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

Unintentional Injury Deaths California, 2001

By Cheryl Wilson

Highlights

- **Unintentional injuries ranked fifth among the leading causes of death in California and in the United States.**
- **A majority of all unintentional injury deaths in California were caused by motor vehicle accidents.**
- **Among California residents, Whites had 59.9 percent of all unintentional injury deaths in 2001.**
- **California did not meet the Year 2010 National Health Objective of an age-adjusted death rate of no more than 17.5 deaths per 100,000 population.**

Introduction

According to the National Center for Injury Prevention and Control, "unintentional injuries are a leading cause of death for all Americans, regardless of age, race, gender, or economic status."¹ In 2001 unintentional injuries ranked fifth among the leading causes of death in the United States and in California.^{2,3} During this year, the number of unintentional injury deaths among all Americans decreased 0.2 percent from 97,900 deaths in 2000 to 97,707 deaths in 2001.^{2,4} Among California residents, unintentional injury deaths increased 5.2 percent from 8,814 deaths in 2000 to 9,274 deaths in 2001.^{3,5}

In California, motor vehicle accidents accounted for the largest proportion (42.9 percent) of all unintentional injury deaths in 2001. Some of the other major causes of unintentional injury deaths include poisoning (21.4 percent), falls (14.0 percent), and drowning (4.5 percent). These four causes combined accounted for 82.8 percent of all unintentional injury deaths in California.³

Due to the prevalence of unintentional injury deaths in this country, the U.S. Public Health Service established a health objective for Healthy People 2010 seeking to reduce the number of unintentional injury deaths to an age-adjusted rate of no more than 17.5 per 100,000 population.⁶ California, with a rate of 27.4, did not meet this objective.

This report presents data on California's unintentional injury deaths for 2001, and provides analysis of crude and age-adjusted death rates for California

¹National Center for Injury Prevention and Control. *Activity Report 2001 CDC's Unintentional Injury Prevention Program*. Atlanta: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2002.

²National Center for Health Statistics, Deaths: Preliminary Data for 2001, *National Vital Statistics Reports*, DHHS Publication No. (PHS) 2003-1120, PRS 03-0165, March 2003.

³State of California, Department of Health Services, Death Records. 2001.

⁴National Center for Health Statistics, Deaths: Final Data for 2000, *National Vital Statistics Reports*, DHHS Publication No. (PHS) 2002-1120, PRS 02-0583, September 2002.

⁵State of California, Department of Health Services, Death Records. 2000.

⁶United States Department of Health and Human Services. *Healthy People 2010 Objectives* (Second Edition, in Two Volumes). Washington, D.C., January 2001.

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

residents by sex, age, and race/ethnicity. The unintentional injury data included in this report are extracted from vital statistics records with death attributed to unintentional injuries as defined by the International Classification of Diseases, Tenth Revision (ICD-10) codes V01-X59, Y85-Y86 in accordance with the National Center for Health Statistics Reports.⁷

