



CENTER FOR HEALTH STATISTICS  
**DATA SUMMARY**

REPORT REGISTER NO. DS01-06000  
(June 2001)

**CHRONIC LIVER DISEASE  
AND CIRRHOSIS DEATHS  
CALIFORNIA, 1998**

## Introduction

Chronic liver disease and cirrhosis has historically been one of the leading causes of death in the United States and in California. The primary risk factor leading to chronic liver disease and cirrhosis is excessive alcohol consumption.

The consequences of alcohol misuse are serious. Heavy drinking can increase the risk for certain cancers, especially those of the liver, esophagus, throat, and larynx. In addition, drinking increases the risk of death from automobile crashes, recreational and on the job accidents, and also increases the likelihood of homicide and suicide. Currently, nearly 14 million Americans abuse alcohol or are alcoholic. In purely economic terms, alcohol-use problems cost society approximately \$100 billion per year. In human terms, the costs are incalculable.<sup>1</sup>

This report presents the most current data on chronic liver disease and cirrhosis deaths, and provides analysis of crude and age-adjusted death rates for California residents by sex, age, and race/ethnicity. The definition of chronic liver disease and cirrhosis used in this report is based on the ICD-9 code 571 traditionally presented in National Center for Health Statistics reports.<sup>2</sup>

## Methodological Approach

The method used to analyze vital statistics data is also important. Analyzing only the number of deaths has its disadvantages and can be misleading because the population at risk is not taken into consideration. Crude death rates show the actual rate of dying in a given population, but

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

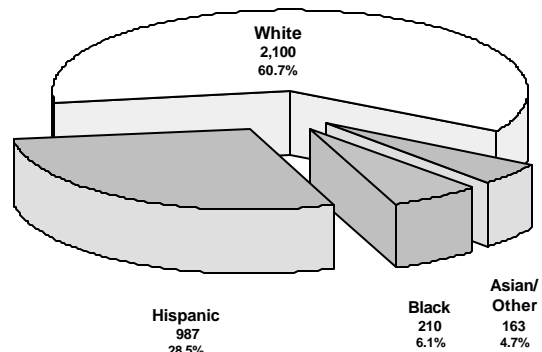
## Chronic Liver Disease and Cirrhosis Deaths

**Table 1** (page 6) displays chronic liver disease and cirrhosis death data for 1998 by race/ethnicity, age, and sex. Chronic liver disease and cirrhosis deaths occur almost exclusively among the adult population, and this held true in 1998 with a large number of deaths occurring in the 25 to 34 age group and continuing through all the older age groups (**Table 1** page 6). During this period, the number of deaths attributed to chronic liver disease and cirrhosis was 2.1 times higher among males (2,349) than among females (1,111).

As shown in **Figure 1** (page 2), the number of chronic liver disease and cirrhosis deaths among Whites (2,100) was higher than Hispanics (987), Blacks (210), and Asian/Other (163).

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**FIGURE 1  
CHRONIC LIVER DISEASE AND CIRRHOSIS DEATHS  
BY RACE/ETHNICITY  
CALIFORNIA, 1998  
(By Place of Residence)**

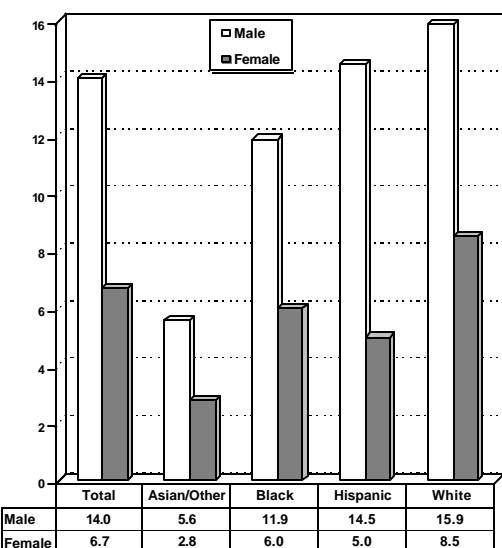


Source: Table 1.

