



Center for Health Statistics



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DATA SUMMARY
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This Data Summary is one of a series of leading cause of death reports.

Highlights

- In 2004, 82.9 percent of all heart disease deaths in California occurred among people aged 65 and older.
- The heart disease crude death rate for California was 178.7 deaths per 100,000 population in 2004.
- During 2004 the California heart disease age-adjusted death rate of 193.0 was lower than the U. S. rate of 217.5.
- In 2004 Blacks had a higher heart disease age-adjusted death rate than the other six race/ethnic groups displayed in this report.

Heart Disease Deaths in California, 2004

By Daniel H. Cox

Introduction

Heart disease has historically been the leading cause of death in the United States (U.S.) and in California. Approximately 24.7 million noninstitutionalized adults had been diagnosed with heart disease in the U.S. in 2004.¹ During the same year 4.4 million hospital discharges were attributed to heart disease with an average length of stay of 4.6 days.¹ There were 654,092 heart disease deaths in the U.S. in 2004.²

This report presents data on heart disease deaths for 2004 and provides analysis of crude and age-adjusted death rates for California residents by sex, age, race/ethnicity, and county. The definition of heart disease used in this report is based on the International Classification of Diseases, Tenth Revision (ICD-10) codes I00-I09, I11, I13, and I20-I51 currently presented in National Center for Health Statistics (NCHS) reports.³ The national health objective for heart disease, as defined by the Healthy People 2010 initiative, pertains to coronary heart disease (a narrowly defined subset of heart disease). Therefore, 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.⁴

Heart Disease Deaths

Table 1 (pages 11 and 12) displays California heart disease death data for 2004 by race/ethnicity, age, and sex. Heart disease deaths occur predominantly among the older population, and this held true in 2004 with 82.9 percent of all heart disease deaths involving people in the age groups 65 years and older. These age groups, within each respective race/ethnic group, accounted for 86.1 percent of all heart disease deaths among Whites, 83.6 percent among Asians, 74.4 percent among Hispanics, 72.1 percent

¹ National Center for Health Statistics. Division of Data Services. Fast Stats A to Z: Heart Disease, July 2006. <http://www.cdc.gov/nchs/fastats/heart.htm>

² National Center for Health Statistics, Deaths: Preliminary Data for 2004. National Vital Statistics Reports, DHHS Pub. No. (PHS) 2006-1120, PRS 06-0130, Vol. 54, No. 19, June 2006.

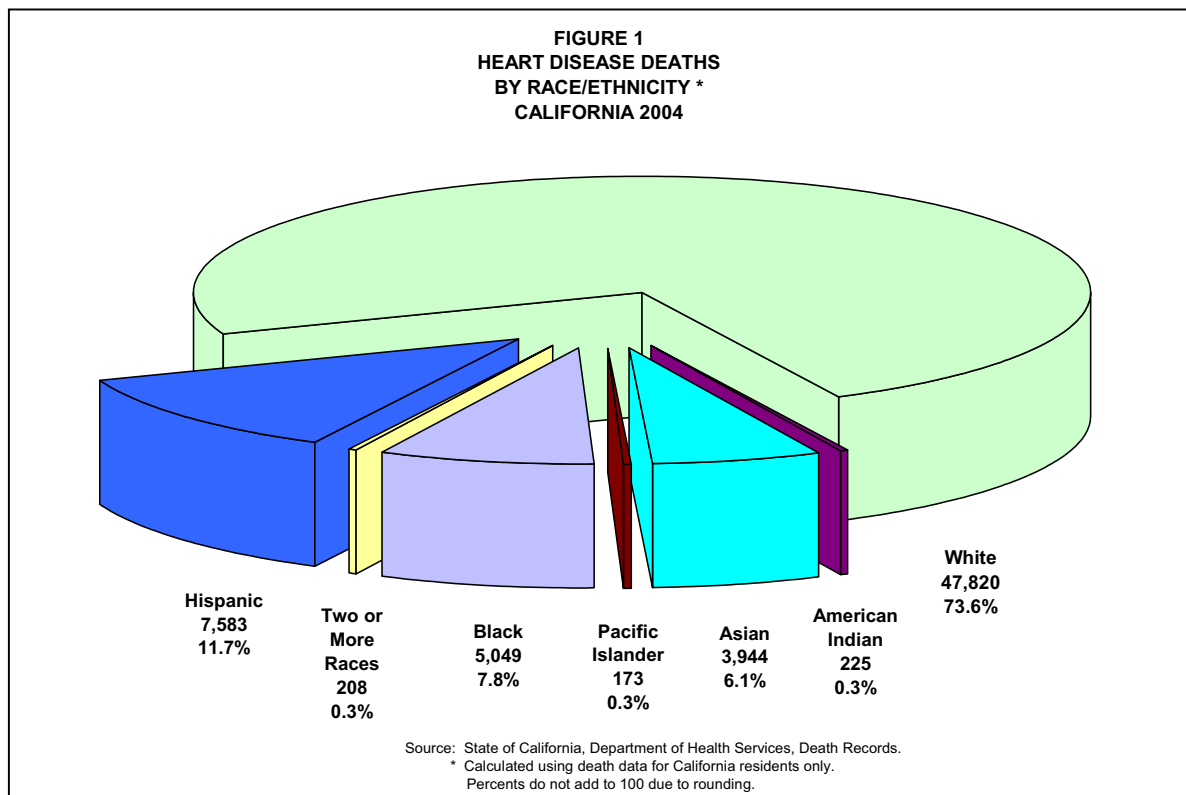
³ National Center for Health Statistics, Deaths: Preliminary Data for 1999. National Vital Statistics Reports, DHHS Pub. No. (PHS) 2001-1120, PRS 01-0358, Vol. 49, No. 3, June 2001.

⁴ Shippen S. County Health Status Profiles 2006. Center for Health Statistics, California Department of Health Services. April 2006.

A brief overview of [data limitations and qualifications](#) is provided at the end of this report.

among Two or More Races, 66.8 percent among Blacks, 63.6 percent among American Indians, and 54.3 percent among Pacific Islanders. During 2004 the number of deaths attributed to heart disease was slightly higher among males (32,506) than among females (32,496).

As shown in **Figure 1**, the number of heart disease deaths among Whites (47,820) was higher than Hispanics (7,583), Blacks (5,049), Asians (3,944), American Indians (225), Two or More Races (208), and Pacific Islanders (173).