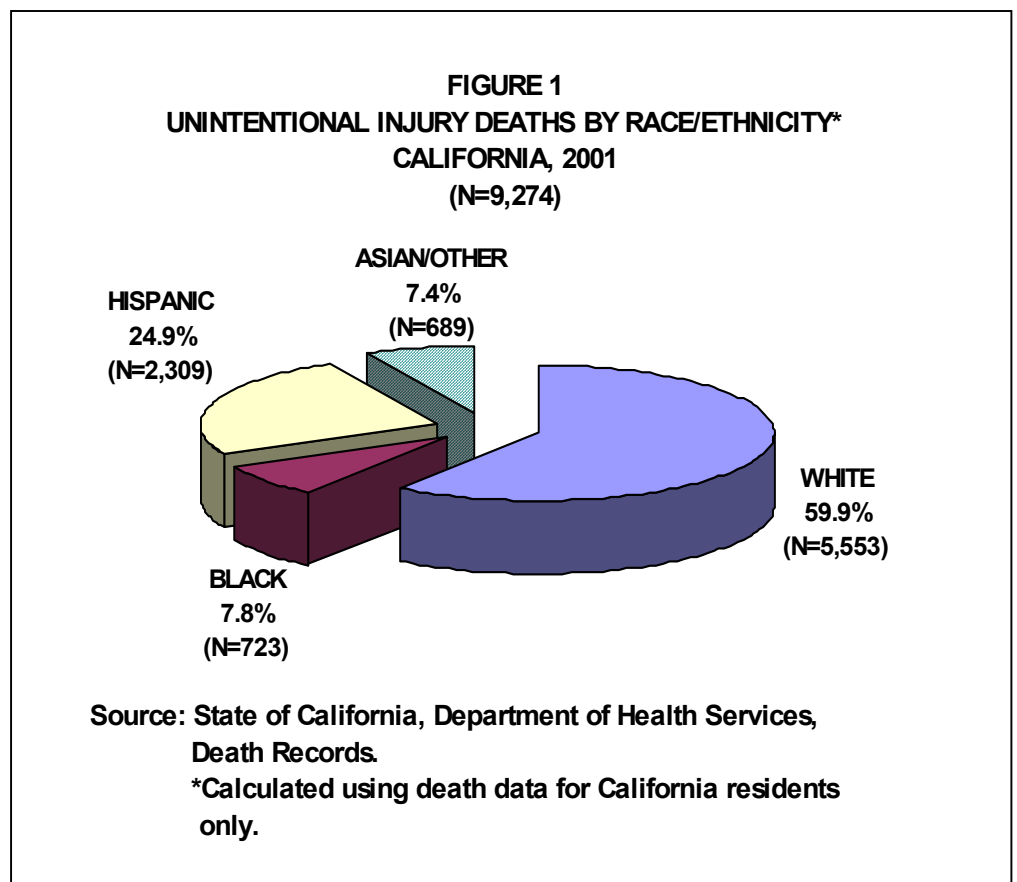
Unintentional Injury Deaths

Table 1 (page 9) shows unintentional injury death data for California residents by race/ethnicity, age group, and sex. In 2001 approximately 61.3 percent of all unintentional injury deaths occurred among people in the age group 15 to 54 and 24.7 percent occurred among people in the age group 65 and older.

Unintentional injury deaths among California residents were higher for males than for females. Males had 6,236 or 67.2 percent of the total unintentional injury deaths and females had 3,038 or 32.8 percent. In 2001 the unintentional injury death ratio was 2.1 male deaths for every female death.

As shown in **Figure 1**, Whites had the highest percentage of unintentional injury deaths, (59.9 percent), followed by Hispanics (24.9 percent), Blacks (7.8 percent), and Asian/Other (7.4 percent).

Table 1 (page 9) shows that among each of the major race/ethnic groups unintentional injury deaths were higher for males than for females in 2001.



Among males, Whites had the highest number of unintentional injury deaths (3,612), followed by Hispanics (1,723), Blacks (465), and Asian/Other (436). Similar patterns also occurred among females, with Whites having the highest number of unintentional injury deaths (1,941), followed by Hispanics (586), Blacks (258), and Asian/Other (253).

⁷National Center for Health Statistics. *Vital Statistics, Instructions for Classifying the Underlying Cause of Death*. NCHS Instruction Manual, Part 9. Hyattsville, Maryland: Public Health Service, 1999.

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

Unintentional Injury Crude Death Rates

As shown in **Table 1** (page 9), Whites had the highest crude death rate (31.7), followed by Blacks (30.7), Hispanics (21.0), and Asian/Other (15.8).

