



DATA SUMMARY

REPORT REGISTER NO. DS98-07000
(Julv 1998)

CANCER DEATHS CALIFORNIA, 1980-1996

Introduction

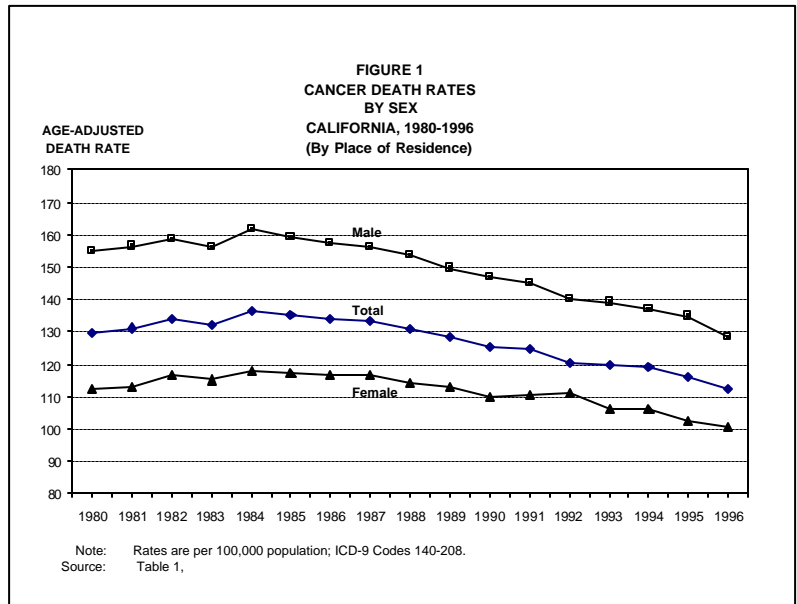
This report covers mortality due to cancer¹ in California for the years 1980 through 1996. Deaths due to cancer have historically been the second leading cause of death in California as well as the United States. Only deaths due to diseases of the heart have consistently surpassed the number of cancer deaths over the past four decades. From 1980 to 1996 more than one out of every four deaths in California was attributed to cancer, which is similar to the ratio for the nation. The majority of these deaths were among the elderly population (aged 65 and over), which constituted more than 60 percent of California's cancer deaths throughout this seventeen-year period. Due to the prevalence of this disease, the United States Public Health Service has established a number of health objectives pertaining to cancer, which are published in *Healthy People 2000*.² Two of these objectives, including detailed cancer death numbers and rates by sex, race/ethnicity, age, and county for California residents, are presented in the following analyses.

Cancer Deaths, Crude and Age-Adjusted Death Rates by Sex

As shown in Table 1 (page 4), the number of cancer deaths, in general, has steadily increased from 40,178 deaths in 1980 to 50,904 deaths in 1996. The number of cancer deaths among males and females also showed a similar increase during this period. Males, however, had slightly higher numbers of cancer deaths than their female counterparts in each of the seventeen years.

California's crude death rates due to cancer (Table 1) varied over the years from 1980 to 1996. The crude cancer death rate in 1980 was 169.0 per 100,000 population and increased during the following 4 years until it peaked at a rate of 174.3 in 1984. Over the subsequent 12 years, the rate steadily decreased to a low of 157.2 in 1996. Rates among males and females also showed the same pattern with the rate peaking in 1984, and a continuous decrease in the rates occurring over the following 12 years. Regression analysis showed a significant downward trend in the crude rates due to cancer, including those for males and females.

As illustrated in Figure 1, the age-adjusted death rates due to cancer showed the same variation as the crude rates from 1980 to 1996. The age-adjusted rates for the total population, males, and females all peaked in 1984, when their rates were respectively 136.6, 161.5, and 118.2 per 100,000 population. Age-adjusted rates for these three groups declined significantly from 1980 to 1996. The age-adjusted rates among males were also higher than their female counterparts in each of the seventeen years. In 1989, California met the Year 2000 national health objective of an age-adjusted cancer death rate of 130.0 per 100,000 population, when the age-adjusted rate dropped to 128.2. Since 1989, the age-adjusted cancer death rate has continuously declined to a low of 112.2 in 1996.