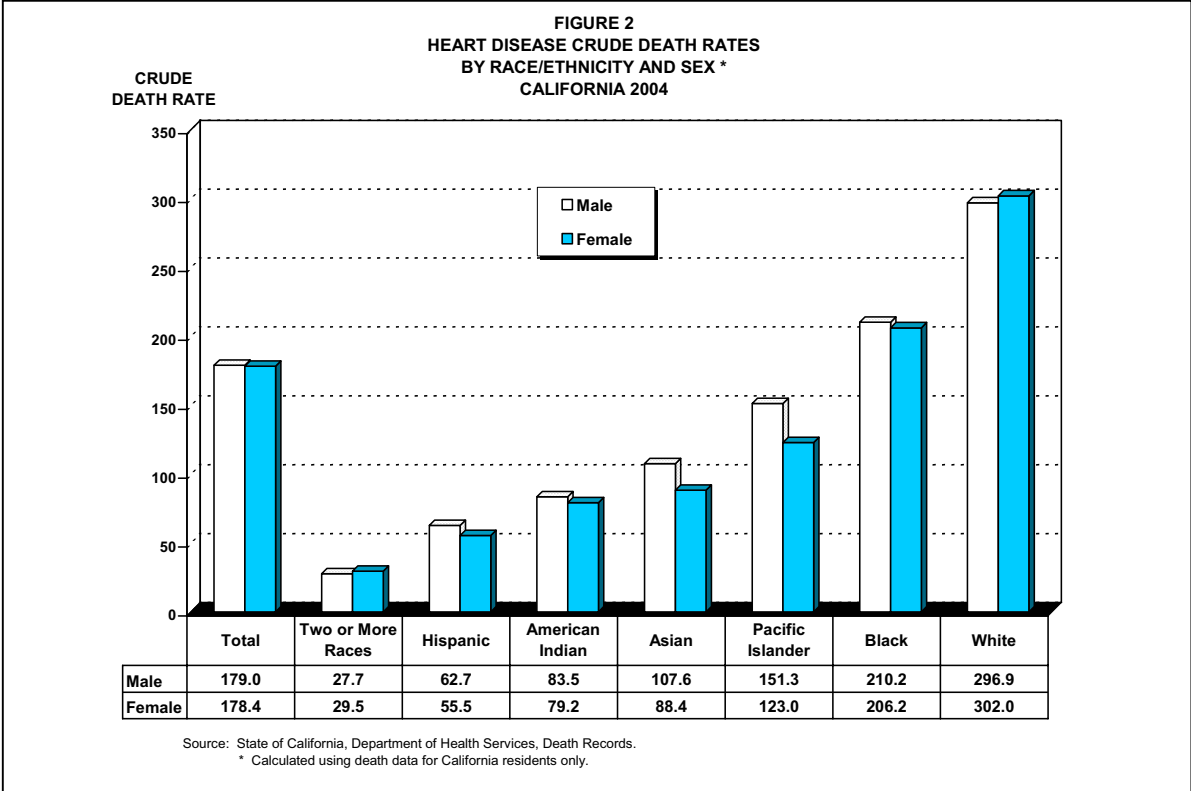
Heart Disease Crude Death Rates

The heart disease crude death rate for California decreased significantly from 201.3 deaths per 100,000 population in 2000 to 178.7 in 2004.⁵ As shown in **Table 1** (pages 11 and 12), Whites had the highest crude death rate in 2004, a rate of 299.5 that was followed by Blacks with a rate of 208.2. Pacific Islanders were next with a rate of 137.1, followed by Asians with 97.7, American Indians with 81.3 and Hispanics with 59.2. The Two or More Races category had the lowest heart disease crude death rate with 28.6. Six of these seven rates decreased from 2000 when Whites had a rate of 325.5, Blacks had a rate of 237.2, Pacific Islanders had a rate of 149.3, Asians had a rate of 101.5, American Indians had a rate of 109.5, and Hispanics had a rate of 60.9.⁵ Contrary to this pattern was the death rate for Two or More Races, a rate of 13.9 in 2000 which increased in 2004. The differences in the heart disease crude death rates from 2000 to 2004 were statistically significant for American Indians, Blacks, Whites, and Two or More Races.

⁵ Cox DH. Heart Disease Deaths in California, 2000-2003. Data Summary. Center for Health Statistics, California Department of Health Services, December 2005.

See the [Methodological Approach Section](#) later in this report for an explanation of crude, age-specific, and age-adjusted death rates.

Figure 2 shows Black, Pacific Islander, Asian, American Indian, and Hispanic males had higher heart disease crude death rates than females in their corresponding race/ethnic groups. Black males had a rate of 210.2 deaths per 100,000 population, and Black females had a rate of 206.2. Pacific Islander males had a rate of 151.3 and Pacific Islander females had a rate of 123.0. Asian males had a rate of 107.6 and Asian females had a rate of 88.4. American Indian males had a rate of 83.5 and American Indian females had a rate of 79.2. Hispanic males had a rate of 62.7 and Hispanic females had a rate of 55.5. The differences between Asian and Hispanic males compared with their respective female counterparts were statistically significant. Contrary to the findings for the other five race/ethnic groups, females in the White and Two or More Races groups had heart disease crude death rates that were higher than the rates for males in their corresponding race/ethnic groups. White females had a rate of 302.0 deaths per 100,000 population and White males had a rate of 296.9. Females of Two or More Races had a rate of 29.5 and males of Two or More Races had a rate of 27.7. Neither of these differences were statistically significant.

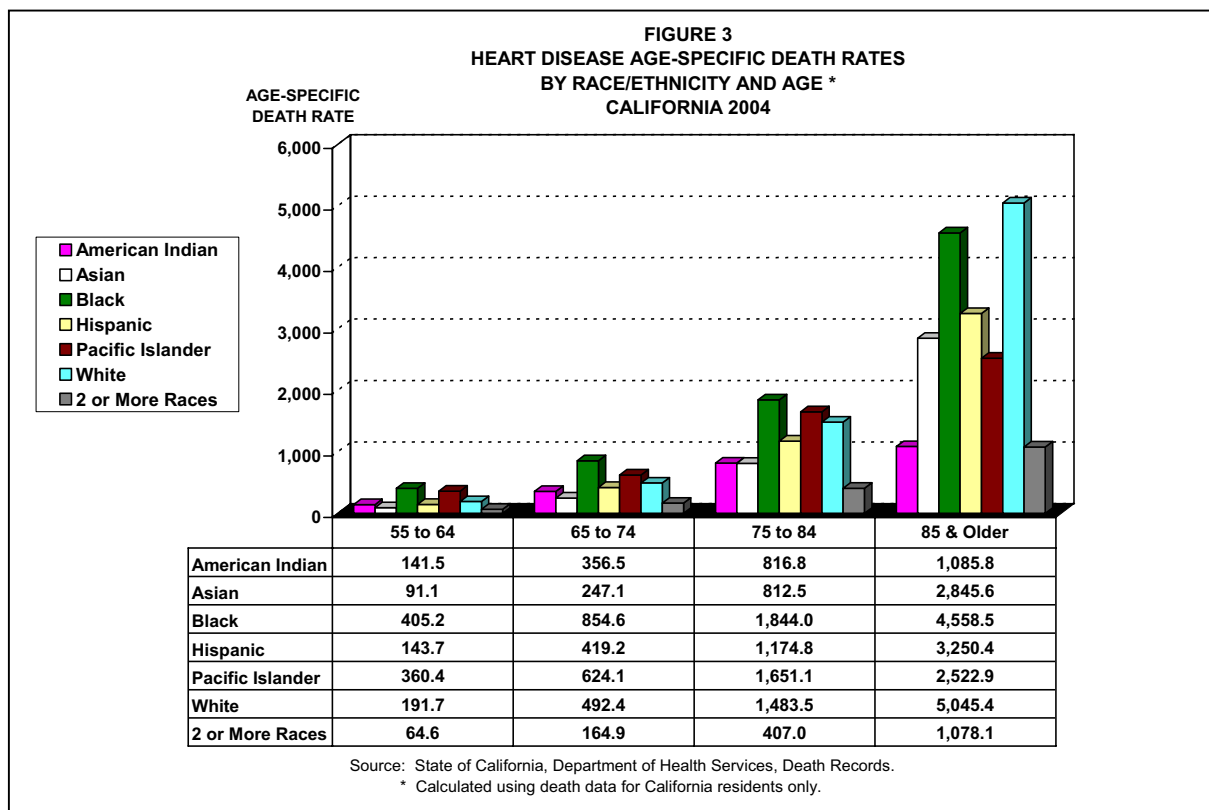


Heart Disease Age-Specific Death Rates

In **Table 1** (pages 11 and 12), reliable age-specific rates show that among the sexes in 2004, males in the American Indian, Asian, Black, Hispanic, and White race/ethnic groups consistently had higher heart disease death rates than females in their corresponding race/ethnic groups. The only exception to this finding was in the 85 and Older age group where Black females had a higher death rate than Black males. In the Two or More Races group the only age group with reliable rates was the 75 to 84 age group where females had a higher rate. Because of unreliability the age-specific rates for male and female Pacific Islanders could not be compared.

You can read more about crude and age-adjusted rates on the National Center for Health Statistics website at www.cdc.gov/nchs

Figure 3 shows that in 2004, among the age groups with reliable rates, Blacks had higher heart disease age-specific death rates than the other six race/ethnic groups in the 55 to 64, 65 to 74, and 75 to 84 age groups. In the 85 and Older age group Whites had a higher death rate than the other six race/ethnic groups. The age-specific differences between Blacks and the other race/ethnic groups were statistically significant only in the 65 to 74 age group. The difference between Whites and the other race/ethnic groups in the 85 and Older age group was statistically significant.



