Highlights

- **CLRD ranked fourth among the leading causes of death in California and the U.S. in 2004.**

- **95.8 percent of all CLRD deaths in 2004 occurred among people aged 55 and older.**

- **California's 2004 CLRD crude death rate was 34.4 per 100,000 population compared with the U.S. rate of 42.2.**

- **The CLRD age-adjusted death rate decreased significantly from 44.0 in 2000 to 38.0 in 2004.**

- **Yuba County (78.5) had the highest reliable 2002-2004 average CLRD age-adjusted death rate and Marin County (28.3) had the lowest.**

Chronic Lower Respiratory Disease Deaths
California, 2004

By Sally Jew-Lochman

Introduction

Chronic lower respiratory disease (CLRD) continued to rank fourth among the leading causes of death in California and the United States (U.S.) in 2004.[1, 2] CLRD is a group of diseases that cause airflow blockage and breathing-related problems. It includes emphysema, chronic bronchitis, and asthma. In the U.S., tobacco use is a key factor in the development and progression of CLRD, but in asthma, exposure to air pollutants in the home and workplace, genetic factors, and respiratory infections also play a role.[3]

The U.S. Public Health Service established a number of health objectives as part of the Healthy People 2010 (HP 2010) Initiative that relate to respiratory diseases such as chronic obstructive pulmonary disease (COPD) and asthma.[4] COPD includes chronic bronchitis and emphysema and is often addressed separately from asthma because its etiology and treatment differs.[5] Several objectives were established to reduce deaths from COPD and asthma for specific age groups.   This report does not address progress toward meeting the HP 2010 objectives because of the differences in the definitions of COPD and CLRD.

CLRD deaths for 2004 are presented in this report with analyses of crude and age-adjusted death rates for California residents by sex, age, race/ethnicity, and county. The definition of CLRD used in this report is based on the International Classification of Diseases, Tenth Revision (ICD-10) codes J40-J47 as currently presented in National Center for Health Statistics (NCHS) reports.[6]

[1] State of California, Department of Health Services. Death Records, 2004.
[2] National Center for Health Statistics. Deaths: Preliminary Data for 2004. URL: http://www.cdc.gov/nchs/data/hestat/preliminarydeaths04_tables.pdf#1 Accessed April 19, 2006.
[3] Centers for Disease Control and Prevention. Facts About Chronic Obstructive Pulmonary Disease (COPD). National Center for Environmental Health. URL: http://www.cdc.gov/nceh/airpollution/copd/copdfaq.htm. Accessed May 3, 2006.
[4] United States Department of Health and Human Services. Healthy People 2010 Objectives (Second Edition, in Two Volumes). Washington, D.C., January 2001.
[5] Mannino DM, et al. Chronic Obstructive Pulmonary Disease Surveillance, United States, *1971-2000*. MMWR 2002:51 (SS06); 1-16. August 2, 2002.
[6] National Center for Health Statistics. Vital Statistics, Instructions for Classifying the Underlying Cause of Death, 2006.   NCHS Instruction Manual, Part 2a. Public Health Service, Hyattsville, Maryland.
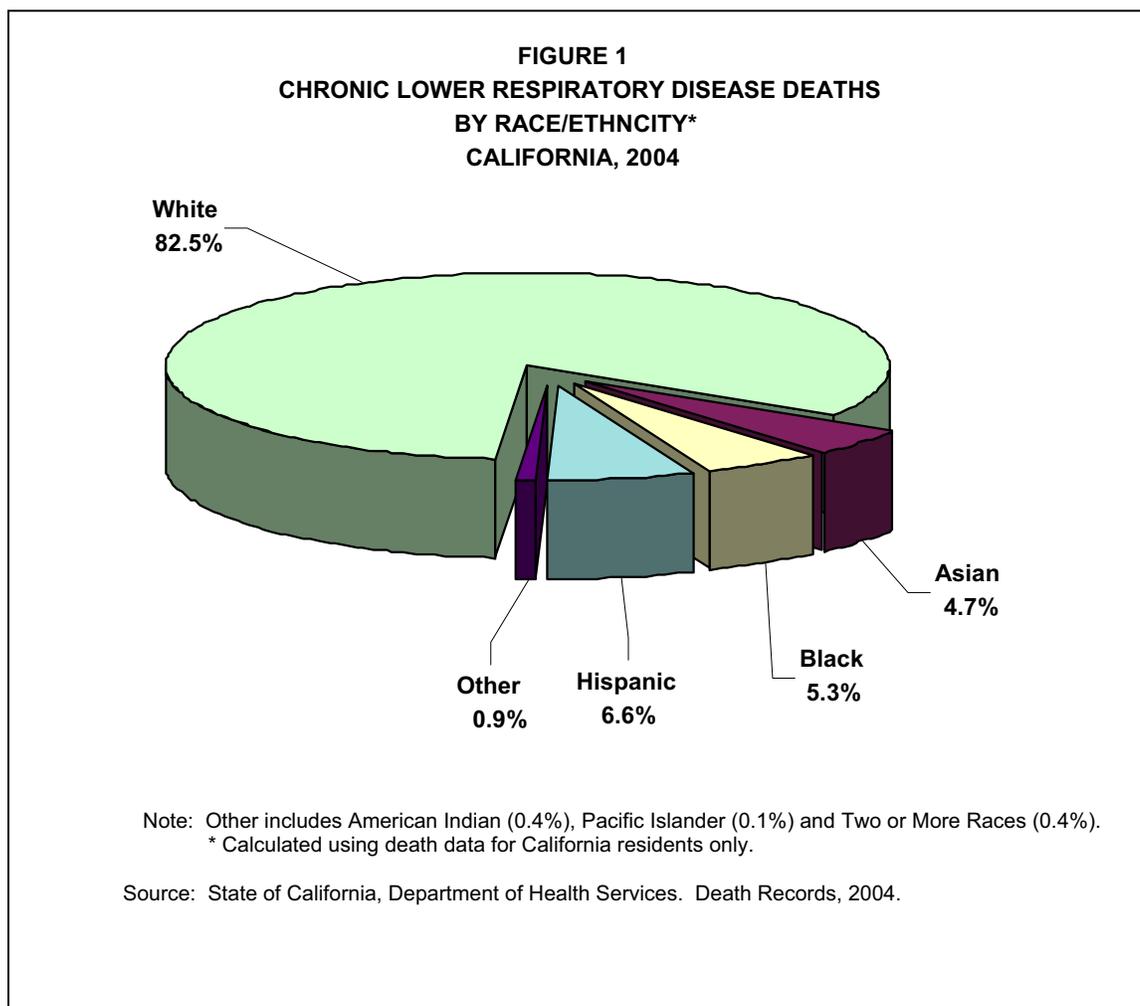
CLRD Deaths

