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Great American Smokeout – November 20, 2008

Approximately 43.4 million (or one in five) U.S. adults are current smokers (1), and smoking and exposure to tobacco smoke result in approximately 443,000 premature deaths in the United States annually (2). November 20, 2008, marks the American Cancer Society's 32nd annual Great American Smokeout, an event that encourages smokers to quit for at least 1 day (in the hope that this might challenge them to stop using tobacco permanently) and that raises awareness of the many effective ways to quit for good.

Smoking cessation has substantial and immediate health benefits, and smokers who use proven interventions (e.g., assistance from a health-care provider, pharmacotherapies approved by the Food and Drug Administration, and behavioral counseling) greatly increase their likelihood of quitting permanently (3). Smokers in all 50 states, the District of Columbia, and certain U.S. territories who want help in quitting can telephone 800-QUIT-NOW (800-784-8669) for free telephone counseling or referrals.

Information about the Great American Smokeout is available at http://www.cancer.org/docroot/ped/ped_10_4.asp or by telephone at 800-227-2345. Advice on how to quit smoking is available at <http://www.smokefree.gov>.

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Cigarette Smoking Among Adults – United States, 2007

One of the national health objectives for 2010 is to reduce the prevalence of cigarette smoking among adults to $\leq 12\%$ (objective 27.1a) (1). To assess progress toward this objective, each year CDC analyzes self-reported data from the National Health Interview Survey (NHIS). This report summarizes findings for 2007, which indicated that approximately 19.8% of adults were current smokers in 2007, a decrease of 1.0 percentage point from 2006 (20.8%) (2). Cigarette smoking has declined during the past 40 years among all sociodemographic subpopulations of adults; however, the declines during the past decade have been smaller than in previous decades. The proportion of current everyday smokers who made a quit attempt during the preceding year decreased 7.2 percentage points from 1993 (47.0%) to 2007 (39.8%). During 1993–2007, young adults (aged 18–24 years) consistently had the highest prevalence of quitting for >1 day during the preceding year (59.3% in 1993 and 53.1% in 2007). Prevention of initiation and smoking cessation at all ages is beneficial in reducing morbidity and mortality. Clinicians should strongly advise smokers to quit and recommend they use effective cessation treatments (3). Health insurers, health insurance purchasers, and health systems should assist clinicians in making effective treatments available by including counseling and medications for smoking cessation as covered benefits and should support effective community interventions for cessation, including increased excise taxes, mass media campaigns, and smoke-free laws (3,4).

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The 2007 NHIS adult core questionnaire, which contained questions on cigarette smoking and cessation attempts, was administered by in-person interview to a nationally representative sample of the noninstitutionalized, U.S. civilian population aged ≥ 18 years ($N = 23,393$). One adult per selected household was chosen randomly to participate in the survey. NHIS oversampled for blacks, Hispanics, and Asians aged ≥ 65 years, who were selected at twice the probability of other adults in the household.* The total household response rate was 87.1%, and the overall survey response rate for the sample adult component of the survey was 67.8%. Smoking status was classified based on the respondent's answers to the following questions: "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 reported they had smoked 100 cigarettes or more during their lifetime and currently smoke every day or some days. Former smokers reported smoking at least 100 cigarettes during their lifetime and currently do not smoke. The prevalence of one or more cessation attempts during the preceding year was assessed among current everyday smokers and included those who responded "yes" to the question, "During the past 12 months, have you stopped smoking for more than one day because you were trying to quit smoking?" Data were adjusted for nonresponse and weighted to provide national estimates of cigarette smoking prevalence and quit attempts; 95% confidence intervals were calculated using statistical software to account for the multi-stage probability sample design. For all comparisons, statistical significance was determined using a two-sided z test; differences were considered statistically significant at $p \leq 0.05$.

In 2007, an estimated 19.8% (43.4 million) of U.S. adults were current cigarette smokers; of these, 77.8% (33.8 million) smoked every day, and 22.2% (9.6 million) smoked some days. In 2007, 39.8% (13.4 million) of adult current everyday smokers had stopped smoking for > 1 day during the preceding 12 months because they were trying to quit. Among the estimated 86.8 million adults who had smoked at least 100 cigarettes in their lifetime (defined as ever smokers), 52.1% (47.3 million) were no longer smoking at the time of the interview.

Smoking prevalence was higher among men (22.3%) than women (17.4%) ($p < 0.01$) (Table). Among the different racial/ethnic populations, Asians (9.6%) had the lowest smoking prevalence, whereas American Indians/Alaska Natives (36.4%) had significantly higher prevalence than the other racial/ethnic populations ($p < 0.05$ for all comparisons). Smoking prevalence among whites (21.4%) and blacks (19.8%) was

* For this report, persons identified as white, black, Asian, and American Indian/Alaska Native are all non-Hispanic. Persons identified as Hispanic might be of any race.

TABLE. Estimated percentage of adults aged ≥18 years who were current smokers,* by sex and selected characteristics — National Health Interview Survey, United States, 2006 and 2007

Characteristic	Men		Women		Total	
	2006 (n = 10,715)	2007 (n = 10,173)	2006 (n = 13,560)	2007 (n = 12,817)	2006 (N = 24,275)	2007 (N = 22,990)
	% (95% CI)†	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Race/Ethnicity[§]						
White, non-Hispanic	24.3 (23.0–25.6)	23.1 (21.6–24.6)	19.7 (18.6–20.8)	19.8 (18.7–20.9)	21.9 (21.0–22.8)	21.4 (20.4–22.4)
Black, non-Hispanic	27.6 (24.2–31.0)	24.8 (22.0–27.6)	19.2 (17.3–21.1)	15.8 (13.7–17.9)	23.0 (21.1–24.9)	19.8 (18.2–21.4)
Hispanic	20.1 (17.8–22.4)	18.0 (15.5–20.5)	10.1 (8.5–11.7)	8.3 (6.7–9.9)	15.2 (13.7–16.7)	13.3 (11.7–14.9)
Asian, non-Hispanic [¶]	16.8 (13.1–20.5)	15.9 (12.8–19.0)	4.6 (3.0–6.2)	4.0 (2.4–5.6)	10.4 (8.4–12.4)	9.6 (8.0–11.2)
American Indian/Alaska Native, non-Hispanic**	35.6 (18.7–52.5)	36.7 (18.9–54.5)	29.0 (15.7–42.3)	36.0 (20.2–51.8)	32.4 (19.7–45.1)	36.4 (22.9–49.9)
Education^{††}						
0–12 yrs (no diploma)	30.6 (27.9–33.3)	29.5 (26.9–32.1)	23.0 (20.7–25.3)	20.2 (18.0–22.4)	26.7 (25.0–28.4)	24.8 (23.1–26.5)
<8 yrs	22.3 (18.5–26.1)	20.4 (17.0–23.8)	12.3 (9.7–14.9)	10.0 (7.7–12.3)	17.4 (15.1–19.7)	15.4 (13.2–17.6)
9–11 yrs	40.1 (35.7–44.5)	36.9 (32.4–41.4)	31.4 (27.7–35.1)	30.0 (26.1–33.9)	35.4 (32.5–38.3)	33.3 (30.4–36.2)
12 yrs (no diploma)	27.9 (21.5–34.3)	33.1 (25.2–41.4)	23.3 (17.5–29.1)	14.8 (10.3–19.3)	25.6 (21.2–30.0)	22.7 (18.1–27.3)
High school diploma	27.6 (25.3–29.9)	27.4 (24.9–29.9)	20.4 (18.7–22.1)	20.4 (18.3–22.5)	23.8 (22.3–25.3)	23.7 (22.0–25.4)
GED ^{§§} diploma	51.3 (43.4–59.2)	49.6 (42.0–57.2)	40.2 (33.2–47.2)	38.9 (31.8–46.0)	46.0 (40.5–51.5)	44.0 (39.0–49.0)
Associate degree	25.4 (22.1–28.7)	21.2 (18.1–24.3)	17.8 (15.2–20.4)	18.9 (16.4–21.4)	21.2 (19.1–23.3)	19.9 (17.8–22.0)
Some college (includes associate degree)	26.1 (24.2–28.0)	22.5 (20.2–24.8)	20.0 (18.3–21.7)	19.5 (18.0–21.0)	22.7 (21.4–24.0)	20.9 (19.5–22.3)
Undergraduate degree	10.8 (9.0–12.6)	13.4 (10.7–16.1)	8.4 (7.0–9.8)	9.4 (8.0–10.8)	9.6 (8.5–10.7)	11.4 (9.9–12.9)
Graduate degree	7.3 (5.4–9.2)	6.4 (4.7–8.1)	5.8 (4.1–7.5)	6.0 (4.5–7.5)	6.6 (5.3–7.9)	6.2 (5.1–7.3)
Age group (yrs)						
18–24	28.5 (24.7–32.3)	25.4 (22.1–28.7)	19.3 (16.7–21.9)	19.1 (16.2–22.0)	23.9 (21.7–26.1)	22.2 (19.9–24.5)
25–44	26.0 (24.3–27.7)	26.0 (24.1–27.9)	21.0 (19.7–22.3)	19.6 (18.1–21.1)	23.5 (22.4–24.6)	22.8 (21.5–24.1)
45–64	24.5 (22.7–26.3)	22.6 (20.8–24.4)	19.3 (17.9–20.7)	19.5 (18.0–21.0)	21.8 (20.6–23.0)	21.0 (19.7–22.3)
≥65	12.6 (10.6–14.6)	9.3 (7.8–10.8)	8.3 (7.0–9.6)	7.6 (6.3–8.9)	10.2 (9.2–11.2)	8.3 (7.3–9.3)
Poverty status^{¶¶}						
At or above federal poverty level	22.9 (21.6–24.2)	22.8 (21.4–24.2)	17.8 (16.8–18.8)	17.8 (16.6–19.0)	20.4 (19.6–21.2)	20.3 (19.3–21.3)
Below federal poverty level	34.0 (30.0–38.0)	32.4 (28.3–36.5)	28.0 (25.2–30.8)	26.3 (23.3–29.3)	30.6 (28.0–33.2)	28.8 (26.2–31.4)
Unknown	23.3 (21.0–25.6)	17.6 (15.1–20.1)	14.2 (12.6–15.8)	13.4 (11.2–15.6)	18.3 (16.9–19.7)	15.2 (13.6–16.8)
Total	23.9 (22.8–25.0)	22.3 (21.1–23.5)	18.0 (17.2–18.8)	17.4 (16.5–18.3)	20.8 (20.1–21.5)	19.8 (19.0–20.6)

