CENTER FOR HEALTH STATISTICS

DATA SUMMARY

REPORT REGISTER NO. DS98-07001
(July 1998)

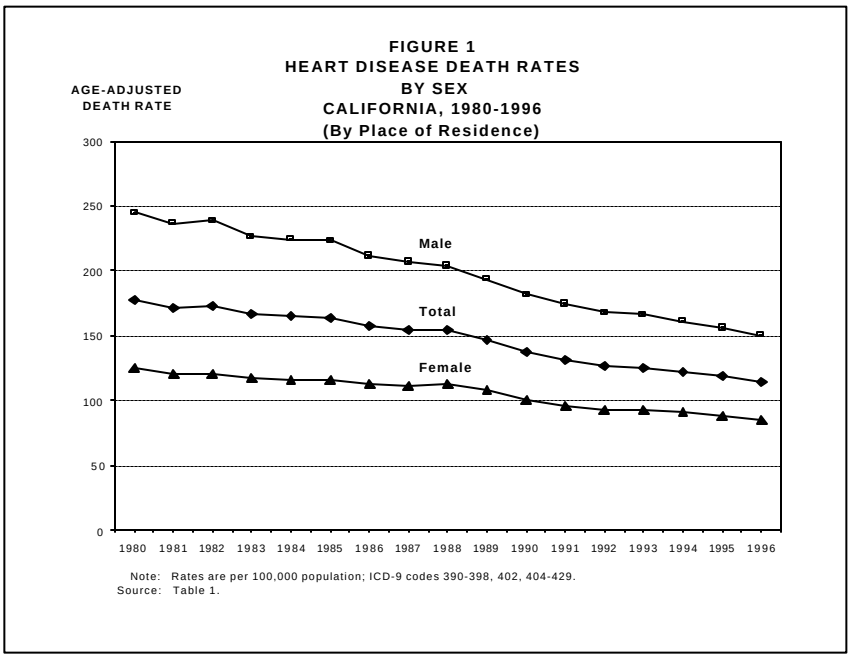
HEART DISEASE DEATHS CALIFORNIA, 1980-1996

Introduction

Heart disease has historically been the leading cause of death in the United States and in California. This report focuses on trends in heart disease deaths during the period 1980 through 1996, and provides analysis of trend data on crude and age-adjusted death rates for California residents by sex, age, race/ethnicity, and county. Heart disease death codes (ICD-9 codes 390-398, 402, 404-429) as used in this report are based on the heart disease group traditionally presented in the National Center for Health Statistic's *Monthly Vital Statistics Report*.[1] The national health objective for heart disease, as defined by the *Healthy People 2000* goals, pertains to coronary heart disease (ICD-9 codes 402, 410-414, 429.2) so an assessment of California's progress in meeting this objective cannot be monitored with the data presented in this report. An analysis of California's progress in meeting the national health objective for coronary heart disease is presented in other Center for Health Statistics (CHS) reports.[2, 3]

Heart Disease Deaths, Crude and Age-Adjusted Death Rates by Sex

As shown in Table 1 (page 4), the total number of heart disease deaths showed no significant trend from 1980 (66,271) to 1996 (67,676). However, the numbers of heart disease deaths among the male and female groups reflect opposite trends during this period. While the number of female deaths increased significantly from 1980 (31,133) to 1996 (34,174) the number of male deaths decreased significantly from 1980 (35,138) to 1996 (33,502).



The overall crude death rate (Table 1) declined during the 17-year period addressed in this report. Crude rates ranged from a high of 278.7 per 100,000 population in 1980 down to a low of 209.0 in 1996, a 25% drop. This was a statistically significant decline. Analysis of the data by sex shows that in 1980 the crude death rate for males (299.7) was significantly higher than for females (258.2). The difference between the two rates decreased over the following eight years and beginning in 1989 the female crude death rate (240.0) surpassed the male rate (236.6). The gap between the rates gradually increased over the next seven years and in 1996 the female crude rate (211.5) continued to be higher than the male crude rate (206.4). During this period the crude death rate declined 31% for males and 18% for females.

In 1996 the United States age-adjusted heart disease death rate (134.6) was higher than the California rate (114.6). [4] As shown in Figure 1, California's age-adjusted death rate declined from 177.9 in 1980 down to 114.6 in 1996, a 37% drop. Regression analysis indicates this was a statistically significant decline. Among the sexes, male age-adjusted death rates were consistently higher than female rates, although there was a steady decline in these rates with the differential dropping from 2.0 times greater in 1980 down to 1.8 times greater in 1996. For the 17-year period age-adjusted rates declined 39% for males and 32% for females.

