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Deaths: Preliminary Data for 2009

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Abstract

Objectives—This report presents preliminary U.S. data on deaths, death rates, life expectancy, leading causes of death, and infant mortality for 2009 by selected characteristics such as age, sex, race, and Hispanic origin.

Methods—Data in this report are based on death records comprising more than 96 percent of the demographic and medical files for all deaths in the United States in 2009. The records are weighted to independent control counts for 2009. Comparisons are made with 2008 preliminary data.

Results—The age-adjusted death rate decreased from 758.7 deaths per 100,000 population in 2008 to 741.0 deaths per 100,000 population in 2009. From 2008 to 2009, age-adjusted death rates decreased significantly for 10 of the 15 leading causes of death: Diseases of heart, Malignant neoplasms, Chronic lower respiratory diseases, Cerebrovascular diseases, Accidents (unintentional injuries), Alzheimer's disease, Diabetes mellitus, Influenza and pneumonia, Septicemia, and Assault (homicide). Life expectancy increased by 0.2 year, from 78.0 in 2008 to 78.2 in 2009.

Keywords: death rates • life expectancy • vital statistics • cause of death

Introduction

This report presents preliminary mortality data for the United States based on vital records for a substantial proportion of deaths occurring in 2009. Statistics in preliminary reports are generally considered reliable; past analyses reveal that most statistics shown in preliminary reports for 1995–2007 were confirmed by the final statistics for each of those years (1–13).

Data Sources and Methods

Preliminary data in this report are based on records of deaths that occurred in calendar year 2009, which were received from state vital statistics offices and processed by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) as of November 5, 2010. Estimates of the level of completeness of preliminary data for each state are shown in Table I (see "Technical Notes"). Detailed information on the nature, sources, and qualifications of the preliminary data are given in "Technical Notes." The preliminary 2009 data for Georgia were incomplete, therefore, additional review of the data was included to ensure that the 2009 estimates for the United States were accurate.

Each state vital statistics office reported to NCHS the number of deaths registered and processed for calendar year 2009. Those state counts were used as independent control counts for NCHS' 2009 preliminary national mortality file. A comparison of a) the number of 2009 death records received from the states for processing by NCHS with b) each state's independent control counts of the number of deaths in 2009 indicates that demographic information for the United States was available for an estimated 97 percent of infant deaths (under age 1 year) and 99 percent of deaths of persons aged 1 year and over occurring in calendar year 2009 (see Table I in "Technical Notes"). Medical (or cause-of-death) information was processed separately and available for an estimated 94 percent of infant deaths and 97 percent of deaths of persons aged 1 year and over in 2009.

To produce the preliminary estimates shown in this report, 2009 records were weighted using 2009 state-specific, independent control counts of infant deaths and deaths of those aged 1 year and over received in state vital statistics offices. Two separate sets of weights were applied to the death records—one set for demographic information and another for medical information. This results in inconsistencies between demographic data from the mortality demographic tables and the medical tables showing causes of death (see "Nature and sources of data" in "Technical Notes"). Preliminary estimates are subject to sampling variation as well as random variation.

Cause-of-death information is not always available when preliminary data are sent to NCHS but is available later for final data processing. As a result, estimates of cause of death based on preliminary mortality data may differ from statistics developed from the final mortality data (see Tables II and III in "Technical Notes"). Such differences may affect certain causes of death where the cause is pending investigation, such as for Assault (homicide), Intentional self-harm

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Table B. Deaths and death rates for 2009, and age-adjusted death rates and percent changes from 2008 to 2009, for the 15 leading causes of death: United States, preliminary 2008 and 2009

[Data based on a continuous file of records received from the states. Rates are per 100,000 population; age-adjusted rates per 100,000 U.S. standard population are based on the year 2000 standard; see "Technical Notes." For explanation of asterisks (*) preceding cause-of-death codes, see "Technical Notes." Figures are based on weighted data rounded to the nearest individual, so categories may not add to totals]