* Persons who reported smoking at least 100 cigarettes during their lifetimes and who, at the time of interview, reported smoking every day or some days. 2006 estimates exclude 315 respondents whose smoking status was unknown, and 2007 estimates exclude 403 respondents whose smoking status was unknown.

† Confidence interval.

§ 2006 estimates exclude 266 respondents of unknown race or multiple races, and 2007 estimates exclude 317 respondents of unknown race or multiple races.

¶ Does not include Native Hawaiians or Other Pacific Islanders.

** Wide variances reflect small sample sizes.

†† Among persons aged >25 years. 2006 estimates exclude 305 persons whose education level was unknown, and 2007 estimates exclude 1,770 persons whose education level was unknown.

§§ General Educational Development.

¶¶ 2006 estimates are based on family income reported by respondents and 2005 poverty thresholds (published by the U.S. Census Bureau), and 2007 estimates are based on family income reported by respondents and 2006 poverty thresholds.

significantly higher than among Hispanics (13.3%) ($p < 0.01$ for both comparisons).

Smoking prevalence also varied by education level among adults aged >25 years. Adults who had a General Education Development (GED) diploma (44.0%) and those with 9–11 years of education (33.3%) had the highest prevalence of current smoking. Those who had an undergraduate or graduate degree had the lowest smoking prevalence (11.4% and 6.2%, respectively). By age group, the prevalence of smoking was lowest among those aged ≥ 65 years (8.3%), compared with those aged <65 years (persons aged 18–24 years [22.2%], aged 25–44 years [22.8%], and aged 45–64 years [21.0%]). Smoking among adults whose incomes were below the federal poverty level (28.8%) was significantly higher than those whose incomes were at or above this level (20.3%) ($p < 0.02$).[†]

The prevalence of cigarette smoking among adults was significantly lower in 2007 (19.8%) than in 2006 (20.8%) ($p = 0.05$). Subgroups with significant decreases in smoking prevalence from 2006 to 2007 included blacks (from 23.0% in 2006 to 19.8% in 2007 [$p = 0.01$]) and adults aged ≥ 65 years (from 10.2% in 2006 to 8.3% in 2007 [$p = 0.01$]).

From 1993 (the first year that quit attempt data were collected in NHIS with everyday smokers identified separately) to 2007, the prevalence of a quit attempt during the preceding 12 months among everyday smokers decreased ($p < 0.01$); these decreases were significant among those aged 25–44 years ($p < 0.01$) and ≥ 65 years ($p = 0.02$) (Figure). In each year, the proportion of current everyday smokers who tried to quit during the preceding 12 months decreased with increasing age, and young adults aged 18–24 years were significantly more likely to have made a quit attempt than older adults ($p < 0.05$ for all comparisons). In 2007, the proportion of current everyday smokers who tried to quit was 53.1% among persons aged 18–24 years, 39.9% among those aged 25–44 years, 38.1% among those aged 45–64 years, and 25.3% among those aged ≥ 65 years.

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Editorial Note: After 3 years during which prevalence in current cigarette smoking among adults remained virtually unchanged (20.9% in 2004, 20.9% in 2005, and 20.8% in 2006), the prevalence in 2007 (19.8%) was significantly lower than in 2006 (2). For 5 consecutive years, the prevalence of smoking among women remained below 20% (19.2% in 2003, 18.5% in 2004, 18.2% in 2005, 18.0% in 2006, and 17.4% in 2007); however, variability existed among the subgroups of women. Also, for 6 consecutive years, former

smokers outnumbered current smokers. During the past 40 years, smoking prevalence has declined overall and among each sociodemographic subpopulation.[§] However, large disparities in smoking prevalence continue to exist by race/ethnicity and education level. The continuing higher prevalence among several populations, such as American Indians/Alaska Natives (36.4%), persons with GED diplomas (44.0%), and persons reporting family incomes below the federal poverty level (28.8%), emphasizes the need for more effective policy and environmental and individual-level interventions to reach and assist these subpopulations.

The trends in smoking prevalence from NHIS data showing a slow decrease from the 1990s through the early- and mid-2000s are similar to trends in other national surveys (e.g., the National Household Survey on Drug Use and Health and the Tobacco Control Supplement to the Current Population Survey[¶]). NHIS data on smoking prevalence is the primary measure used to assess progress in meeting the *Healthy People 2010* objective of reducing smoking among adults to $\leq 12\%$, and these data indicate that the objective likely will not be met. Before 2007, several population subgroups had met the *Healthy People 2010* smoking prevalence objective of $\leq 12\%$ and, in 2007, these same subpopulations continued to meet this goal. Subpopulations who continued to meet this goal in 2007 include Hispanic (8.3%) and Asian (4.0%) women, women with 0–8 years of education (10.0%) or undergraduate (9.4%) or graduate degrees (6.0%), and women aged ≥ 65 years (7.6%). Men with graduate degrees (6.4%) and men aged ≥ 65 years (9.3%) also met this goal.

The percentage of everyday smokers who attempted to quit for >1 day during the preceding 12 months decreased during 1993–2007. The lack of funding for comprehensive state tobacco-control programs likely has remained a barrier to achieving progress in increasing smokers' quit attempts. In fiscal year 2005, investments by states in tobacco control varied; the mean per capita expenditure was \$2.76, with some states investing approximately \$11.00, whereas others invested nothing (4). CDC recommends a per capita annual expenditure of \$9.23 to \$18.03 by state comprehensive tobacco-control programs to implement effective programs (5).