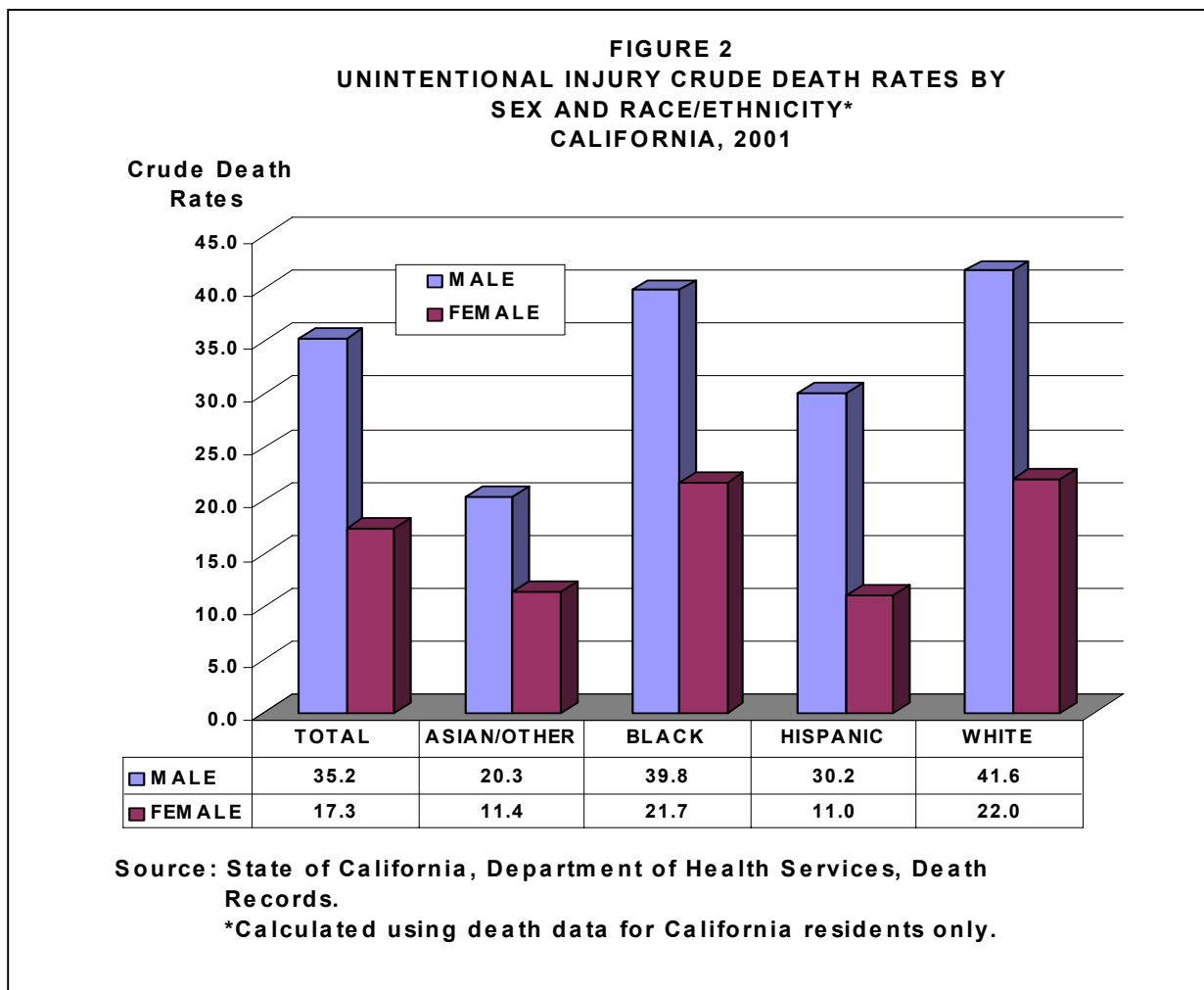


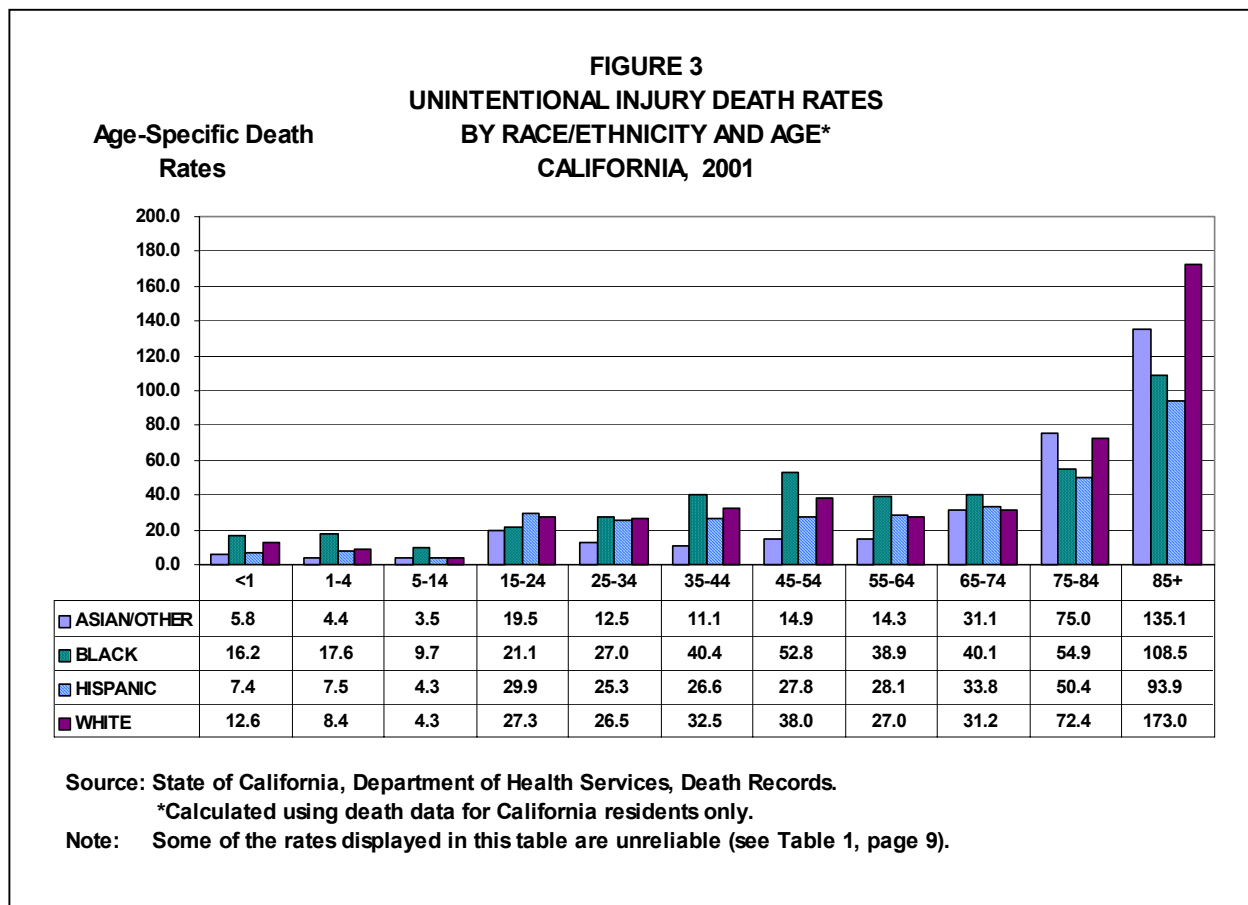
Figure 2 shows White males had the highest crude death rate among males (41.6) per 100,000 population in 2001, followed by Black males (39.8), Hispanic males (30.2), and Asian/Other males (20.3). Among females, Whites had the highest crude death rate (22.0), followed by Blacks (21.7), Asian/Other (11.4), and Hispanics (11.0). White and Black females each had a higher crude death rate than the rate for Asian/Other males. Overall, males had significantly higher crude death rates than females within each of the major race/ethnic groups in 2001.

Unintentional Injury Age-Specific Death Rates

As shown in **Table 1** (page 9), males had higher age-specific death rates than females in California and for each race/ethnic group with reliable rates. Among California residents in 2001, males and females in the age group 85 and older had the highest age-specific death rates, 212.6 and 131.2 respectively, due to unintentional injuries. The lowest age-specific death rates for both females (3.8) and males (5.3) occurred in the 5 to 14 age group.

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

Figure 3 shows the age-specific death rates by race/ethnicity and age group. The highest rates among the race/ethnic groups with reliable rates are shown for Blacks in the 5 to 14 and 25 to 74 age groups; Hispanics in the 15 to 24 age group; Asian/Other in the 75-84 age group; and Whites in the 85 and older age group. Asian/Other had the lowest rates in the 5 to 74 age groups and Hispanics were lowest in the 75 and older age groups.