Table 1 (pages 11 to 12) displays California's CLRD death data by race/ethnicity, age group, and sex for 2004. In 2004 the number of CLRD deaths among females (6,648) made up 53.1 percent of the total while deaths among males (5,871) made up 46.9 percent.

Deaths due to CLRD occur most often among older people. This fact held true for California decedents aged 55 and older which accounted for 95.8 percent of all CLRD deaths.

Figure 1 shows in 2004 Whites had the highest percentage of CLRD deaths with 82.5 percent, followed by Hispanics with 6.6 percent, Blacks with 5.3 percent, and Asians with 4.7 percent. The remaining race/ethnic groups combined as Other accounted for 0.9 percent of CLRD deaths including American Indians with 0.4 percent, Two or More Races with 0.4 percent, and Pacific Islanders with 0.1 percent.

FIGURE 1
CHRONIC LOWER RESPIRATORY DISEASE DEATHS
BY RACE/ETHNCITY*
CALIFORNIA, 2004

White 82.5%

Other 0.9%

Hispanic 6.6%

Black 5.3%

Asian 4.7%

Note: Other includes American Indian (0.4%), Pacific Islander (0.1%) and Two or More Races (0.4%).
        * Calculated using death data for California residents only.

Source: State of California, Department of Health Services. Death Records, 2004.

CLRD Crude Death Rates

California's 2004 CLRD crude death rate was 34.4 per 100,000 population (**Table 1**, pages 11 to 12) compared with the U.S. rate of 42.2.[2] In California Whites had the highest CLRD crude rate (64.7) followed by Blacks (27.5), American Indians (19.1), Asians (14.5), Two or More Races (7.0), and Hispanics (6.4).

