



CENTER FOR HEALTH STATISTICS
DATA SUMMARY

REPORT REGISTER NO. DS01-05000
(May 2001)

**CEREBROVASCULAR
DISEASE DEATHS
CALIFORNIA, 1998**

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 65.¹

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.²

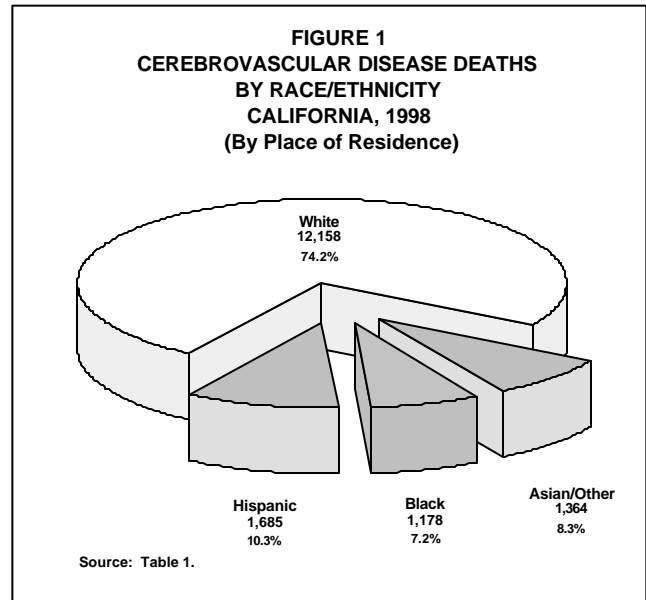
Methodological Approach

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 show the actual rate of dying in a given population, but because of the age compositions of various populations, they do not provide a statistically valid method for comparing geographic areas and/or multiple reporting periods. Age-specific death rates are the number of deaths per 100,000 population in a specific age group and are used along with standard population proportions to develop a weighted average rate. This rate is referred to as an age-adjusted death rate and removes the effect of different age structures of the populations whose rates are being compared. Age-adjusted death rates therefore provide the preferred method for comparisons of different race/ethnic groups, sexes, and geographic areas and measuring death rates over time. The 1940

United States (standard million) population is used as the basis for age-adjustments in this report.

Cerebrovascular Disease Deaths

Table 1 (page 6) displays cerebrovascular disease death data for 1998 by race/ethnicity, age, and sex. Cerebrovascular disease deaths occur predominantly among the older population, and this held true in 1998 with 87.0 percent of all cerebrovascular disease deaths involving people 65 years and older. This age group, within each respective race/ethnic group, accounted for 91.6 percent of all cerebrovascular disease deaths among Whites, 81.1 percent of deaths among Asian/Other, 70.2 percent of deaths among Blacks, and 70.0 percent of deaths among Hispanics. During this period, the number of deaths attributed to cerebrovascular disease was 49.9 percent higher among females (9,829) than among males (6,556).



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As shown in **Figure 1** (page 1), the number of cerebrovascular disease deaths among Whites (12,158) was much higher than Hispanics (1,685), Asian/Other (1,364), and Blacks (1,178).

Cerebrovascular Disease Crude Death Rates

The cerebrovascular disease crude death rate for California declined from 50.5 deaths per 100,000 population in 1997 to 48.9 in 1998.³ As shown in **Table 1** (page 6), Whites had the highest crude death rate in 1998, a rate of 70.4. Blacks were next with a crude rate of 50.1. Asian/Other and Hispanics had lower rates of 34.8 and 17.0, respectively.