### Chronic Liver Disease and Cirrhosis Crude Death Rates

The chronic liver disease and cirrhosis crude death rate for California declined slightly from 10.6 deaths per 100,000 population in 1997 to 10.3 in 1998.<sup>3</sup> As shown in **Table 1** (page 6), Whites had the highest crude death rate in 1998, a rate of 12.2. Hispanics were next with a crude rate of 9.9. Blacks and Asian/Other had rates of 8.9 and 4.2, respectively.

**FIGURE 2  
CHRONIC LIVER DISEASE AND CIRRHOSIS  
CRUDE DEATH RATES  
BY RACE/ETHNICITY AND SEX  
CALIFORNIA, 1998  
(By Place of Residence)**



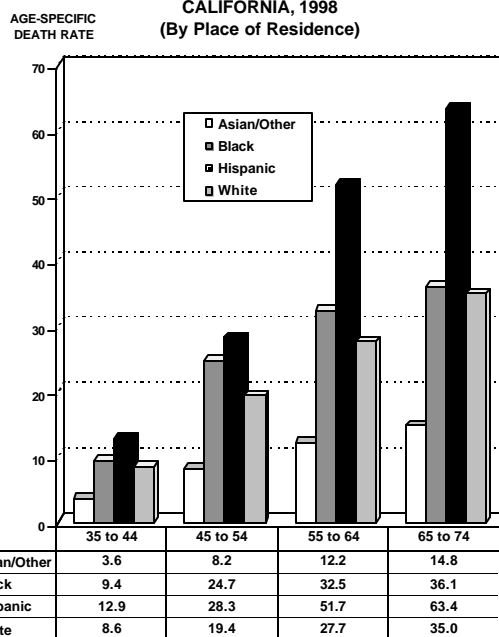
Source: Table 1.

**Figure 2** shows that males in all four race/ethnic groups had significantly higher chronic liver disease and cirrhosis crude death rates than females in the corresponding groups. White males had a rate of 15.9 deaths per 100,000 population and White females had a rate of 8.5. Hispanic males had a rate of 14.5 and Hispanic females had a rate of 5.0. Black males had a rate of 11.9 and Black females had a rate of 6.0. Asian/Other males had a rate of 5.6 and Asian/Other females had a rate of 2.8.

### Chronic Liver Disease and Cirrhosis Age-Specific Death Rates

In **Table 1** (page 6), reliable age-specific rates show that among the sexes, males consistently had higher chronic liver disease and cirrhosis death rates than females. This held true among all four of the race/ethnic groups.

**FIGURE 3  
CHRONIC LIVER DISEASE AND CIRRHOSIS  
AGE-SPECIFIC DEATH RATES  
BY RACE/ETHNICITY AND AGE  
CALIFORNIA, 1998  
(By Place of Residence)**



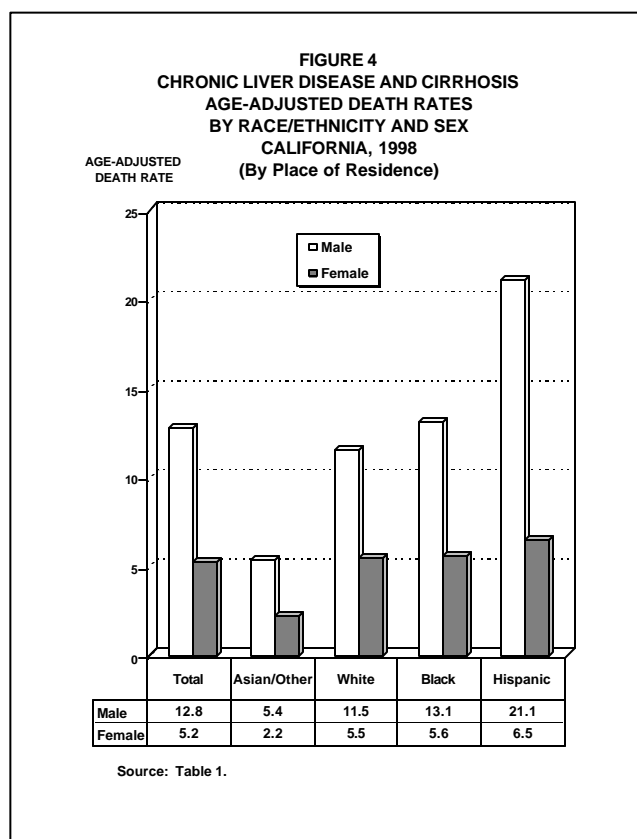
Source: Table 1.