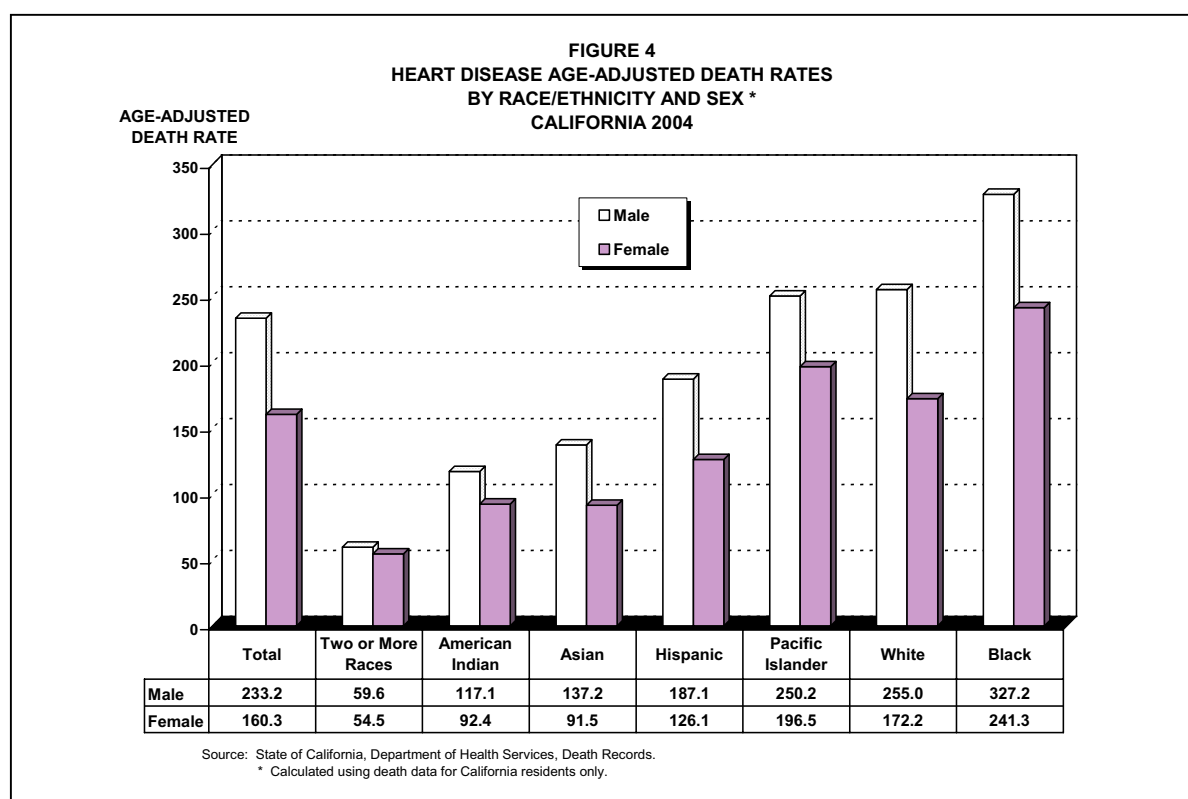
Not shown in **Figure 3**, but displayed in **Table 1** (pages 11 and 12) are the heart disease age-specific death rates for the 45 to 54 age group where Blacks had a higher death rate than Pacific Islanders, American Indians, Whites, Hispanics, and Asians. The rate for Two or More Races was not reliable in the 45 to 54 age group. A comparison of reliable rates in the 35 to 44 age group shows that Blacks had a higher heart disease death rate than Whites, Hispanics, and Asians. A similar pattern was seen for reliable rates in the 25 to 34 age group where Blacks had a higher death rate than Whites, Hispanics, and Asians. In the 15 to 24 age group Whites had a higher death rate than Hispanics and the death rates for the other five race/ethnic groups were unreliable.

See the Vital Statistics Query System (VSQ) at our website www.dhs.ca.gov/vsq to create your own vital statistics tables.

Heart Disease Age-Adjusted Death Rates

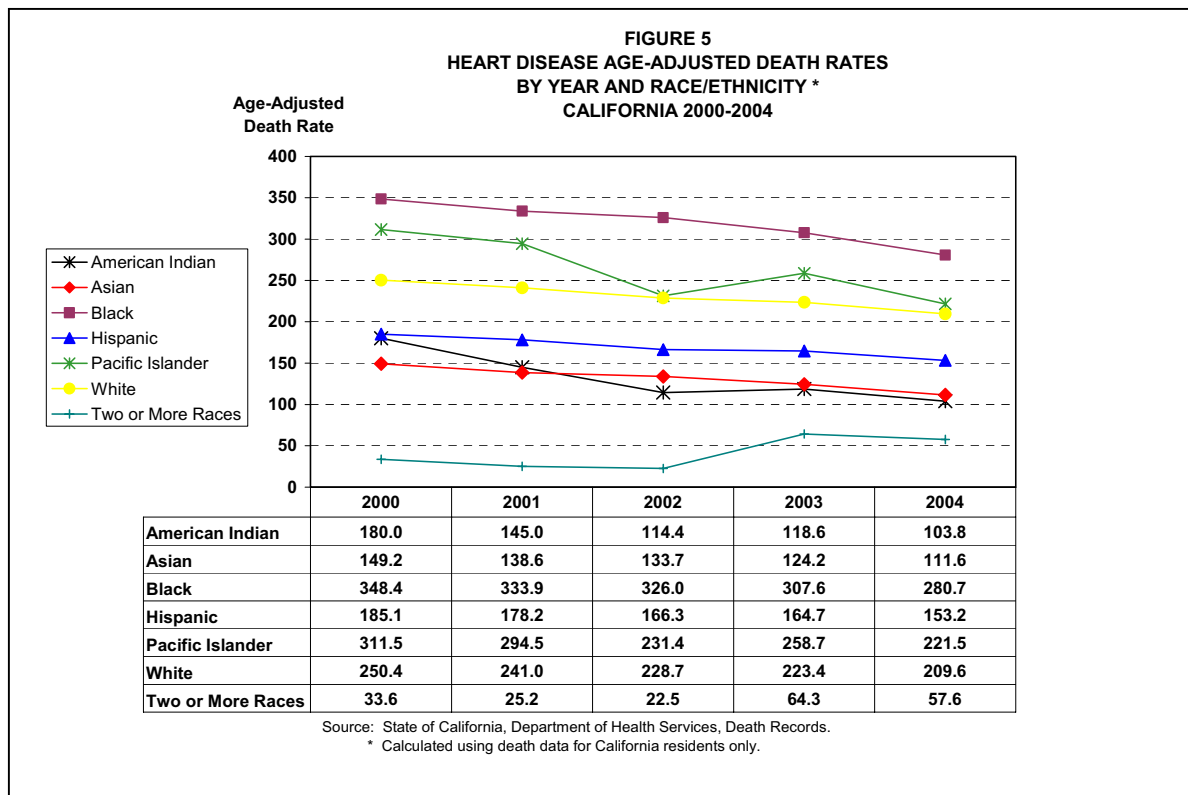
In 2004 the California heart disease age-adjusted death rate of 193.0 deaths per 100,000 population was lower than the U.S. rate of 217.5.² The California rate decreased significantly from 2000 when the heart disease age-adjusted death rate was 236.3.⁵

As shown in **Figure 4**, in 2004 the heart disease age-adjusted death rate for males (233.2) was higher than for females (160.3). This was also true for all seven race/ethnic groups. Black males (327.2) had a higher rate than Black females (241.3). White males (255.0) had a higher rate compared with White females (172.2). Pacific Islander males (250.2) had a higher rate than Pacific Islander females (196.5). Hispanic males (187.1) had a higher rate than Hispanic females (126.1). The Asian male rate (137.2) was higher than the Asian female rate (91.5). American Indian males (117.1) had a higher rate than American Indian females (92.4), and males (59.6) in the Two or More Races group had a higher rate than females (54.5) in their group. The gender differences overall and among Blacks, Whites, Hispanics, and Asians were statistically significant.