Unintentional Injury Age-Adjusted Death Rates

As shown in **Table 1** (page 9), California's age-adjusted death rate in 2001 was 27.4 per 100,000 population. In 2001 California has not yet met the Healthy People 2010 National Health Objective of reducing the number of unintentional injury deaths in the United States to an age-adjusted rate of no more than 17.5 per 100,000 population.^{3,6,8}

In 2001 the male age-adjusted death rate among California residents was 38.1 per 100,000 population, which was significantly greater than the female rate of 17.2. The male age-adjusted rate was 2.2 times greater than the female rate.

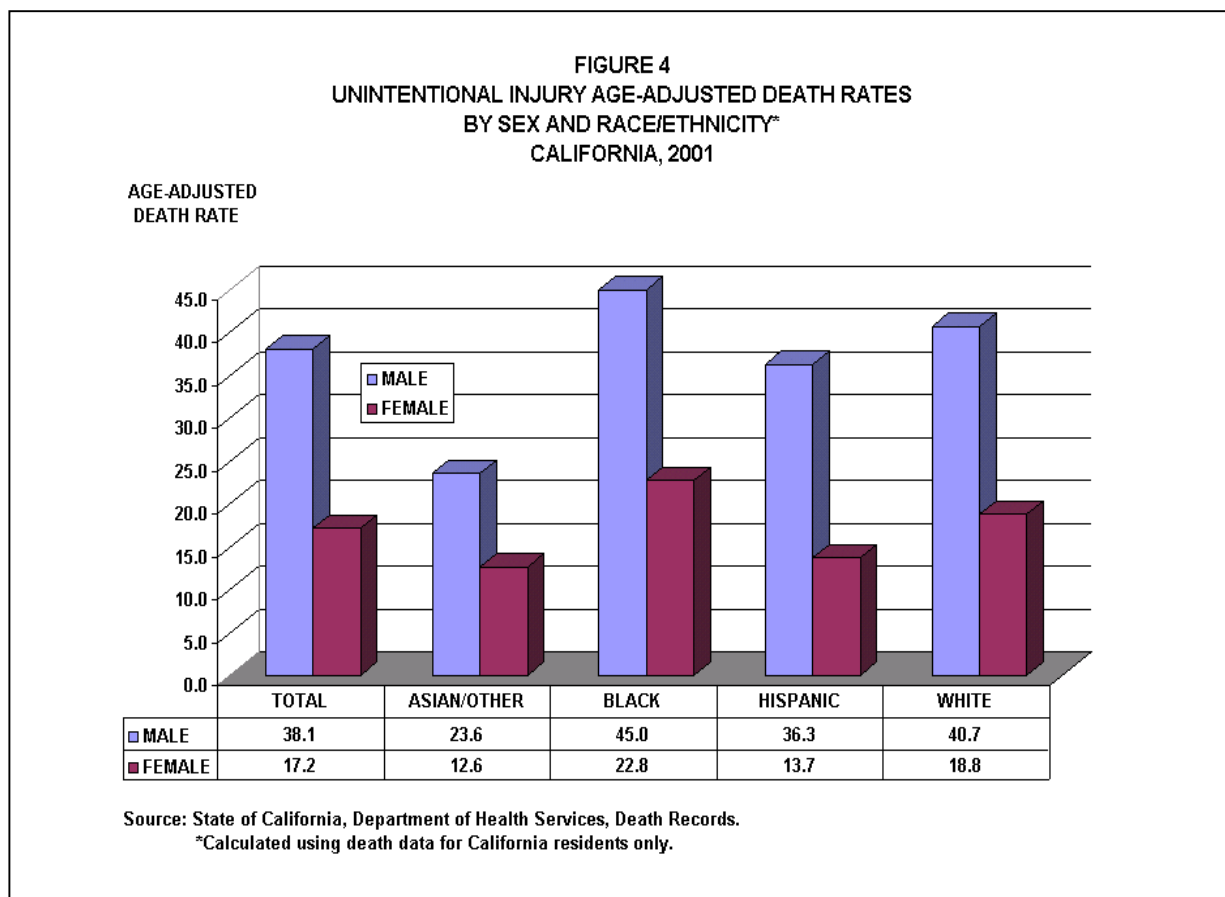
Among the major race/ethnic groups, Blacks had the highest age-adjusted death rate (33.1), followed by Whites (29.4), Hispanics (25.2), and Asian/Other (17.8). The age-adjusted death rate for Blacks was significantly greater than the rates for Whites, Hispanics, and Asian/Other. Whites also had a significantly higher age-adjusted death rate than the rates for Hispanics and Asian/Other.

