.8	(41.4–50.2)	62.5	(56.6–68.4)
Other	18.5	(16.0–21.0)	37.8	(32.3–43.2)	63.4	(56.4–70.4)
<b>Education**</b>						
Less than high school diploma	28.3	(25.6–30.9)	24.7	(21.0–28.4)	63.2	(58.6–67.8)
High school diploma or GED††	29.4	(28.1–30.8)	35.3	(33.3–37.3)	57.2	(54.7–59.8)
Some college	23.6	(22.4–24.7)	43.7	(41.6–45.8)	59.9	(57.2–62.5)
College graduate	9.9	(9.2–10.6)	59.7	(57.5–62.0)	60.0	(56.3–63.7)
<b>Marital status</b>						
Married	15.8	(15.2–16.5)	49.6	(48.0–51.1)	61.6	(59.4–63.7)
Divorced/Widowed/ Separated	34.7	(32.9–36.6)	30.4	(28.0–32.8)	60.3	(57.3–63.2)
Never married	23.5	(22.3–24.7)	29.0	(26.8–31.2)	63.0	(60.2–65.7)

\* Women who reported having smoked  $\geq 100$  cigarettes during their lifetime and who currently smoke every day or some days.

† Percentage of women ever smokers (i.e., persons who reported having smoked  $\geq 100$  cigarettes during their lifetime) who reported no current smoking.

‡ Percentage of women who smoke every day and who had quit at least 1 day in the past year.

§ Confidence interval.

\*\* Women aged  $\geq 25$  years.

†† General Education Development diploma.

smokers who had quit, and quit attempts. The variations are likely the result of differences in socioeconomic determinants (e.g., race/ethnicity, education, marital status) of smoking, differing social norms regarding tobacco use, and variation in implementation of tobacco control programs and policies in states.

Women of reproductive age who smoke are at increased risk for multiple adverse pregnancy-related health outcomes, including difficulty conceiving, infertility, spontaneous abortion, premature rupture of membranes, low birth weight, neonatal mortality, stillbirth, preterm delivery, and sudden infant death syndrome (SIDS) (3). These smoking-related adverse reproductive health outcomes are associated with substantial economic and societal costs. Estimated neonatal health care costs attributable to maternal smoking are approximately \$366 million per year in the United States (4). In addition, women who smoke are at increased risk for adverse health outcomes, including lung and other cancers, chronic obstructive pulmonary disease, and heart disease (3). Smoking cessation is beneficial at any age, but the relative benefits of cessation are greater if women can stop smoking at younger ages, before they develop smoking-related diseases (3). In addition,

parents who smoke often expose their children to secondhand smoke, with associated adverse health consequences and economic costs, and model smoking behavior to their children, potentially increasing the likelihood that their children will become smokers (5).

The findings in this report are subject to at least three limitations. First, BRFSS does not survey persons in households without landline telephones or those in wireless-only telephone households, populations that might be more likely to include smokers (6,7). Preliminary findings from the National Health Interview Survey (NHIS) indicate that 10.5% of women lived in households with only wireless telephones in 2006 (8). Those findings also indicate that 25.2% of adults aged 18–24 years, 29.1% of adults aged 25–29 years, and 12.4% of adults aged 30–44 years lived in households with only wireless telephones in 2006 (7). The exclusion of persons with wireless-only telephone service might have led to underestimation of smoking prevalence. Second, the median response rate was 51.4% (range: 35.1%–66.0%). Low response rates indicate a potential for response bias; however, BRFSS estimates for current cigarette smoking are generally comparable with smoking estimates from surveys with higher response rates (6). Finally, estimates for cigarette smoking and smoking cessation attempts are based on self-report and are not validated by biochemical tests. However, self-reported data on current smoking status have high validity (6).