Displayed in **Figure 5** (page 6), a comparison among the race/ethnic groups shows that in 2004 Blacks had a heart disease age-adjusted death rate of 280.7, which was higher than Pacific Islanders with a rate of 221.5, Whites with 209.6, Hispanics with 153.2, Asians with 111.6, American Indians with 103.8, and Two or More Races with 57.6. Six of these seven rates decreased from 2000 when Blacks had a rate of 348.4, Pacific Islanders had 311.5, Whites had 250.4, Hispanics had 185.1, American Indians had 180.0, and Asians had 149.2. The age-adjusted death rate for Two or More Races increased from 2000 when the rate was 33.6. All of these differences were statistically significant.

For more data, see DHS Center for Health Statistics, Office of Health Information and Research website at www.dhs.ca.gov/ohir



Heart Disease Death Data for California Counties

Table 2 (page 13) displays the number of deaths, crude death rates, and age-adjusted death rates by county averaged over a three-year period, 2002 to 2004. 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.

Los Angeles County (18,776.3) had the highest average number of heart disease deaths for the three-year period and Alpine County (2.3) had the lowest.

The highest reliable heart disease crude death rate occurred in Inyo County (385.0 deaths per 100,000 population) and the lowest occurred in San Benito (117.8).

The status of heart disease age-adjusted death rates among the counties showed San Joaquin County with the highest reliable rate (278.0 deaths per 100,000 population) and Plumas County with the lowest (142.8).

As seen in **Table 2**, in 2004 twenty-seven counties had significantly different heart disease age-adjusted death rates than the California rate of 203.2; fifteen of these counties had lower rates and twelve had higher rates. Please refer to the Data Limitations and Qualifications Section for information regarding significance testing between the county and state age-adjusted death rates.

Figure 6 (page 14) graphically presents 2004 heart disease age-adjusted death rates for California counties in a quantile format with a separate pattern to display counties with unreliable rates.

Heart Disease Death Data by City Health Jurisdiction

Table 3 displays the number of deaths and crude death rates for California's three city health jurisdictions averaged over a three-year period, 2002 to 2004. Age-adjusted death rates were not calculated for the city health jurisdictions because city population estimates by age were not available.

The city of Long Beach had an annual average of 1,087.3 heart disease deaths for the three-year period, Pasadena had 365.3, and Berkeley had 165.7.

The city of Pasadena had a heart disease crude death rate of 256.9 deaths per 100,000 population, Long Beach had a crude death rate of 226.0, and Berkeley had a crude death rate of 159.0.

**TABLE 3
HEART DISEASE DEATHS
AMONG THE CITY HEALTH JURISDICTIONS*
CALIFORNIA, 2002-2004**

CITY HEALTH JURISDICTION	NUMBER OF DEATHS (Average)	2003 POPULATION	CRUDE DEATH RATE
BERKELEY	165.7	104,195	159.0
LONG BEACH	1,087.3	481,015	226.0
PASADENA	365.3	142,214	256.9

Note: Rates are per 100,000 population. ICD-10 codes are I00-I09,I11,I13,I20-I51.

* Calculated using death data for California residents only.

Source: State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2006, with 2000 Benchmark, May 2006.
State of California, Department of Health Services, Death Records.

Methodological Approach

The methods used to analyze vital statistics data are 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 differing age compositions of various populations, crude rates 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. The weighted average 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 comparing different race/ethnic groups, sexes, and geographic areas and for measuring death rates over time.

Age-adjusted rates are presented when the single, summary measure is needed, but data analysts should inspect age-specific rates first.⁶ Age-specific rates provide insights to important age-related mortality trends that can be masked by age-adjusted rates. For example, a shift in the number of deaths from one age group to another could produce very little change in the age-adjusted rate, but may warrant further investigation. In addition, analysis of age-specific rates can reveal that populations being compared do not show a consistent relationship (e.g., the trend is not in the same direction for all age-specific rates) in which case the analysis of age-specific rates is recommended over age-adjusted rates.

Data Limitations and Qualifications

The heart disease death data presented in this report are based on vital statistics records with ICD-10 codes I00-I09, I11, I13, I20-I51 as defined by the NCHS.³

Deaths by place of residence means that the data include only those deaths occurring among residents of California, regardless of the place of death.

The term “significant” within the text indicates statistical significance based on the difference between two independent rates ($p < .05$). Significant difference between the county and State age-adjusted death rates was determined by comparing the 95 percent confidence intervals (CI) of the two rates, which are based on the rate, standard deviation, and standard error. Rates were considered to be significantly different from each other when their CIs (rounded to the nearest hundredth) did not overlap. If the upper limit of the county CI fell below the lower limit of the State CI, the county rate was deemed to be significantly lower. If the lower limit of the county CI exceeded the higher limit of the State CI, the county rate was deemed to be significantly higher. Significant differences of overlapping CIs were not addressed in this report. Overlapping CIs require a more precise statistical measure to determine significant and non-significant differences in rates because CIs may overlap as much as 29 percent and still be significantly different.⁷

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. To assist the reader, the 95 percent CIs are provided in the data tables as a tool for measuring the reliability of death rates. Rates with a relative standard error (coefficient of variation) greater than or equal to 23 percent are indicated with an asterisk (*). The CIs represent the range of values likely to contain the “true” value 95 percent of the time.

Beginning in 1999, cause of death is reported using ICD-10.⁸ Cause of death for 1979 through 1998 was coded using the International Classification of Diseases, Ninth Revision (ICD-9). Depending on the specific cause of death, the numbers of deaths and death rates are not comparable between ICD-9 and ICD-10. Therefore, our analyses do not combine both ICD-9 and ICD-10 data.

⁶ Choi BCK, de Guia NA, and Walsh P. Look before you leap: Stratify before you standardize. *American Journal of Epidemiology*, 149: 1087-1096. 1999.

⁷ van Belle G. *Statistical Rules of Thumb*, Rule 2.5. Wiley Publishing. March 2002.

⁸ World Health Organization. *International Statistical Classification of Diseases and Related Health Problems. Tenth Revision*. Geneva: World Health Organization. 1992.

To meet the U.S. Office of Management and Budget minimum standards for race and ethnicity data collection and reporting, the report presents the following race/ethnic groups: American Indian, Asian, Black, Hispanic, Pacific Islander, White, and Two or More Races. Hispanic origin of decedents is determined first and includes any race group. Second, decedents of the Two or More Races group are determined and are not reported in single race groups. In order to remain consistent with the population data obtained from the Department of Finance, the single race groups are defined as follows: the "American Indian" race group includes Aleut, American Indian, and Eskimo; the "Asian" race group includes Asian Indian, Asian (specified/unspecified), Cambodian, Chinese, Filipino, Hmong, Japanese, Korean, Laotian, Thai, and Vietnamese; the "Pacific Islander" race group includes Guamanian, Hawaiian, Samoan, and Other Pacific Islander; the "White" race group includes White, Other (specified), Not Stated, and Unknown.

Caution should be exercised in the interpretation of mortality data by race/ethnicity. Misclassification of race/ethnicity on death certificates may contribute to death rates that may be understated among American Indians, Asians, Hispanics, and Pacific Islanders.⁹ This problem could contribute to understatements of rates for the Two or More Races group as well.

Beginning in 2000 federal race/ethnicity reporting guidelines changed to allow reporting of more than one race on death certificates. California initiated use of the new guidelines on January 1, 2000, and collects up to three races. California's population estimates recently added the Multirace (Two or More Races) group. To be consistent with the population groups, current reports tabulate race of decedent using all races mentioned on the death certificate. Therefore, prior reports depicting race group statistics based on single race are not comparable with current reports.