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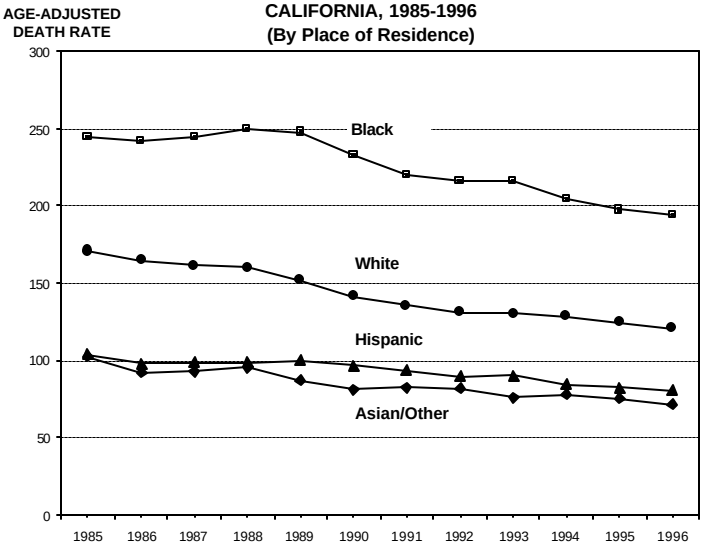
Heart Disease Deaths, Crude and Age-Adjusted Death Rates by Race/Ethnicity

Table 2 (page 5) shows heart disease death data by the four major race/ethnic groups from 1985 to 1996. During this period, the average number of heart disease deaths among Whites (55,494.9) was approximately 11 times higher than Hispanics (5,032.5) or Blacks (5,065.2) and 20 times higher than Asian/Others (2,777.4).

Table 2 also shows that the crude death rate for Blacks fell by 8 percent, from 242.5 per 100,000 population in 1985 down to 223.7 in 1996. The crude death rate for Whites declined by 14 percent from 358.8 in 1985 down to 309.9 in 1996. Both Whites and Blacks experienced statistically significant declines. There was no significant trend in the crude rates among the Asian/Other or the Hispanic populations. The highest crude death rate for Whites occurred in 1985 (358.8), for Blacks in 1988 (256.1), for the Asian/Other group in 1995 (98.9), and for Hispanics in 1985 (66.8).

FIGURE 2
HEART DISEASE DEATH RATES
BY RACE/ETHNICITY
CALIFORNIA, 1985-1996
(By Place of Residence)

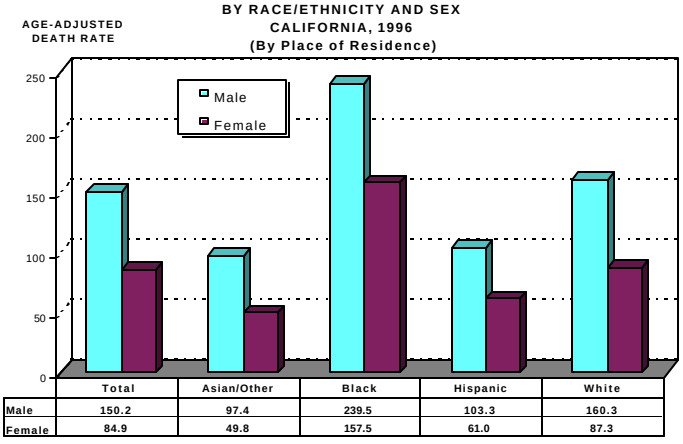


Note: Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
Source: Table 2.

From 1985 to 1996 the age-adjusted death rates (Figure 2) among all four race/ethnic groups declined by 21 percent or more. Regression analysis showed all of the declines to be statistically significant. The highest age-adjusted death rate for Blacks occurred in 1988 (249.9). For the other three groups their highest age-adjusted death rates each occurred in 1985, Whites with a rate of 170.7, Hispanics with a rate of 103.4, and Asian/Others with a rate of 102.4. The lowest age-adjusted death rate for all four race/ethnic groups occurred in 1996, Blacks with a rate of 193.6, Whites with a rate of 120.5, Hispanics with a rate of 80.4, and Asian/Others with a rate of 71.2.

Heart Disease Death Rates by Age, Race/Ethnicity, and Sex, 1996

FIGURE 3
HEART DISEASE DEATH RATES
BY RACE/ETHNICITY AND SEX
CALIFORNIA, 1996
(By Place of Residence)



	Total	Asian/Other	Black	Hispanic	White
Male	150.2	97.4	239.5	103.3	160.3
Female	84.9	49.8	157.5	61.0	87.3

Note: Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
Source: Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail, 1970-1996, January 1998.
Department of Health Services, Death Records.