**Figure 3** shows that Hispanics had higher age-specific death rates than the other three race/ethnic groups, with the differences in the 55 to 64 and 65 to 74 age groups being statistically significant. Not shown in **Figure 3**, but displayed in **Table 1** (page 6), are the chronic liver disease and cirrhosis age-specific death

rates for the 25 to 34 age group where Hispanics had the highest rate (2.4) and Whites had the lowest (1.9). In the 75 to 84 age group Hispanics had the highest rate (50.5) and Whites had the lowest (33.8). The rates for the other two race/ethnic groups, Asian/Other and Black, were unreliable for these age groups. Whites had the only reliable rate (20.0) in the 85 & Older age group.

### Chronic Liver Disease and Cirrhosis Age-Adjusted Death Rates

In 1998, the United States chronic liver disease and cirrhosis age-adjusted death rate (7.2 per 100,000 population) was lower than the California rate (8.9).<sup>4</sup> During this period, California did not meet the *Healthy People 2000* objective of no more than 6.0 chronic liver disease and cirrhosis age-adjusted deaths per 100,000 population.<sup>5</sup> Objectives were also established for Black males and all Hispanics, goals of no more than 12.0 and 10.0 deaths per 100,000 population, respectively. These goals were not met in 1998 since Black males had an age-adjusted death rate of 13.1 and Hispanics had a rate of 13.7.



A positive trend in chronic liver disease and cirrhosis age-adjusted death rates is the 49.7 percent decline in the overall rate from 1980 (17.7) to 1998 (8.9).<sup>3</sup>

A comparison among the race/ethnic groups shows that Hispanics had an age-adjusted death rate (13.7) significantly higher than Blacks (9.0), Whites (8.4), and Asian/Other (3.7).

As shown in **Figure 4**, the chronic liver disease and cirrhosis age-adjusted death rate for males was significantly higher than for females in all four of the race/ethnic groups.

### Chronic Liver Disease and Cirrhosis Death Data for California Counties

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

The highest average number of chronic liver disease and cirrhosis deaths occurred in Los Angeles County (1,036.7). The lowest number was in Sierra County where no chronic liver disease and cirrhosis deaths occurred during the three-year period.

The highest and lowest reliable crude death rates due to chronic liver disease and cirrhosis were in Butte County (16.3 per 100,000 population) and Monterey County (8.2), respectively.

The ranking for chronic liver disease and cirrhosis age-adjusted death rates showed Yolo County with the highest reliable death rate (14.6 per 100,000 population) and Ventura County with the lowest (7.0).

### Chronic Liver Disease and Cirrhosis Death Data by Local Health Jurisdiction

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

because city population estimates by age are not available.

The City of Long Beach had 48.7 chronic liver disease and cirrhosis deaths, Pasadena had 14.0 deaths, and Berkeley had 13.7 deaths.

The City of Long Beach had a chronic liver disease and cirrhosis crude death rate of 11.0 deaths per 100,000 population. Berkeley and Pasadena had crude death rates of 12.9 and 10.1 respectively, though these rates were unreliable.