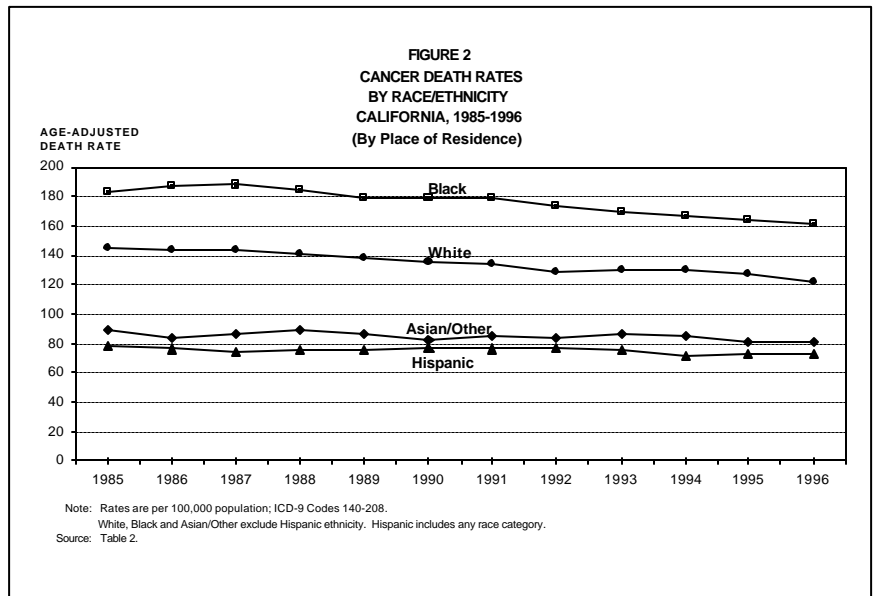
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Cancer Deaths, Crude, and Age-Adjusted Death Rates by Race/Ethnicity

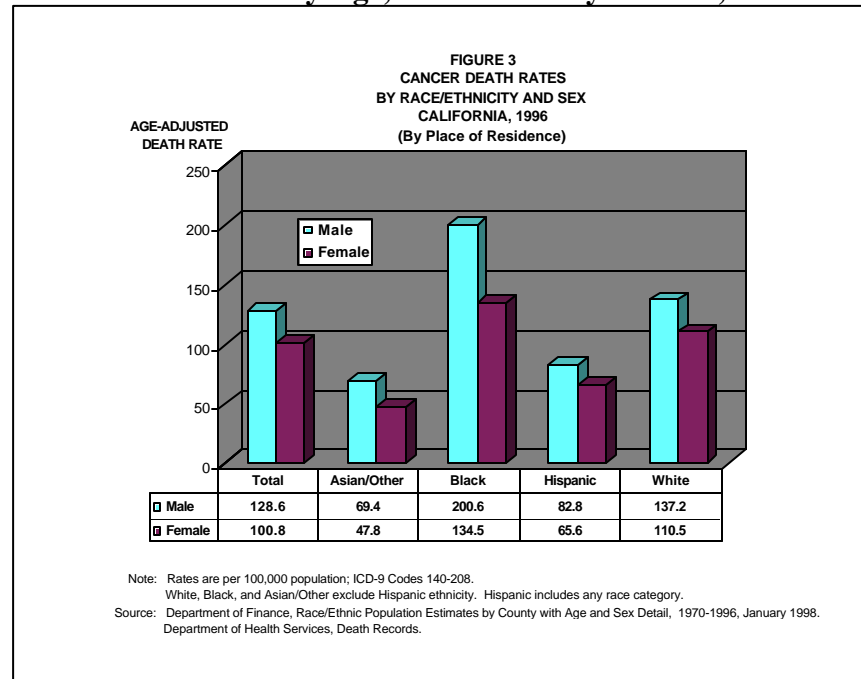
Table 2 (page 5) shows cancer death data by the four major race/ethnic groups from 1985 to 1996. During this period, the average number of cancer deaths among Whites (39,008.5) were 10.1, 10.8, and 15.3 times higher than the respective average number of deaths among Hispanics (3,846.5), Blacks (3,603.8), and Asian/Other (2,551.4).

Throughout the 12-year period, Whites also had the highest crude death rates due to cancer followed by Blacks, Asian/Other, and Hispanics. The crude death rates among Whites were approximately five times higher than Hispanics and over two times higher than Asian/Other during these years. Regression analysis showed the rates among Blacks decreased significantly, while rates among Hispanics and Asian/Other increased significantly. Crude death rates among Whites showed no significant upward or downward trend.

The age-adjusted death rates among Asian/Other and Blacks were relatively the same as their crude death rates from 1985 to 1996. However, the age-adjusted death rates among Hispanics were higher than their crude rates, and age-adjusted death rates among Whites were remarkably lower than their crude rates. The variations between the age-adjusted death rates and the crude death rates among Hispanics and Whites can be attributed to the age distribution of their respective population groups, in that the Hispanic population tend to be disproportionately younger, whereas the White population tend to be disproportionately older. Furthermore, as a result of age-adjusting, Blacks became the group with the highest age-adjusted death rates followed by Whites, Asian/Other, and Hispanics. However, California met the Year 2000 national objective of an age-adjusted Black death rate of 175.0 deaths per 100,000 population, when the age-adjusted death rate fell to 174.0 in 1992. As shown in Figure 2, the age-adjusted death rates among Blacks have declined significantly from 1985 through 1996. The other three race/ethnic groups have also shown significant declines during this period.