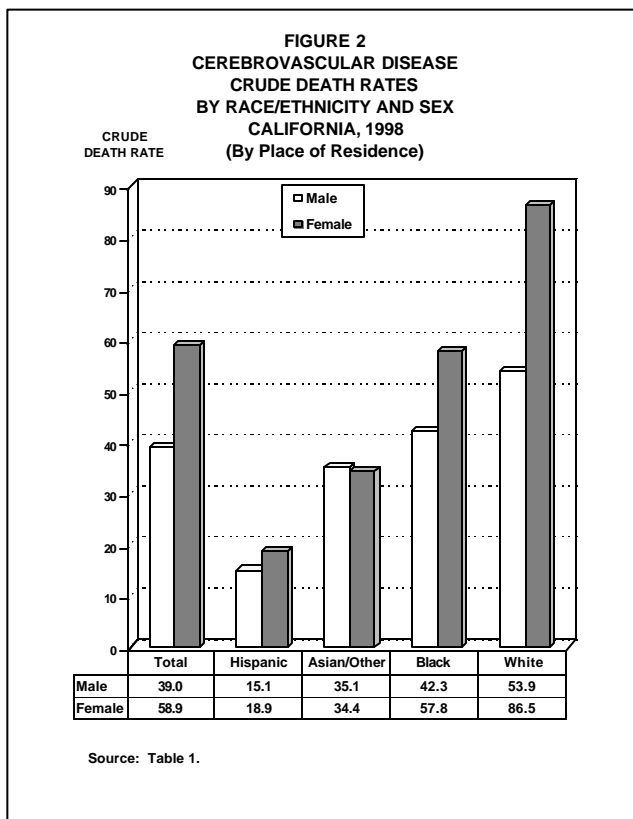


Figure 2 shows White, Black, and Hispanic females had significantly higher cerebrovascular disease crude death rates than males in the corresponding race/ethnic groups. White females had a rate of 86.5 deaths per 100,000 population and White males had a rate of 53.9. Black females had a rate of 57.8 and Black males had a rate of 42.3. Hispanic females had a rate of 18.9 and Hispanic males had a rate of 15.1. Contrary to the other three race/ethnic groups, Asian/Other males had a higher rate (35.1) than females

(34.4), although this difference was not statistically significant.

Cerebrovascular Disease Age-Specific Death Rates

In **Table 1** (page 6) 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 35 to 44, 55 to 64, and 65 to 74, while females had higher rates in the remaining age groups. Hispanic males had higher rates than Hispanic females, except in the 75 to 84 and 85 & older age groups. White males had higher rates than White females, except for the 35 to 44 and 85 & older age groups.