**TABLE 3**  
**CHRONIC LIVER DISEASE AND CIRRHOSIS DEATHS**  
**AMONG THE LOCAL HEALTH JURISDICTIONS**  
**CALIFORNIA, 1996-1998**  
**(By Place of Residence)**

LOCAL HEALTH JURISDICTION	NUMBER OF DEATHS (Average)	1997 POPULATION	CRUDE DEATH RATE
BERKELEY	13.7	106,300	12.9 *
LONG BEACH	48.7	440,800	11.0
PASADENA	14.0	138,600	10.1 *

Note: Rates are per 100,000 population; ICD-9 code 571.

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

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

### Notes:

The chronic liver disease and cirrhosis death data presented in this report are identified by ICD-9 code 571.

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

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

equal to 23 percent are indicated with an asterisk “\*”.

The four race/ethnic groups presented in the tables are mutually exclusive. White, Black, and Asian/Other exclude Hispanic ethnicity, while Hispanic includes any race/ethnic group. In order to remain consistent with the population data obtained from the Department of Finance, the “White race/ethnic group” includes: White, Other (specified), Not Stated, and Unknown; and the “Asian/Other race/ethnic group” includes: Aleut, American Indian, Asian Indian, Asian (specified/unspecified), Cambodian, Chinese, Eskimo, Filipino, Guamanian, Hawaiian, Japanese, Korean, Laotian, Other Pacific Islander, Samoan, Thai, and Vietnamese. In addition, caution should be exercised in the interpretation of mortality data by race/ethnicity. Misclassification of race/ethnicity on the death certificate may contribute to death rates that may be underestimated among Hispanics and Asian/Other.<sup>6</sup>

For a complete explanation of the age-adjusting methodology used in this report see the *Healthy People 2000 Statistical Notes* publication.<sup>7</sup> Detailed information on data quality and limitations as well as the formulas used to calculate vital statistics rates are presented in the appendix of the annual report, *Vital Statistics of California*.<sup>8</sup>

### References:

1. National Institute on Alcohol Abuse and Alcoholism. *Alcoholism, Getting the Facts*, NIH Pub. No. 96-4153-1996, Updated: February 2001.
2. National Center for Health Statistics, Births and Deaths: United States, 1996, *Monthly Vital Statistics Report*, DHHS Pub. No. (PHS) 97-1120, Supplement 2, September 1997; Vol. 46, No. 1, pp. 24-25.

References continued on next page.

3. Perrin H. Chronic Liver Disease and Cirrhosis Deaths California, 1980-1997. *Data Summary*. Center for Health Statistics, California Department of Health Services, Report Register No. DS99-06001, June 1999.
4. National Center for Health Statistics, Deaths: Final Data for 1998, *National Vital Statistics Reports*, DHHS Pub. No. (PHS) 2000-1120, 0-0487, July 2000; Vol. 48, No. 11, pp. 23-25.
5. Richards F. *Healthy California 2000: Midcourse Review, California's Experience in Achieving the National Health Promotion and Disease Prevention Objectives*. Center for Health Statistics, California Department of Health Services, June 1999.
6. Rosenberg HM, et al. Quality of Death Rates by Race and Hispanic Origin: A Summary of Current Research, 1999. *Vital and Health Statistics, Series 2 No.128*, National Center for Health Statistics, DHHS Pub. No. (PHS) 99-1328, September 1999.
7. Curtin LR, Klein RJ. Direct Standardization (Age-Adjusted Death Rates), *Healthy People 2000 Statistical Notes*, No. 6 – Revised, National Center for Health Statistics, DHHS Pub. No. (PHS) 95-1237, March 1995.
8. Riedmiller K, Harms C. *Vital Statistics of California, 1997*. Center for Health Statistics, California Department of Health Services, February 2000.