Cancer Death Rates by Age, Race/Ethnicity and Sex, 1996



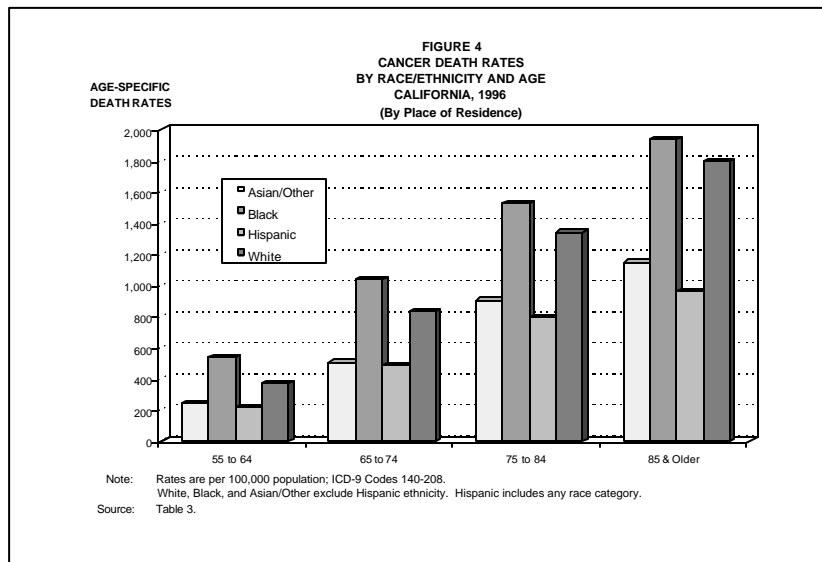
As illustrated in Figure 3, the age-adjusted death rate among Black males (200.6 per 100,000 population) was significantly greater than the age-adjusted death rates among White males (137.2), Hispanic males (82.8), and Asian/Other males (69.4). The Black male age-adjusted rate was respectively 2.9, 2.4, and 1.5 times greater than the age-adjusted death rates among Asian/Other males, Hispanic males, and White males. The age-adjusted death rates among females by race/ethnicity reflected similar results. Black females had the highest age-adjusted death rate (134.5), while Asian/Other females had the lowest age-adjusted death rate (47.8). The Black female age-adjusted death rate was also significantly greater than the age-adjusted death rates among the other three race/ethnic groups, and was 2.8, 2.1, and 1.2 times greater than the age-adjusted death rates among Asian/Other females, Hispanic females, and White females, respectively.

Age-Specific Cancer Death Rates

Table 3 (page 6) shows California's 1996 age-specific cancer death numbers and rates among the four race/ethnic groups by sex. During this year, 35,644 or 70.0 percent of the 50,904 deaths in California were among those aged 65 and over. Analysis of the four race/ethnic groups showed that Whites had the highest number of deaths in each of the eleven age groups, except for Hispanics aged under 1 year, 5-14 years, and 15-24 years. The number of deaths by sex also showed a similar pattern. Overall, White males and females had the highest numbers of death among the four race/ethnic groups.

In California, decedents aged 85 and over had the highest age-specific death rate of 1,658.5 per 100,000 population; conversely, those aged under 1 had the lowest age-specific rate of 1.7. As shown in Figure 4, racial differences generally persisted over each of the four older age groups. The highest age-specific death rate in each of the four race/ethnic groups were also among decedents aged 85 and over. In this age group, the rates were 1,939.2 among Blacks, 1,798.5 among Whites, 1,146.7 among Asian/Other, and 959.1 among Hispanics. Overall, Blacks generally had the highest death rates in each of the eleven age groups, and Hispanics had the lowest.

Analysis of the 1996 death rates revealed variations in the data by age and sex. Males aged 15-24 and 55 and over had higher death rates than females, whereas females aged 25-54 and 14 and under had higher death rates than males. Age- and sex-specific death rates among the four race/ethnic groups showed relatively the same results. Of the four race/ethnic groups, Black males and females generally had the highest age- and sex-specific death rates.



Cancer Death Rates Among California Counties

Table 4 (page 7) shows the 1994-1996 three-year average crude and age-adjusted cancer death rates for each of the California counties. For counties with reliable rates, (i.e. those rates with a relative standard error less than or equal to 30%), the crude death rate varied from 349.7 per 100,000 population in Lake county to 116.6 in Kings county, a difference in rates by a factor of nearly 3 to 1. The crude death rates for the ten largest counties (in order of their population size), were: Los Angeles (143.9), San Diego (163.0), Orange (145.2), Riverside (179.7), San Bernardino (143.4), Alameda (168.6), Santa Clara (130.0), Sacramento (173.7), Contra Costa (178.1), and Fresno (143.3).