The 2006–2007 Annual Report of the President's Cancer Panel described tobacco use as the number one cause of preventable death in the United States and the second leading cause of death in the world. Worldwide, approximately 10 million tobacco-related deaths will occur each year by 2020 if current tobacco use trends continue, with more than 1 billion tobacco-related deaths in the 21st century (8). The Institute of Medicine (IOM) has called for increasing the federal excise tax on cigarette substantially and dedicating a portion of the higher taxes or other resources to fund tobacco control efforts in each state (9). The IOM also recommends that states maintain a comprehensive integrated tobacco control strategy and fund tobacco control activities at the level recommended by CDC (9). Evidence-based comprehensive tobacco control programs that can prevent initiation, increase cessation, and eliminate exposure to secondhand smoke should be used to reduce smoking among women of reproductive age (10). The prevention and reduction of tobacco use among women of reproductive age are essential to reduce the burden of reproductive health complications from smoking and adverse health effects of children's exposure to secondhand smoke, and to improve the life expectancy of the women themselves.

## References

1. CDC. Preconception and interconception health status of women who recently gave birth to a live-born infant—Pregnancy Risk Assessment Monitoring System (PRAMS)—United States, 26 reporting areas, 2004. *MMWR* 2007;56(No. SS-10).
2. CDC. State-specific prevalence of cigarette smoking among adults and quitting among persons aged 18–35 years—United States, 2006. *MMWR* 2007;56:38:993–6.
3. US Department of Health and Human Services. Women and smoking: a report of the Surgeon General. Rockville, MD: US Department of Health and Human Services; 2001. Available at [http://www.cdc.gov/tobacco/data\\_statistics/sgr/sgr\\_2001/sgr\\_women\\_chapters.htm](http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2001/sgr_women_chapters.htm).
4. Adams EK, Miller VP, Ernst C, Nishimura BK, Melvin C, Merritt R. Neonatal health care costs related to smoking during pregnancy. *Health Econ* 2002;11:193–206.
5. Clark PI, Schooley MW, Pierce B, Schulman J, Hartman AM, Schmitt CL. Impact of home smoking rules on smoking patterns among adolescents and young adults. *Prev Chronic Dis* 2006;3:A41. Available at [http://www.cdc.gov/pcd/issues/2006/apr05\\_0028.htm](http://www.cdc.gov/pcd/issues/2006/apr05_0028.htm).
6. CDC. Behavioral Risk Factor Surveillance System. Comparability of data: BRFSS 2006. Available at [http://www.cdc.gov/brfss/technical\\_infodata/surveydata/2006/compare\\_06.rtf](http://www.cdc.gov/brfss/technical_infodata/surveydata/2006/compare_06.rtf).
7. Blumberg SJ, Luke JV. Wireless substitution: early release of estimates based on data from the National Health Interview Survey, July–December 2006. Available at <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200705.pdf>.
8. US Department of Health and Human Services. Promoting healthy lifestyles: policy, program, and personal recommendations for reducing cancer risk; 2007. Bethesda, MD: US Department of Health and Human Services, National Institutes of Health/National Cancer Institute; 2007. Available at <http://deainfo.nci.nih.gov/advisory/pcp/pcp07rpt/pcp07rpt.pdf>.
9. Institute of Medicine. Ending the tobacco problem: a blueprint for the nation. Washington, DC: National Academies Press; 2007. Available at <http://www.iom.edu/CMS/3793/20076/43179.aspx>.
10. CDC. Best practices for comprehensive tobacco control programs—2007. Atlanta: US Department of Health and Human Services, CDC; 2007. Available at [http://www.cdc.gov/tobacco/tobacco\\_control\\_programs/stateandcommunity/best\\_practices](http://www.cdc.gov/tobacco/tobacco_control_programs/stateandcommunity/best_practices).

## Fatal Fires Associated with Smoking During Long-Term Oxygen Therapy — Maine, Massachusetts, New Hampshire, and Oklahoma, 2000–2007

Approximately 1 million persons in the United States receive long-term oxygen therapy (LTOT) annually through the Medicare program, most often for smoking-related lung disease (1,2). At 2:10 a.m. on December 14, 2007, a fire occurred in a public housing project for the elderly in Westbrook, Maine. Approximately 60 residents were evacuated; six were transported to a hospital for smoke inhalation. The fire was caused unintentionally by a woman aged 57 years who was an overnight guest of a relative who lived in the housing project. The visitor had ignited the fire while simulta-

neously smoking and using an oxygen concentrator.\* After this incident, the Maine Department of Health and Human Services, in collaboration with three other states, attempted to determine 1) how often this type of event results in fatalities and 2) factors common to these incidents that might be amenable to prevention. This report describes the results of that study, which found that, during 2000–2007, of the 38 deaths identified in the four states, 37 occurred in private residences, and the median age of the decedents was 67 years. Prevention of this type of fatality is dependent on smoking cessation, careful assessment of the need for LTOT, and strategies to prevent injuries from fires, such as smoke alarms and sprinklers.