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

AGE GROUPS	DEATHS			POPULATION			RATES			95% CONFIDENCE LIMITS					
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL		MALE		FEMALE	
										LOWER	UPPER	LOWER	UPPER	LOWER	UPPER
<b>TOTAL</b>															
Under 1	1	1	0	522,034	266,390	255,644	0.2 *	0.4 *	0.0 +	0.0	0.6	0.0	1.1	-	-
1 to 4	0	0	0	2,211,332	1,131,193	1,080,139	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	1	0	1	5,284,863	2,704,999	2,579,864	0.0 *	0.0 +	0.0 *	0.0	0.1	-	-	0.0	0.1
15 to 24	4	4	0	4,356,208	2,258,544	2,097,664	0.1 *	0.2 *	0.0 +	0.0	0.2	0.0	0.4	-	-
25 to 34	95	67	28	5,208,869	2,758,217	2,450,652	1.8	2.4	1.1	1.5	2.2	1.8	3.0	0.7	1.6
35 to 44	521	365	156	5,644,380	2,876,572	2,767,808	9.2	12.7	5.6	8.4	10.0	11.4	14.0	4.8	6.5
45 to 54	834	624	210	4,131,786	2,050,795	2,080,991	20.2	30.4	10.1	18.8	21.6	28.0	32.8	8.7	11.5
55 to 64	776	556	220	2,541,885	1,236,490	1,305,395	30.5	45.0	16.9	28.4	32.7	41.2	48.7	14.6	19.1
65 to 74	727	462	265	1,948,692	885,190	1,063,502	37.3	52.2	24.9	34.6	40.0	47.4	57.0	21.9	27.9
75 to 84	414	223	191	1,236,392	501,453	734,939	33.5	44.5	26.0	30.3	36.7	38.6	50.3	22.3	29.7
85 & Older	86	46	40	406,376	125,502	280,874	21.2	36.7	14.2	16.7	25.6	26.1	47.2	9.8	18.7
Unknown	1	1	0												
Total	3,460	2,349	1,111	33,492,817	16,795,345	16,697,472	10.3	14.0	6.7	10.0	10.7	13.4	14.6	6.3	7.0
Age-Adjusted							8.9	12.8	5.2	8.6	9.2	12.3	13.3	4.9	5.5
<b>ASIAN/OTHER</b>															
Under 1	0	0	0	59,298	30,720	28,578	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	255,226	131,589	123,637	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	615,588	315,572	300,016	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	0	0	0	565,434	290,066	275,368	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 to 34	5	4	1	626,348	316,425	309,923	0.8 *	1.3 *	0.3 *	0.1	1.5	0.0	2.5	0.0	1.0
35 to 44	24	16	8	670,617	323,636	346,981	3.6	4.9 *	2.3 *	2.1	5.0	2.5	7.4	0.7	3.9
45 to 54	41	28	13	498,901	236,177	262,724	8.2	11.9	4.9 *	5.7	10.7	7.5	16.2	2.3	7.6
55 to 64	35	29	6	286,259	135,484	150,775	12.2	21.4	4.0 *	8.2	16.3	13.6	29.2	0.8	7.2
65 to 74	30	19	11	203,383	88,240	115,143	14.8	21.5 *	9.6 *	9.5	20.0	11.9	31.2	3.9	15.2
75 to 84	19	5	14	109,047	46,367	62,680	17.4 *	10.8 *	22.3 *	9.6	25.3	1.3	20.2	10.6	34.0
85 & Older	9	7	2	32,493	13,822	18,671	27.7 *	50.6 *	10.7 *	9.6	45.8	13.1	88.2	0.0	25.6
Unknown	0	0	0												
Total	163	108	55	3,922,594	1,928,098	1,994,496	4.2	5.6	2.8	3.5	4.8	4.5	6.7	2.0	3.5
Age-Adjusted							3.7	5.4	2.2	3.1	4.2	4.3	6.4	1.6	2.7
<b>BLACK</b>															
Under 1	0	0	0	35,290	18,083	17,207	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	157,434	79,976	77,458	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	414,292	209,767	204,525	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	1	1	0	352,516	184,981	167,535	0.3 *	0.5 *	0.0 +	0.0	0.8	0.0	1.6	-	-
25 to 34	1	1	0	386,096	201,122	184,974	0.3 *	0.5 *	0.0 +	0.0	0.8	0.0	1.5	-	-