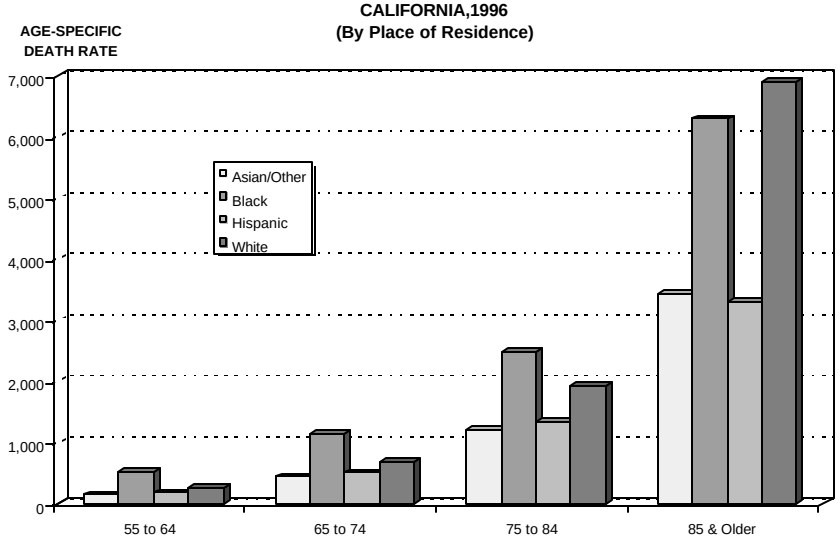
Figure 3 shows Black males had the highest age-adjusted death rate, 239.5 per 100,000 population, in 1996. This was significantly higher than male rates in the other three race/ethnic groups. White males had a rate of 160.3, Hispanic males had a rate of 103.3, and Asian/Other males had a rate of 97.4. The age-adjusted death rates for males were higher, by 34% or more, than for females in the corresponding race/ethnic groups. Black females had an age-adjusted death rate of 157.5, a rate significantly higher than females in the other three race/ethnic groups. It was also higher than age-adjusted rates for Hispanic and Asian/Other males. White females had a rate of 87.3, Hispanic females had a rate of 61.0, and Asian/Other females had a rate of 49.8.

In Table 3 (page 6) reliable age-specific rates show that males in all four race/ethnic groups consistently had higher rates than females, except for Black males age 85 and over. Since heart disease deaths are predominantly among the elderly, it's not surprising that 84% of all heart disease deaths in 1996 involved people 65 years of age and older. One notable pattern is the age-specific heart disease death rate among Blacks. In 1996 Blacks in the age group 15 to 24 were 3.4 times more likely to die from heart disease than Whites. This trend continued through the 75 to 84 age group and though the difference declined, the death rate was still 1.3 times higher for Blacks.

Figure 4 graphically shows this pattern of higher age-specific death rates for blacks in the age groups 55 to 64, 65 to 74 and 75 to 84 years. The difference between Blacks and the other race/ethnic groups was statistically significant for all three age groups. In the 85 and older age group whites had a rate significantly higher than Blacks, Asian/Others, and Hispanics.

The age-specific death rate for the Asian/Other race/ethnic group was lowest among the age groups 55 to 64, 65 to 74 and 75 to 84 years. This was a statistically significant difference. In the 85 and older age group Hispanics had the lowest age-specific death rate though it was not significantly different than Asian/Others.

FIGURE 4
HEART DISEASE DEATH RATES
BY RACE/ETHNICITY AND AGE
CALIFORNIA,1996
(By Place of Residence)



Note: Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.
Source: Table 3.

Heart Disease Death Rates among California Counties

Table 4 displays the number of deaths, crude death rates, and age-adjusted death rates by county averaged over a three-year period, 1994 to 1996. 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 heart disease deaths occurred in Los Angeles County (19,959.0) and the lowest in Alpine County (0.3).

The highest and lowest reliable heart disease crude death rates were Lake County (395.3 per 100,000 population) and San Benito County (148.7), Lake County was higher by a magnitude of 2.7 to 1.

Yuba County had the highest reliable age-adjusted heart disease death rate (151.3); this was two times higher than Nevada County, which had the lowest reliable age-adjusted death rate (75.9).

TABLE 1
DEATHS DUE TO HEART DISEASE
BY SEX
CALIFORNIA , 1980-1996
(By Place of Residence)