The 2000 U.S. population standard was used for calculating age-adjustments in accordance with statistical policy implemented by NCHS.¹⁰ Age-adjusted death rates are not comparable when rates are calculated with different population standards, e.g., the 1940 standard population. Additionally, population data used to calculate city crude rates in **Table 3** (page 7) differ from population data used to calculate county crude rates in **Table 2** (page 13). Caution should be exercised when comparing the crude rates of the three city health jurisdictions with the crude rates of the 58 California counties. Age-adjusted rates for city health jurisdictions were not calculated.

A more complete explanation of age-adjustment methodology is available in the "Healthy People 2010 Statistical Notes" publication.¹¹ Detailed information on data quality and limitations is presented in the appendix of the annual report, "Vital Statistics of

⁹ 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.

¹⁰ Anderson RN, Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National Vital Statistics Reports; Volume 47, No. 3, Hyattsville, Maryland: National Center for Health Statistics. October 1998.

¹¹ Klein RJ, Schoenborn CA. Healthy People 2010 Statistical Notes: Age Adjustment using the 2000 Projected U.S. Population. National Center for Health Statistics, DHHS Publication, No. 20. January 2001.

California."¹² Formulas used to calculate death rates are included in the technical notes of the "County Health Status Profiles" report.¹³

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¹² Ficenc S, Bindra K. Vital Statistics of California, 2003. Center for Health Statistics, California Department of Health Services. August 2005.

¹³ Shippen S. County Health Status Profiles 2006. Center for Health Statistics, California Department of Health Services. April 2006.

TABLE 1
HEART DISEASE DEATHS
BY RACE/ETHNICITY, AGE, AND SEX
CALIFORNIA, 2004
(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	26	13	13	534,769	272,800	261,969	4.9	4.8 *	5.0 *	3.0	6.7	2.2	7.4	2.3	7.7	
1 to 4	18	7	11	2,047,621	1,045,813	1,001,808	0.9 *	0.7 *	1.1 *	0.5	1.3	0.2	1.2	0.4	1.7	
5 to 14	19	9	10	5,369,098	2,750,853	2,618,245	0.4	0.3 *	0.4 *	0.2	0.5	0.1	0.5	0.1	0.6	
15 to 24	88	62	26	5,294,261	2,757,217	2,537,044	1.7	2.2	1.0	1.3	2.0	1.7	2.8	0.6	1.4	
25 to 34	307	224	83	5,231,086	2,701,183	2,529,903	5.9	8.3	3.3	5.2	6.5	7.2	9.4	2.6	4.0	
35 to 44	1,148	810	338	5,672,590	2,883,426	2,789,164	20.2	28.1	12.1	19.1	21.4	26.2	30.0	10.8	13.4	
45 to 54	3,503	2,544	959	4,931,148	2,440,823	2,490,325	71.0	104.2	38.5	68.7	73.4	100.2	108.3	36.1	40.9	
55 to 64	6,015	4,191	1,824	3,303,083	1,594,612	1,708,471	182.1	262.8	106.8	177.5	186.7	254.9	270.8	101.9	111.7	
65 to 74	9,465	5,777	3,688	2,025,575	936,610	1,088,965	467.3	616.8	338.7	457.9	476.7	600.9	632.7	327.7	349.6	
75 to 84	19,496	9,911	9,585	1,420,413	590,956	829,457	1,372.6	1,677.1	1,155.6	1,353.3	1,391.8	1,644.1	1,710.1	1,132.4	1,178.7	
85 & Older	24,915	8,956	15,959	546,767	187,361	359,406	4,556.8	4,780.1	4,440.4	4,500.2	4,613.4	4,681.1	4,879.1	4,371.5	4,509.3	
Unknown	2	2	0													
Total	65,002	32,506	32,496	36,376,411	18,161,654	18,214,757	178.7	179.0	178.4	177.3	180.1	177.0	180.9	176.5	180.3	
Age-Adjusted							193.0	233.2	160.3	191.5	194.5	230.6	235.8	158.5	162.1	
AMERICAN INDIAN																
Under 1	0	0	0	3,420	1,749	1,671	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-	
1 to 4	0	0	0	10,132	5,219	4,913	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-	
5 to 14	0	0	0	44,098	22,317	21,781	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-	
15 to 24	1	1	0	45,586	23,211	22,375	2.2 *	4.3 *	0.0 +	0.0	6.5	0.0	12.8	-	-	
25 to 34	2	0	2	36,784	18,309	18,475	5.4 *	0.0 +	10.8 *	0.0	13.0	-	-	0.0	25.8	
35 to 44	8	6	2	43,965	21,368	22,597	18.2 *	28.1 *	8.9 *	5.6	30.8	5.6	50.5	0.0	21.1	
45 to 54	33	17	16	42,504	20,200	22,304	77.6	84.2 *	71.7 *	51.1	104.1	44.2	124.2	36.6	106.9	
55 to 64	38	24	14	26,857	12,754	14,103	141.5	188.2	99.3 *	96.5	186.5	112.9	263.5	49.3	151.3	
65 to 74	46	24	22	12,903	5,996	6,907	356.5	400.3	318.5	253.5	459.5	240.1	560.4	185.4	451.6	