Three other states (Massachusetts, New Hampshire, and Oklahoma) agreed to join Maine in the study. A case was defined as a fatality resulting from a fire caused by smoking during LTOT by a resident of one of the four states during 2000–2007. In Maine, Massachusetts, and New Hampshire, cases were identified by state fire marshals, based on information provided by immediate survivors and household members and investigation of the scene by fire officials. Supplementary information for certain cases was available from medical examiners, death certificates, and newspaper accounts. In Oklahoma, cases were identified using the state burn registry, which relies on multiple data sources, including medical examiner reports, burn center medical records, fire marshal and fire department reports, and media accounts (3). Burns and smoke inhalation injuries resulting in hospitalization or death have been a reportable condition in Oklahoma since 1986 but have not been reportable in the other three states.

A total of 38 cases were identified: five in Maine, three in New Hampshire, 11 in Massachusetts, and 19 in Oklahoma. All incidents involved a single fatality except for one fire that resulted in two deaths. The overall fatality rate for the four states was 3.8 deaths per 10 million population per year. The highest fatality rate was in Oklahoma (6.7 per 10 million population), followed by Maine (4.8), New Hampshire (2.9), and Massachusetts (2.1). Decedents ranged in age from 9 to 87 years (median: 67 years); the death of a child aged 9 years was the only fatality involving a minor. Twenty-four (63%) decedents were female. Thirty-four (89%) of the decedents were on LTOT and were smoking at the time the fire began; three (8%) were household members of smokers on LTOT who survived, and one (3%) was a nonsmoker on LTOT who was unintentionally ignited by a smoker who lived in the household and survived. Twenty-two (58%) decedents died on the

\*An oxygen concentrator or generator is a device that produces substantially higher concentrations of oxygen than is found in ambient air. It is an alternative to tanks or cylinders of compressed oxygen for providing LTOT to patients.



day of the fire, and seven (18%) died the following day. The remaining nine (24%) decedents survived a median of 15 days (range: 3–41 days).

All 38 fatalities occurred in private residences except for one in a nursing home. Ten (27%) incidents occurred in multifamily dwellings; six (16%) occurred in mobile homes. For the 27 incidents for which location in the home was known, 14 (52%) fires began in a bedroom, 11 (41%) in a living room, one (4%) in a hallway, and one (4%) in a bathroom. House fires occurred in 24 (65%) incidents; the remaining fires were confined to the person or the person's immediate surroundings (e.g., a chair or bed). No clustering of incidents by day of the week or month of the year was observed. Of 34 incidents for which time of occurrence was known, 20 (59%) occurred between 12:00 midnight and 8:00 a.m.

In addition to the 38 fatalities, these 37 incidents resulted in 16 nonfatal injuries, which included two injuries to firefighters, one injury to a police officer, and 13 injuries to civilians. Functioning smoke alarms were present in 19 (51%) incidents. Sprinklers and signage indicating that oxygen was in use were noted in one (3%) incident each.

**Reported by:** *T Wendling, MPH, Injury Prevention Svc, Oklahoma State Dept of Health. A Pelletier, MD, Coordinating Office for Terrorism Preparedness and Emergency Response, CDC.*

**Editorial Note:** Fires associated with tobacco use are the leading cause of residential fire deaths in the United States (4). Although smoking should never be allowed where LTOT is used (4), a substantial percentage of persons on LTOT continue to smoke. A precise percentage is not known; however, estimates range from 10% to 43% (2,5,6,8). Medical oxygen can saturate clothing, fabric, and hair. Oxygen will not explode but will act as an accelerant. A fire, such as a lit cigarette, will burn faster and hotter in an oxygen-enriched environment.

