



CENTER FOR HEALTH STATISTICS  
DATA SUMMARY

REPORT REGISTER NO. DS00-03001  
(March 2000)

**CEREBROVASCULAR  
DISEASE DEATHS  
CALIFORNIA, 1997**

**Introduction**

Cerebrovascular disease has historically been one of the leading causes of death in the United States and in California. In the United States an estimated 600,000 people suffer a new or recurrent stroke each year; 28 percent of these stroke victims are under age 65.<sup>1</sup>

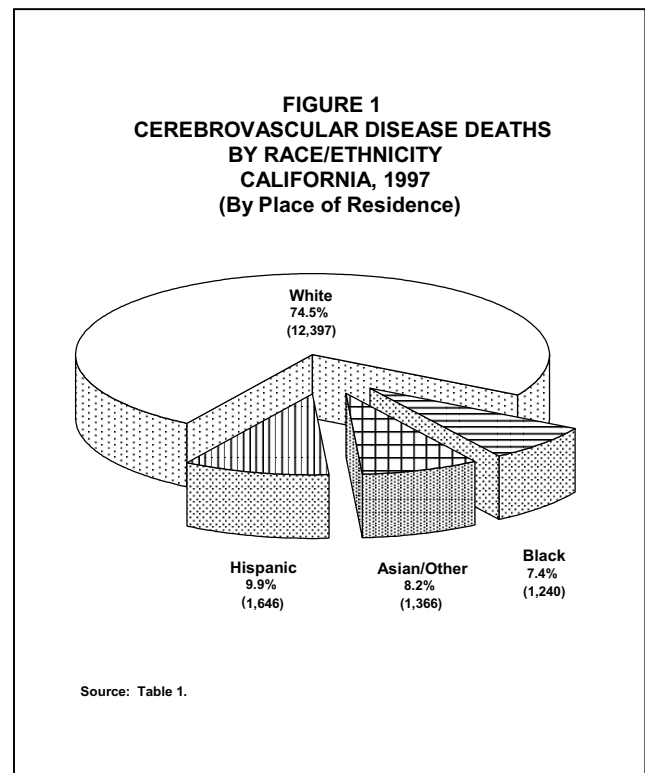
This report presents the most current data on cerebrovascular disease deaths, and provides analysis of crude and age-adjusted death rates for California residents by sex, age, and race/ethnicity. The definition of cerebrovascular disease used in this report is based on the ICD-9 codes 430-438 traditionally presented in National Center for Health Statistics reports.<sup>2</sup>

The method used to analyze vital statistics data is also important. Analyzing only the number of deaths has its disadvantages and can be misleading because the population at risk is not taken into consideration. Crude death rates, on the other hand, show the actual rate of dying in a given population, but the age composition of that population is not taken into consideration. Therefore, the use of age-adjusted death rates becomes the preferred method for measuring death rates over time, and for comparing death rates between race/ethnic groups, sex, and geographic areas. The 1940 United States (standard million) population was used as the basis for age-adjusting in this report.

**Cerebrovascular Disease Deaths**

**Table 1** (page 5) displays cerebrovascular disease death data for 1997 by race/ethnicity, age, and sex. Cerebrovascular disease deaths occur predominantly among the older population, and this held true in 1997 with 87.3

percent of all cerebrovascular disease deaths involving people 65 years and older. This age group, within each respective race/ethnic group, accounted for 91.9 percent of all cerebrovascular disease deaths among Whites, 79.1 percent of deaths among Asian/Other, 71.9 percent of deaths among Hispanics, and 71.0 percent of deaths among Blacks. During this period, the number of deaths attributed to cerebrovascular disease was 48.3 percent higher among females (9,943) than among males (6,706).

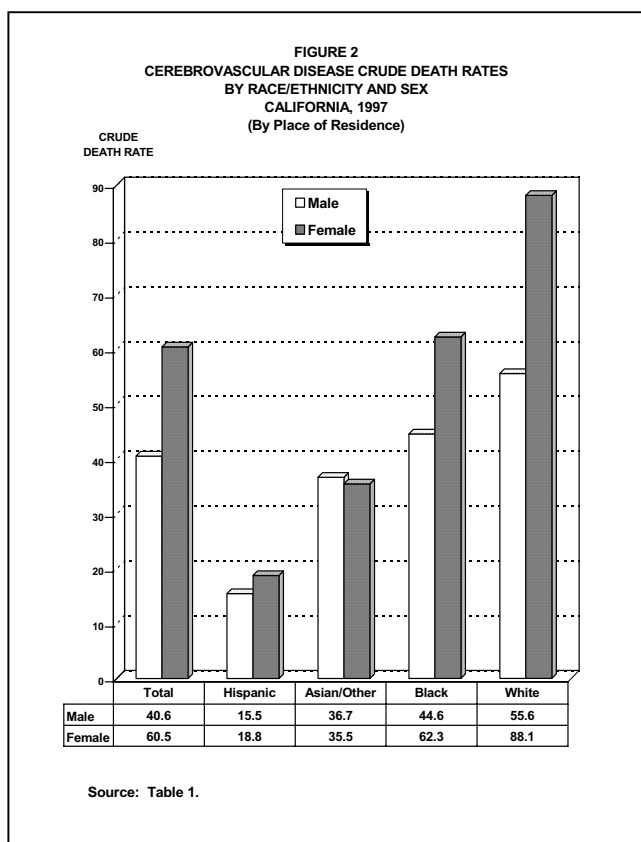


As shown in **Figure 1**, the number of cerebrovascular disease deaths among Whites (12,397) was much higher than Hispanics (1,646), Asian/Other (1,366), and Blacks (1,240).