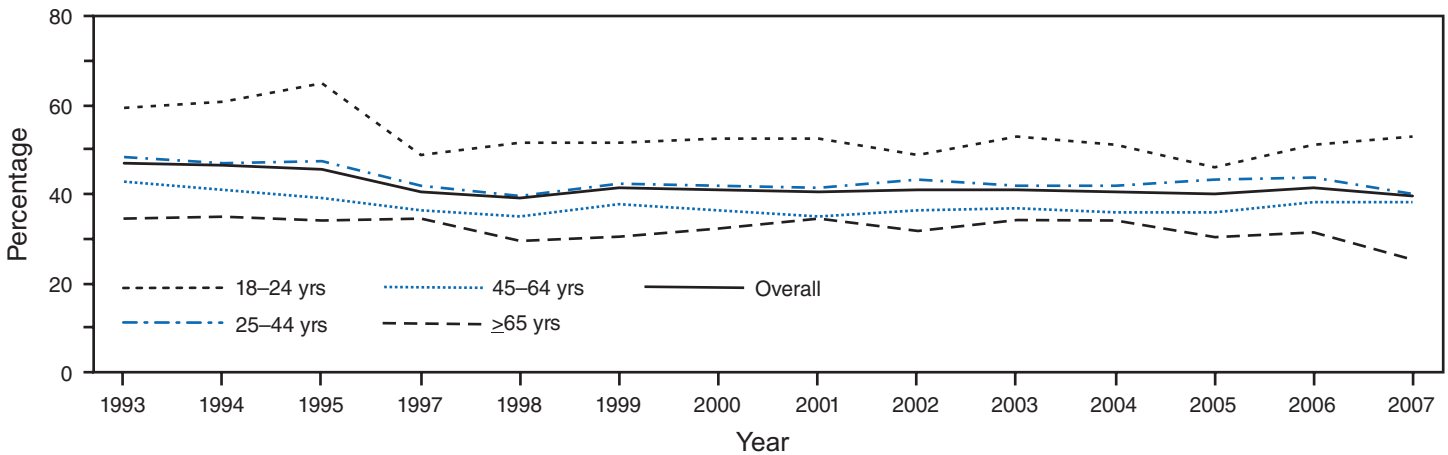
The majority of smokers who attempt to quit do not use recommended cessation methods (3), and most of these untreated smokers relapse within the first 8 days after quitting; an estimated 24%–51% are abstinent at 1 week, 15%–28% are abstinent at 1 month, and 10%–20% are abstinent at 3 months (6). Of untreated adult smokers who try to quit smoking each

[§] Additional information available at http://www.cdc.gov/tobacco/data_statistics/tables/adult/table_2.htm.

[¶] Available at <http://www.oas.samhsa.gov/nsduhlatest.htm> and <http://riskfactor.cancer.gov/studies/tus-cps>, respectively.

[†] 2007 estimates are based on family income reported by respondents and 2006 poverty thresholds (published by the U.S. Census Bureau).

FIGURE. Estimated percentage of adult current everyday smokers* who quit for >1 day† during the preceding year, by age group — National Health Interview Survey, United States, 1993–2007



* Persons who reported smoking at least 100 cigarettes during their lifetimes and who, at the time of the interview, reported smoking every day.

† Persons who reported that, during the preceding 12 months, they had stopped smoking for >1 day because they were trying to quit smoking.

year, only 4%–7% are likely to be successful (3). Among daily smokers, younger adults (aged 18–24 years) were more likely to try to quit smoking during the preceding year than older adults. This finding is consistent with other national studies (7). Young adults have lower levels of addiction, are less likely to be heavy smokers, and are more likely to have smoke-free homes than older adults; lower levels of dependence and having a smoke-free home are associated with increases in trying to quit during the preceding year (7). Smoking cessation is beneficial at any age; however, quitting at younger ages is associated with greater decreases in premature mortality (8).

The findings in this report are subject to at least three limitations. First, estimates of cigarette smoking were based on self-report and were not validated with biochemical tests. However, self-reported smoking status has validity when compared with measured serum cotinine levels and yields similar population prevalence estimates (9). Second, the NHIS questionnaire is administered in English and Spanish only, which might affect estimates for racial/ethnic populations who do not speak English or Spanish primarily. Finally, single-year estimates with large confidence intervals for certain population groups (e.g., American Indians/Alaska Natives) primarily resulted from small sample sizes.

Tobacco use screening with a brief cessation intervention is one of the top three clinical preventive services that have been found to be cost-saving (10). Effective clinical cessation interventions include brief interventions by clinicians; individual, group, or telephone counseling; and the following pharmacologic therapies: Bupropion SR, Varenicline, and nicotine gum, inhaler, lozenge, nasal spray, or patch (3). Clinicians and health-care delivery systems need to consistently identify and document tobacco use status, treat every tobacco user seen in

the health-care setting, and promote patients' use of quitlines (available countrywide through the toll-free access number 1-800 QUIT-NOW) (3). These effective clinical approaches should be part of a comprehensive tobacco-control program that includes increasing the real price of tobacco products, implementing smoke-free policies, and increasing health insurance coverage for effective cessation interventions; with wider implementation of these policies and programs, greater progress in reducing smoking prevalence among adults could be attained (4,5).

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Smoking-Attributable Mortality, Years of Potential Life Lost, and Productivity Losses – United States, 2000–2004

Cigarette smoking and exposure to tobacco smoke are associated with premature death from chronic diseases, economic losses to society, and a substantial burden on the United States health-care system. Smoking is the primary causal factor for at least 30% of all cancer deaths, for nearly 80% of deaths from chronic obstructive pulmonary disease, and for early cardiovascular disease and deaths (1). In 2005, to assess the economic and public health burden from smoking, CDC published results of an analysis of smoking-attributable mortality (SAM), years of potential life lost (YPLL), and productivity losses in the United States from smoking during 1997–2001 (2). The analysis was based on data from CDC's Smoking-Attributable Mortality, Morbidity, and Economic Costs (SAMMEC) system,* which estimates SAM, YPLL, and productivity losses based on data from the National Health Interview Survey and death certificate data from the National Center for Health Statistics. This report presents an update of that analysis for 2000–2004, the most recent years for which source data are available. The updated analysis indicated that, during 2000–2004, cigarette smoking and exposure to tobacco smoke resulted in at least 443,000 premature deaths, approximately 5.1 million YPLL, and \$96.8 billion in productivity losses annually in the United States. Comprehensive, national tobacco-control recommendations have been provided to the public health community with the goal of reducing smoking so substantially that it is no longer a significant public health problem in the United States (3,4).

The adult and the maternal and child health SAMMEC software modules were used to estimate SAM, YPLL, and productivity losses attributed to diseases caused by smoking. Sex- and age-specific smoking-attributable deaths were calculated by multiplying the total number of deaths for 19 adult and four infant disease categories (Table) by estimates of the

smoking-attributable fraction (SAF)[†] of preventable deaths. The attributable fractions provide estimates of the public health burden of each risk factor and the relative importance of risk factors for multifactorial diseases. Because of the effect of interactions between various risk factors, attributable fractions for a given disease can total more than 100%. For adults, SAFs were derived using sex-specific relative risk (RR) estimates from the American Cancer Society's Cancer Prevention Study-II (CPS-II) for current and former smokers for each cause of death for the period 1982–1988. For ischemic heart disease and cerebrovascular disease deaths, RR estimates also were stratified by age (35–64 years and ≥65 years). Sex- and age-specific (35–64 years and ≥65 years) current and former cigarette smoking prevalence estimates from the National Health Interview Survey also were used to calculate SAFs. For infants, SAFs were calculated by using pediatric RR estimates and maternal smoking prevalence estimates from birth certificates. Smoking-attributable YPLL and productivity losses were estimated by multiplying sex- and age-specific SAM by remaining life expectancy (5) and lifetime earnings data (6). In addition, smoking-attributable residential fire-related deaths (7) and lung cancer and heart disease deaths attributable to exposure to secondhand smoke (8,9) were included in the SAM, but not in YPLL and productivity loss estimates.

During 2000–2004, smoking resulted in an estimated annual average of 269,655 deaths among males and 173,940 deaths among females in the United States (Table). The three leading specific causes of smoking-attributable death were lung cancer (128,922), ischemic heart disease (126,005), and chronic obstructive pulmonary disease (COPD)[§] (92,915). Among adults aged ≥35 years, 160,848 (41.0%) smoking-attributable deaths were caused by cancer, 128,497 (32.7%) by cardiovascular diseases, and 103,338 (26.3%) by respiratory diseases (excluding deaths from secondhand smoking and from residential fires). Smoking during pregnancy resulted in an estimated 776 infant deaths annually during 2000–2004. An estimated 49,400 lung cancer and heart disease deaths annually were attributable to exposure to secondhand smoke. The average annual SAM estimates also included 736 deaths from smoking-attributable residential fires.

During 2000–2004, on average, smoking accounted for an estimated 3.1 million YPLL for males and approximately 2.0

[†] SAFs for each disease are calculated using the following equation: $SAF = [(p_1(RR_1 - 1) + p_2(RR_2 - 1)) / (p_1(RR_1 - 1) + p_2(RR_2 - 1) + 1)]$ where p_1 = percentage of current smokers (persons who have smoked ≥100 cigarettes and now smoke every day or some days), p_2 = percentage of former smokers (persons who have smoked ≥100 cigarettes and do not currently smoke), RR_1 = relative risk for current smokers relative to never smokers, and RR_2 = relative risk for former smokers relative to never smokers.

[§] COPD includes bronchitis/emphysema (*International Classification of Diseases, Tenth Revision* [ICD-10] codes J40–J42 and J43) and chronic airway obstruction (ICD-10 J44) (1).

* The computations also use other data elements; available at <http://apps.nccd.cdc.gov/sammecc>.