Five case series involving patients admitted to burn centers in the United States after being injured while smoking in the presence of medical oxygen have been published previously (2,6). These case series involved a total of 79 in-patients and 15 deaths, for an overall mortality rate of 19%. In addition, one study indicated that 52% of all patients burned while smoking in the presence of medical oxygen were treated at a burn center on an outpatient basis (2). The number of fires ignited by smoking in the presence of medical oxygen in which injuries occur that do not require treatment at a burn center is unknown.

The findings in this report are subject to at least four limitations. First, electronic records maintained by state fire marshals often do not allow for the identification of this specific type of fatality (4). Therefore, case counts for Maine, Massachusetts, and New Hampshire, which relied on data from state fire marshals, might represent underestimates. Second, some of the decedents were alone at the time of the incident. Deter-

mining the exact cause of incidents without witnesses was sometimes complicated by extensive fire damage. Third, complete information was not available for all fatalities. Some of the factors described in this report, such as presence of signage, might represent minimum estimates of actual prevalence. Finally, incidents without fatalities were not examined. Focusing only on incidents with fatalities underestimates the public health impact of smoking during LTOT.

Preventing injuries resulting from smoking in the presence of medical oxygen requires a multifaceted approach. First, health-care providers should employ evidence-based guidelines for achieving smoking cessation (7,8). Quitting smoking has immediate and long-term health benefits (7) and will decrease fire risks associated with medical oxygen substantially. Second, the need for LTOT should be carefully assessed (5). In one study, 40% of patients on LTOT were found not to meet established criteria for this therapy (9). Third, strategies to prevent fire-related injuries should be emphasized. Patients and their household contacts should be thoroughly educated about the dangers of smoking in the presence of medical oxygen. The U.S. Fire Administration recommends that homes be equipped with smoke alarms on every level, including the basement, and for extra safety, both outside sleeping areas and inside bedrooms (10). Consideration should be given to installing automatic sprinkler systems, where feasible, and families should develop a fire escape plan and practice it several times a year (10).

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#### References

1. Croxton TL, Bailey WC. Long-term oxygen treatment in chronic obstructive pulmonary disease: recommendations for future research. *Am J Respir Crit Care Med* 2006;174:373–8.
2. Robb BW, Hungness ES, Hershko DD, Warden GD, Kagan RJ. Home oxygen therapy: adjunct or risk factor? *J Burn Care Rehabil* 2003;24:403–6.
3. Mallonee S, Istre GR, Rosenberg M, et al. Surveillance and prevention of residential-fire injuries. *N Engl J Med* 1996;335:27–31.
4. Hall JR, Ahrens M, Rohr K, Gamache S, Comoletti J. Behavioral mitigation of smoking fires through strategies based on statistical analysis. Emmitsburg, MD: US Department of Homeland Security, US Fire Administration; 2006. Available at <http://www.usfa.dhs.gov/downloads/pdf/publications/fa-302-508.pdf>.

5. Lacasse Y, LaForge J, Maltais F. Got a match? Home oxygen therapy in current smokers. *Thorax* 2006;61:374–5.
6. Edelman DA, Maleyko-Jacobs S, White MT, Lucas CE, Ledgerwood AM. Smoking and home oxygen therapy—a preventable public health hazard. *J Burn Care Res* 2008;29:119–22.
7. Fiore MC, Jaen CR, Baker TB, et al. Treating tobacco use and dependence: 2008 update. Rockville, MD: US Department of Health and Human Services; US Public Health Service; 2008. Available at [http://www.surgeongeneral.gov/tobacco/treating\\_tobacco\\_use08.pdf](http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf).
8. Task force on community preventive services. Zaza S, Briss PA, Harris K, eds. *The guide to community preventive services: what works to promote health?* New York, NY: Oxford University Press; 2005. Available at <http://www.thecommunityguide.org/library/book>.
9. Guyatt GH, McKim DA, Austin P, et al. Appropriateness of domiciliary oxygen delivery. *Chest* 2000;118:1303–8.
10. US Fire Administration. Smoke alarms. Available at [http://www.usfa.dhs.gov/citizens/all\\_citizens/home\\_fire\\_prev/alarms](http://www.usfa.dhs.gov/citizens/all_citizens/home_fire_prev/alarms).

### Notice to Readers

#### **National Drunk Driving Crackdown — August 15–September 1, 2008**

In 2006, a total of 13,470 persons died in motor vehicle collisions in which at least one driver had a blood alcohol concentration of  $\geq 0.08$  g/dL, the level at which adults may not legally drive in the 50 states and the District of Columbia.