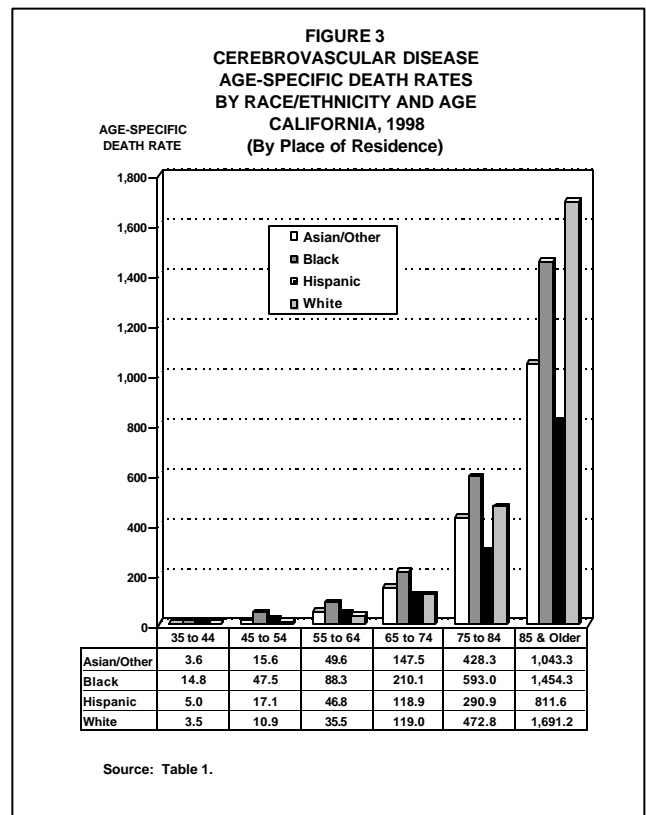


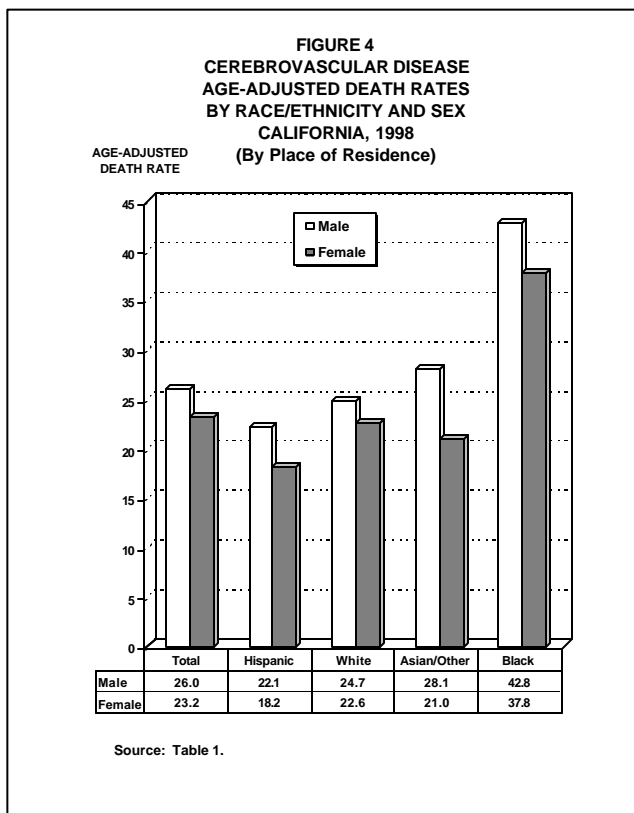
Figure 3 shows that Blacks had significantly higher age-specific death rates than the other three race/ethnic groups, except in the 85 & older group where Whites had the highest rate. Not shown in **Figure 3**, but displayed in **Table 1** (page 6), are the cerebrovascular disease age-specific death rates for the 25 to 34 age group where Hispanics had the highest rate (2.0) and Whites had the lowest (1.3). 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 1998, the United States cerebrovascular disease age-adjusted death rate (25.1 per 100,000 population) was slightly higher than the California rate (24.6).⁴ 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.⁵ An objective was also established for Blacks, a goal of no more than 27.0 age-adjusted cerebrovascular disease deaths per 100,000 population. Because Blacks had an age-adjusted death rate of 40.2, this goal was not met in 1998. *Healthy People 2000* goals were not established for any other race/ethnic group.

A comparison among the race/ethnic groups shows that Blacks had an age-adjusted death rate (40.2) significantly higher than Asian/Other (24.1), Whites (23.7), and Hispanics (20.1).



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

Cerebrovascular Disease Death Data for California Counties

Table 2 (page 7) displays the number of deaths, crude death rates, and age-adjusted death rates by county averaged over a three-year period, 1996 to 1998. This averaging is done to reduce the large fluctuations in the death rates that are inherent among counties with a small number of events and/or population.

The highest average number of cerebrovascular disease deaths occurred in Los Angeles County (4,053.3). The lowest number was in Alpine County where no cerebrovascular disease deaths occurred during the three-year period.

The highest and lowest reliable crude death rates due to cerebrovascular disease were in Lake County (121.7 per 100,000 population) and San Bernardino County (38.0), respectively.

The ranking for cerebrovascular disease age-adjusted death rates showed Yuba County with the highest reliable death rate (33.3 per 100,000 population) and Nevada County with the lowest (19.6).

Cerebrovascular Disease Death Data by Local Health Jurisdiction

Table 3 (page 4) displays the number of deaths and crude death rates for California's three local health jurisdictions averaged over a three-year period, 1996 to 1998. Age-adjusted death rates were not calculated for local health jurisdictions because city population estimates by age are not available.