75 to 84	55	27	28	6,734	2,840	3,894	816.8	950.7	719.1	600.9	1,032.6	592.1	1,309.3	452.7	985.4	
85 & Older	42	14	28	3,868	1,435	2,433	1,085.8	975.6 *	1,150.8	757.4	1,414.2	464.6	1,878.7	724.6	1,577.1	
Unknown	0	0	0													
Total	225	113	112	276,851	135,398	141,453	81.3	83.5	79.2	70.7	91.9	68.1	98.8	64.5	93.8	
Age-Adjusted							103.8	117.1	92.4	89.7	118.0	94.3	139.9	74.6	110.1	
ASIAN																
Under 1	5	3	2	48,115	24,552	23,563	10.4 *	12.2 *	8.5 *	1.3	19.5	0.0	26.0	0.0	20.3	
1 to 4	2	0	2	188,290	96,379	91,911	1.1 *	0.0 +	2.2 *	0.0	2.5	-	-	0.0	5.2	
5 to 14	2	1	1	498,432	257,125	241,307	0.4 *	0.4 *	0.4 *	0.0	1.0	0.0	1.2	0.0	1.2	
15 to 24	11	7	4	567,146	291,640	275,506	1.9 *	2.4 *	1.5 *	0.8	3.1	0.6	4.2	0.0	2.9	
25 to 34	29	22	7	618,710	302,916	315,794	4.7	7.3	2.2 *	3.0	6.4	4.2	10.3	0.6	3.9	
35 to 44	56	45	11	671,272	321,320	349,952	8.3	14.0	3.1 *	6.2	10.5	9.9	18.1	1.3	5.0	
45 to 54	190	158	32	609,567	284,594	324,973	31.2	55.5	9.8	26.7	35.6	46.9	64.2	6.4	13.3	
55 to 64	351	258	93	385,197	179,303	205,894	91.1	143.9	45.2	81.6	100.7	126.3	161.4	36.0	54.3	
65 to 74	607	346	261	245,629	107,974	137,655	247.1	320.4	189.6	227.5	266.8	286.7	354.2	166.6	212.6	
75 to 84	1,252	649	603	154,086	64,809	89,277	812.5	1,001.4	675.4	767.5	857.5	924.4	1,078.4	621.5	729.3	
85 & Older	1,439	610	829	50,569	20,013	30,556	2,845.6	3,048.0	2,713.1	2,698.6	2,992.6	2,806.1	3,289.9	2,528.4	2,897.7	
Unknown	0	0	0													
Total	3,944	2,099	1,845	4,037,013	1,950,625	2,086,388	97.7	107.6	88.4	94.6	100.7	103.0	112.2	84.4	92.5	
Age-Adjusted							111.6	137.2	91.5	108.1	115.1	131.2	143.1	87.3	95.6	
BLACK																
Under 1	2	1	1	32,707	16,671	16,036	6.1 *	6.0 *	6.2 *	0.0	14.6	0.0	17.8	0.0	18.5	
1 to 4	3	2	1	122,652	62,561	60,091	2.4 *	3.2 *	1.7 *	0.0	5.2	0.0	7.6	0.0	4.9	
5 to 14	2	0	2	408,879	208,120	200,759	0.5 *	0.0 +	1.0 *	0.0	1.2	-	-	0.0	2.4	
15 to 24	9	7	2	395,238	205,416	189,822	2.3 *	3.4 *	1.1 *	0.8	3.8	0.9	5.9	0.0	2.5	
25 to 34	56	35	21	326,490	160,606	165,884	17.2	21.8	12.7	12.7	21.6	14.6	29.0	7.2	18.1	
35 to 44	205	118	87	399,615	199,186	200,429	51.3	59.2	43.4	44.3	58.3	48.6	69.9	34.3	52.5	
45 to 54	592	367	225	329,298	160,793	168,505	179.8	228.2	133.5	165.3	194.3	204.9	251.6	116.1	151.0	
55 to 64	807	502	305	199,142	92,418	106,724	405.2	543.2	285.8	377.3	433.2	495.7	590.7	253.7	317.9	
65 to 74	1,036	602	434	121,222	55,208	66,014	854.6	1,090.4	657.4	802.6	906.7	1,003.3	1,177.5	595.6	719.3	
75 to 84	1,194	554	640	64,749	25,309	39,440	1,844.0	2,188.9	1,622.7	1,739.4	1,948.6	2,006.7	2,371.2	1,497.0	1,748.4	
85 & Older	1,143	322	821	25,074	7,615	17,459	4,558.5	4,228.5	4,702.4	4,294.2	4,822.8	3,766.6	4,690.4	4,380.8	5,024.1	
Unknown	0	0	0													
Total	5,049	2,510	2,539	2,425,066	1,193,903	1,231,163	208.2	210.2	206.2	202.5	213.9	202.0	218.5	198.2	214.2	
Age-Adjusted							280.7	327.2	241.3	272.8	288.6	313.7	340.7	231.8	250.8	
HISPANIC																
Under 1	9	4	5	273,401	139,443	133,958	3.3 *	2.9 *	3.7 *	1.1	5.4	0.1	5.7	0.5	7.0	
1 to 4	8	4	4	1,003,339	512,381	490,958	0.8 *	0.8 *	0.8 *	0.2	1.3	0.0	1.5	0.0	1.6	
5 to 14	8	3	5	2,503,684	1,279,931	1,223,753	0.3 *	0.2 *	0.4 *	0.1	0.5	0.0	0.5	0.1	0.8	
15 to 24	33	22	11	2,275,634	1,199,542	1,076,092	1.5	1.8	1.0 *	1.0	1.9	1.1	2.6	0.4	1.6	
25 to 34	95	75	20	2,332,753	1,244,497	1,088,256	4.1	6.0	1.8	3.3	4.9	4.7	7.4	1.0	2.6	
35 to 44	244	182	62	1,954,969	1,014,652	940,317	12.5	17.9	6.6	10.9	14.0	15.3	20.5	5.0	8.2	
45 to 54	633	457	176	1,228,904	607,654	621,250	51.5	75.2	28.3	47.5	55.5	68.3	82.1	24.1	32.5	
55 to 64	915	619	296	636,784	298,857	337,927	143.7	207.1	87.6	134.4	153.0	190.8	223.4	77.6	97.6	
65 to 74	1,498	911	587	357,389	157,978	199,411	419.2	576.7	294.4	397.9	440.4	539.2	614.1	270.6	318.2	
75 to 84	2,241	1,153	1,088	190,758	78,695	112,063	1,174.8	1,465.2	970.9	1,126.1	1,223.4	1,380.6	1,549.7	913.2	1,028.6	
85 & Older	1,899	680	1,219	58,423	20,677	37,746	3,250.4	3,288.7	3,229.5	3,104.2	3,396.6	3,041.5	3,535.9	3,048.2	3,410.8	
Unknown	0	0	0													
Total	7,583	4,110	3,473	12,816,038	6,554,307	6,261,731	59.2	62.7	55.5	57.8	60.5	60.8	64.6	53.6	57.3	
Age-Adjusted							153.2	187.1	126.1	149.6	156.8	180.9	193.3	121.9	130.4	