These alcohol-impaired driving fatalities accounted for 32% of motor vehicle traffic fatalities in the United States during 2006 (1).

“Drunk Driving. Over the Limit. Under Arrest,” a national safe-driving enforcement campaign coordinated by the National Highway Traffic Safety Administration, is scheduled for August 15–September 1, 2008. The campaign combines high-visibility enforcement of laws against alcohol-impaired driving with advertising and publicity to heighten public awareness about the risks of alcohol-impaired driving. A program planner, sample public-service announcements, media tool kits, and program guidance materials are available from the National Highway Traffic Safety Administration at <http://www.stopimpaireddriving.org/tools-campaignheadquarters.htm>. Additional information on preventing motor-vehicle–related injuries is available at <http://www.cdc.gov/ncipc/duip/mvsafety.htm>.

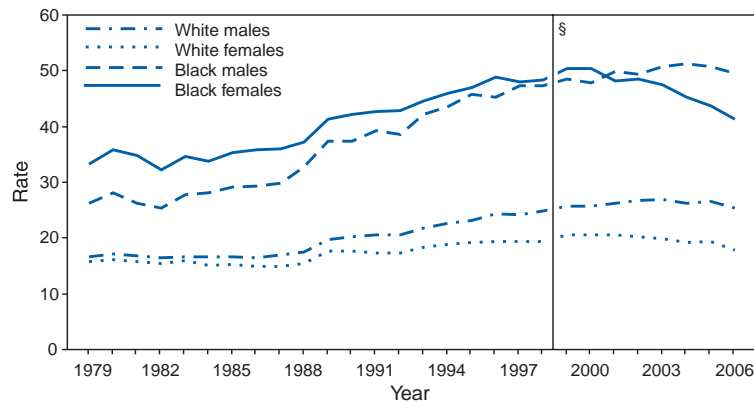
#### **Reference**

1. National Highway Traffic Safety Administration. Traffic safety facts, 2006 data: alcohol-impaired driving. Washington, DC: National Highway Traffic Safety Administration; 2008. Available at <http://www.nrd.nhtsa.dot.gov/pubs/810801.pdf>.

# QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

## Age-Adjusted Death Rates\* for Diabetes, by Race and Sex — United States, 1979–2006†



\* Per 100,000 U.S. standard population.

† Data for 2006 are preliminary.

§ In 1999, *International Classification of Diseases, 10th Revision* (ICD-10) replaced the previous revision of the ICD (ICD-9). This resulted in approximately 2% more deaths being classified as diabetes mellitus under ICD-10 (diagnosis codes E10–E14) than would be counted under ICD-9 (diagnosis code 250); therefore, death rates before 1999 are not exactly comparable with those computed after 1998.

Age-adjusted death rates for diabetes declined for whites and blacks from 2005 to 2006. This was the biggest drop in the diabetes death rate since 1999. The rate for black males, however, has generally increased and first surpassed the rate for black females in 2001.

**SOURCE:** Heron MP, Hoyert DL, Xu JQ, Scott C, Tejada-Vera B. Deaths: preliminary data for 2006. *Natl Vital Stat Rep* 2008;56(16). Available at [http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56\\_16.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_16.pdf) and <http://www.cdc.gov/nchs/data/statab/hist001r.pdf>.