TABLE. Annual deaths and estimates* of smoking-attributable mortality (SAM), years of potential life lost (YPLL), and productivity losses, by sex and cause of death — United States, 2000–2004

Causes of death (ICD-10 code†)	Male				Female			
	Deaths	SAM	YPLL	Productivity losses (in thousands) (\$)	Deaths	SAM	YPLL	Productivity losses (in thousands) (\$)
Malignant neoplasm								
Lip, oral cavity, pharynx (C00–C14)	5,126	3,749	65,336	1,613,319	2,494	1,144	19,047	354,635
Esophagus (C15)	9,707	6,961	108,847	2,464,063	2,926	1,631	25,382	433,273
Stomach (C16)	7,056	1,900	27,602	600,702	5,024	584	8,971	157,891
Pancreas (C25)	14,845	3,147	50,201	1,162,577	15,481	3,536	53,334	884,761
Larynx (C32)	2,984	2,446	38,012	853,914	778	563	9,914	186,317
Trachea/lung/bronchus (C33–C34)	90,025	78,680	1,118,359	23,189,096	66,874	46,842	770,655	13,597,333
Cervix uteri (C53)	0	0	0	0	3,774	447	11,918	307,412
Kidney and renal pelvis (C64–65)	7,469	2,827	43,898	997,062	4,527	216	3,722	70,680
Urinary bladder (C67)	8,508	3,907	44,166	742,898	3,951	1,076	13,245	174,529
Acute myeloid leukemia (C92.0)	3,889	855	12,527	272,429	3,189	337	5,496	99,772
Subtotal	149,609	104,472	1,508,948	31,896,060	109,018	56,376	921,684	16,266,603
Cardiovascular diseases								
Ischemic heart disease (I20–I25)	248,506	50,884	804,551	19,019,062	238,845	29,121	389,974	6,068,242
Other heart disease (I00–I09, I26–I51)	72,312	12,944	55,621	1,134,588	95,304	8,060	31,745	428,084
Cerebrovascular disease (I60–I69)	61,616	7,896	127,280	3,075,304	97,681	8,026	140,894	2,878,017
Atherosclerosis (I70–I71)	5,000	1,282	11,814	155,198	8,430	611	5,475	40,423
Aortic aneurysm (I71)	8,861	5,628	70,512	1,339,220	5,862	2,791	34,192	445,625
Other circulatory diseases (I72–I79)	4,238	505	6,636	134,357	5,715	749	9,386	133,702
Subtotal	400,533	79,139	1,076,414	24,857,729	451,837	49,358	611,666	9,994,093
Respiratory diseases								
Pneumonia, influenza (J10–J18)	27,517	6,042	29,828	448,507	35,008	4,381	23,438	273,061
Bronchitis, emphysema (J40–J42, J43)	8,321	7,536	42,842	708,007	7,941	6,391	40,844	532,162
Chronic airways obstruction (J44)	49,774	40,217	421,721	6,306,543	52,328	38,771	462,973	5,545,304
Subtotal	85,612	53,795	494,391	7,463,057	95,277	49,543	527,255	6,350,527
Perinatal conditions								
Short gestation/low birth weight (P07)	2,557	219	16,315	—	2,030	174	13,898	—
Respiratory distress syndrome (P22)	550	18	1,358	—	382	13	1,007	—
Other respiratory (newborn) (P23–28)	786	35	2,611	—	556	25	1,983	—
Sudden infant death syndrome (R95)	1,357	173	12,878	—	935	119	9,531	—
Subtotal	5,250	445	33,161	—	3,903	331	26,419	—
Residential fire	1,600	416	—	—	1,270	320	—	—
Secondhand smoke								
Lung cancer	—	2,131	—	—	—	1,269	—	—
Ischemic heart disease	—	29,256	—	—	—	16,744	—	—
Subtotal	—	31,388	—	—	—	18,012	—	—
Total	269,655	3,112,914	3,112,914	64,216,846	173,940	2,087,024	2,087,024	32,611,223

* CDC estimates from 2000–2004 National Health Interview Survey responses and 2000–2004 National Center for Health Statistics death certificate data; smoking-attributable residential fire-related death estimates from 2002–2005 data; productivity losses in 2004 dollars.

† *International Classification of Diseases and Health Conditions, 10th Revision*; available at <http://www.who.int/classifications/apps/icd/icd10online>.

million YPLL for females annually, excluding deaths from smoking-attributable residential fires and adult deaths from secondhand smoke. Estimates for average annual smoking-attributable productivity losses were approximately \$96.8 billion (\$64.2 billion for males and \$32.6 billion for females) during this period (Table).

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Editorial Note: During 2000–2004, an estimated 443,000 persons in the United States died prematurely each year as

a result of smoking or exposure to secondhand smoke. This figure is higher than the average annual estimate of approximately 438,000 deaths during 1997–2001 (2). The number of smoking-attributable deaths varies according to trends in smoking prevalence and the number of deaths from diseases caused by smoking. SAM estimates also change when a causal relationship is established between smoking and a disease not previously included in SAMMEC (1). Although smoking prevalence has declined dramatically since its peak in the 1960s, the number of smoking-attributable deaths has remained relatively unchanged, primarily because of increases in population

size (particularly among older age groups). Even with declines in the rates of various smoking-related diseases (e.g., coronary heart disease), the absolute number of deaths is increasing as the total population increases. In addition, cohorts of smokers with the highest peak prevalence have now reached the ages with the highest incidence of smoking-attributable diseases.

The relative risk estimates used in the calculation of SAM have remained the same. In general, the magnitude of the relationship between smoking and the diseases it causes has remained stable over time (1). However, CDC is continuing to monitor whether the RRs for smoking are changing over time. Future SAMMEC estimates might contain updated RRs, particularly for females, because their adoption of smoking (and hence their duration of smoking) lagged that of males during the early to mid-1900s. Prevalence of smoking among females peaked in the 1960s and in recent cohorts of smokers more closely follows the trend for male smokers. Smoking-attributable fractions are higher for cancers and COPD than for cardiovascular diseases; however, because the absolute number of deaths is highest for coronary heart disease, it contributes a large number of smoking-attributable deaths.

Preventing smoking and increasing cessation rates need to remain priorities of public health professionals who are working to prevent heart disease and stroke. Dramatic declines in smoking-attributable deaths can be achieved by further reducing smoking prevalence rates. Leading causes of death, such as lung cancer and COPD, could become relatively uncommon in future generations if the prevalence of smoking was substantially reduced (1,3).

The findings in this report are subject to at least six limitations. First, the estimates understate deaths attributable to tobacco use because estimates of deaths attributable to cigar smoking, pipe smoking, and smokeless tobacco use were excluded. Although the overall prevalence rates of cigar and pipe smoking and use of smokeless tobacco have remained relatively stable, increased public health concerns about these products might warrant including estimates of deaths attributable to these tobacco products in the future. Second, RRs were based on deaths during 1982–1988 among birth cohorts who might have had different smoking histories than current or former smokers (e.g., age of initiation and duration of smoking before quitting). Third, this report used a death-certificate-based definition of COPD, including codes for bronchitis/emphysema and chronic airway obstruction (ICD-10 J44) (1). Therefore, the COPD SAM estimate used for this report might differ from other estimates that use other definitions of COPD (1). Fourth, RRs were adjusted for the effects of age but not for other potential confounders. However, research suggests that education, alcohol, and other confounders had negligible additional effects on SAM estimates for lung cancer, COPD,

ischemic heart disease, and cerebrovascular disease in CPS-II. Fifth, productivity losses understate the total costs of smoking because costs associated with smoking-attributable health-care expenditures, smoking-related disability, employee absenteeism, and secondhand-smoke-attributable disease morbidity and mortality were not included. Finally, the estimates do not account for the sampling variability in smoking prevalence estimates or RRs.

Cigarette smoking continues to impose substantial health and financial costs on society. During 2001–2004, average annual smoking-attributable health-care expenditures were approximately \$96 billion. Accounting for direct health-care expenditures and productivity losses (approximately \$97 billion), the total economic burden of smoking is approximately \$193 billion per year. By comparison, investments in comprehensive, state-based tobacco prevention and control programs in fiscal year 2007 totaled \$595 million, approximately 325-times less than the smoking-attributable costs (10). Comprehensive statewide tobacco-control programs significantly accelerate declines in consumption and smoking prevalence (4). By increasing their investment in such programs to the levels recommended by CDC, states can further hasten the reduction in cigarette use and reduce the health and economic burden of smoking (3).