During the same period, reliable age-adjusted death rates ranged from a high of 162.3 per 100,000 population in Trinity County to a low of 96.7 in Lassen County. The difference between the crude and the age-adjusted death rates show how the age composition of a county differs from the 1940 United States population, which was the standard used in age-adjusting the death rates.

California and most of the 58 counties have met the Year 2000 National Health Status Objective, which is an age-adjusted cancer death rate of 130.0 deaths per 100,000 population.⁴

**TABLE 1
DEATHS DUE TO CANCER
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	50,904	32,383,811	157.2	112.2	111.2	113.3
	1995	51,217	32,062,912	159.7	116.1	115.1	117.2
	1994	51,247	31,790,557	161.2	119.0	117.9	120.1
	1993	50,751	31,515,753	161.0	120.0	118.9	121.1
	1992	49,903	31,186,559	160.0	120.6	119.5	121.7
	1991	50,001	30,563,276	163.6	124.7	123.6	125.9
	1990	48,896	29,942,397	163.3	125.3	124.2	126.5
	1989	48,110	29,142,106	165.1	128.2	127.0	129.4
	1988	47,709	28,393,094	168.0	130.8	129.5	132.0
	1987	47,358	27,716,860	170.9	133.2	132.0	134.5
	1986	46,412	27,052,291	171.6	133.9	132.6	135.2
	1985	45,615	26,402,633	172.8	135.1	133.8	136.4
	1984	44,992	25,816,294	174.3	136.6	135.2	137.9
	1983	43,058	25,336,301	169.9	132.3	131.0	133.6
	1982	42,774	24,805,011	172.4	134.2	132.9	135.5
	1981	40,975	24,227,674	169.1	131.2	129.9	132.5
	1980	40,178	23,780,068	169.0	129.9	128.5	131.2
MALE							
	1996	25,930	16,227,924	159.8	128.6	126.9	130.2
	1995	26,365	16,062,552	164.1	134.9	133.2	136.6
	1994	26,103	15,921,009	164.0	137.0	135.3	138.7
	1993	26,022	15,782,166	164.9	139.2	137.5	141.0
	1992	25,662	15,616,376	164.3	140.3	138.6	142.1
	1991	25,686	15,301,183	167.9	145.0	143.2	146.8
	1990	25,318	14,989,516	168.9	147.0	145.2	148.9
	1989	24,767	14,573,988	169.9	149.7	147.8	151.6
	1988	24,749	14,181,700	174.5	153.6	151.6	155.6
	1987	24,465	13,825,118	177.0	156.0	154.0	158.0
	1986	24,056	13,474,197	178.5	157.4	155.3	159.4
	1985	23,757	13,130,674	180.9	159.5	157.4	161.5
	1984	23,508	12,818,768	183.4	161.5	159.4	163.7
	1983	22,429	12,559,834	178.6	156.2	154.1	158.3
	1982	22,307	12,275,613	181.7	158.7	156.6	160.8
	1981	21,513	11,993,514	179.4	156.5	154.3	158.6
	1980	21,100	11,772,769	179.2	155.2	153.1	157.4
FEMALE							
	1996	24,974	16,155,887	154.6	100.8	99.4	102.2
	1995	24,852	16,000,360	155.3	102.8	101.4	104.2
	1994	25,144	15,869,548	158.4	106.2	104.8	107.6
	1993	24,729	15,773,587	157.2	106.2	104.8	107.7
	1992	24,241	15,570,183	155.7	106.6	105.1	108.0
	1991	24,315	15,262,093	159.3	110.5	109.0	112.0
	1990	23,578	14,952,881	157.7	110.1	108.5	111.6
	1989	23,343	14,568,118	160.2	113.2	111.6	114.7
	1988	22,960	14,211,394	161.6	114.4	112.8	116.0
	1987	22,893	13,891,742	164.8	116.8	115.1	118.4
	1986	22,356	13,578,094	164.6	116.6	114.9	118.2
	1985	21,858	13,271,959	164.7	117.4	115.7	119.0
	1984	21,484	12,997,526	165.3	118.2	116.5	119.9
	1983	20,629	12,776,467	161.5	115.2	113.5	116.9
	1982	20,467	12,529,398	163.4	116.8	115.1	118.5
	1981	19,462	12,284,160	158.4	113.2	111.5	115.0
	1980	19,078	12,057,299	158.2	112.1	110.4	113.8