**TABLE I. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending August 2, 2008 (31st Week)\***

Disease	Current week	Cum 2008	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2007	2006	2005	2004	2003	
Anthrax	—	—	—	1	1	—	—	—	
Botulism:									
foodborne	—	5	0	32	20	19	16	20	
infant	—	43	2	85	97	85	87	76	
other (wound & unspecified)	—	9	1	27	48	31	30	33	
Brucellosis	1	43	3	131	121	120	114	104	CA (1)
Chancroid	—	24	0	23	33	17	30	54	
Cholera	—	—	0	7	9	8	6	2	
Cyclosporiasis§	3	79	5	92	137	543	160	75	NY (1), FL (2)
Diphtheria	—	—	—	—	—	—	—	1	
Domestic arboviral diseases§¶:									
California serogroup	—	8	5	55	67	80	112	108	
eastern equine	—	1	1	4	8	21	6	14	
Powassan	—	—	0	7	1	1	1	—	
St. Louis	—	5	1	9	10	13	12	41	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§**:									
<i>Ehrlichia chaffeensis</i>	15	270	19	828	578	506	338	321	ME (1), MN (1), MO (2), MD (7), NC (1), FL (1), TN (2)
<i>Ehrlichia ewingii</i>	—	3	—	—	—	—	—	—	
<i>Anaplasma phagocytophilum</i>	20	120	22	834	646	786	537	362	MN (20)
undetermined	2	26	5	337	231	112	59	44	MO (1), TN (1)
<i>Haemophilus influenzae</i> ††									
invasive disease (age <5 yrs):									
serotype b	—	16	0	22	29	9	19	32	
nonserotype b	2	102	3	199	175	135	135	117	FL (1), OK (1)
unknown serotype	1	133	4	180	179	217	177	227	OH (1)
Hansen disease§	—	39	2	101	66	87	105	95	
Hantavirus pulmonary syndrome§	—	7	1	32	40	26	24	26	
Hemolytic uremic syndrome, postdiarrheal§	—	83	7	292	288	221	200	178	
Hepatitis C viral, acute	10	454	16	849	766	652	720	1,102	ME (1), NY (1), MI (3), MD (1), FL (1), KY (1), CA (2)
HIV infection, pediatric (age <13 yrs)§§	—	—	4	—	—	380	436	504	
Influenza-associated pediatric mortality§§¶	—	87	0	77	43	45	—	N	
Listeriosis	7	308	22	808	884	896	753	696	PA (1), OH (2), MN (1), MD (1), TN (1), CA (1)
Measles***	—	123	1	43	55	66	37	56	
Meningococcal disease, invasive†††:									
A, C, Y, & W-135	1	178	4	325	318	297	—	—	VA (1)
serogroup B	1	106	2	167	193	156	—	—	SC (1)
other serogroup	—	22	1	35	32	27	—	—	
unknown serogroup	7	411	9	550	651	765	—	—	WA (2), CA (5)
Mumps	1	257	14	800	6,584	314	258	231	WA (1)
Novel influenza A virus infections	—	—	—	1	N	N	N	N	
Plague	—	1	0	7	17	8	3	1	
Poliomyelitis, paralytic	—	—	—	—	—	1	—	—	
Poliovirus infection, nonparalytic§	—	—	—	—	N	N	N	N	
Psittacosis§	—	6	0	12	21	16	12	12	
Q fever§,§§ total:	2	62	3	171	169	136	70	71	
acute	1	56	—	—	—	—	—	—	OH (1)
chronic	1	6	—	—	—	—	—	—	NY (1)
Rabies, human	—	—	0	1	3	2	7	2	
Rubella¶¶¶	—	8	0	12	11	11	10	7	
Rubella, congenital syndrome	—	—	—	—	1	1	—	1	
SARS-CoV§,****	—	—	—	—	—	—	—	8	

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

\* Incidence data for reporting years 2007 and 2008 are provisional, whereas data for 2003, 2004, 2005, and 2006 are finalized.

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

§ Not notifiable in all states. Data from states where the condition is not notifiable are excluded from this table, except in 2007 and 2008 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.

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

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

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

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

¶¶ Updated weekly from reports to the Influenza Division, National Center for Immunization and Respiratory Diseases. Eighty-five cases occurring during the 2007–08 influenza season have been reported.

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

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

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

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

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

**TABLE 1. (Continued) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending August 2, 2008 (31st Week)\***

Disease	Current week	Cum 2008	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2007	2006	2005	2004	2003	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	1	91	1	132	125	129	132	161	CT (1)
Syphilis, congenital (age <1 yr)	—	104	7	430	349	329	353	413	
Tetanus	—	5	1	28	41	27	34	20	
Toxic-shock syndrome (staphylococcal)§	1	38	2	92	101	90	95	133	KY (1)
Trichinellosis	—	5	0	5	15	16	5	6	
Tularemia	1	46	4	137	95	154	134	129	ND (1)
Typhoid fever	1	203	9	434	353	324	322	356	CA (1)
Vancomycin-intermediate <i>Staphylococcus aureus</i> §	—	5	0	28	6	2	—	N	
Vancomycin-resistant <i>Staphylococcus aureus</i> §	—	—	—	2	1	3	1	N	
Vibriosis (noncholera <i>Vibrio</i> species infections)§	14	155	9	447	N	N	N	N	OH (2), VA (2), FL (5), WA (5)
Yellow fever	—	—	—	—	—	—	—	—	