SEX	EVENT YEAR	DEATHS	POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS LOWER	UPPER
TOTAL							
	1996	67,676	32,383,811	209.0	114.6	113.6	115.6
	1995	67,990	32,062,912	212.1	118.6	117.6	119.6
	1994	68,312	31,790,557	214.9	122.5	121.5	123.5
	1993	68,603	31,515,753	217.7	125.8	124.7	126.8
	1992	66,668	31,186,559	213.8	126.9	125.8	127.9
	1991	67,140	30,563,276	219.7	131.1	130.0	132.2
	1990	67,425	29,942,397	225.2	136.6	135.4	137.7
	1989	69,457	29,142,106	238.3	146.3	145.1	147.5
	1988	70,747	28,393,094	249.2	153.9	152.7	155.2
	1987	69,327	27,716,860	250.1	154.6	153.3	155.9
	1986	68,049	27,052,291	251.5	157.5	156.2	158.8
	1985	69,046	26,402,633	261.5	163.9	162.5	165.2
	1984	67,691	25,816,294	262.2	165.0	163.6	166.3
	1983	66,552	25,336,301	262.7	166.4	165.1	167.8
	1982	67,255	24,805,011	271.1	173.1	171.7	174.5
	1981	65,323	24,277,674	269.1	171.9	170.5	173.3
	1980	66,271	23,780,068	278.7	177.9	176.4	179.3
MALE							
	1996	33,502	16,227,924	206.4	150.2	148.5	151.9
	1995	33,575	16,062,552	209.0	155.7	154.0	157.5
	1994	33,816	15,921,009	212.4	160.9	159.1	162.7
	1993	34,155	15,782,166	216.4	166.1	164.3	168.0
	1992	33,320	15,616,376	213.4	167.6	165.7	169.5
	1991	33,671	15,301,183	220.1	174.6	172.6	176.5
	1990	33,742	14,989,516	225.1	181.4	179.4	183.4
	1989	34,489	14,573,988	236.6	193.2	191.1	195.3
	1988	35,415	14,181,700	249.7	203.7	201.5	205.9
	1987	35,097	13,825,118	253.9	206.7	204.4	208.9
	1986	34,887	13,474,197	258.9	211.4	209.1	213.7
	1985	35,850	13,130,674	273.0	223.2	220.8	225.6
	1984	35,162	12,818,768	274.3	224.3	221.8	226.7
	1983	34,669	12,559,834	276.0	226.4	224.0	228.9
	1982	35,660	12,275,613	290.5	238.6	236.1	241.2
	1981	34,502	11,993,514	287.7	236.5	233.9	239.0
	1980	35,138	11,722,769	299.7	244.8	242.2	247.4
FEMALE							
	1996	34,174	16,155,887	211.5	84.9	83.8	86.0
	1995	34,415	16,000,360	215.1	87.7	86.6	88.8
	1994	34,496	15,869,548	217.4	90.8	89.6	91.9
	1993	34,448	15,733,587	218.9	92.7	91.5	93.8
	1992	33,348	15,570,183	214.2	93.2	92.0	94.3
	1991	33,469	15,262,093	219.3	95.3	94.1	96.5
	1990	33,683	14,952,881	225.3	99.9	98.6	101.1
	1989	34,968	14,568,118	240.0	107.7	106.3	109.0
	1988	35,332	14,211,394	248.6	112.6	111.2	114.0
	1987	34,230	13,891,742	246.4	111.5	110.1	112.8
	1986	33,162	13,578,094	244.2	113.0	111.6	114.4
	1985	33,196	13,271,959	250.1	115.2	113.8	116.7
	1984	32,529	12,997,526	250.3	116.3	114.8	117.8
	1983	31,883	12,776,467	249.5	117.3	115.8	118.8
	1982	31,595	12,529,398	252.2	119.9	118.3	121.4
	1981	30,821	12,284,160	250.9	119.9	118.4	121.4
	1980	31,133	12,057,299	258.2	124.3	122.8	125.9

Note : Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.

Source : State of California, Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail, 1970-1996, January
State of California, Department of Health Services, Death Records.

TABLE 2
DEATHS DUE TO HEART DISEASE
BY RACE/ETHNICITY
CALIFORNIA, 1985-1996
(By Place of Residence)

RACE/ ETHNICITY	EVENT YEAR	DEATHS	POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS LOWER	UPPER
ASIAN/OTHER							
	1996	3,525	3,645,998	96.7	71.2	68.7	73.7
	1995	3,491	3,530,931	98.9	75.3	72.7	78.0
	1994	3,328	3,429,125	97.1	77.7	75.0	80.5
	1993	3,089	3,323,013	93.0	76.1	73.3	78.9
	1992	3,055	3,209,399	95.2	81.4	78.4	84.4
	1991	2,840	3,068,424	92.6	82.3	79.2	85.4
	1990	2,557	2,930,570	87.3	80.8	77.6	84.0
	1989	2,482	2,774,167	89.5	86.8	83.3	90.3
	1988	2,509	2,616,586	95.9	95.1	91.4	98.9
	1987	2,261	2,465,134	91.7	92.6	88.7	96.4
	1986	2,076	2,313,141	89.7	92.3	88.2	96.3
	1985	2,116	2,158,886	98.0	102.4	98.0	106.9
BLACK							
	1996	5,089	2,275,401	223.7	193.6	188.0	199.2
	1995	5,056	2,250,502	224.7	197.2	191.5	202.9
	1994	5,119	2,232,841	229.3	204.8	198.9	210.7
	1993	5,270	2,214,376	238.0	215.9	209.8	222.0
	1992	5,075	2,192,451	231.5	215.5	209.3	221.7
	1991	5,098	2,147,691	237.4	219.7	213.4	226.0
	1990	5,205	2,105,207	247.2	232.8	226.2	239.4
	1989	5,267	2,061,823	255.5	247.7	240.8	254.7
	1988	5,185	2,024,779	256.1	249.9	242.9	257.0
	1987	4,962	1,992,361	249.1	244.9	237.8	252.0
	1986	4,792	1,958,844	244.6	241.9	234.8	248.9
	1985	4,664	1,923,209	242.5	244.4	237.2	251.6
HISPANIC							
	1996	5,963	9,330,740	63.9	80.4	78.2	82.5
	1995	5,769	9,100,994	63.4	82.5	80.2	84.7
	1994	5,582	8,882,966	62.8	84.2	81.9	86.5
	1993	5,653	8,658,118	65.3	90.3	87.9	92.8
	1992	5,265	8,421,133	62.5	89.3	86.8	91.8
	1991	5,192	8,097,870	64.1	93.2	90.5	95.8
	1990	5,049	7,774,789	64.9	96.4	93.6	99.2
	1989	4,875	7,419,574	65.7	99.7	96.8	102.5
	1988	4,552	7,077,579	64.3	98.4	95.4	101.3
	1987	4,333	6,754,398	64.2	98.2	95.2	101.3
	1986	4,079	6,428,436	63.5	98.0	94.8	101.1
	1985	4,078	6,103,662	66.8	103.4	100.1	106.7
WHITE							
	1996	53,099	17,131,672	309.9	120.5	119.3	121.8
	1995	53,674	17,180,485	312.4	124.5	123.2	125.7
	1994	54,283	17,245,625	314.8	128.1	126.9	129.4
	1993	54,591	17,320,246	315.2	130.4	129.1	131.6
	1992	53,273	17,363,576	306.8	131.1	129.9	132.4
	1991	54,010	17,249,291	313.1	135.4	134.1	136.7
	1990	54,614	17,131,831	318.8	141.0	139.7	142.4
	1989	56,833	16,886,542	336.6	151.3	149.9	152.7
	1988	58,501	16,674,150	350.8	159.8	158.4	161.3
	1987	57,771	16,504,967	350.0	161.1	159.6	162.6
	1986	57,102	16,351,870	349.2	164.6	163.1	166.2
	1985	58,188	16,216,876	358.8	170.7	169.1	172.3