Note : Rates are per 100,000 population; ICD-9 Codes 140-208.
 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 2
DEATHS DUE TO CANCER
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	3,394	3,645,998	93.1	80.3	77.5	83.1
	1995	3,207	3,530,931	90.8	80.4	77.6	83.3
	1994	3,176	3,429,125	92.6	84.7	81.7	87.7
	1993	3,061	3,323,013	92.1	86.1	83.0	89.2
	1992	2,768	3,209,399	86.2	83.1	80.0	86.3
	1991	2,643	3,068,424	86.1	84.5	81.2	87.8
	1990	2,391	2,930,570	81.6	82.2	78.9	85.5
	1989	2,291	2,774,167	82.6	86.1	82.5	89.7
	1988	2,191	2,616,586	83.7	89.1	85.4	92.9
	1987	1,973	2,465,134	80.0	86.7	82.9	90.6
	1986	1,779	2,313,141	76.9	83.6	79.7	87.5
	1985	1,743	2,158,886	80.7	89.3	85.1	93.6
BLACK							
	1996	3,808	2,275,401	167.4	161.2	156.0	166.5
	1995	3,755	2,250,502	166.9	164.2	158.8	169.6
	1994	3,709	2,232,841	166.1	166.2	160.7	171.7
	1993	3,743	2,214,376	169.0	170.1	164.5	175.7
	1992	3,730	2,192,451	170.1	174.0	168.3	179.7
	1991	3,727	2,147,691	173.5	179.3	173.4	185.2
	1990	3,623	2,105,207	172.1	178.6	172.7	184.6
	1989	3,498	2,061,823	169.7	179.8	173.7	185.9
	1988	3,484	2,024,779	172.1	183.9	177.7	190.2
	1987	3,496	1,992,361	175.5	188.2	181.8	194.5
	1986	3,428	1,958,844	175.0	187.3	180.9	193.7
	1985	3,245	1,923,209	168.7	182.9	176.5	189.3
HISPANIC							
	1996	4,852	9,330,740	52.0	72.5	70.4	74.6
	1995	4,640	9,100,994	51.0	72.5	70.4	74.7
	1994	4,346	8,882,966	48.9	71.6	69.4	73.8
	1993	4,370	8,658,118	50.5	75.4	73.1	77.7
	1992	4,271	8,421,133	50.7	77.3	74.9	79.7
	1991	4,002	8,097,870	49.4	76.2	73.8	78.6
	1990	3,809	7,774,789	49.0	77.0	74.5	79.5
	1989	3,493	7,419,574	47.1	75.1	72.6	77.7
	1988	3,285	7,077,579	46.4	75.0	72.3	77.6
	1987	3,132	6,754,398	46.4	74.5	71.8	77.2
	1986	3,026	6,428,436	47.1	75.7	72.9	78.4
	1985	2,932	6,103,662	48.0	77.6	74.7	80.4
WHITE							
	1996	38,850	17,131,672	226.8	121.3	120.0	122.7
	1995	39,615	17,180,485	230.6	126.4	125.1	127.8
	1994	40,016	17,245,625	232.0	129.4	128.0	130.8
	1993	39,577	17,320,246	228.5	129.3	127.9	130.7
	1992	39,134	17,363,576	225.4	129.1	127.7	130.5
	1991	39,629	17,249,291	229.7	134.4	132.9	135.8
	1990	39,073	17,131,831	228.1	135.1	133.6	136.5
	1989	38,828	16,886,542	222.9	138.1	136.6	139.6
	1988	38,749	16,674,150	232.4	140.7	139.2	142.2
	1987	38,757	16,504,967	234.8	143.5	142.0	145.1
	1986	38,179	16,351,870	233.5	144.1	142.6	145.7
	1985	37,695	16,216,876	232.4	144.6	143.0	146.2

Note : Rates are per 100,000 population; ICD-9 Codes 140-208.

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.
State of California, Department of Health Services, Death Records.