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Deaths from Chronic Obstructive Pulmonary Disease – United States, 2000–2005

Chronic obstructive pulmonary disease (COPD) is a heterogeneous group of slowly progressive diseases characterized by airflow obstruction that interferes with normal breathing (1). In 2005, approximately one in 20 deaths in the United States had COPD as the underlying cause. Smoking is estimated to be responsible for at least 75% of COPD deaths (2). Excess health-care expenditures are estimated at nearly \$6,000 annually for every COPD patient in the United States (3). To update national estimates of deaths from COPD for the period 2000–2005 (the most recent years for which data are available), CDC analyzed data from the National Vital Statistics System (NVSS). Results of that analysis indicated that an estimated 126,005 deaths of persons aged ≥ 25 years occurred in 2005 with COPD as the underlying cause, an increase of 8% from 116,494 deaths in 2000. Age-standardized COPD mortality rates remained fairly stable during the period overall but decreased among men and increased among women. To decrease the number and rate of COPD deaths, public health programs should continue efforts to reduce all personal exposure to 1) tobacco smoke, including passive smoke exposure; 2) occupational dusts and chemicals; and 3) other indoor and outdoor air pollutants linked to COPD (3). Once COPD is diagnosed, chronic disease management programs should work to prevent further deterioration in lung function and reduce COPD mortality (4).

The numbers of deaths for which COPD was the underlying cause* and population estimates for calculation of rates were obtained from the CDC Wonder compressed mortality database† of the National Vital Statistics System. *International Classification of Diseases, Tenth Revision* (ICD-10) codes were used to identify cases of COPD.§ Annual age-, sex-, and race-specific rates (per 100,000 population) of death from COPD during 2000–2005 were computed by dividing the number of COPD deaths by midyear population estimates, using the

* Underlying cause is defined by the World Health Organization as the disease or injury that initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that produced the fatal injury. The underlying cause is selected from the conditions entered by the physician in the cause-of-death section of the death certificate. When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of conditions on the certificate, provisions of the *International Classification of Diseases*, and associated selection rules and modifications. Additional information is available at http://www.cdc.gov/nchs/data/nvsr/nvsr49/nvsr49_08.pdf.

† Available at <http://wonder.cdc.gov/mortssql.html>.

§ ICD-10 codes used were J40 (bronchitis not specified as acute or chronic), J41 (simple and mucopurulent chronic bronchitis), J42 (unspecified chronic bronchitis), J43 (emphysema), and J44 (other chronic obstructive pulmonary disease)(2). Available at <http://www.cdc.gov/nchs/about/major/dvs/icd10des.htm>.

2000 U.S. standard population aged ≥ 25 years for direct age standardization. Rate calculations were restricted to adults aged ≥ 25 years because this group accounted for 99.9% of all COPD deaths.

During 2000–2005, COPD was the underlying cause of death for 718,077 persons overall aged ≥ 25 years in the United States. The number of deaths from COPD increased from 116,494 in 2000 to 121,267 in 2003, decreased to 117,134 in 2004, and increased to 126,005 in 2005 (Table 1). Age-standardized death rates per 100,000 population decreased during 2000–2004; the rate in 2005 was similar to that for 2003.

From 2000 to 2005, the annual number of deaths from COPD increased 5% among men (Table 1), and the number of deaths was higher in 2005 than in 2004. The death rate for men declined during 2000–2005 and was lower in 2004 than in 2005 (Figure 1). Among women, the annual number of deaths increased 11% from 2000 to 2005 and was lower in 2005 than in 2004. The death rate for women increased from 2000 to 2003, decreased in 2004, and increased in 2005 (Figure 1). The death rate was higher for men compared with the rate for women in each year, but the number of deaths was greater for women.

For each year during 2000–2005, COPD mortality rates were higher among whites than among blacks or persons of all other races. During this period, the rate for blacks remained stable, except for 2004, when the rate was lower. In 2005, the death rate among white men was 80.2 (95% confidence interval [CI] = 79.5–80.9) compared with 63.8 (CI = 61.8–65.8) among black men, 60.3 (CI = 59.8–60.8) among white women, and 29.9 (CI = 28.9–30.9) among black women.

By state, in 2005, age-standardized death rates from COPD for adults aged ≥ 25 years ranged from 27.1 per 100,000 in Hawaii to 93.6 per 100,000 population in Oklahoma. States with COPD death rates in the highest quartile were as follows: Idaho, Indiana, Kansas, Kentucky, Maine, Montana, Nevada, Ohio, Oklahoma, Vermont, West Virginia, and Wyoming (Figure 2). Among adults aged 25–64 years, rates ranged from 6.2 (Massachusetts and New Jersey) to 19.2 (Oklahoma) per 100,000 population for men and from 3.8 (New Jersey) to 16.5 (West Virginia) in women (Table 2). Among adults aged ≥ 65 years, rates ranged from 169.0 (Hawaii) to 540.4 (Vermont) per 100,000 population in men and from 94.7 (Hawaii) to 394.9 (Nevada) in women.

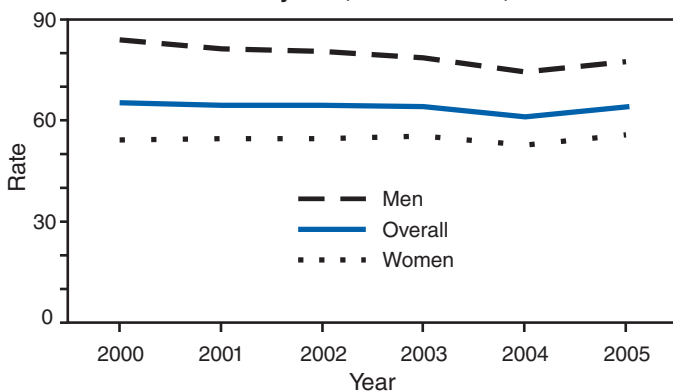
Reported by: DW Brown, PhD, JB Croft, PhD, KJ Greenlund, PhD, WH Giles, MD, Div of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: From 1980 to 2000, the COPD death rate in the United States among women aged ≥ 25 years increased from 20.1 to 56.7 per 100,000 population, while the rate for men aged ≥ 25 years increased from 73.0 to 82.6 per 100,000 population (5). The findings in this report indicate that, during

TABLE 1. Annual number of deaths and rate* of death with chronic obstructive pulmonary disease as the underlying cause among adults aged ≥ 25 years, by age group, sex, and race — National Vital Statistics System, United States, 2000–2005

Characteristic	2000		2001		2002		2003		2004		2005	
	No. of deaths	Rate	No. of deaths	Rate	No. of deaths	Rate	No. of deaths	Rate	No. of deaths	Rate	No. of deaths	Rate
Overall†	116,494	65.2	117,697	64.7	119,480	64.4	121,267	64.3	117,134	61.1	126,005	64.3
Age group (yrs)												
25–44	500	0.6	554	0.7	586	0.7	573	0.7	554	0.7	558	0.7
45–54	2,618	6.9	2,695	6.9	2,842	7.1	2,883	7.1	2,920	7.0	3,356	7.9
55–64	10,130	41.7	10,545	41.7	10,670	40.1	11,451	41.0	11,183	38.5	12,173	40.1
65–74	30,249	164.5	29,942	163.5	29,040	158.9	29,241	159.5	27,740	150.2	29,296	157.2
≥ 75	72,997	439.7	73,961	435.6	76,342	440.6	77,119	438.6	74,737	419.2	80,622	444.2
Sex†												
Men	58,058	83.8	57,908	81.3	58,807	80.4	58,904	78.7	56,940	74.5	60,812	77.3
Women	58,436	54.4	59,789	54.7	60,673	54.6	62,363	55.4	60,194	52.8	65,193	56.0
Race†												
White	68,979	68.5	69,823	68.0	71,947	67.8	72,748	67.9	70,517	64.7	75,883	68.1
Black	3,173	42.6	3,269	41.9	3,508	42.7	3,388	41.4	3,242	38.6	3,657	42.4
All other	845	28.4	869	26.8	887	25.0	983	25.5	978	23.5	1,082	24.0

* Per 100,000 population.

† Age standardized to the 2000 U.S. standard population, aged ≥ 25 years.**FIGURE 1. Age-standardized death rate* from chronic obstructive pulmonary disease among adults aged ≥ 25 years, by sex — National Vital Statistics System, United States, 2000–2005**

* Per 100,000 population.

2000–2005, the overall age-standardized mortality rate from COPD in the United States was fairly stable, but the absolute number of COPD deaths increased 8% from 2000 to 2005. During the period, more women than men died from COPD, and death rates from COPD increased among women while rates decreased among men. The difference in mortality rates between men and women might reflect a delay in mortality related to smoking exposure among women relative to men in the United States in the second half of the 20th century (6). In addition, women might be more susceptible to COPD as a result of sex differences in xenobiotic metabolism, hormones that modify detoxifying enzymes, airway inflammation and responsiveness, and particle deposition (7). The changes in death rates observed in 2004 and 2005 for men, women, and overall suggest a need for continued monitoring to assess whether changes are trending in a more favorable or less favorable pattern.