Note : Rates are per 100,000 population. ICD-10 codes I00-I09,I11,I13,I20-I51.

The year 2000 U.S. standard population is used for age-adjusted rates.

Two or More Races, White, Pacific Islander, Black, Asian, and American Indian exclude Hispanic ethnicity.

Hispanic includes any race category.

Deaths reported under Two or More Races are not duplicated in single race/ethnic groups.

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

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

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

TABLE 1 (Continued)
 HEART DISEASE DEATHS
 BY RACE/ETHNICITY, AGE, AND SEX
 CALIFORNIA, 2004
 (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	26	13	13	534,769	272,800	261,969	4.9	4.8 *	5.0 *	3.0	6.7	2.2	7.4	2.3	7.7
1 to 4	18	7	11	2,047,621	1,045,813	1,001,808	0.9 *	0.7 *	1.1 *	0.5	1.3	0.2	1.2	0.4	1.7
5 to 14	19	9	10	5,369,098	2,750,853	2,618,245	0.4	0.3 *	0.4 *	0.2	0.5	0.1	0.5	0.1	0.6
15 to 24	88	62	26	5,294,261	2,757,217	2,537,044	1.7	2.2	1.0	1.3	2.0	1.7	2.8	0.6	1.4
25 to 34	307	224	83	5,231,086	2,701,183	2,529,903	5.9	8.3	3.3	5.2	6.5	7.2	9.4	2.6	4.0
35 to 44	1,148	810	338	5,672,590	2,883,426	2,789,164	20.2	28.1	12.1	19.1	21.4	26.2	30.0	10.8	13.4
45 to 54	3,503	2,544	959	4,931,148	2,440,823	2,490,325	71.0	104.2	38.5	68.7	73.4	100.2	108.3	36.1	40.9
55 to 64	6,015	4,191	1,824	3,303,083	1,594,612	1,708,471	182.1	262.8	106.8	177.5	186.7	254.9	270.8	101.9	111.7
65 to 74	9,465	5,777	3,688	2,025,575	936,610	1,088,965	467.3	616.8	338.7	457.9	476.7	600.9	632.7	327.7	349.6
75 to 84	19,496	9,911	9,585	1,420,413	590,956	829,457	1,372.6	1,677.1	1,155.6	1,353.3	1,391.8	1,644.1	1,710.1	1,132.4	1,178.7
85 & Older	24,915	8,956	15,959	546,767	187,361	359,406	4,556.8	4,780.1	4,440.4	4,500.2	4,613.4	4,681.1	4,879.1	4,371.5	4,509.3
Unknown	2	2	0												
Total	65,002	32,506	32,496	36,376,411	18,161,654	18,214,757	178.7	179.0	178.4	177.3	180.1	177.0	180.9	176.5	180.3
Age-Adjusted							193.0	233.2	160.3	191.5	194.5	230.6	235.8	158.5	162.1
PACIFIC ISLANDER															
Under 1	0	0	0	1,651	840	811	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	5,973	3,062	2,911	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	20,060	10,247	9,813	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	1	1	0	21,713	11,142	10,571	4.6 *	9.0 *	0.0 +	0.0	13.6	0.0	26.6	-	-
25 to 34	5	5	0	21,154	10,412	10,742	23.6 *	48.0 *	0.0 +	2.9	44.4	5.9	90.1	-	-
35 to 44	11	7	4	21,764	10,687	11,077	50.5 *	65.5 *	36.1 *	20.7	80.4	17.0	114.0	0.7	71.5
45 to 54	28	18	10	15,953	7,886	8,067	175.5	228.3 *	124.0 *	110.5	240.5	122.8	333.7	47.1	200.8
55 to 64	34	21	13	9,434	4,434	4,848	360.4	457.9	268.2 *	239.3	481.5	262.1	653.8	122.4	413.9
65 to 74	33	13	20	5,288	2,517	2,771	624.1	516.5 *	721.8	411.1	837.0	235.7	797.3	405.4	1,038.1
75 to 84	39	18	21	2,362	1,053	1,309	1,651.1	1,709.4 *	1,604.3	1,132.9	2,169.4	919.7	2,499.1	918.1	2,290.4
85 & Older	22	12	10	872	370	502	2,522.9	3,243.2 *	1,992.0 *	1,468.7	3,577.2	1,408.2	5,078.3	757.4	3,226.7
Unknown	0	0	0												
Total	173	95	78	126,224	62,802	63,422	137.1	151.3	123.0	116.6	157.5	120.9	181.7	95.7	150.3
Age-Adjusted							221.5	250.2	196.5	186.5	256.6	195.4	305.0	151.2	241.8
WHITE															
Under 1	10	5	5	164,750	84,066	80,684	6.1 *	5.9 *	6.2 *	2.3	9.8	0.7	11.2	0.8	11.6
1 to 4	5	1	4	617,372	315,162	302,210	0.8 *	0.3 *	1.3 *	0.1	1.5	0.0	0.9	0.0	2.6
5 to 14	7	5	2	1,722,936	886,271	836,665	0.4 *	0.6 *	0.2 *	0.1	0.7	0.1	1.1	0.0	0.6
15 to 24	31	23	8	1,856,335	960,424	895,911	1.7	2.4	0.9 *	1.1	2.3	1.4	3.4	0.3	1.5
25 to 34	115	83	32	1,808,165	922,586	885,579	6.4	9.0	3.6	5.2	7.5	7.1	10.9	2.4	4.9
35 to 44	617	447	170	2,502,123	1,278,269	1,223,854	24.7	35.0	13.9	22.7	26.6	31.7	38.2	11.8	16.0
45 to 54	2,009	1,512	497	2,639,194	1,328,451	1,310,743	76.1	113.8	37.9	72.8	79.5	108.1	119.6	34.6	41.3
55 to 64	3,844	2,752	1,092	2,005,398	987,820	1,017,578	191.7	278.6	107.3	185.6	197.7	268.2	289.0	100.9	113.7
65 to 74	6,208	3,862	2,346	1,260,712	596,472	664,240	492.4	647.5	353.2	480.2	504.7	627.1	667.9	338.9	367.5
75 to 84	14,660	7,486	7,174	988,209	412,295	575,914	1,483.5	1,815.7	1,245.7	1,459.5	1,507.5	1,774.6	1,856.8	1,216.8	1,274.5
85 & Older	20,312	7,302	13,010	402,581	135,267	267,314	5,045.4	5,398.2	4,866.9	4,976.1	5,114.8	5,224.4	5,522.0	4,783.3	4,950.6
Unknown	2	2	0												
Total	47,820	23,480	24,340	15,967,775	7,907,083	8,060,692	299.5	296.9	302.0	296.8	302.2	293.2	300.7	298.2	305.8
Age-Adjusted							209.6	255.0	172.2	207.7	211.5	251.7	258.2	170.0	174.4
TWO OR MORE RACES															
Under 1	0	0	0	10,725	5,479	5,246	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	99,863	51,049	48,814	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	171,009	86,842	84,167	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	2	1	1	132,609	65,842	66,767	1.5 *	1.5 *	1.5 *	0.0	3.6	0.0	4.5	0.0	4.4
25 to 34	5	4	1	87,030	41,857	45,173	5.7 *	9.6 *	2.2 *	0.7	10.8	0.2	18.9	0.0	6.6
35 to 44	7	5	2	78,882	37,944	40,938	8.9 *	13.2 *	4.9 *	2.3	15.4	1.6	24.7	0.0	11.7
45 to 54	18	15	3	65,728	31,245	34,483	27.4 *	48.0 *	8.7 *	14.7	40.0	23.7	72.3	0.0	18.5
55 to 64	26	15	11	40,271	18,874	21,397	64.6	79.5 *	51.4 *	39.7	89.4	39.3	119.7	21.0	81.8
65 to 74	37	19	18	22,432	10,465	11,967	164.9	181.6	150.4 *	111.8	218.1	99.9	263.2	80.9	219.9
75 to 84	55	24	31	13,515	5,955	7,560	407.0	403.0	410.1	299.4	514.5	241.8	564.3	265.7	554.4
85 & Older	58	16	42	5,380	1,984	3,396	1,078.1	806.5 *	1,236.7	800.6	1,355.5	411.3	1,201.6	862.7	1,610.8
Unknown	0	0	0												
Total	208	99	109	727,444	357,536	369,908	28.6	27.7	29.5	24.7	32.5	22.2	33.1	23.9	35.0
Age-Adjusted							57.6	59.6	54.5	49.7	65.6	47.5	71.8	44.1	64.8

Note : Rates are per 100,000 population. ICD-10 codes I00-I09,I11,I13,I20-I51.
 The year 2000 U.S. standard population is used for age-adjusted rates.
 Two or More Races, White, Pacific Islander, Black, Asian, and American Indian exclude Hispanic ethnicity.
 Hispanic includes any race category.
 Deaths reported under Two or More Races are not duplicated in single race/ethnic groups.

* Death rate unreliable, relative standard error is greater than or equal to 23 percent
 + 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 Population with Age and Sex Detail, 2000-2050. May 2004.
 State of California, Department of Health Services, Death Records.

TABLE 2
HEART DISEASE DEATHS
CALIFORNIA, 2002-2004
(By Place of Residence)