The city of Long Beach had 204.3 cerebrovascular disease deaths, Pasadena had 101.7 deaths, and Berkeley had 68.3 deaths.

The city of Pasadena had a cerebrovascular disease crude death rate of 73.4 deaths per 100,000 population, Berkeley had a crude rate of 64.3, and Long Beach had a crude rate of 46.4.

**TABLE 3
DEATHS DUE TO CEREBROVASCULAR DISEASE
AMONG THE LOCAL HEALTH JURISDICTIONS
CALIFORNIA, 1996-1998
(By Place of Residence)**

LOCAL HEALTH JURISDICTION	NUMBER OF DEATHS (Average)	1997 POPULATION	CRUDE DEATH RATE
BERKELEY	68.3	106,300	64.3
LONG BEACH	204.3	440,800	46.4
PASADENA	101.7	138,600	73.4

Note: Rates are per 100,000 population; ICD-9 codes 430-438.

Source: State of California, Department of Finance, Report Hist E-4, 1997 Historical Estimates of California Cities and Counties, May 1999. State of California, Department of Health Services, Death records.

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, Laotian, Other Pacific Islander, Samoan, Thai, and Vietnamese. 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.⁶

For a complete explanation of the age-adjusting methodology used in this report see the *Healthy People 2000 Statistical Notes* publication.⁷ 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*.⁸ 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].

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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. Cox DH. Cerebrovascular Disease Deaths, California 1997. *Data Summary*. Center for Health Statistics, California Department of Health Services, Report Register No. DS00-03001, March 2000.
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6. Rosenberg HM, et al. Quality of Death Rates by Race and Hispanic Origin: A Summary of Current Research, 1999. *Vital and Health Statistics, Series 2 No.128*, National Center for Health Statistics, DHHS Pub. No. (PHS) 99-1328, September 1999.
7. Curtin LR, Klein RJ. Direct Standardization (Age-Adjusted Death Rates), *Healthy People 2000 Statistical Notes*, No. 6 – Revised, National Center for Health Statistics, DHHS Pub. No. (PHS) 95-1237, March 1995.
8. Riedmiller K, Harms C. *Vital Statistics of California, 1997*. Center for Health Statistics, California Department of Health Services, February 2000.

TABLE 1
DEATHS DUE TO CEREBROVASCULAR DISEASE BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 1998
(By Place of Residence)