35 to 44	37	22	15	392,571	191,281	201,290	9.4	11.5	7.5 *	6.4	12.5	6.7	16.3	3.7	11.2
45 to 54	66	43	23	267,602	125,822	141,780	24.7	34.2	16.2	18.7	30.6	24.0	44.4	9.6	22.9
55 to 64	53	37	16	163,032	76,090	86,942	32.5	48.6	18.4 *	23.8	41.3	33.0	64.3	9.4	27.4
65 to 74	38	27	11	105,180	45,362	59,818	36.1	59.5	18.4 *	24.6	47.6	37.1	82.0	7.5	29.3
75 to 84	10	4	6	58,348	21,889	36,459	17.1 *	18.3 *	16.5 *	6.5	27.8	0.4	36.2	3.3	29.6
85 & Older	4	3	1	17,878	5,270	12,608	22.4 *	56.9 *	7.9 *	0.4	44.3	0.0	121.3	0.0	23.5
Unknown	0	0	0												
Total	210	138	72	2,350,239	1,159,643	1,190,596	8.9	11.9	6.0	7.7	10.1	9.9	13.9	4.7	7.4
Age-Adjusted							9.0	13.1	5.6	7.8	10.3	10.9	15.3	4.3	6.9
<b>HISPANIC</b>															
Under 1	0	0	0	247,713	125,675	122,038	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	0	0	0	1,024,463	522,147	502,316	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	0	0	0	2,054,172	1,048,592	1,005,580	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
15 to 24	2	2	0	1,494,249	771,494	722,755	0.1 *	0.3 *	0.0 +	0.0	0.3	0.0	0.6	-	-
25 to 34	43	35	8	1,820,094	1,021,495	798,599	2.4	3.4	1.0 *	1.7	3.1	2.3	4.6	0.3	1.7
35 to 44	194	156	38	1,503,414	797,133	706,281	12.9	19.6	5.4	11.1	14.7	16.5	22.6	3.7	7.1
45 to 54	240	210	30	848,771	429,818	418,953	28.3	48.9	7.2	24.7	31.9	42.2	55.5	4.6	9.7
55 to 64	235	180	55	454,852	220,075	234,777	51.7	81.8	23.4	45.1	58.3	69.8	93.7	17.2	29.6
65 to 74	190	120	70	299,470	135,955	163,515	63.4	88.3	42.8	54.4	72.5	72.5	104.1	32.8	52.8
75 to 84	71	37	34	140,610	57,195	83,415	50.5	64.7	40.8	38.7	62.2	43.8	85.5	27.1	54.5
85 & Older	12	6	6	51,135	17,548	33,587	23.5 *	34.2 *	17.9 *	10.2	36.7	6.8	61.6	3.6	32.2
Unknown	0	0	0												
Total	987	746	241	9,938,943	5,147,127	4,791,816	9.9	14.5	5.0	9.3	10.6	13.5	15.5	4.4	5.7
Age-Adjusted							13.7	21.1	6.5	12.8	14.6	19.6	22.7	5.6	7.3
<b>WHITE</b>															
Under 1	1	1	0	179,733	91,912	87,821	0.6 *	1.1 *	0.0 +	0.0	1.6	0.0	3.2	-	-
1 to 4	0	0	0	774,209	397,481	376,728	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
5 to 14	1	0	1	2,200,811	1,131,068	1,069,743	0.0 *	0.0 +	0.1 *	0.0	0.1	-	-	0.0	0.3
15 to 24	1	1	0	1,944,009	1,012,003	932,006	0.1 *	0.1 *	0.0 +	0.0	0.2	0.0	0.3	-	-
25 to 34	46	27	19	2,376,331	1,219,175	1,157,156	1.9	2.2	1.6 *	1.4	2.5	1.4	3.0	0.9	2.4
35 to 44	266	171	95	3,077,778	1,564,522	1,513,256	8.6	10.9	6.3	7.6	9.7	9.3	12.6	5.0	7.5
45 to 54	487	343	144	2,516,512	1,258,978	1,257,534	19.4	27.2	11.5	17.6	21.1	24.4	30.1	9.6	13.3
55 to 64	453	310	143	1,637,742	804,841	832,901	27.7	38.5	17.2	25.1	30.2	34.2	42.8	14.4	20.0
65 to 74	469	296	173	1,340,659	615,633	725,026	35.0	48.1	23.9	31.8	38.1	42.6	53.6	20.3	27.4
75 to 84	314	177	137	928,387	376,002	552,385	33.8	47.1	24.8	30.1	37.6	40.1	54.0	20.6	29.0
85 & Older	61	30	31	304,870	88,862	216,008	20.0	33.8	14.4	15.0	25.0	21.7	45.8	9.3	19.4
Unknown	1	1	0												
Total	2,100	1,357	743	17,281,041	8,560,477	8,720,564	12.2	15.9	8.5	11.6	12.7	15.0	16.7	7.9	9.1
Age-Adjusted							8.4	11.5	5.5	8.0	8.8	10.8	12.1	5.1	5.9