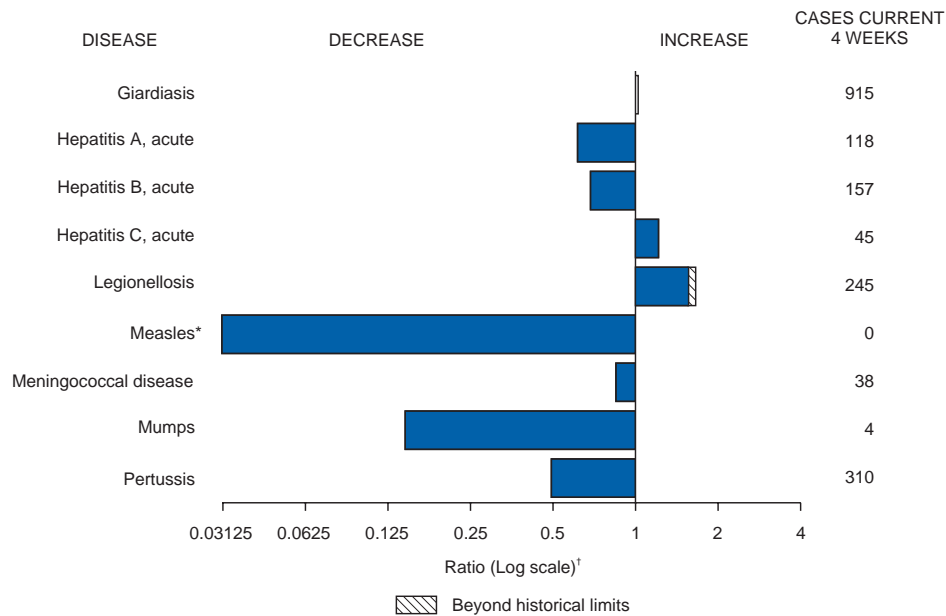
—: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts.

\* Incidence data for reporting years 2007 and 2008 are provisional, whereas data for 2003, 2004, 2005, and 2006 are finalized.

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

§ Not notifiable in all states. Data from states where the condition is not notifiable are excluded from this table, except in 2007 and 2008 for the domestic arboviral diseases and influenza-associated pediatric mortality, and in 2003 for SARS-CoV. Reporting exceptions are available at <http://www.cdc.gov/epo/dphsi/phs/infdis.htm>.

**FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals August 2, 2008, with historical data**



\* No measles cases were reported for the current 4-week period yielding a ratio for week 31 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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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending August 2, 2008, and August 4, 2007 (31st Week)\*