AGE GROUPS	DEATHS			POPULATION			RATES			95% CONFIDENCE LIMITS					
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL		MALE		FEMALE	
										LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
TOTAL															
Under 1	38	22	16	522,034	266,390	255,644	7.3	8.3	6.3 *	5.0	9.6	4.8	11.7	3.2	9.3
1 to 4	9	6	3	2,211,332	1,131,193	1,080,139	0.4 *	0.5 *	0.3 *	0.1	0.7	0.1	1.0	0.0	0.6
5 to 14	7	3	4	5,284,863	2,704,999	2,579,864	0.1 *	0.1 *	0.2 *	0.0	0.2	0.0	0.2	0.0	0.3
15 to 24	18	10	8	4,356,208	2,258,544	2,097,664	0.4 *	0.4 *	0.4 *	0.2	0.6	0.2	0.7	0.1	0.6
25 to 34	89	45	44	5,208,869	2,758,217	2,450,652	1.7	1.6	1.8	1.4	2.1	1.2	2.1	1.3	2.3
35 to 44	266	143	123	5,644,380	2,876,572	2,767,808	4.7	5.0	4.4	4.1	5.3	4.2	5.8	3.7	5.2
45 to 54	625	328	297	4,131,786	2,050,795	2,080,991	15.1	16.0	14.3	13.9	16.3	14.3	17.7	12.6	15.9
55 to 64	1,080	615	465	2,541,885	1,236,490	1,305,395	42.5	49.7	35.6	40.0	45.0	45.8	53.7	32.4	38.9
65 to 74	2,472	1,241	1,231	1,948,692	885,190	1,063,502	126.9	140.2	115.7	121.9	131.9	132.4	148.0	109.3	122.2
75 to 84	5,611	2,429	3,182	1,236,392	501,453	734,939	453.8	484.4	433.0	441.9	465.7	465.1	503.7	417.9	448.0
85 & Older	6,170	1,714	4,456	406,376	125,502	280,874	1,518.3	1,365.7	1,586.5	1,480.4	1,556.2	1,301.1	1,430.4	1,539.9	1,633.1
Total	16,385	6,556	9,829	33,492,817	16,795,345	16,697,472	48.9	39.0	58.9	48.2	49.7	38.1	40.0	57.7	60.0
Age-Adjusted							24.6	26.0	23.2	24.1	25.0	25.4	26.7	22.6	23.7
ASIAN/OTHER															
Under 1	1	1	0	59,298	30,720	28,578	1.7 *	3.3 *	0.0 +	0.0	5.0	0.0	9.6	-	-
1 to 4	1	1	0	255,226	131,589	123,637	0.4 *	0.8 *	0.0 +	0.0	1.2	0.0	2.2	-	-
5 to 14	1	0	1	615,588	315,572	300,016	0.2 *	0.0 +	0.3 *	0.0	0.5	-	-	0.0	1.0
15 to 24	3	1	2	565,434	290,066	275,368	0.5 *	0.3 *	0.7 *	0.0	1.1	0.0	1.0	0.0	1.7
25 to 34	8	3	5	626,348	316,425	309,923	1.3 *	0.9 *	1.6 *	0.4	2.2	0.0	2.0	0.2	3.0
35 to 44	24	13	11	670,617	323,636	346,981	3.6	4.0	3.2 *	2.1	5.0	1.8	6.2	1.3	5.0
45 to 54	78	44	34	498,901	236,177	262,724	15.6	18.6	12.9	12.2	19.1	13.1	24.1	8.6	17.3
55 to 64	142	83	59	286,259	135,484	150,775	49.6	61.3	39.1	41.4	57.8	48.1	74.4	29.1	49.1
65 to 74	300	160	140	203,383	88,240	115,143	147.5	181.3	121.6	130.8	164.2	153.2	209.4	101.4	141.7
75 to 84	467	224	243	109,047	46,367	62,680	428.3	483.1	387.7	389.4	467.1	419.8	546.4	338.9	436.4
85 & Older	339	147	192	32,493	13,822	18,671	1,043.3	1,063.5	1,028.3	932.2	1,154.4	891.6	1,235.4	882.9	1,173.8
Total	1,364	677	687	3,922,594	1,928,098	1,994,496	34.8	35.1	34.4	32.9	36.6	32.5	37.8	31.9	37.0
Age-Adjusted							24.1	28.1	21.0	22.8	25.5	25.8	30.3	19.3	22.7
BLACK															
Under 1	6	5	1	35,290	18,083	17,207	17.0 *	27.7 *	5.8 *	3.4	30.6	3.4	51.9	0.0	17.2
1 to 4	2	0	2	157,434	79,976	77,458	1.3 *	0.0 +	2.6 *	0.0	3.0	-	-	0.0	6.2
5 to 14	0	0	0	414,292	209,767	204,525	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	2	2	0	352,516	184,981	167,535	0.6 *	1.1 *	0.0 +	0.0	1.4	0.0	2.6	-	-
25 to 34	12	4	8	386,096	201,122	184,974	3.1 *	2.0 *	4.3 *	1.3	4.9	0.0	3.9	1.3	7.3
35 to 44	58	31	27	392,571	191,281	201,290	14.8	16.2	13.4	11.0	18.6	10.5	21.9	8.4	18.5