⁸Klein 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.

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

Figure 4 shows age-adjusted death rates by race/ethnicity and sex. In 2001 the age-adjusted death rates among males were significantly higher than the rates among their female counterparts. The male age-adjusted death rates for Asian/Other, Blacks, Hispanics, and Whites were 1.9, 2.0, 2.6, and 2.2 times higher than the age-adjusted death rates among females for the same race/ethnic group.

Black males had a significantly higher age-adjusted death rate (45.0) than Asian/Other males (23.6) and Hispanic males (36.3), but not significantly higher than White males (40.7). In addition, both Hispanic males and White males had significantly higher age-adjusted death rates than Asian/Other males. Among females, the age-adjusted death rate among Blacks (22.8) was significantly higher than the rates for Asian/Other (12.6), Hispanics (13.7), and Whites (18.8). Also, White females had a significantly higher age-adjusted death rate than Asian/Other females and Hispanic females.



Unintentional Injury Death Rates for California Counties

Table 3 (page 10) shows the number of unintentional injury deaths averaged over a three-year period from 1999 to 2001 with crude and age-adjusted death rates for California and its 58 counties.

Among the 44 counties with reliable crude death rates, Lake County had the highest rate (63.8) per 100,000 population, which was 3.6 times higher than the lowest rate of 17.9 in Santa Clara County. Lake County had the highest reliable age-adjusted death rate (62.0), and San Mateo County had the lowest reliable rate (19.1).

The year 2010 National Health Objective to reduce unintentional injury deaths to an age-adjusted rate of no more than 17.5 deaths per 100,000 population was met by one county (none with a reliable age-adjusted death rate), but not California as a whole, which had a three-year average age-adjusted death rate of 27.2.

Unintentional Injury Deaths among the Three City Health Jurisdictions

Table 4 shows the three-year average (1999-2001) number of unintentional injury deaths and crude death rates for California's three city health jurisdictions.

Age-adjusted death rates were not calculated for city health jurisdictions because city population data by age are not available.

Long Beach had the highest average number of deaths (108.0), followed by Pasadena (36.7), and Berkeley (25.7). The crude death rates were 27.4 per 100,000 population for Pasadena, 25.0 for Berkeley, and 23.5 for Long Beach.

**TABLE 3
UNINTENTIONAL INJURY DEATHS
AMONG THE CITY HEALTH JURISDICTIONS*
CALIFORNIA, 1999-2001**

CITY HEALTH JURISDICTION	AVERAGE NUMBER OF DEATHS	2000 POPULATION	CRUDE DEATH RATE
BERKELEY	25.7	102,500	25.0
LONG BEACH	108.0	459,900	23.5
PASADENA	36.7	133,600	27.4

Note: Rates are per 100,000 population; ICD-10 codes V01-X59, Y85-Y86.

*Calculated using death data for California residents only.

Source: State of California, Department of Finance, E-4 Historical City/County Population Estimates 1991-2000, with 1990 and 2000 Census Counts, March 2002.
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, demographic groups, 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 comparing different race/ethnic groups, sexes, and geographic areas and for measuring death rates over time. The 2000 population standard is used as the basis for age-adjustments in this report.

For more data, see DHS Center for Health Statistics, Home Page at www.dhs.ca.gov/org/hisp/chs/chsindex.htm

Data Limitations and Qualifications

The unintentional injury death data presented in this report are based on the vital statistics records with ICD-10 codes V01-X59, Y85-Y86 as defined by the National Center for Health Statistics.² Deaths by place of residence means that the data include only those deaths occurring among residents of California and its counties, regardless of the place of death.