TABLE 3
DEATHS DUE TO CANCER
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	9	4	5	1.7 *	1.4 *	1.9 *	0.6	2.8	0.0	2.9	0.2	3.6
	1 to 4	57	25	32	2.5	2.1	2.9	1.8	3.1	1.3	3.0	1.9	3.8
	5 to 14	124	69	55	2.5	2.7	2.3	2.1	3.0	2.1	3.4	1.7	2.9
	15 to 24	215	133	82	5.1	6.0	4.1	4.4	5.8	5.0	7.1	3.2	4.9
	25 to 34	531	238	293	9.9	8.4	11.6	9.1	10.8	7.3	9.5	10.3	12.9
	35 to 44	1,877	807	1,070	34.7	29.4	40.2	33.2	36.3	27.4	31.5	37.8	42.6
	45 to 54	4,402	2,054	2,348	115.7	108.8	122.4	112.2	119.1	104.1	113.5	117.5	127.4
	55 to 64	8,045	4,197	3,848	340.9	365.9	317.3	333.5	348.4	354.8	377.0	307.2	327.3
	65 to 74	14,905	7,991	6,914	762.7	908.1	643.6	750.5	775.0	888.2	928.1	628.5	658.8
	75 to 84	14,584	7,610	6,974	1,255.4	1,634.0	1,002.1	1,235.0	1,275.8	1,597.2	1,670.7	978.5	1,025.6
	85 & Older	6,155	2,802	3,353	1,658.5	2,496.0	1,295.3	1,617.1	1,699.9	2,403.6	2,588.5	1,251.5	1,339.1
	Total	50,904	25,930	24,974	157.2	159.8	154.6	155.8	158.6	157.8	161.7	152.7	156.5
ASIAN/OTHER													
	Under 1	1	0	1	1.6 *	0.0 +	3.4 *	0.0	4.9	-	-	0.0	10.0
	1 to 4	6	4	2	2.4 *	3.1 *	1.6 *	0.5	4.2	0.1	6.0	0.0	3.9
	5 to 14	12	5	7	2.1	1.7 *	2.5 *	0.9	3.3	0.2	3.3	0.7	4.4
	15 to 24	26	15	11	4.9	5.5	4.2 *	3.0	6.7	2.7	8.2	1.7	6.8
	25 to 34	63	26	37	10.5	8.6	12.4	7.9	13.1	5.3	12.0	8.4	16.4
	35 to 44	201	93	108	31.8	30.7	32.9	27.4	36.2	24.4	36.9	26.7	39.1
	45 to 54	392	180	212	89.5	86.6	92.1	80.6	98.3	73.9	99.2	79.7	104.5
	55 to 64	609	327	282	237.0	270.7	207.1	218.2	255.9	241.4	300.1	183.0	231.3
	65 to 74	948	567	381	502.9	693.3	357.0	470.9	535.0	636.2	750.4	321.2	392.9
	75 to 84	834	471	363	902.7	1,188.1	688.2	841.4	963.9	1,080.8	1,295.4	617.4	758.9
	85 & Older	302	175	127	1,146.7	1,558.2	840.8	1,017.4	1,276.1	1,327.3	1,789.1	694.6	987.0
	Total	3,394	1,863	1,531	93.1	104.0	82.5	90.0	96.2	99.3	108.7	78.4	86.7
BLACK													
	Under 1	1	1	0	2.7 *	5.3 *	0.0 +	0.0	7.9	0.0	15.6	-	-
	1 to 4	5	2	3	2.9 *	2.3 *	3.6 *	0.4	5.5	0.0	5.5	0.0	7.6
	5 to 14	7	2	5	1.8 *	1.0 *	2.6 *	0.5	3.1	0.0	2.4	0.3	4.9
	15 to 24	22	13	9	6.4	7.1	5.5 *	3.7	9.0	3.3	11.0	1.9	9.1
	25 to 34	44	20	24	11.1	9.8	12.5	7.8	14.4	5.5	14.1	7.5	17.5
	35 to 44	235	97	138	63.2	53.9	72.0	55.1	71.3	43.1	64.6	59.9	84.0