State-specific variations in COPD mortality might reflect differences in smoking histories and/or differences in other exposures such as occupational exposure across states. Occupational exposure to dust, fumes, and gases accounts for approximately 15% of COPD cases (8).

The findings in this report are subject to at least two limitations. First, data are subject to misclassification of race both in the population census and on death certificates, which might result in overreporting or underreporting of deaths or rates for certain racial groups. Second, data on underlying cause of death might be subject to errors in diagnosis and reporting on the death certificate.

Public health programs that focus on reducing total personal exposure to tobacco smoke, occupational dusts and chemicals, and other indoor and outdoor air pollutants are critically important (4). Although current evidence does not support population screening using office spirometry to detect COPD (9), patients should be identified and treated as early as possible in the course of the disease. Disease prevention is the ultimate goal, but once COPD has been diagnosed, effective management should be aimed at relieving symptoms; preventing disease progression; improving exercise tolerance, daily activity, and health status; preventing and treating complications and exacerbations; and reducing mortality (4,9). No treatment has been shown to effectively modify the rate of decline in lung function; however, evidence supports the use of bronchodilators as the primary pharmacologic therapy to prevent and control symptoms, reduce the frequency and severity of acute exacerbations, and improve quality of life (9). Physicians should be aware of the availability of clinical practice guidelines for the diagnosis and management of COPD and guidelines on smoking cessation among COPD patients.

TABLE 2. Number of deaths and rate* of death with chronic obstructive pulmonary disease as the underlying cause, among adults aged ≥ 25 years, by state, sex, and age group — National Vital Statistics System, United States, 2005

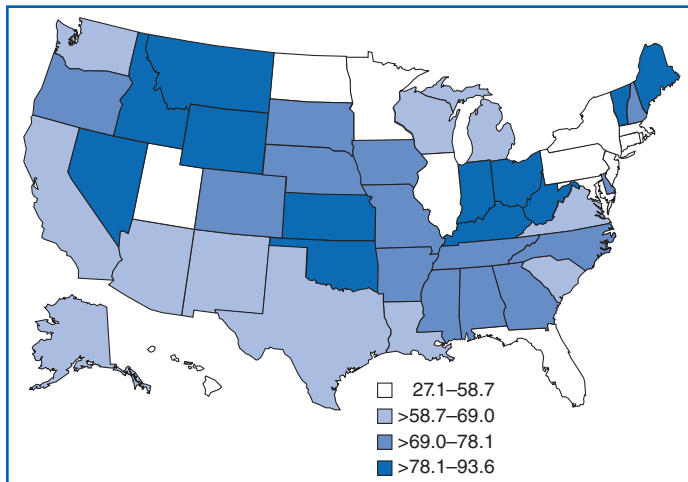
State	Men				Women			
	No. of deaths	Rate†			No. of deaths	Rate†		
		25–64 yrs	≥ 65 yrs	All ages ≥ 25 yrs		25–64 yrs	≥ 65 yrs	All ages ≥ 25 yrs
Alabama	1,212	14.6	442.8	98.3	1,106	10.8	254.6	58.4
Alaska	73	—§	349.5	73.9	72	—	242.0	54.7
Arizona	1,281	10.9	334.5	74.1	1,442	9.2	290.1	64.1
Arkansas	794	16.4	423.2	95.9	714	13.2	254.4	60.3
California	5,944	8.2	326.7	70.5	6,664	6.9	250.2	54.4
Colorado	961	10.6	445.5	95.6	903	6.0	297.8	63.0
Connecticut	626	6.6	291.7	62.3	795	5.4	230.3	49.3
Delaware	184	—	368.4	77.3	214	7.4	290.0	62.6
District of Columbia	58	—	189.8	41.4	65	—	125.5	26.4
Florida	4,436	11.0	294.3	66.3	4,737	8.7	230.5	52.0
Georgia	1,595	12.7	395.3	87.5	1,667	9.5	261.3	58.7
Hawaii	150	—	169.0	36.6	110	—	94.7	20.3
Idaho	365	10.5	458.5	98.1	326	10.0	304.3	67.5
Illinois	2,209	8.1	321.6	69.4	2,608	7.5	237.4	52.4
Indiana	1,621	13.8	452.8	99.6	1,744	12.5	311.0	70.8
Iowa	844	11.4	415.5	90.3	806	9.4	258.5	58.1
Kansas	772	12.1	459.5	99.6	757	9.2	300.9	66.2
Kentucky	1,239	17.5	508.6	113.4	1,268	16.2	328.6	77.2
Louisiana	949	11.3	398.4	87.0	881	8.5	234.6	52.7
Maine	394	11.2	445.8	96.1	419	8.3	325.1	70.2
Maryland	760	6.6	263.4	56.8	1,063	6.0	238.3	51.4
Massachusetts	1,102	6.2	290.4	61.8	1,427	6.7	224.0	49.2
Michigan	2,017	9.0	352.3	76.1	2,287	8.9	258.4	57.7
Minnesota	923	6.7	322.8	68.5	960	6.4	218.7	47.9
Mississippi	763	16.9	461.6	103.8	653	11.7	245.7	57.4
Missouri	1,508	12.6	422.4	92.7	1,494	10.0	272.5	61.3
Montana	287	11.5	454.4	98.1	282	12.3	320.8	72.6
Nebraska	459	9.0	430.5	91.4	438	6.4	272.8	58.5
Nevada	577	10.7	443.2	95.2	632	10.5	394.9	85.6
New Hampshire	265	10.1	347.2	75.9	346	7.3	318.5	68.1
New Jersey	1,330	6.2	265.7	56.9	1,679	3.8	215.6	45.2
New Mexico	425	8.9	382.9	82.0	399	7.0	261.4	56.8
New York	2,907	6.8	258.3	56.0	3,565	6.0	196.4	43.2
North Carolina	2,033	12.2	430.7	94.0	1,972	9.4	265.8	59.5
North Dakota	144	—	325.0	68.8	116	—	179.7	40.1
Ohio	3,062	12.8	440.7	96.4	3,344	11.0	305.3	68.5
Oklahoma	1,159	19.2	514.9	116.1	1,137	15.9	341.8	79.6
Oregon	822	9.7	356.6	77.5	945	9.8	293.9	65.3
Pennsylvania	2,813	8.5	330.3	71.4	3,122	6.5	227.4	49.6
Rhode Island	219	9.2	316.7	69.3	283	9.6	241.2	54.8
South Carolina	965	13.3	387.0	86.4	914	11.0	235.7	54.9
South Dakota	242	12.9	447.7	97.9	182	—	242.5	52.3
Tennessee	1,510	15.8	427.3	96.2	1,566	14.3	284.3	67.0
Texas	3,816	9.6	362.6	78.6	3,850	8.0	246.4	54.6
Utah	322	8.7	294.1	64.5	237	6.2	161.3	36.5
Vermont	192	—	540.4	111.7	178	—	314.0	68.1
Virginia	1,295	7.1	346.9	73.5	1,475	8.0	243.5	54.1
Washington	1,194	8.7	340.8	73.6	1,397	8.3	282.4	61.9
West Virginia	657	15.8	516.1	113.6	658	16.5	329.6	77.7
Wisconsin	1,191	8.3	358.7	76.8	1,161	5.9	234.1	50.5
Wyoming	145	12.7	477.9	103.6	132	14.0	310.7	72.0
Total	60,812	10.0	355.1	77.3	65,193	8.4	252.0	56.0

* Per 100,000 population.

† Age standardized to the 2000 U.S. standard population aged ≥ 25 years.

§ Rate not calculated because of small number of deaths.

FIGURE 2. Rate* of death with chronic obstructive pulmonary disease as the underlying cause, among adults aged ≥ 25 years, by quartile — National Vital Statistics System, 2005



* Per 100,000 population, age standardized to the 2000 U.S. standard population aged ≥ 25 years.

COPD represents an important public health challenge that is both preventable and treatable. Globally, the COPD burden is projected to increase in coming decades because of continued exposure to COPD risk factors and aging of the population (10). Further efforts to improve public recognition of COPD as a public health problem and to increase awareness of COPD symptoms are needed.

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Notice to Readers

World COPD Day – November 19, 2008

Chronic obstructive pulmonary disease (COPD) is a growing global public health problem. According to new projections, COPD is predicted to become the third leading cause of death worldwide by 2030 (1). In 2005, COPD was the fourth leading cause of death in the United States. To increase global awareness of COPD, the Global Initiative for Chronic Obstructive Lung Disease (<http://www.goldcopd.com>) is sponsoring World COPD Day on November 19, 2008.