COUNTY	2002-2004 DEATHS (Average)	PERCENT	2003 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS	
						LOWER	UPPER
CALIFORNIA	67,467.3	100.0	35,934,967	187.7	203.2	201.7	204.7
ALAMEDA	2,530.7	3.8	1,495,367	169.2	195.2	187.6	202.8
ALPINE	2.3	a	1,268	184.0 *	194.0 *	0.0	446.6
AMADOR	99.3	0.1	37,074	267.9	202.9	162.4	243.3
BUTTE	597.3	0.9	212,473	281.1	216.1	198.6	233.7
CALAVERAS	116.0	0.2	43,566	266.3	205.8	167.6	244.1
COLUSA	35.0	0.1	20,026	174.8	191.2	127.7	254.6
CONTRA COSTA ¹	1,760.0	2.6	1,003,704	175.4	180.9	172.4	189.4
DEL NORTE	67.3	0.1	28,192	238.8	229.9	174.8	285.0
EL DORADO	320.7	0.5	168,227	190.6	196.2	174.5	217.9
FRESNO ¹	1,595.7	2.4	855,469	186.5	231.1	219.8	242.5
GLENN	64.0	0.1	27,626	231.7	216.1	163.0	269.2
HUMBOLDT	294.7	0.4	129,515	227.5	224.3	198.7	250.0
IMPERIAL	232.3	0.3	153,673	151.2	203.2	176.6	229.7
INYO	71.7	0.1	18,617	385.0	219.9	168.1	271.6
KERN ¹	1,650.3	2.4	717,332	230.1	250.9	238.7	263.1
KINGS	200.0	0.3	138,763	144.1	230.9	198.6	263.2
LAKE ¹	212.3	0.3	62,359	340.5	243.9	210.7	277.1
LASSEN	55.0	0.1	34,633	158.8	184.7	135.6	233.8
LOS ANGELES	18,776.3	27.8	10,047,236	186.9	199.9	197.1	202.8
MADERA	253.7	0.4	133,965	189.4	188.1	164.8	211.4
MARIN ¹	456.0	0.7	250,252	182.2	149.6	135.8	163.5
MARIPOSA	49.3	0.1	17,886	275.8	203.9	146.7	261.1
MENDOCINO	222.7	0.3	89,156	249.7	226.3	196.4	256.2
MERCED ¹	386.3	0.6	230,696	167.5	239.8	215.8	263.9
MODOC	35.3	0.1	9,541	370.3	257.9	171.9	344.0
MONO	13.3	a	13,443	99.2 *	149.6 *	58.4	240.7
MONTEREY ¹	616.3	0.9	418,842	147.2	179.7	165.5	193.9
NAPA ¹	324.0	0.5	130,920	247.5	177.5	157.7	197.3
NEVADA	239.7	0.4	96,923	247.3	184.8	161.3	208.4
ORANGE	5,137.0	7.6	3,001,146	171.2	208.7	202.9	214.4
PLACER ¹	589.3	0.9	285,336	206.5	183.7	168.9	198.6
PLUMAS ¹	46.0	0.1	21,181	217.2	142.8	100.9	184.7
RIVERSIDE ¹	4,138.7	6.1	1,758,719	235.3	235.7	228.5	242.9
SACRAMENTO ¹	2,657.0	3.9	1,331,563	199.5	217.9	209.6	226.2
SAN BENITO	66.7	0.1	56,605	117.8	170.9	129.4	212.4
SAN BERNARDINO ¹	3,456.0	5.1	1,869,219	184.9	272.8	263.6	282.0
SAN DIEGO	5,315.3	7.9	2,989,178	177.8	198.7	193.4	204.1
SAN FRANCISCO ¹	1,612.0	2.4	786,980	204.8	177.2	168.5	185.8
SAN JOAQUIN ¹	1,364.7	2.0	625,702	218.1	278.0	263.2	292.8
SAN LUIS OBISPO ¹	542.0	0.8	257,452	210.5	175.7	160.8	190.5
SAN MATEO ¹	1,225.7	1.8	712,772	172.0	160.2	151.2	169.2
SANTA BARBARA ¹	823.3	1.2	412,069	199.8	188.3	175.4	201.3
SANTA CLARA ¹	2,255.0	3.3	1,723,819	130.8	160.4	153.8	167.1
SANTA CRUZ	480.7	0.7	259,220	185.4	201.0	182.8	219.1
SHASTA	487.3	0.7	175,421	277.8	193.6	175.9	211.3
SIERRA	9.0	a	3,563	252.6 *	155.8 *	53.1	258.4
SISKIYOU	127.7	0.2	45,081	283.2	195.2	160.9	229.5
SOLANO ¹	664.0	1.0	416,406	159.5	166.9	154.1	179.8
SONOMA ¹	989.7	1.5	473,274	209.1	178.9	167.6	190.2
STANISLAUS ¹	1,158.0	1.7	489,491	236.6	271.9	256.2	287.6
SUTTER ¹	207.0	0.3	84,978	243.6	253.0	218.5	287.5
TEHAMA	155.0	0.2	58,665	264.2	174.7	146.4	203.0
TRINITY ¹	28.3	a	13,579	208.7	144.9	90.4	199.3
TULARE ¹	736.7	1.1	392,989	187.5	258.2	239.5	276.9
TUOLUMNE	165.3	0.2	57,120	289.4	208.5	176.5	240.4
VENTURA ¹	1,343.0	2.0	799,114	168.1	184.5	174.6	194.4
YOLO	260.7	0.4	183,602	142.0	187.6	164.7	210.4
YUBA ¹	148.7	0.2	63,979	232.4	276.2	231.5	320.8

Note: Rates are per 100,000 population. ICD-10 codes I00-I09,I11,I13,I20-I51.

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

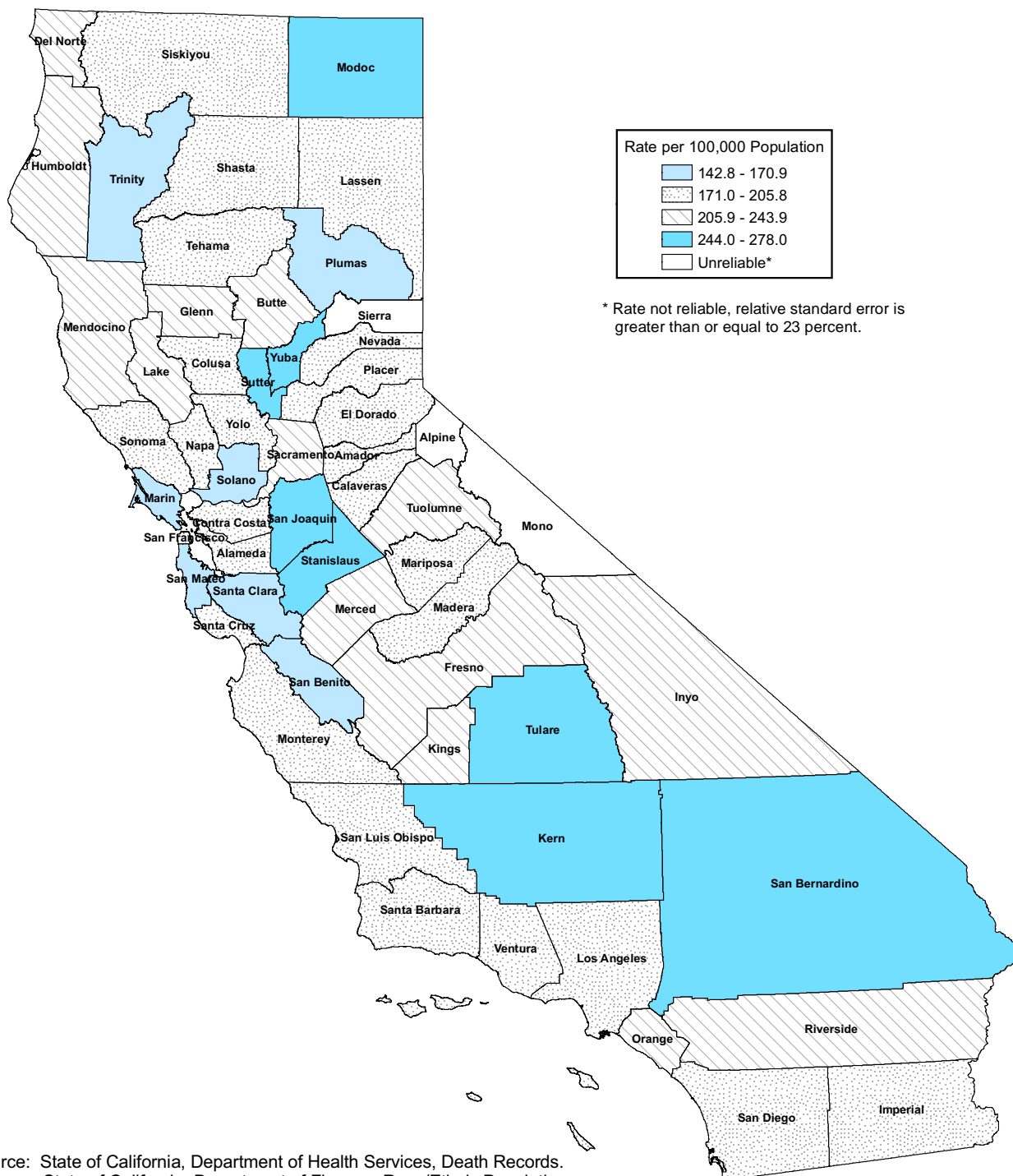
The year 2000 U.S. standard population is used for age-adjusted rates.

¹ County age-adjusted rate is significantly different from California age-adjusted rate.

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

Source: State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050. May 2004.
State of California, Department of Health Services, Death Records.

Figure 6
Deaths Due to Heart Disease
Age-Adjusted Death Rates
California Counties, 2002-2004



Source: State of California, Department of Health Services, Death Records.
 State of California, Department of Finance, Race/Ethnic Population
 with Age and Sex Detail, 2000-2050. Sacramento, CA. May 2004.