Note : Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.

Source : State of California, Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail, 1970-1996, Janua
State of California, Department of Health Services, Death Records.

TABLE 3
DEATHS DUE TO HEART DISEASE
BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 1996
(By Place of Residence)

RACE/ ETHNICITY	AGE GROUPS	1996 DEATHS			AGE-SPECIFIC DEATH RATE			95% CONFIDENCE LIMITS					
								TOTAL		MALE		FEMALE	
		TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
TOTAL													
	Under 1	68	30	38	12.6	10.8	14.4	9.6	15.6	7.0	14.7	9.8	19.0
	1 to 4	25	14	11	1.1	1.2	1.0	0.7	1.5	0.6	1.8	0.4	1.6
	5 to 14	43	17	26	0.9	0.7	1.1	0.6	1.1	0.4	1.0	0.7	1.5
	15 to 24	84	57	27	2.0	2.6	1.3	1.6	2.4	1.9	3.3	0.8	1.8
	25 to 34	303	217	86	5.7	7.7	3.4	5.0	6.3	6.7	8.7	2.7	4.1
	35 to 44	1,082	788	294	20.0	28.7	11.1	18.8	21.2	26.7	30.8	9.8	12.3
	45 to 54	3,117	2,337	780	81.9	123.8	40.7	79.0	84.8	118.8	128.8	37.8	43.5
	55 to 64	5,855	4,026	1,829	248.1	351.0	150.8	241.8	254.5	340.2	361.8	143.9	157.7
	65 to 74	12,797	7,772	5,025	654.9	883.3	467.8	643.5	666.2	863.6	902.9	454.9	480.7
	75 to 84	21,246	10,900	10,346	1,828.9	2,340.4	1,486.6	1,804.3	1,853.5	2,296.4	2,384.3	1,457.9	1,515.2
	85 & Older	23,043	7,337	15,706	6,209.1	6,535.8	6,067.4	6,128.9	6,289.2	6,386.3	6,685.4	5,972.5	6,162.3
	Unknown	13	7	6									
	Total	67,676	33,502	34,174	209.0	206.4	211.5	207.4	210.6	204.2	208.7	209.3	213.8
ASIAN/OTHER													
	Under 1	10	4	6	16.5 *	12.8 *	20.4 *	6.3	26.7	0.3	25.3	4.1	36.7
	1 to 4	3	1	2	1.2 *	0.8 *	1.6 *	0.0	2.5	0.0	2.3	0.0	3.9
	5 to 14	4	3	1	0.7 *	1.0 *	0.4 *	0.0	1.4	0.0	2.2	0.0	1.1
	15 to 24	5	3	2	0.9 *	1.1 *	0.8 *	0.1	1.8	0.0	2.3	0.0	1.8
	25 to 34	14	11	3	2.3	3.7	1.0 *	1.1	3.6	1.5	5.8	0.0	2.1
	35 to 44	77	62	15	12.2	20.5	4.6	9.5	14.9	15.4	25.5	2.3	6.9
	45 to 54	203	166	37	46.3	79.8	16.1	40.0	52.7	67.7	92.0	10.9	21.3
	55 to 64	373	260	113	145.2	215.3	83.0	130.4	159.9	189.1	241.4	67.7	98.3
	65 to 74	821	502	319	435.6	613.8	298.9	405.8	465.4	560.1	667.5	266.1	331.7
	75 to 84	1,111	611	500	1,202.5	1,541.3	947.9	1,131.8	1,273.2	1,419.1	1,663.5	864.8	1,031.0
	85 & Older	904	414	490	3,432.6	3,686.2	3,244.0	3,208.8	3,656.3	3,331.1	4,041.3	2,956.7	3,531.2
	Unknown	0	0	0									
	Total	3,525	2,037	1,488	96.7	113.7	80.2	93.5	99.9	108.8	118.7	76.1	84.3
BLACK													
	Under 1	10	4	6	26.8 *	21.1 *	32.7 *	10.2	43.5	0.4	41.8	6.5	58.9
	1 to 4	4	0	4	2.3 *	0.0 +	4.8 *	0.0	4.6	-	-	0.1	9.4
	5 to 14	3	1	2	0.8 *	0.5 *	1.0 *	0.0	1.6	0.0	1.5	0.0	2.5
	15 to 24	19	15	4	5.5	8.2	2.5 *	3.0	8.0	4.1	12.4	0.0	4.9