	45 to 54	498	229	269	205.1	200.6	209.1	187.1	223.1	174.6	226.6	184.1	234.1
	55 to 64	809	453	356	531.2	635.0	439.7	494.6	567.8	576.5	693.5	394.0	485.3
	65 to 74	1,061	592	469	1,038.2	1,356.1	801.2	975.7	1,100.7	1,246.8	1,465.3	728.7	873.7
	75 to 84	818	469	349	1,531.0	2,383.7	1,033.9	1,426.1	1,635.9	2,168.0	2,595.5	925.4	1,142.4
	85 & Older	308	140	168	1,939.2	2,998.5	1,498.1	1,722.6	2,155.8	2,501.8	3,495.2	1,271.6	1,724.7
	Total	3,808	2,018	1,790	167.4	179.9	155.1	162.0	172.7	172.1	187.8	147.9	162.3
HISPANIC													
	Under 1	5	2	3	2.0 *	1.6 *	2.4 *	0.2	3.7	0.0	3.7	0.0	5.2
	1 to 4	19	7	12	1.8 *	1.3	2.4	1.0	2.7	0.3	2.3	1.0	3.7
	5 to 14	55	30	25	3.0	3.2	2.8	2.2	3.8	2.1	4.4	1.7	3.9
	15 to 24	90	59	31	6.3	7.9	4.5	5.0	7.6	5.9	9.9	2.9	6.1
	25 to 34	142	65	77	7.9	6.4	9.7	6.6	9.1	4.9	8.0	7.5	11.8
	35 to 44	338	135	203	24.6	18.7	31.2	22.0	27.3	15.6	21.9	26.9	35.4
	45 to 54	561	238	323	75.1	63.3	87.0	68.8	81.3	55.2	71.3	77.5	96.5
	55 to 64	907	467	440	217.9	233.4	203.7	203.8	232.1	212.2	254.5	184.6	222.7
	65 to 74	1,349	742	607	481.6	586.8	395.0	455.9	507.3	544.6	629.0	363.6	426.5
	75 to 84	963	521	442	788.5	1,083.4	597.0	738.7	838.3	990.4	1,176.4	541.3	652.6
	85 & Older	423	204	219	959.1	1,320.0	764.4	867.7	1,050.5	1,138.9	1,501.2	663.2	865.7
	Total	4,852	2,470	2,382	52.0	51.1	52.9	50.5	53.5	49.1	53.1	50.8	55.1
WHITE													
	Under 1	2	1	1	1.1 *	1.0 *	1.1 *	0.0	2.5	0.0	3.0	0.0	3.2
	1 to 4	27	12	15	3.2	2.8	3.7	2.0	4.4	1.2	4.4	1.8	5.5
	5 to 14	50	32	18	2.3	2.9	1.7	1.7	3.0	1.9	3.9	0.9	2.5
	15 to 24	77	46	31	4.0	4.6	3.4	3.1	5.0	3.3	6.0	2.2	4.6
	25 to 34	282	127	155	11.0	9.7	12.5	9.8	12.3	8.0	11.4	10.5	14.4
	35 to 44	1,103	482	621	36.4	31.3	41.7	34.3	38.6	28.5	34.1	38.4	45.0
	45 to 54	2,951	1,407	1,544	124.1	118.3	130.0	119.6	128.6	112.1	124.4	123.5	136.4
	55 to 64	5,720	2,950	2,770	372.8	390.9	355.2	363.1	382.4	376.8	405.0	342.0	368.5
	65 to 74	11,547	6,090	5,457	834.7	969.7	722.5	819.5	849.9	945.3	994.0	703.3	741.7
	75 to 84	11,969	6,149	5,820	1,339.2	1,716.0	1,087.0	1,315.2	1,363.2	1,673.1	1,758.9	1,059.1	1,114.9
	85 & Older	5,122	2,283	2,839	1,798.5	2,821.9	1,392.4	1,749.2	1,847.7	2,706.1	2,937.6	1,341.2	1,443.6
	Total	38,850	19,579	19,271	226.8	230.8	222.9	224.5	229.0	227.5	234.0	219.7	226.0