45 to 54	127	59	68	267,602	125,822	141,780	47.5	46.9	48.0	39.2	55.7	34.9	58.9	36.6	59.4
55 to 64	144	78	66	163,032	76,090	86,942	88.3	102.5	75.9	73.9	102.8	79.8	125.3	57.6	94.2
65 to 74	221	113	108	105,180	45,362	59,818	210.1	249.1	180.5	182.4	237.8	203.2	295.0	146.5	214.6
75 to 84	346	128	218	58,348	21,889	36,459	593.0	584.8	597.9	530.5	655.5	483.5	686.1	518.6	677.3
85 & Older	260	70	190	17,878	5,270	12,608	1,454.3	1,328.3	1,507.0	1,277.5	1,631.1	1,017.1	1,639.4	1,292.7	1,721.3
Total	1,178	490	688	2,350,239	1,159,643	1,190,596	50.1	42.3	57.8	47.3	53.0	38.5	46.0	53.5	62.1
Age-Adjusted							40.2	42.8	37.8	37.7	42.6	38.9	46.7	34.7	41.0
HISPANIC															
Under 1	21	11	10	247,713	125,675	122,038	8.5	8.8 *	8.2 *	4.9	12.1	3.6	13.9	3.1	13.3
1 to 4	4	3	1	1,024,463	522,147	502,316	0.4 *	0.6 *	0.2 *	0.0	0.8	0.0	1.2	0.0	0.6
5 to 14	2	1	1	2,054,172	1,048,592	1,005,580	0.1 *	0.1 *	0.1 *	0.0	0.2	0.0	0.3	0.0	0.3
15 to 24	8	5	3	1,494,249	771,494	722,755	0.5 *	0.6 *	0.4 *	0.2	0.9	0.1	1.2	0.0	0.9
25 to 34	37	18	19	1,820,094	1,021,495	798,599	2.0	1.8 *	2.4 *	1.4	2.7	0.9	2.6	1.3	3.4
35 to 44	75	46	29	1,503,414	797,133	706,281	5.0	5.8	4.1	3.9	6.1	4.1	7.4	2.6	5.6
45 to 54	145	82	63	848,771	429,818	418,953	17.1	19.1	15.0	14.3	19.9	14.9	23.2	11.3	18.8
55 to 64	213	125	88	454,852	220,075	234,777	46.8	56.8	37.5	40.5	53.1	46.8	66.8	29.7	45.3
65 to 74	356	194	162	299,470	135,955	163,515	118.9	142.7	99.1	106.5	131.2	122.6	162.8	83.8	114.3
75 to 84	409	164	245	140,610	57,195	83,415	290.9	286.7	293.7	262.7	319.1	242.9	330.6	256.9	330.5
85 & Older	415	128	287	51,135	17,548	33,587	811.6	729.4	854.5	733.5	889.7	603.1	855.8	755.6	953.4
Total	1,685	777	908	9,938,943	5,147,127	4,791,816	17.0	15.1	18.9	16.1	17.8	14.0	16.2	17.7	20.2
Age-Adjusted							20.1	22.1	18.2	19.1	21.1	20.5	23.7	16.9	19.5
WHITE															
Under 1	10	5	5	179,733	91,912	87,821	5.6 *	5.4 *	5.7 *	2.1	9.0	0.7	10.2	0.7	10.7
1 to 4	2	2	0	774,209	397,481	376,728	0.3 *	0.5 *	0.0 +	0.0	0.6	0.0	1.2	-	-
5 to 14	4	2	2	2,200,811	1,131,068	1,069,743	0.2 *	0.2 *	0.2 *	0.0	0.4	0.0	0.4	0.0	0.4
15 to 24	5	2	3	1,944,009	1,012,003	932,006	0.3 *	0.2 *	0.3 *	0.0	0.5	0.0	0.5	0.0	0.7
25 to 34	32	20	12	2,376,331	1,219,175	1,157,156	1.3	1.6	1.0 *	0.9	1.8	0.9	2.4	0.5	1.6
35 to 44	109	53	56	3,077,778	1,564,522	1,513,256	3.5	3.4	3.7	2.9	4.2	2.5	4.3	2.7	4.7
45 to 54	275	143	132	2,516,512	1,258,978	1,257,534	10.9	11.4	10.5	9.6	12.2	9.5	13.2	8.7	12.3
55 to 64	581	329	252	1,637,742	804,841	832,901	35.5	40.9	30.3	32.6	38.4	36.5	45.3	26.5	34.0
65 to 74	1,595	774	821	1,340,659	615,633	725,026	119.0	125.7	113.2	113.1	124.8	116.9	134.6	105.5	121.0
75 to 84	4,389	1,913	2,476	928,387	376,002	552,385	472.8	508.8	448.2	458.8	486.7	486.0	531.6	430.6	465.9
85 & Older	5,156	1,369	3,787	304,870	88,862	216,008	1,691.2	1,540.6	1,753.2	1,645.0	1,737.4	1,459.0	1,622.2	1,697.3	1,809.0
Total	12,158	4,612	7,546	17,281,041	8,560,477	8,720,564	70.4	53.9	86.5	69.1	71.6	52.3	55.4	84.6	88.5
Age-Adjusted							23.7	24.7	22.6	23.2	24.2	23.9	25.5	22.0	23.3