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 death rates. Rates with a relative standard error (coefficient of variation) greater than or equal to 23 percent are indicated with an asterisk (*).

Beginning in 1999 cause of death is reported using ICD-10.⁹ 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 number 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.

The four race/ethnic groups presented in the table 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 “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 underestimates of Hispanics and Asian/Other death rates.¹⁰

Beginning in 2000 federal race/ethnicity reporting guidelines changed to allow the reporting of up to three races on death certificates. The race/ethnic groups in this report were tabulated based on the first listed race on those certificates where more than one race was listed. Race groups for 2000 and later are therefore not strictly compatible with prior years and trends should be viewed with caution.

Effective with 1999 mortality data, the standard population for calculating age-adjustments was changed from the 1940 population standard to the year 2000 population standard in accordance with new statistical policy implemented by the

⁹World Health Organization. *International Statistical Classification of Diseases and Related Health Problems. Tenth Revision*. Geneva: World Health Organization, 1992.

¹⁰Rosenberg 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 Publication No. (PHS) 99-1328, September 1999.

National Center for Health Statistics. The new population standard affects measurement of mortality trends and group comparisons. Of particular note are the effects on race comparison of mortality.¹¹ Age-adjusted rates presented in this report are not comparable to rates calculated with different population standards.

In addition, the population data used to calculate the crude rates in **Table 3** (page 6) differ from the population data used to calculate the crude rates in **Table 2** (page 10). Consequently, caution should be exercised when comparing the crude rates among the three city health jurisdictions with the rates among the 58 California counties. Age-adjusted rates for city health jurisdictions were not calculated.

For a more complete explanation of the age-adjustment methodology used in this report, see the "Healthy People 2010 Statistical Notes" publication.⁸ Detailed information on data quality and limitations is presented in the appendix of the annual report "Vital Statistics of 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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¹¹Anderson RN, Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National Vital Statistics Reports; Vol. 47, No.3. Hyattsville, Maryland: National Center for Health Statistics, 1998.

¹²Riedmiller K, Bindra K. *Vital Statistics of California, 1999*. Center for Health Statistics, California Department of Health Services, April 2002.

¹³Schmidt C, Wilson C. *County Health Status Profiles 2003*. Center for Health Statistics, California Department of Health Services, April 2003.

TABLE 2
DEATHS DUE TO UNINTENTIONAL INJURIES
CALIFORNIA COUNTIES, 1999-2001
(By Place of Residence)