Note : Rates are per 100,000 population; ICD-9 Codes 140-208.

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, rates based on no (zero) deaths.

- Upper and lower limits at the 95% confidence level are indeterminate.

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 CANCER
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	51,122.9	100.0	32,062,912	159.4	115.9	114.8	117.0
ALAMEDA	2,272.3	4.4	1,347,739	168.6	120.9	115.6	126.2
ALPINE	0.7	a	1,185	59.1 *	42.5 *	0.0	144.4
AMADOR	86.3	0.2	32,572	265.0	120.8	91.6	150.0
BUTTE	495.3	1.0	196,108	252.6	123.5	110.5	136.6
CALAVERAS	102.0	0.2	36,907	276.4	130.8	102.1	159.4
COLUSA	35.7	0.1	17,799	200.6	132.6	85.2	180.1
CONTRA COSTA	1,545.0	3.0	867,315	178.1	116.5	110.3	122.6
DEL NORTE	49.0	0.1	27,597	177.6	106.1	72.7	139.4
EL DORADO	265.0	0.5	144,158	183.8	115.1	100.3	129.8
FRESNO	1,080.7	2.1	754,045	143.3	111.1	104.0	118.3
GLENN	59.3	0.1	26,523	223.6	132.5	94.6	170.4
HUMBOLDT	263.0	0.5	124,481	211.3	131.9	114.5	149.3
IMPERIAL	185.7	0.4	137,445	135.1	115.5	94.3	128.7
INYO	48.0	0.1	18,571	258.5	103.3	67.9	138.7
KERN	936.7	1.8	616,701	151.9	120.8	112.6	129.0
KINGS	134.0	0.3	114,902	116.6	110.2	90.4	129.9
LAKE	192.3	0.4	54,984	349.7	155.8	129.0	182.5
LASSEN	40.3	0.1	28,678	140.5	96.7	64.7	128.7
LOS ANGELES	13,461.0	26.3	9,352,192	143.9	113.7	111.6	115.7
MADERA	182.7	0.4	106,429	171.7	115.0	96.8	133.2
MARIN	482.0	0.9	238,981	201.7	116.5	105.3	127.7
MARIPOSA	43.7	0.1	15,903	274.8	125.7	83.1	168.2
MENDOCINO	192.0	0.4	84,269	227.8	135.5	114.5	156.5
MERCED	292.0	0.6	198,522	147.1	124.5	109.3	139.7
MODOC	23.7	a	10,064	235.5	106.7	58.0	155.5
MONO	8.0	a	10,624	75.3 *	63.6 *	18.7	108.5
MONTEREY	567.0	1.1	361,840	156.7	117.4	107.0	127.9
NAPA	314.7	0.6	117,735	267.3	130.0	113.4	146.6
NEVADA	214.0	0.4	86,506	247.4	107.6	90.9	124.3
ORANGE	3,795.7	7.4	2,614,851	145.2	112.8	109.0	116.5
PLACER	388.7	0.8	203,454	191.1	120.4	107.6	133.2
PLUMAS	52.7	0.1	20,484	257.3	123.0	85.1	160.8
RIVERSIDE	2,463.0	4.8	1,370,338	179.7	115.6	110.5	120.7
SACRAMENTO	1,941.7	3.8	1,117,748	173.7	125.6	119.6	131.5
SAN BENITO	59.7	0.1	42,604	140.1	98.9	71.9	126.0
SAN BERNARDINO	2,267.7	4.4	1,581,620	143.4	127.0	121.5	132.5
SAN DIEGO	4,351.7	8.5	2,669,280	163.0	119.6	115.7	123.5
SAN FRANCISCO	1,572.7	3.1	751,532	209.3	112.5	106.2	118.8
SAN JOAQUIN	861.7	1.7	524,611	164.3	117.4	108.9	125.9
SAN LUIS OBISPO	462.7	0.9	228,401	202.6	119.2	106.7	131.7
SAN MATEO	1,264.3	2.5	689,731	183.3	111.9	105.3	118.6
SANTA BARBARA	646.3	1.3	391,425	165.1	104.4	95.5	113.3
SANTA CLARA	2,084.0	4.1	1,603,340	130.0	101.8	97.3	106.3
SANTA CRUZ	380.0	0.7	241,510	157.3	109.0	96.9	121.1
SHASTA	384.3	0.8	160,877	238.9	133.1	118.5	147.8
SIERRA	6.3	a	3,410	184.8 *	75.4 *	5.0	145.8
SISKIYOU	128.0	0.3	44,616	286.9	142.9	115.0	170.8
SOLANO	570.0	1.1	370,556	153.8	133.2	121.8	144.5
SONOMA	833.0	1.6	419,459	198.6	118.5	109.5	127.6
STANISLAUS	689.7	1.3	413,806	166.7	123.5	113.6	133.5
SUTTER	145.3	0.3	73,721	197.1	124.3	102.4	146.1
TEHAMA	143.7	0.3	54,195	265.2	134.8	109.5	160.1
TRINITY	40.3	0.1	13,363	301.6	162.3	108.2	216.4
TULARE	512.3	1.0	349,860	146.4	112.7	102.1	123.3
TUOLUMNE	139.3	0.3	51,516	270.4	130.2	105.4	154.9
VENTURA	1,007.0	2.0	712,762	141.3	105.0	98.2	111.8
YOLO	248.7	0.5	150,812	164.9	133.3	115.5	151.1
YUBA	110.3	0.2	62,255	177.2	140.8	112.9	168.8

Note : Rates are per 100,000 population; ICD-9 Codes 140-208.

* Death rate is 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 1998.
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 & OI
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	371,1
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	112,2
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	258,8
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	26,3
MALE	1,791,148	31,247	131,069	288,489	274,693	301,165	303,109	207,939	120,782	81,782	39,642	11,2
FEMALE	1,854,850	29,470	123,328	275,865	259,074	297,891	328,395	230,128	136,135	106,709	52,750	15,1
BLACK	2,275,401	37,276	170,539	388,094	345,698	395,287	371,892	242,802	152,306	102,194	53,430	15,8
MALE	1,121,544	18,939	86,386	196,545	182,527	203,575	180,097	114,139	71,336	43,656	19,675	4,8
FEMALE	1,153,857	18,337	84,153	191,549	163,171	191,712	191,795	128,663	80,970	58,538	33,755	11,2
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	44,1
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	15,4
FEMALE	4,499,839	123,991	507,419	890,520	687,156	795,494	651,665	371,220	216,028	153,656	74,041	28,6
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	284,7
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	80,8
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	203,8

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 cancer death data presented in this report include ICD-9 codes 140-208.⁵

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.⁶ 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*.⁷ 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].

References:

1. The 1998 Facts and Figures from of the American Cancer Society defines cancer as a group of diseases characterized by the uncontrolled growth and spread of abnormal cells, which can lead to death if left uncontrolled, see [<http://www.cancer.org.statistics>].
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3. Anderson RN, Kocjanek KD, Murphy SL. Report on Final Mortality Statistics, 1995. *Monthly Vital Statistics Report*. National Center for Health Statistics, (PHS) 97-1120, June 1997.
4. Fujitani L. *California Health Status Profiles 1998*. California Department of Health Services, Center for Health Statistics publication, 1998.
5. World Health Organization, Manual of the International Statistical Classification of Diseases. Injuries, and Causes of Death. *International Classification of Diseases, ninth revision*. Geneva, 1977.

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