The World Health Organization recently published *Global Surveillance, Prevention and Control of Chronic Respiratory Diseases: a Comprehensive Approach* to raise awareness of the substantial impact of chronic respiratory diseases worldwide and to highlight the risk factors and ways to prevent and treat these diseases. Improving global awareness of COPD will require basic epidemiologic data on COPD risk factors, burden, and surveillance. These data currently are lacking for much of the world's population, particularly persons in low- and middle-income countries.

Smoking is the most important recognized cause of COPD. Other causes include exposure to occupational hazards, air pollution, alpha 1-antitrypsin deficiency (2), and secondhand smoke. All smokers should stop smoking, and all persons should be protected from exposure to secondhand smoke. Many resources are available to help smokers quit. Additional information is available at <http://www.smokefree.gov>, http://www.cdc.gov/tobacco/quit_smoking, or by telephone, 1-800-QUIT-NOW.

COPD is treatable, and early diagnosis is important. Persons at risk for COPD who have cough, sputum production, or shortness of breath should talk with their physicians and be tested for the disease using spirometry, a simple breathing test for assessing lung function (3). Additional information on COPD is available at <http://www.nhlbi.nih.gov/health/public/lung/copd/lmbb-campaign>.

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*Notice to Readers***Twelfth Annual Conference
on Vaccine Research**

CDC and 11 other national and international agencies and organizations will collaborate with the National Foundation for Infectious Diseases in sponsoring the Twelfth Annual Conference on Vaccine Research, April 27–29, 2009, at the Marriott Waterfront Hotel, Baltimore, Maryland. The conference is the largest scientific forum devoted exclusively to the research and development of all vaccines and related technologies for prevention and treatment of disease through immunization. The conference brings together the diverse fields of human and veterinary vaccinology to encourage cross-fertilization of ideas and approaches among researchers otherwise focused on specific diseases or methods.

Twenty invited speakers at five symposia will discuss vaccine safety, immunization programs for global health, synergy between veterinary and human vaccine development, and

tuberculosis and malaria vaccines. Six oral sessions and posters will include presentations selected through peer review from among submitted abstracts.

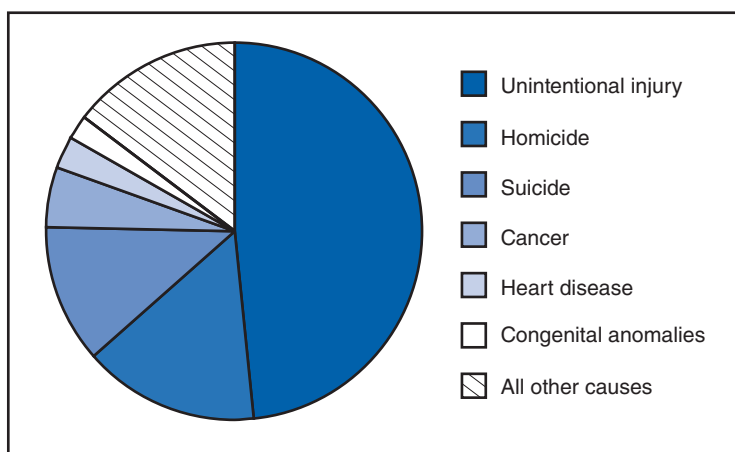
A travel grant program to subsidize attendees from countries with limited resources has an application deadline of December 7, 2008. Deadline for online submission of general abstracts is January 26, 2009. Abstracts from eligible authors may be designated for consideration for the Maurice R. Hilleman Early-Stage Career Investigator Award, which provides \$10,000 for research expenses and a travel stipend and registration for the 2010 conference.

Additional information about the preliminary program, travel grants, abstract submission, registration, hotel accommodation, and exhibition space is available at <http://www.nfid.org/conferences/vaccine09>, by e-mail (vaccine@nfid.org), fax (301-907-0878), by telephone (301-656-0003, ext 19), and by mail (NFID, Suite 750, 4733 Bethesda Avenue, Bethesda, MD 20814-5278).

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Deaths from Leading Causes Among Teens Aged 15–19 Years — National Vital Statistics System, United States, 2005



In 2005, a total of 13,073 deaths occurred among teens aged 15–19 years. The leading cause of death in this age group was unintentional injury, accounting for 48.3% of the deaths. Homicide accounted for 15.1% of the deaths and suicide for 11.8%, followed by cancer (5.3%), heart disease (2.8%), and congenital anomalies (1.8%).

SOURCE: National Vital Statistics System mortality data available at <http://www.cdc.gov/ncipc/wisqars>. Additional information available at <http://www.cdc.gov/nchs/deaths.htm>.

TABLE 1. Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending November 8, 2008 (45th week)*

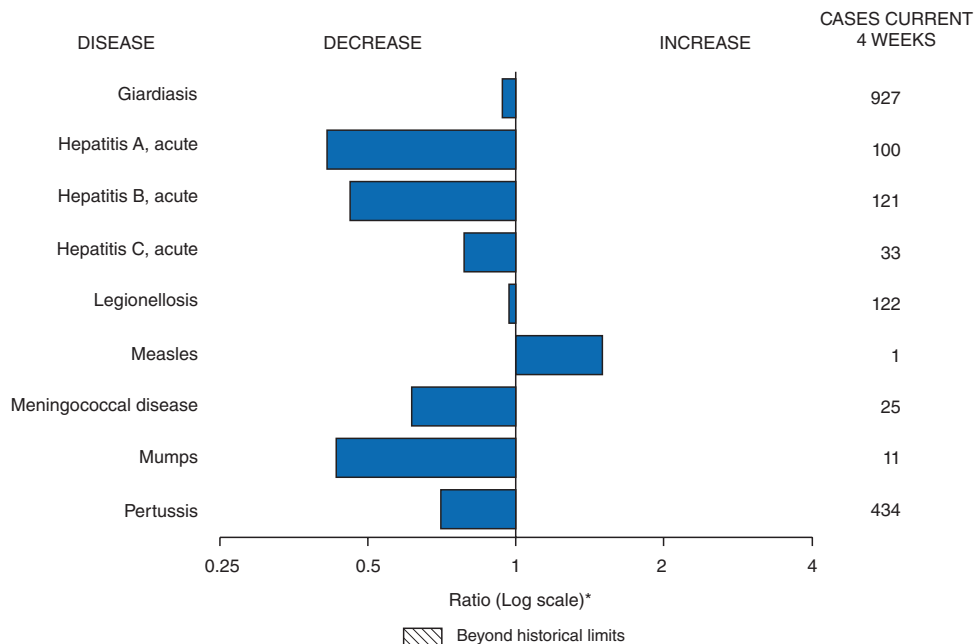
Disease	Current week	Cum 2008	5-year weekly average†	Total cases reported for previous years					States reporting cases during current week (No.)
				2007	2006	2005	2004	2003	
Anthrax	—	—	—	1	1	—	—	—	
Botulism:									
foodborne	—	11	0	32	20	19	16	20	
infant	—	79	1	85	97	85	87	76	
other (wound & unspecified)	—	16	0	27	48	31	30	33	
Brucellosis	1	78	3	131	121	120	114	104	CA (1)
Chancroid	—	29	1	23	33	17	30	54	
Cholera	—	1	0	7	9	8	6	2	
Cyclosporiasis§	1	115	1	93	137	543	160	75	VA (1)
Diphtheria	—	—	0	—	—	—	—	1	
Domestic arboviral diseases§,¶:									
California serogroup	—	35	0	55	67	80	112	108	
eastern equine	—	2	0	4	8	21	6	14	
Powassan	—	1	0	7	1	1	1	—	
St. Louis	—	8	0	9	10	13	12	41	
western equine	—	—	—	—	—	—	—	—	
Ehrlichiosis/Anaplasmosis§,¶,¶:									
<i>Ehrlichia chaffeensis</i>	9	732	8	828	578	506	338	321	OH (1), MN (1), MD (1), VA (1), NC (1), KY (1), TN (1), OK (2)
<i>Ehrlichia ewingii</i>	—	7	—	—	—	—	—	—	
<i>Anaplasma phagocytophilum</i>	7	358	10	834	646	786	537	362	NY (4), MN (2), MD (1)
undetermined	1	64	2	337	231	112	59	44	NY (1)
<i>Haemophilus influenzae</i> ,††									
invasive disease (age <5 yrs):									
serotype b	1	23	0	22	29	9	19	32	NC (1)
nonserotype b	1	139	2	199	175	135	135	117	NY (1)
unknown serotype	2	162	3	180	179	217	177	227	MO (1), GA (1)
Hansen disease§	1	65	2	101	66	87	105	95	OH (1)
Hantavirus pulmonary syndrome§	—	14	1	32	40	26	24	26	
Hemolytic uremic syndrome, postdiarrheal§	—	180	4	292	288	221	200	178	
Hepatitis C viral, acute	7	694	17	849	766	652	720	1,102	IN (1), MD (1), KY (1), NV (1), CA (3)
HIV infection, pediatric (age <13 years)§§	—	—	5	—	—	380	436	504	
Influenza-associated pediatric mortality§,¶¶	1	90	0	77	43	45	—	N	WA (1)
Listeriosis	7	549	16	808	884	896	753	696	PA (1), OH (1), NC (1), FL (1), AZ (1), WA (1), CA (1)
Measles***	1	132	0	43	55	66	37	56	NY (1)
Meningococcal disease, invasive†††:									
A, C, Y, & W-135	2	235	4	325	318	297	—	—	OH (1), OK (1)
serogroup B	2	130	2	167	193	156	—	—	OH (1), TX (1)
other serogroup	—	30	1	35	32	27	—	—	
unknown serogroup	7	522	10	550	651	765	—	—	NY (1), OH (1), MI (1), MO (1), TN (1), OR (1), CA (1)
Mumps	1	349	13	800	6,584	314	258	231	AK (1)
Novel influenza A virus infections	—	—	—	4	N	N	N	N	
Plague	—	1	0	7	17	8	3	1	
Poliomyelitis, paralytic	—	—	—	—	—	1	—	—	
Polio virus infection, nonparalytic§	—	—	—	—	N	N	N	N	
Psittacosis§	—	9	0	12	21	16	12	12	
Qfever§,§§§ total:	2	103	2	171	169	136	70	71	
acute	2	92	—	—	—	—	—	—	NY (2)
chronic	—	11	—	—	—	—	—	—	
Rabies, human	—	—	0	1	3	2	7	2	
Rubella¶¶¶	—	13	—	12	11	11	10	7	
Rubella, congenital syndrome	—	—	—	—	1	1	—	1	
SARS-CoV§,****	—	—	—	—	—	—	—	8	
Smallpox§	—	—	—	—	—	—	—	—	
Streptococcal toxic-shock syndrome§	—	111	1	132	125	129	132	161	
Syphilis, congenital (age <1 yr)	—	187	8	430	349	329	353	413	
Tetanus	—	9	0	28	41	27	34	20	
Toxic-shock syndrome (staphylococcal)§	3	54	1	92	101	90	95	133	KY (1), TN (1), NV (1)
Trichinellosis	—	5	0	5	15	16	5	6	
Tularemia	—	86	1	137	95	154	134	129	
Typhoid fever	4	341	5	434	353	324	322	356	MO (1), CA (3)
Vancomycin-intermediate <i>Staphylococcus aureus</i> §	—	6	0	37	6	2	—	N	
Vancomycin-resistant <i>Staphylococcus aureus</i> §	—	—	0	2	1	3	1	N	
Vibriosis (noncholera <i>Vibrio</i> species infections)§	6	385	5	447	N	N	N	N	MN (1), MD (1), AL (1), AZ (1), CA (2)
Yellow fever	—	—	—	—	—	—	—	—	