	25 to 34	63	43	20	15.9	21.1	10.4	12.0	19.9	14.8	27.4	5.9	15.0
	35 to 44	205	114	91	55.1	63.3	47.4	47.6	62.7	51.7	74.9	37.7	57.2
	45 to 54	511	322	189	210.5	282.1	146.9	192.2	228.7	251.3	312.9	126.0	167.8
	55 to 64	787	463	324	516.7	649.0	400.1	480.6	552.8	589.9	708.2	356.6	443.7
	65 to 74	1,162	638	524	1,137.1	1,461.4	895.1	1,071.7	1,202.4	1,348.0	1,574.8	818.5	971.8
	75 to 84	1,324	601	723	2,478.0	3,054.6	2,141.9	2,344.5	2,611.5	2,810.4	3,298.9	1,985.8	2,298.0
	85 & Older	1,001	276	725	6,302.3	5,911.3	6,465.1	5,911.9	6,692.8	5,213.9	6,608.7	5,994.5	6,935.7
	Unknown	0	0	0									
	Total	5,089	2,477	2,612	223.7	220.9	226.4	217.5	229.8	212.2	229.6	217.7	235.1
HISPANIC													
	Under 1	30	15	15	11.9	11.7	12.1	7.6	16.1	5.8	17.6	6.0	18.2
	1 to 4	13	9	4	1.3	1.7 *	0.8 *	0.6	1.9	0.6	2.8	0.0	1.6
	5 to 14	15	4	11	0.8	0.4 *	1.2	0.4	1.2	0.0	0.9	0.5	2.0
	15 to 24	29	18	11	2.0	2.4	1.6	1.3	2.8	1.3	3.5	0.7	2.5
	25 to 34	63	49	14	3.5	4.8	1.8	2.6	4.3	3.5	6.2	0.8	2.7
	35 to 44	164	134	30	12.0	18.6	4.6	10.1	13.8	15.5	21.8	3.0	6.3
	45 to 54	387	283	104	51.8	75.2	28.0	46.6	56.9	66.5	84.0	22.6	33.4
	55 to 64	735	499	236	176.6	249.3	109.2	163.8	189.4	227.5	271.2	95.3	123.2
	65 to 74	1,432	851	581	511.2	673.0	378.1	484.8	537.7	627.8	718.2	347.4	408.9
	75 to 84	1,637	784	853	1,340.4	1,630.3	1,152.1	1,275.4	1,405.3	1,516.2	1,744.4	1,074.8	1,229.4
	85 & Older	1,458	526	932	3,305.9	3,403.6	3,253.2	3,136.2	3,475.6	3,112.8	3,694.5	3,044.3	3,462.0
	Unknown	0	0	0									
	Total	5,963	3,172	2,791	63.9	65.7	62.0	62.3	65.5	63.4	67.9	59.7	64.3
WHITE													
	Under 1	18	7	11	9.5	7.2 *	11.9	5.1	13.8	1.9	12.5	4.9	19.0
	1 to 4	5	4	1	0.6 *	0.9 *	0.2 *	0.1	1.1	0.0	1.8	0.0	0.7
	5 to 14	21	9	12	1.0	0.8 *	1.2	0.6	1.4	0.3	1.3	0.5	1.8
	15 to 24	31	21	10	1.6	2.1	1.1 *	1.1	2.2	1.2	3.0	0.4	1.8
	25 to 34	163	114	49	6.4	8.7	3.9	5.4	7.4	7.1	10.3	2.8	5.0
	35 to 44	636	478	158	21.0	31.1	10.6	19.4	22.6	28.3	33.9	9.0	12.3
	45 to 54	2,016	1,566	450	84.8	131.6	37.9	81.1	88.5	125.1	138.2	34.4	41.4
	55 to 64	3,960	2,804	1,156	258.1	371.5	148.3	250.0	266.1	357.8	385.3	139.7	156.8
	65 to 74	9,382	5,781	3,601	678.2	920.5	476.8	664.5	691.9	896.8	944.2	461.2	492.3
	75 to 84	17,174	8,904	8,270	1,921.6	2,484.8	1,544.6	1,892.8	1,950.3	2,433.2	2,536.4	1,511.3	1,577.9
	85 & Older	19,680	6,121	13,559	6,910.2	7,565.8	6,650.1	6,813.7	7,006.8	7,376.2	7,755.3	6,538.2	6,762.0
	Unknown	13	7	6									
	Total	53,099	25,816	27,283	309.9	304.3	315.5	307.3	312.6	300.6	308.0	311.8	319.3

Note : Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.
White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.