Note : Rates are per 100,000 population. ICD-9 code 571.  
White, Black, and Asian/Other exclude Hispanic ethnicity.  
Hispanic includes any race category.

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

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

TABLE 2  
DEATHS DUE TO CHRONIC LIVER DISEASE AND CIRRHOSIS BY COUNTY  
CALIFORNIA, 1996-1998  
(By Place of Residence)

COUNTY	1996-1998 DEATHS (Average)	PERCENT	1997 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS	
						LOWER	UPPER
CALIFORNIA	3,487.7	100.0	32,956,695	10.6	9.2	8.9	9.5
ALAMEDA	148.7	4.3	1,398,421	10.6	8.8	7.4	10.3
ALPINE	0.7	a	1,174	56.8 *	43.2 *	0.0	147.0
AMADOR	5.0	0.1	33,472	14.9 *	10.3 *	1.0	19.6
BUTTE	32.3	0.9	198,459	16.3	12.2	7.7	16.8
CALAVERAS	5.3	0.2	37,916	14.1 *	9.6 *	1.0	18.2
COLUSA	1.3	a	18,530	7.2 *	7.4 *	0.0	19.9
CONTRA COSTA	93.0	2.7	896,206	10.4	7.9	6.3	9.6
DEL NORTE	4.3	0.1	28,413	15.3 *	13.3 *	0.3	26.3
EL DORADO	16.0	0.5	147,409	10.9 *	8.0 *	3.8	12.1
FRESNO	71.3	2.0	778,674	9.2	8.8	6.7	10.9
GLENN	1.7	a	26,856	6.2 *	5.1 *	0.0	13.4
HUMBOLDT	12.3	0.4	126,137	9.8 *	8.1 *	3.5	12.7
IMPERIAL	20.7	0.6	142,759	14.5	14.2 *	7.8	20.6
INYO	3.3	0.1	18,272	18.2 *	11.1 *	0.0	23.8
KERN	74.3	2.1	634,404	11.7	11.1	8.5	13.7
KINGS	13.7	0.4	117,793	11.6 *	12.4 *	5.6	19.2
LAKE	13.7	0.4	55,047	24.8 *	18.8 *	8.2	29.5
LASSEN	4.0	0.1	33,861	11.8 *	10.1 *	0.0	20.4
LOS ANGELES	1,036.7	29.7	9,524,613	10.9	10.0	9.3	10.6
MADERA	12.7	0.4	113,525	11.2 *	9.9 *	4.3	15.6
MARIN	30.7	0.9	243,214	12.6	8.8	5.5	12.1
MARIPOSA	2.3	0.1	15,957	14.6 *	8.3 *	0.0	20.1
MENDOCINO	13.3	0.4	85,966	15.5 *	11.5 *	5.0	17.9
MERCED	20.0	0.6	201,905	9.9	9.2 *	5.0	13.5
MODOC	1.7	a	10,140	16.4 *	12.4 *	0.0	32.3
MONO	0.3	a	10,531	3.2 *	3.3 *	0.0	14.6
MONTEREY	31.0	0.9	377,744	8.2	7.6	4.8	10.3