See Table 1 footnotes on next page.

TABLE 1. (Continued) Provisional cases of infrequently reported notifiable diseases (<1,000 cases reported during the preceding year) — United States, week ending November 8, 2008 (45th week)*

—: No reported cases. N: Not notifiable. Cum: Cumulative year-to-date counts.
 * Incidence data for reporting year 2008 are provisional, whereas data for 2003, 2004, 2005, 2006, and 2007 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. There are no reports of confirmed influenza-associated pediatric deaths for the current 2008-09 season.
 *** The one measles case reported for the current week was indigenous.
 ††† 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.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals November 8, 2008, with historical data



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

Notifiable Disease Data Team and 122 Cities Mortality Data Team
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TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending November 8, 2008, and November 10, 2007 (45th week)*

Reporting area	Streptococcal diseases, 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		
United States	44	96	259	4,525	4,534	32	35	166	1,353	1,516
New England	—	6	31	315	346	1	1	14	60	112
Connecticut	—	0	26	95	107	—	0	11	—	13
Maine§	—	0	3	26	24	1	0	1	2	2
Massachusetts	—	3	8	138	165	—	0	5	39	76
New Hampshire	—	0	2	26	26	—	0	1	11	11
Rhode Island§	—	0	9	18	8	—	0	2	7	8
Vermont§	—	0	2	12	16	—	0	1	1	2
Mid. Atlantic	6	18	43	885	836	2	3	19	158	270
New Jersey	—	3	11	133	154	—	1	6	30	52
New York (Upstate)	1	6	17	290	256	2	2	14	87	89
New York City	—	4	10	163	200	—	1	8	41	129
Pennsylvania	5	6	16	299	226	N	0	0	N	N
E.N. Central	2	19	42	832	856	4	6	23	231	260
Illinois	—	5	16	219	258	—	1	6	48	68
Indiana	1	2	11	119	103	—	0	14	34	17
Michigan	—	3	10	155	181	1	1	5	62	64
Ohio	1	5	14	237	200	3	1	5	54	55
Wisconsin	—	2	10	102	114	—	1	3	33	56
W.N. Central	—	5	39	339	297	1	2	16	122	86
Iowa	—	0	0	—	—	—	0	0	—	—
Kansas	—	0	5	34	29	—	0	3	16	1
Minnesota	—	0	35	154	144	—	0	13	53	47
Missouri	—	2	10	80	75	—	1	2	30	24
Nebraska§	—	1	3	39	23	1	0	3	8	13
North Dakota	—	0	5	12	15	—	0	2	8	1
South Dakota	—	0	2	20	11	—	0	1	7	—
S. Atlantic	9	22	37	972	1,104	5	7	16	258	273
Delaware	—	0	2	7	10	—	0	0	—	—
District of Columbia	—	0	4	26	17	—	0	1	2	2
Florida	6	5	11	232	276	3	1	4	57	58
Georgia	—	4	14	211	216	—	1	5	61	65
Maryland§	1	4	8	161	185	—	1	5	48	57
North Carolina	—	3	10	125	149	N	0	0	N	N
South Carolina§	—	1	5	61	90	2	1	4	45	47
Virginia§	2	3	12	117	137	—	1	6	38	37
West Virginia	—	0	3	32	24	—	0	1	7	7
E.S. Central	4	4	9	154	193	4	2	11	84	85
Alabama§	N	0	0	N	N	N	0	0	N	N
Kentucky	1	1	3	36	37	N	0	0	N	N
Mississippi	N	0	0	N	N	—	0	3	18	5
Tennessee§	3	3	6	118	156	4	1	9	66	80
W.S. Central	17	9	85	410	272	13	5	66	235	212
Arkansas§	—	0	2	5	17	—	0	2	6	13
Louisiana	—	0	2	15	15	—	0	2	10	33
Oklahoma	2	2	19	100	62	—	1	7	58	47
Texas§	15	6	65	290	178	13	3	58	161	119
Mountain	4	10	22	475	501	2	4	12	191	205
Arizona	2	4	9	182	191	2	2	8	97	99
Colorado	—	2	8	126	124	—	1	4	53	40
Idaho§	2	0	2	15	16	—	0	1	5	2
Montana§	N	0	0	N	N	—	0	1	4	1
Nevada§	—	0	1	10	2	N	0	0	N	N
New Mexico§	—	2	8	88	88	—	0	3	16	36
Utah	—	1	5	48	75	—	0	3	15	27
Wyoming§	—	0	2	6	5	—	0	1	1	—
Pacific	2	3	10	143	129	—	0	2	14	13
Alaska	2	1	4	37	24	N	0	0	N	N
California	—	0	0	—	—	N	0	0	N	N
Hawaii	—	2	10	106	105	—	0	2	14	13
Oregon§	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	0	—	14	—	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 year 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 (NNDSS event code 11717).

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

TABLE II. (Continued) Provisional cases of selected notifiable diseases, United States, weeks ending November 8, 2008, and November 10, 2007 (45th week)*

Table with columns for Reporting area, Current week, Previous 52 weeks (Med, Max), and Cumulative counts (2008, 2007). It is divided into sections for Streptococcus pneumoniae (A and B) and Syphilis, primary and secondary.

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 2008 are provisional. † Includes cases of invasive pneumococcal disease caused by drug-resistant S. pneumoniae (DRSP) (NNDSS event code 11720). ‡ Contains data reported through the National Electronic Disease Surveillance System (NEDSS).

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