* Death rate unreliable, relative standard error is greater than 30%.
\+ Standard error indeterminate, death rate based on no (zero) death
\- Upper and lower limits at the 95% confidence level are indetermina

Source : State of California, Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail, 1970-1996, January 1998.
State of California, Department of Health Services, Death Records.

TABLE 4
DEATHS DUE TO HEART DISEASE
BY COUNTY
CALIFORNIA, 1994-1996
(By Place of Residence)

COUNTY	1994-1996 DEATHS (Average)	PERCENT	1995 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS LOWER	UPPER
CALIFORNIA	67,992.7	100	32,062,912	212.1	118.7	117.7	119.7
ALAMEDA	2,893.7	4.3	1,347,739	214.7	120.2	115.3	125.2
ALPINE	0.3	a	1,185	28.1 *	31.5 *	0.0	138.4
AMADOR	104.7	0.2	32,572	321.3	113.0	87.2	138.9
BUTTE	537.0	0.8	196,108	273.8	98.1	87.4	108.8
CALAVERAS	105.7	0.2	36,907	286.3	107.3	83.8	130.9
COLUSA	46.7	0.1	17,799	262.2	127.9	85.1	170.6
CONTRA COSTA	1,713.7	2.5	867,315	197.6	101.7	96.4	107.0
DEL NORTE	67.0	0.1	27,597	242.8	133.4	96.3	170.6
EL DORADO	287.7	0.4	144,158	199.5	99.0	86.5	111.5
FRESNO	1,585.0	2.3	754,045	210.2	121.6	114.8	128.5
GLENN	60.0	0.1	26,523	226.2	99.6	69.2	130.0
HUMBOLDT	298.0	0.4	124,481	239.4	120.3	104.7	136.0
IMPERIAL	241.0	0.4	137,445	175.3	122.0	105.0	139.0
INYO	72.7	0.1	18,571	391.3	119.3	84.1	154.5
KERN	1,364.7	2.0	616,701	221.3	139.5	131.2	147.7
KINGS	213.0	0.3	114,902	185.4	141.7	120.7	162.8
LAKE	217.3	0.3	54,984	395.3	138.2	114.6	161.8
LASSEN	45.7	0.1	28,678	159.2	92.1	63.1	121.1
LOS ANGELES	19,959.0	29.4	9,352,192	213.4	130.6	128.6	132.6
MADERA	228.3	0.3	106,429	214.5	115.4	98.4	132.4
MARIN	492.3	0.7	238,981	206.0	89.1	80.2	98.0
MARIPOSA	49.3	0.1	15,903	310.2	112.3	75.0	149.7
MENDOCINO	214.7	0.3	84,269	254.7	115.1	97.5	132.8
MERCED	338.7	0.5	198,522	170.6	116.7	103.0	130.3
MODOC	29.7	a	10,064	294.8	113.0	62.7	163.4
MONO	9.0	a	10,624	84.7 *	61.0 *	18.3	103.6
MONTEREY	604.0	0.9	361,840	166.9	96.7	88.1	105.4
NAPA	349.0	0.5	117,735	296.4	102.6	89.2	116.0
NEVADA	199.3	0.3	86,506	230.4	75.9	63.3	88.6
ORANGE	5,004.0	7.4	2,614,851	191.4	113.3	109.8	116.7
PLACER	437.3	0.6	203,454	215.0	101.5	90.8	112.3
PLUMAS	58.0	0.1	20,484	283.1	104.6	73.1	136.1
RIVERSIDE	3,728.3	5.5	1,370,338	272.1	132.0	127.0	137.0
SACRAMENTO	2,430.0	3.6	1,117,748	217.4	125.6	120.1	131.1
SAN BENITO	63.3	0.1	42,604	148.7	83.1	60.2	106.1
SAN BERNARDIN(	3,280.7	4.8	1,581,620	207.4	147.6	142.1	153.2
SAN DIEGO	5,405.7	8.0	2,669,280	202.5	111.7	108.3	115.2
SAN FRANCISCO	2,099.0	3.1	751,532	279.3	111.2	105.5	117.0
SAN JOAQUIN	1,235.3	1.8	524,611	235.5	129.7	121.4	138.1
SAN LUIS OBISPO	601.3	0.9	228,401	263.3	107.0	96.6	117.4
SAN MATEO	1,409.7	2.1	689,731	204.4	94.3	88.7	99.9
SANTA BARBARA	879.0	1.3	391,425	224.6	102.2	94.2	110.2
SANTA CLARA	2,544.7	3.7	1,603,340	158.7	100.1	95.9	104.2
SANTA CRUZ	525.7	0.8	241,510	217.7	101.2	90.8	111.6
SHASTA	431.3	0.6	160,877	268.1	121.0	108.0	133.9
SIERRA	6.3	a	3,410	185.7 *	65.4 *	0.9	129.8
SISKIYOU	151.0	0.2	44,616	338.4	128.9	103.8	153.9
SOLANO	569.7	0.8	370,556	153.7	114.6	104.7	124.6
SONOMA	1,005.7	1.5	419,459	239.8	103.3	95.7	111.0
STANISLAUS	922.3	1.4	413,806	222.9	127.3	118.0	136.6
SUTTER	151.0	0.2	73,721	204.8	106.2	87.1	125.3
TEHAMA	169.0	0.2	54,195	311.8	117.3	96.1	138.5
TRINITY	31.3	a	13,363	234.5	112.5	67.9	157.2
TULARE	798.3	1.2	349,860	228.2	134.0	123.3	144.7
TUOLUMNE	148.7	0.2	51,516	288.6	105.6	85.3	126.0
VENTURA	1,182.7	1.7	712,762	165.9	94.7	88.8	100.7
YOLO	256.7	0.4	150,812	170.2	104.6	90.2	119.1
YUBA	139.7	0.2	62,255	224.3	151.3	123.6	179.1