Note : Rates are per 100,000 population. ICD-9 codes 430-438.
White, Black, and Asian/Other exclude Hispanic ethnicity.
Hispanic includes any race category.

* Death rate unreliable, relative standard error is greater than or equal to 23%.
+ Standard error indeterminate, death rate based on no (zero) deaths.
- Confidence limit is not calculated for no (zero) deaths.

Source : State of California, Department of Finance. 1998 County Race/Ethnic Population Estimates with Age and Sex Detail, May 2000.
State of California, Department of Health Services, Death Records.

TABLE 2
DEATHS DUE TO CEREBROVASCULAR DISEASE BY COUNTY
CALIFORNIA, 1996-1998
(By Place of Residence)

COUNTY	1996-1998 DEATHS (Average)	PERCENT	1997 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS	
						LOWER	UPPER
CALIFORNIA	16,505.0	100.0	32,956,695	50.1	25.3	24.9	25.8
ALAMEDA	778.0	4.7	1,398,421	55.6	28.5	26.2	30.8
ALPINE	0.0	0.0	1,174	0.0 +	0.0 +	-	-
AMADOR	25.0	0.2	33,472	74.7	19.8 *	10.2	29.5
BUTTE	182.3	1.1	198,459	91.9	27.6	22.3	32.9
CALAVERAS	31.3	0.2	37,916	82.6	26.1 *	14.4	37.7
COLUSA	11.0	0.1	18,530	59.4 *	27.8 *	8.4	47.2
CONTRA COSTA	555.3	3.4	896,206	62.0	28.4	25.8	31.0
DEL NORTE	17.0	0.1	28,413	59.8 *	28.7 *	13.2	44.1
EL DORADO	77.3	0.5	147,409	52.5	21.8	16.4	27.1
FRESNO	416.0	2.5	778,674	53.4	27.6	24.5	30.8
GLENN	14.3	0.1	26,856	53.4 *	24.2 *	9.0	39.5
HUMBOLDT	80.0	0.5	126,137	63.4	27.9	20.7	35.0
IMPERIAL	66.3	0.4	142,759	46.5	28.5	20.7	36.4
INYO	19.7	0.1	18,272	107.6 *	29.4 *	13.3	45.6
KERN	267.0	1.6	634,404	42.1	24.2	20.9	27.5
KINGS	57.3	0.3	117,793	48.7	32.6	23.3	42.0
LAKE	67.0	0.4	55,047	121.7	32.8	22.1	43.4
LASSEN	8.7	0.1	33,861	25.6 *	14.2 *	3.4	24.9
LOS ANGELES	4,053.3	24.6	9,524,613	42.6	24.5	23.6	25.3
MADERA	47.7	0.3	113,525	42.0	20.8	14.1	27.5
MARIN	168.0	1.0	243,214	69.1	24.9	20.6	29.3
MARIPOSA	10.7	0.1	15,957	66.8 *	20.2 *	5.6	34.8
MENDOCINO	59.7	0.4	85,966	69.4	25.5	18.1	32.8
MERCED	101.0	0.6	201,905	50.0	29.4	23.0	35.8
MODOC	6.7	0.0 a	10,140	65.7 *	17.7 *	1.3	34.1
MONO	2.3	0.0 a	10,531	22.2 *	18.0 *	0.0	41.7