NAPA	17.3	0.5	121,239	14.3 *	9.9 *	4.9	14.9
NEVADA	11.3	0.3	88,356	12.8 *	6.8 *	2.5	11.1
ORANGE	242.7	7.0	2,705,313	9.0	7.7	6.7	8.7
PLACER	19.7	0.6	215,634	9.1 *	6.7 *	3.7	9.7
PLUMAS	5.7	0.2	20,402	27.8 *	17.9 *	2.2	33.5
RIVERSIDE	163.0	4.7	1,423,699	11.4	9.9	8.3	11.5
SACRAMENTO	125.3	3.6	1,146,825	10.9	9.2	7.6	10.9
SAN BENITO	2.0	0.1	46,121	4.3 *	3.1 *	0.0	7.9
SAN BERNARDINO	169.0	4.8	1,617,262	10.4	10.2	8.6	11.7
SAN DIEGO	257.0	7.4	2,763,401	9.3	8.6	7.5	9.7
SAN FRANCISCO	87.0	2.5	777,368	11.2	8.2	6.4	10.0
SAN JOAQUIN	60.0	1.7	542,196	11.1	9.9	7.3	12.5
SAN LUIS OBISPO	21.3	0.6	234,813	9.1	7.5 *	4.1	10.9
SAN MATEO	76.7	2.2	711,699	10.8	7.9	6.1	9.8
SANTA BARBARA	42.7	1.2	400,751	10.6	9.0	6.2	11.8
SANTA CLARA	166.3	4.8	1,671,414	10.0	8.5	7.2	9.8
SANTA CRUZ	27.3	0.8	247,216	11.1	9.2	5.6	12.7
SHASTA	19.7	0.6	163,351	12.0 *	9.0 *	4.9	13.1
SIERRA	0.0	0.0	3,406	0.0 +	0.0 +	-	-
SISKIYOU	6.0	0.2	44,186	13.6 *	9.0 *	1.3	16.7
SOLANO	40.3	1.2	378,664	10.7	9.6	6.6	12.7
SONOMA	43.3	1.2	432,771	10.0	7.5	5.1	9.9
STANISLAUS	45.3	1.3	425,407	10.7	9.6	6.7	12.5
SUTTER	7.0	0.2	76,004	9.2 *	7.8 *	1.9	13.6
TEHAMA	6.7	0.2	54,702	12.2 *	8.3 *	1.4	15.3
TRINITY	4.7	0.1	13,230	35.3 *	21.4 *	0.7	42.1
TULARE	51.0	1.5	358,337	14.2	13.2	9.4	17.0
TUOLUMNE	7.7	0.2	52,280	14.7 *	9.0 *	2.0	16.0
VENTURA	63.3	1.8	727,154	8.7	7.0	5.2	8.8
YOLO	22.0	0.6	154,850	14.2	14.6	8.3	20.8
YUBA	6.0	0.2	61,246	9.8 *	9.5 *	1.6	17.4

Note : Rates are per 100,000 population. ICD-9 code 571.

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

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

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

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

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