Rank[1]	Cause of death (based on the *International Classification of Diseases, Tenth Revision*, Second Edition, 2004)		Number	Death rate	Age-adjusted death rate		
					2009	2008	Percent change
...	All causes		2,436,652	793.7	741.0	758.6	–2.3
1	Diseases of heart	(I00–I09,I11,I13,I20–I51)	598,607	195.0	179.8	186.7	–3.7
2	Malignant neoplasms	(C00–C97)	568,668	185.2	173.6	175.5	–1.1
3	Chronic lower respiratory diseases	(J40–J47)	137,082	44.7	42.2	44.0	–4.1
4	Cerebrovascular diseases	(I60–I69)	128,603	41.9	38.9	40.6	–4.2
5	Accidents (unintentional injuries)	(V01–X59,Y85–Y86)[2]	117,176	38.2	37.0	38.6	–4.1
6	Alzheimer's disease	(G30)	78,889	25.7	23.4	24.4	–4.1
7	Diabetes mellitus	(E10–E14)	68,504	22.3	20.9	21.8	–4.1
8	Influenza and pneumonia	(J09–J18)	53,582	17.5	16.2	17.0	–4.7
9	Nephritis, nephrotic syndrome and nephrosis	(N00–N07,N17—N19,N25–N27)	48,714	15.9	14.8	14.8	0.0
10	Intentional self-harm (suicide)	(*U03,X60–X84,Y87.0)[2]	36,547	11.9	11.7	11.6	0.9
11	Septicemia	(A40–A41)	35,587	11.6	10.9	11.1	–1.8
12	Chronic liver disease and cirrhosis	(K70,K73–K74)	30,444	9.9	9.2	9.2	0.0
13	Essential hypertension and hypertensive renal disease	(I10,I12,I15)	25,651	8.4	7.7	7.7	0.0
14	Parkinson's disease	(G20–G21)	20,552	6.7	6.4	6.4	0.0
15	Assault (homicide)	(*U01–*U02,X85–Y09,Y87.1)[2]	16,591	5.4	5.5	5.9	–6.8
...	All other causes	(residual)	471,455	153.6	...	...	...

... Category not applicable.

[1]Based on number of deaths.

[2]For unintentional injuries, suicides, and homicides, preliminary and final data may differ significantly because of the truncated nature of the preliminary file.

NOTES: Data are subject to sampling and random variation. For information regarding the calculation of standard errors and further discussion of variability of the data, see "Technical Notes."

age-adjusted death rate for the leading cause of death, Diseases of heart, decreased by 3.7 percent. The age-adjusted death rate for Malignant neoplasms decreased by 1.1 percent (Tables B and 2). Deaths from these two diseases combined accounted for 48 percent of deaths in the United States in 2009. Although heart disease mortality has exhibited a downward trend since 1950, cancer mortality began to decline only in the early 1990s (10,22). The preliminary age-adjusted death rate also decreased significantly for Chronic lower respiratory diseases (4.1 percent) and Cerebrovascular diseases (4.2 percent).

Other leading causes of death that showed significant decreases in 2009 relative to 2008 were: Accidents (unintentional injuries) (4.1 percent), Alzheimer's disease (4.1 percent), Diabetes mellitus (4.1 percent), Influenza and pneumonia (4.7 percent), Septicemia (1.8 percent), and Assault (homicide) (6.8 percent).

The observed increase in the age-adjusted death rate for Intentional self-harm (suicide) was not significant. The age-adjusted death rates for Nephritis, nephrotic syndrome and nephrosis; Chronic liver disease and cirrhosis; Essential hypertension and hypertensive renal disease; and Parkinson's disease remained unchanged from 2008 to 2009.

Human immunodeficiency virus (HIV) disease was not among the 15 leading causes of death in 2009. The preliminary age-adjusted death rate for HIV disease declined by 9.1 percent from 2008 to 2009 (Table 2). Following a period of increase from 1987 through 1994, HIV disease mortality reached a plateau in 1995. Subsequently, the rate for this disease decreased an average of 33.0 percent per year from 1995 through 1998 (27), and 5.1 percent per year from 1999 through 2008 (22). For all races combined in the age group 15–24, HIV disease was the 12th leading cause of death in 2009, decreasing by two positions relative to its rank as 10th leading cause for those aged 15–24 in 2008. HIV disease remained the sixth leading cause of death for the age group 25–44, unchanged in rank from 2008. Among decedents aged 45–64, HIV disease dropped from 12th leading cause in 2008 to 13th leading cause.

Enterocolitis due to *Clostridium difficile (C. difficile)*—a predominantly antibiotic-associated inflammation of the intestines caused by *C. difficile*, a gram-positive, anaerobic, spore-forming bacillus—is of growing concern. The disease is often acquired by long-term patients or residents in hospitals or other health-care facilities and accounted for an increasing number of deaths between 1999 and 2008 (28,29). In 1999, 793 deaths were due to *C. difficile* compared with 7,483 *C. difficile* deaths in 2008 (22). In 2009, the number of deaths decreased to 7,285. The age-adjusted death rate for this cause decreased from 2.3 deaths per 100,000 standard population in 2008 to 2.2 deaths per 100,000 standard population in 2009 (4.3 percent). In 2009, *C. difficile* ranked as the 19th leading cause of death for the population aged 65 and over. Approximately 92 percent of deaths from *C. difficile* occurred to people aged 65 and over (data not shown).

The preliminary age-adjusted death rate for drug-induced deaths declined by 1.6 percent, from 12.3 in 2008 to 12.1 in 2009. However, the final number of drug-induced deaths in 2008 or 2009 may be substantially higher because information on cause of death in these cases is often delayed pending investigation. Additional information