MONTEREY	182.3	1.1	377,744	48.3	25.8	21.5	30.1
NAPA	110.0	0.7	121,239	90.7	26.9	20.6	33.3
NEVADA	68.7	0.4	88,356	77.7	19.6	13.8	25.4
ORANGE	1,204.7	7.3	2,705,313	44.5	24.3	22.8	25.8
PLACER	125.3	0.8	215,634	58.1	24.6	19.8	29.5
PLUMAS	9.7	0.1	20,402	47.4 *	17.6 *	0.2	34.9
RIVERSIDE	766.7	4.6	1,423,699	53.9	23.9	21.9	26.0
SACRAMENTO	639.7	3.9	1,146,825	55.8	29.5	27.0	32.0
SAN BENITO	20.0	0.1	46,121	43.4	21.6 *	10.6	32.6
SAN BERNARDINO	614.0	3.7	1,617,262	38.0	25.0	22.8	27.2
SAN DIEGO	1,385.0	8.4	2,763,401	50.1	24.3	22.8	25.8
SAN FRANCISCO	531.3	3.2	777,368	68.4	24.9	22.3	27.5
SAN JOAQUIN	349.3	2.1	542,196	64.4	31.9	28.0	35.9
SAN LUIS OBISPO	157.7	1.0	234,813	67.1	22.0	17.7	26.2
SAN MATEO	465.0	2.8	711,699	65.3	25.7	23.0	28.4
SANTA BARBARA	237.0	1.4	400,751	59.1	23.6	19.9	27.2
SANTA CLARA	689.0	4.2	1,671,414	41.2	23.6	21.7	25.5
SANTA CRUZ	129.0	0.8	247,216	52.2	21.7	17.2	26.2
SHASTA	95.3	0.6	163,351	58.4	22.4	17.2	27.7
SIERRA	2.0	0.0 a	3,406	58.7 *	14.7 *	0.0	38.1
SISKIYOU	37.3	0.2	44,186	84.5	27.5	16.8	38.2
SOLANO	184.3	1.1	378,664	48.7	33.0	27.9	38.1
SONOMA	340.7	2.1	432,771	78.7	29.1	25.4	32.9
STANISLAUS	233.0	1.4	425,407	54.8	28.6	24.4	32.8
SUTTER	53.7	0.3	76,004	70.6	27.4	19.0	35.9
TEHAMA	48.0	0.3	54,702	87.7	29.1	18.8	39.4
TRINITY	8.3	0.1	13,230	63.0 *	24.7 *	5.7	43.8
TULARE	208.3	1.3	358,337	58.1	30.9	26.0	35.9
TUOLUMNE	35.0	0.2	52,280	66.9	25.5	15.0	36.0
VENTURA	339.3	2.1	727,154	46.7	22.9	20.2	25.7
YOLO	77.0	0.5	154,850	49.7	26.7	19.8	33.5
YUBA	35.3	0.2	61,246	57.7	33.3	20.8	45.7

Note : Rates are per 100,000 population. ICD-9 codes 430-438.

a Represents a percentage of more than zero but less than 0.05.

* Death rate unreliable, relative standard error is greater than or equal to 23%.

+ Standard error indeterminate, death rate based on no (zero) deaths.

- Confidence limit is not calculated for no (zero) deaths

Source : State of California, Department of Finance, Race/Ethnic 1997 Population Estimates for Counties with Age and Sex Detail. June 1999.
State of California, Department of Health Services, Death Records.