COUNTY	1999-2001 DEATHS (AVERAGE)	PERCENT	2000 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS	
						LOWER	UPPER
CALIFORNIA	9,009.3	100.0	34,653,395	26.0	27.2	26.6	27.7
ALAMEDA	341.3	3.8	1,470,155	23.2	24.0	21.4	26.6
ALPINE	0.0	0.0	1,239	0.0 +	0.0 +	-	-
AMADOR	14.3	0.2	34,853	41.1 *	36.2 *	16.7	55.8
BUTTE	87.7	1.0	207,158	42.3	40.1	31.5	48.6
CALAVERAS	25.3	0.3	42,041	60.3	57.1	34.0	80.3
COLUSA	5.0	0.1	20,973	23.8 *	24.5 *	2.9	46.1
CONTRA COSTA	212.3	2.4	931,946	22.8	23.2	20.1	26.3
DEL NORTE	17.0	0.2	31,155	54.6 *	53.9 *	28.1	79.8
EL DORADO	55.3	0.6	163,197	33.9	34.5	25.3	43.6
FRESNO	298.7	3.3	811,179	36.8	39.9	35.3	44.4
GLENN	14.3	0.2	29,298	48.9 *	49.4 *	23.6	75.3
HUMBOLDT	72.7	0.8	128,419	56.6	55.2	42.5	67.9
IMPERIAL	69.0	0.8	154,549	44.6	38.3	27.6	49.0
INYO	5.7	0.1	18,437	30.7 *	25.2 *	3.8	46.6
KERN	265.3	2.9	677,372	39.2	41.7	36.7	46.8
KINGS	49.0	0.5	126,672	38.7	44.2	31.4	57.1
LAKE	38.3	0.4	60,072	63.8	62.0	41.5	82.6
LASSEN	6.0	0.1	35,959	16.7 *	18.2 *	3.5	32.9
LOS ANGELES	2,003.0	22.2	9,838,861	20.4	21.8	20.9	22.8
MADERA	56.7	0.6	126,394	44.8	46.3	34.1	58.4
MARIN	56.0	0.6	248,397	22.5	21.9	16.1	27.6
MARIPOSA	10.0	0.1	16,762	59.7 *	53.8 *	18.9	88.7
MENDOCINO	41.3	0.5	90,442	45.7	44.6	30.9	58.3
MERCED	85.7	1.0	215,256	39.8	44.5	34.9	54.2
MODOC	4.7	0.1	10,481	44.5 *	37.1 *	2.5	71.7
MONO	4.7	0.1	10,891	42.8 *	44.4 *	2.5	86.4
MONTEREY	113.3	1.3	401,886	28.2	30.6	24.9	36.3
NAPA	40.3	0.4	127,084	31.7	29.5	20.3	38.7
NEVADA	35.0	0.4	97,020	36.1	32.6	21.4	43.8
ORANGE	593.3	6.6	2,833,190	20.9	23.3	21.4	25.2
PLACER	70.0	0.8	243,646	28.7	29.0	22.2	35.9
PLUMAS	9.7	0.1	20,852	46.4 *	41.6 *	14.1	69.2
RIVERSIDE	488.3	5.4	1,570,885	31.1	31.8	29.0	34.6
SACRAMENTO	326.3	3.6	1,212,527	26.9	28.2	25.1	31.2
SAN BENITO	15.3	0.2	51,853	29.6 *	32.1 *	15.9	48.2
SAN BERNARDINO	440.3	4.9	1,727,452	25.5	28.3	25.6	31.0
SAN DIEGO	733.0	8.1	2,943,001	24.9	26.5	24.6	28.5
SAN FRANCISCO	281.3	3.1	792,049	35.5	32.3	28.4	36.1
SAN JOAQUIN	211.3	2.3	579,712	36.5	37.8	32.7	42.9
SAN LUIS OBISPO	84.0	0.9	254,818	33.0	33.0	25.8	40.2
SAN MATEO	144.0	1.6	747,061	19.3	19.1	16.0	22.2
SANTA BARBARA	131.7	1.5	412,071	32.0	31.7	26.3	37.1
SANTA CLARA	315.7	3.5	1,763,252	17.9	19.7	17.5	21.9
SANTA CRUZ	64.0	0.7	260,248	24.6	24.8	18.6	30.9
SHASTA	89.3	1.0	175,777	50.8	50.7	40.1	61.3
SIERRA	2.7	a	3,457	77.1 *	54.0 *	0.0	120.1
SISKIYOU	25.3	0.3	45,194	56.1	50.2	30.0	70.4
SOLANO	88.7	1.0	399,841	22.2	25.0	19.6	30.3
SONOMA	134.3	1.5	459,258	29.3	28.2	23.4	33.0
STANISLAUS	187.0	2.1	459,025	40.7	43.0	36.8	49.2
SUTTER	35.7	0.4	82,040	43.5	43.6	29.2	57.9
TEHAMA	28.3	0.3	56,666	50.0	45.6	28.3	62.9
TRINITY	9.3	0.1	13,490	69.2 *	66.0 *	22.4	109.7
TULARE	169.3	1.9	379,944	44.6	47.5	40.3	54.8
TUOLUMNE	26.7	0.3	56,125	47.5	43.9	27.0	60.9
VENTURA	202.7	2.2	753,820	26.9	28.8	24.8	32.8
YOLO	42.0	0.5	164,010	25.6	28.6	19.7	37.4
YUBA	31.7	0.4	63,983	49.5	54.5	35.3	73.6

Note: ICD-10 codes V01-X59,Y85-Y86; rates are per 100,000 population.

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

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

+ 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 Estimates by County with Age and Sex Detail, 1970-2040, December, 1998.
State of California, Department of Health Services, Death Records.