This Data Summary was prepared by Daniel H. Cox, Center for Health Statistics, 304 S Street, P.O. Box 942732, Sacramento, CA 94234-7320, Telephone (916) 445-6355

## Cerebrovascular Disease Crude Death Rates

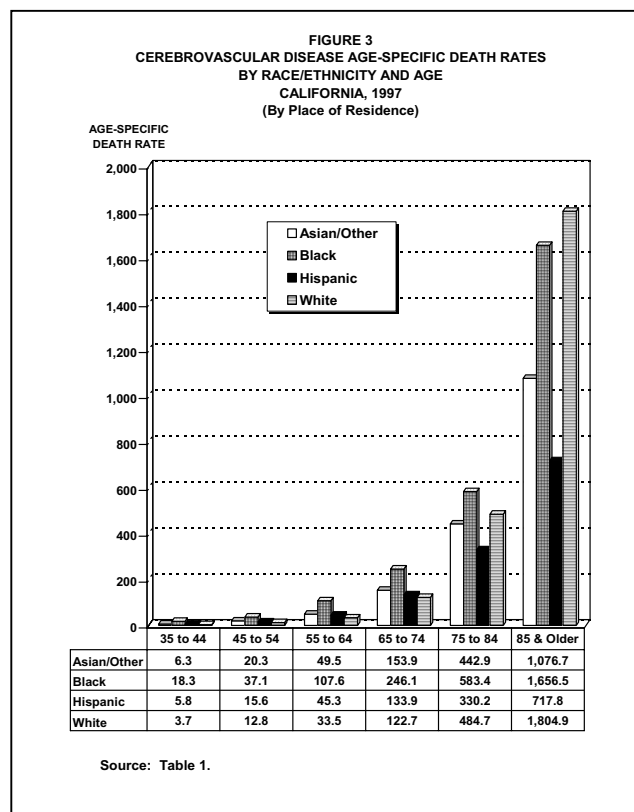
The cerebrovascular disease crude death rate for California declined slightly from 50.9 deaths per 100,000 population in 1996 to 50.5 in 1997. As shown in **Table 1** (page 5), Whites had the highest crude death rate in 1997, a rate of 72.0. Blacks were next with a crude rate of 53.6. Asian/Other and Hispanics were last with rates of 36.1 and 17.1, respectively.



**Figure 2** shows Hispanic, Black, and White females had significantly higher cerebrovascular disease crude death rates than males in the corresponding race/ethnic groups. Hispanic females had a rate of 18.8 deaths per 100,000 population and Hispanic males had a rate of 15.5. Black females had a rate of 62.3 and Black males had a rate of 44.6. White females had a rate of 88.1 and White males had a rate of 55.6. Contrary to the other three race/ethnic groups, Asian/Other males had a higher rate than females, although this difference was not statistically significant.

## Cerebrovascular Disease Age-Specific Death Rates

In **Table 1** (page 5) reliable age-specific rates show that among the sexes, Asian/Other males consistently had higher rates than Asian/Other females. Among Blacks, males had higher rates in the age groups 55 to 64, 65 to 74, and 85 & older, while females had higher rates in the remaining age groups. Hispanic males had higher rates than Hispanic females, except in the 75 to 84 age group. White males had higher rates than White females, except for the 85 & older age group.



**Figure 3** shows that Blacks had higher age-specific death rates than the other three race/ethnic groups, except in the 85 & older group where Whites had the highest rate. Not shown in **Figure 3**, but displayed in **Table 1** (page 5), are the cerebrovascular disease age-specific death rates for the 25 to 34 age group where Hispanics (2.0) had the highest rate and Whites (0.8) had the lowest. The rates for the other two race/ethnic groups, Asian/Other and Black, were unreliable for this age group.

## Cerebrovascular Disease Age-Adjusted Death Rates

In 1997 the United States cerebrovascular disease age-adjusted death rate (25.9 per 100,000 population) was slightly higher than the California rate (25.5).<sup>3</sup> During this year, California did not meet the *Healthy People 2000* objective of no more than 20.0 age-adjusted cerebrovascular disease deaths per 100,000 population.<sup>4</sup> An objective was also established for Blacks; a goal of no more than 27.0 age-adjusted cerebrovascular disease deaths per 100,000 population. Since Blacks had an age-adjusted death rate of 43.2, this goal was not met in 1997. *Healthy People 2000* goals were not established for any other race/ethnic group.