Note : Rates are per 100,000 population; ICD-9 codes 390-398, 402, 404-429.

* Death rate unreliable, relative standard error is greater than 30%.

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

Source : State of California, Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail 1970-1996, January
State of California, Department of Health Services, Death Records.

TABLE 5
POPULATION ESTIMATES
BY RACE/ETHNICITY, SEX, AND AGE
CALIFORNIA, 1996

RACE/ ETHNICITY	TOTAL	AGE GROUPS										
		Under 1	1 to 4	5 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 to 84	85 & Older
TOTAL	32,383,811	540,625	2,298,325	4,914,945	4,217,867	5,357,377	5,401,744	3,806,109	2,359,866	1,954,134	1,161,701	371,118
MALE	16,227,924	276,538	1,175,708	2,514,194	2,198,841	2,828,447	2,741,290	1,887,994	1,146,990	879,924	465,740	112,258
FEMALE	16,155,887	264,087	1,122,617	2,400,751	2,019,026	2,528,930	2,660,454	1,918,115	1,212,876	1,074,210	695,961	258,860
ASIAN/OTHER	3,645,998	60,717	254,397	564,354	533,767	599,056	631,504	438,067	256,917	188,491	92,392	26,336
MALE	1,791,148	31,247	131,069	288,489	274,693	301,165	303,109	207,939	120,782	81,782	39,642	11,231
FEMALE	1,854,850	29,470	123,328	275,865	259,074	297,891	328,395	230,128	136,135	106,709	52,750	15,105
BLACK	2,275,401	37,276	170,539	388,094	345,698	395,287	371,892	242,802	152,306	102,194	53,430	15,883
MALE	1,121,544	18,939	86,386	196,545	182,527	203,575	180,097	114,139	71,336	43,656	19,675	4,669
FEMALE	1,153,857	18,337	84,153	191,549	163,171	191,712	191,795	128,663	80,970	58,538	33,755	11,214
HISPANIC	9,330,740	252,617	1,034,656	1,816,510	1,436,639	1,808,376	1,372,005	747,447	416,154	280,103	122,130	44,103
MALE	4,830,901	128,626	527,237	925,990	749,483	1,012,882	720,340	376,227	200,126	126,447	48,089	15,454
FEMALE	4,499,839	123,991	507,419	890,520	687,156	795,494	651,665	371,220	216,028	153,656	74,041	28,649
WHITE	17,131,672	190,015	838,733	2,145,987	1,901,763	2,554,658	3,026,343	2,377,793	1,534,489	1,383,346	893,749	284,796
MALE	8,484,331	97,726	431,016	1,103,170	992,138	1,310,825	1,537,744	1,189,689	754,746	628,039	358,334	80,904
FEMALE	8,647,341	92,289	407,717	1,042,817	909,625	1,243,833	1,488,599	1,188,104	779,743	755,307	535,415	203,892

Note : White, Black, and Asian/Other exclude Hispanic ethnicity. Hispanic includes any race category.

Source : State of California Department of Finance, Race/Ethnic Population Estimates by County with Age and Sex Detail, 1970-1996, January 1998.

Notes:

The heart disease death data presented in this report include ICD-9 codes 390-398, 402, 404-429.

The term "significant" within the text indicates either statistically significant based on a linear regression test with the slope of a least-squares line not equal to zero ($p<.05$) for regression analysis, or 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. Also, rates with a relative standard error (coefficient of variation) greater than 30 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. Race/ethnic data are not presented for years prior to 1985 due to the unavailability of mutually exclusive data for Hispanics and Whites. 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.

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. Subsequently, 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.

For a more complete explanation of the age-adjusting methodology see the *Healthy People 2000 Statistical Notes* publication.[5] 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*.[6] 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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