Reporting area	Streptococcal disease, invasive, group A					<i>Streptococcus pneumoniae</i> , invasive disease, nondrug resistant†				
	Current week	Previous 52 weeks		Cum 2008	Cum 2007	Current week	Previous 52 weeks		Cum 2008	Cum 2007
		Med	Max				Med	Max		
<b>United States</b>	48	89	259	3,548	3,688	15	36	166	1,001	1,126
<b>New England</b>	—	6	31	270	291	—	2	14	48	89
Connecticut	—	0	26	83	90	—	0	11	—	11
Maine <sup>§</sup>	—	0	3	20	21	—	0	1	1	1
Massachusetts	—	3	8	125	141	—	1	5	37	59
New Hampshire	—	0	2	18	22	—	0	1	7	8
Rhode Island <sup>§</sup>	—	0	8	14	2	—	0	1	2	8
Vermont <sup>§</sup>	—	0	2	10	15	—	0	1	1	2
<b>Mid. Atlantic</b>	9	17	43	744	712	3	4	19	125	205
New Jersey	—	3	11	122	132	—	1	6	21	41
New York (Upstate)	2	6	17	248	216	3	2	14	68	74
New York City	—	3	10	132	177	—	1	12	36	90
Pennsylvania	7	5	16	242	187	N	0	0	N	N
<b>E.N. Central</b>	8	19	63	776	736	1	6	23	215	200
Illinois	—	5	16	193	224	—	1	6	46	48
Indiana	—	2	11	99	85	—	0	14	24	12
Michigan	1	3	10	120	153	—	1	5	51	56
Ohio	6	5	14	207	174	—	1	5	36	42
Wisconsin	1	2	42	157	100	1	1	9	58	42
<b>W.N. Central</b>	9	4	39	283	242	3	2	16	85	57
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	6	38	26	—	0	3	12	—
Minnesota	9	0	35	130	116	3	0	13	33	35
Missouri	—	2	10	64	63	—	1	2	25	15
Nebraska <sup>§</sup>	—	0	3	25	19	—	0	3	6	6
North Dakota	—	0	5	10	11	—	0	2	4	1
South Dakota	—	0	2	16	7	—	0	1	5	—
<b>S. Atlantic</b>	11	19	34	600	858	2	5	13	126	193
Delaware	—	0	2	6	7	—	0	0	—	—
District of Columbia	—	0	2	15	16	—	0	1	1	2
Florida	3	6	11	171	195	2	1	4	39	39
Georgia	—	5	12	154	167	—	1	5	20	43
Maryland <sup>§</sup>	2	0	6	7	148	—	0	4	2	48
North Carolina	3	2	10	96	118	N	0	0	N	N
South Carolina <sup>§</sup>	—	1	5	38	78	—	1	4	35	25
Virginia <sup>§</sup>	3	3	12	91	109	—	0	6	24	31
West Virginia	—	0	3	22	20	—	0	1	5	5
<b>E.S. Central</b>	—	4	9	116	151	—	2	11	65	62
Alabama <sup>§</sup>	N	0	0	N	N	N	0	0	N	N
Kentucky	—	1	3	26	32	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	3	16	5
Tennessee <sup>§</sup>	—	3	7	90	119	—	2	9	49	57
<b>W.S. Central</b>	5	7	85	294	213	4	5	66	161	157
Arkansas <sup>§</sup>	—	0	2	4	16	—	0	2	4	9
Louisiana	—	0	1	3	14	—	0	2	2	28
Oklahoma	2	1	19	76	51	1	1	7	48	34
Texas <sup>§</sup>	3	5	65	211	132	3	3	58	107	86
<b>Mountain</b>	1	10	22	371	394	2	5	12	166	152
Arizona	—	4	9	141	146	1	2	8	84	72
Colorado	1	2	8	103	101	1	1	4	45	31
Idaho <sup>§</sup>	—	0	2	11	9	—	0	1	3	2
Montana <sup>§</sup>	N	0	0	N	N	—	0	1	4	1
Nevada <sup>§</sup>	—	0	2	6	2	N	0	0	N	N
New Mexico <sup>§</sup>	—	2	7	66	68	—	0	3	14	27
Utah	—	1	5	39	63	—	0	3	15	19
Wyoming <sup>§</sup>	—	0	2	5	5	—	0	1	1	—
<b>Pacific</b>	5	3	10	94	91	—	0	2	10	11
Alaska	5	0	3	29	17	N	0	0	N	N
California	—	0	0	—	—	N	0	0	N	N
Hawaii	—	2	10	65	74	—	0	2	10	11
Oregon <sup>§</sup>	N	0	0	N	N	N	0	0	N	N
Washington	N	0	0	N	N	N	0	0	N	N
American Samoa	—	0	12	30	4	N	0	0	N	N
C.N.M.I.	—	—	—	—	—	—	—	—	—	—
Guam	—	0	3	—	7	—	0	0	—	—
Puerto Rico	N	0	0	N	N	N	0	0	N	N
U.S. Virgin Islands	—	0	0	—	—	N	0	0	N	N

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

U: Unavailable. —: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts. Med: Median. Max: Maximum.

\* Incidence data for reporting years 2007 and 2008 are provisional.

† Includes cases of invasive pneumococcal disease, in children aged <5 years, caused by *S. pneumoniae*, which is susceptible or for which susceptibility testing is not available (NNDS event code 11717).

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







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