A comparison among the race/ethnic groups shows that Blacks (43.2) had an age-adjusted death rate significantly higher than Asian/Other (25.7), Whites (24.4), and Hispanics (21.0).

statistically significant for Asian/Other, Hispanics, and Whites.

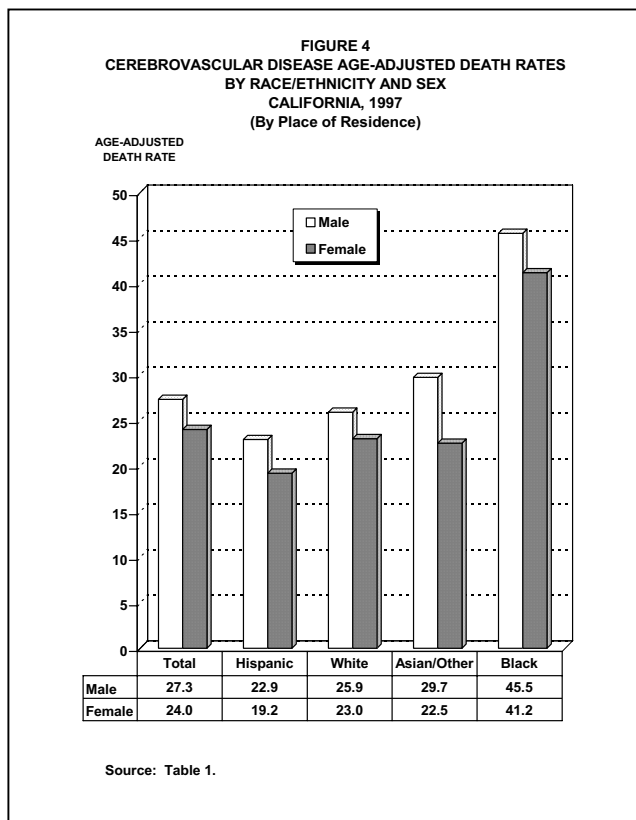
### Notes:

The cerebrovascular disease death data presented in this report are ICD-9 codes 430-438.

The term “significant” within the text indicates statistically significant based on the difference between two independent rates ( $p < .05$ ).

As with any vital statistics data, caution needs to be exercised when analyzing small numbers, including the rates derived from them. Death rates calculated from a small number of deaths and/or population tend to be unreliable and subject to significant variation from one year to the next. To assist the reader, 95 percent confidence intervals are provided in the data tables as a tool for measuring the reliability of the death rates. Rates with a relative standard error (coefficient of variation) greater than or equal to 23 percent are indicated with an “\*” (asterisk).

The four race/ethnic groups presented in the tables are mutually exclusive. White, Black, and Asian/Other exclude Hispanic ethnicity, while Hispanic includes any race/ethnic group. In order to remain consistent with the population data obtained from the Department of Finance, the “White race/ethnic group” includes: White, Other (specified), Not Stated, and Unknown; and the “Asian/Other race/ethnic group” includes: Aleut, American Indian, Asian Indian, Asian (specified/unspecified), Cambodian, Chinese, Eskimo, Filipino, Guamanian, Hawaiian, Japanese, Korean, Vietnamese, Other Pacific Islander, Samoan, Thai, and Laotian. In addition, caution should be exercised in the interpretation of mortality data by race/ethnicity. Misclassification of race/ethnicity on the death certificate may contribute to death rates that may be underestimated among Hispanics and Asian/Other.<sup>5</sup>



As shown in **Figure 4**, the cerebrovascular disease age-adjusted death rate for males was higher than for females in all four of the race/ethnic groups. These differences were

For a complete explanation of the age-adjusting methodology used in this report see the *Healthy People 2000 Statistical Notes* publication.<sup>6</sup> Detailed information on data quality and limitations as well as the formulas used to

calculate vital statistics rates are presented in the appendix of the annual report, *Vital Statistics of California*.<sup>7</sup> Another source of information is the Department of Health Services, Center for Health Statistics Home Page [[www.dhs.ca.gov/org/hisp/chs/chsindex.htm](http://www.dhs.ca.gov/org/hisp/chs/chsindex.htm)].

## References:

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2. National Center for Health Statistics, Births and Deaths: United States, 1996, *Monthly Vital Statistics Report*, DHHS Pub. No. (PHS) 97-1120, Supplement 2, September 1997; Vol. 46, No. 1, pp. 24-25.
3. National Center for Health Statistics, Births and Deaths: Final Data for 1997, *National Vital Statistics Reports*, DHHS Pub. No. (PHS) 99-1120, 9-0472, June 1999; Vol. 47, No. 19, pp. 24-26.
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7. Riedmiller K, Harms C. *Vital Statistics of California, 1996*. Center for Health Statistics, California Department of Health Services, September 1998.