Figure 2 shows that the rate of dying from CLRD for the overall population was significantly higher for females with a crude rate of 36.5 than for males with a rate of 32.3 in 2004. An examination of rates for males and females by each race/ethnic group finds these characteristics were found only among Whites, where females had a significantly higher crude death rate (70.4) compared to males (58.9). Conversely, the rate among Asian males (19.3) was significantly higher than the rate for Asian females (10.0). The differences in crude death rates between males and females were not significant among American Indians, Blacks, Hispanics, or Two or More Races.
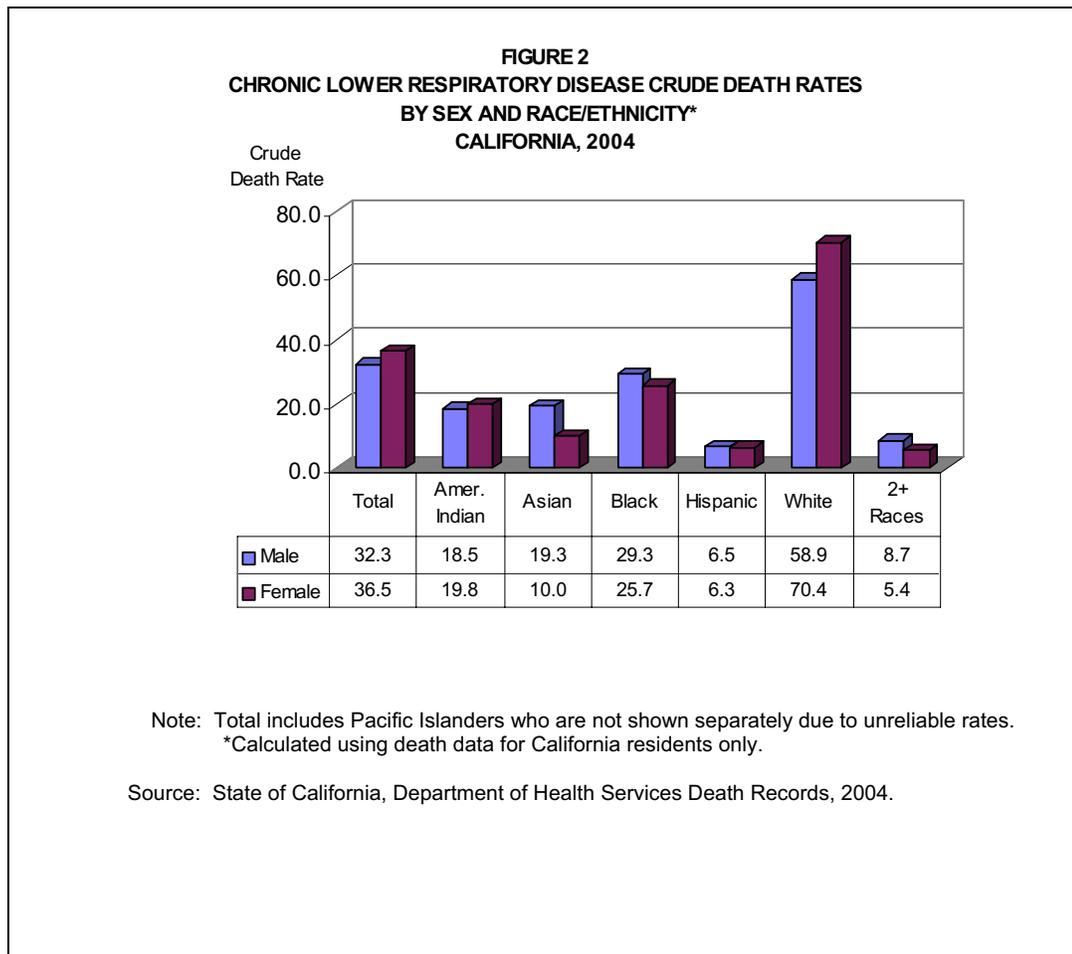
FIGURE 2
CHRONIC LOWER RESPIRATORY DISEASE CRUDE DEATH RATES
BY SEX AND RACE/ETHNICITY*
CALIFORNIA, 2004

Crude Death Rate

	Total	Amer. Indian	Asian	Black	Hispanic	White	2+ Races
Male	32.3	18.5	19.3	29.3	6.5	58.9	8.7
Female	36.5	19.8	10.0	25.7	6.3	70.4	5.4

Note: Total includes Pacific Islanders who are not shown separately due to unreliable rates.
  *Calculated using death data for California residents only.

Source: State of California, Department of Health Services Death Records, 2004.

CLRD Age-Specific Death Rates

Table 1 (pages 11 to 12) displays age-specific CLRD death rates for all California residents by sex and race/ethnic group for 2004. Generally, reliable age-specific CLRD death rates increased with age. Among all residents aged 55 and over, males had significantly higher death rates than females. In younger age groups the gender differences were either not significant or the rates were unreliable so comparisons could not be made.

Figure 3 displays reliable age-specific CLRD death rates in 2004 by race/ethnicity for age groups 45 and older. Age-specific death rates for CLRD varied among race/ethnic groups. Blacks had the highest death rates in the 45 to 54 (18.8) and 55 to 64 (47.2) age groups. Whites had the highest death rates for age groups 65 to 74, 75 to 84, and 85 and older (107.4, 426.2, 701.5, respectively). The lowest reliable age-specific rates occurred among Asians for age groups 55 to 64, 65 to 74, and 75 to 84 (7.8, 32.6, 148.0, respectively). Hispanics had the lowest rate (371.4) in the 85 and older age group.

FIGURE 3
CHRONIC LOWER RESPIRATORY DISEASE AGE-SPECIFIC DEATH RATES
BY RACE/ETHNICITY AND AGE GROUP*
CALIFORNIA, 2004

Age-Specific Death Rate

	45-54	55-64	65-74	75-84	85+
Total	7.5	31.2	128.3	350.3	621.1
Asian	2.1	7.8	32.6	148.0	452.8
Black	18.8	47.2	135.3	299.6	458.6
Hispanic	2.5	10.5	44.8	159.9	371.4
White	9.9	41.1	170.4	426.2	701.5
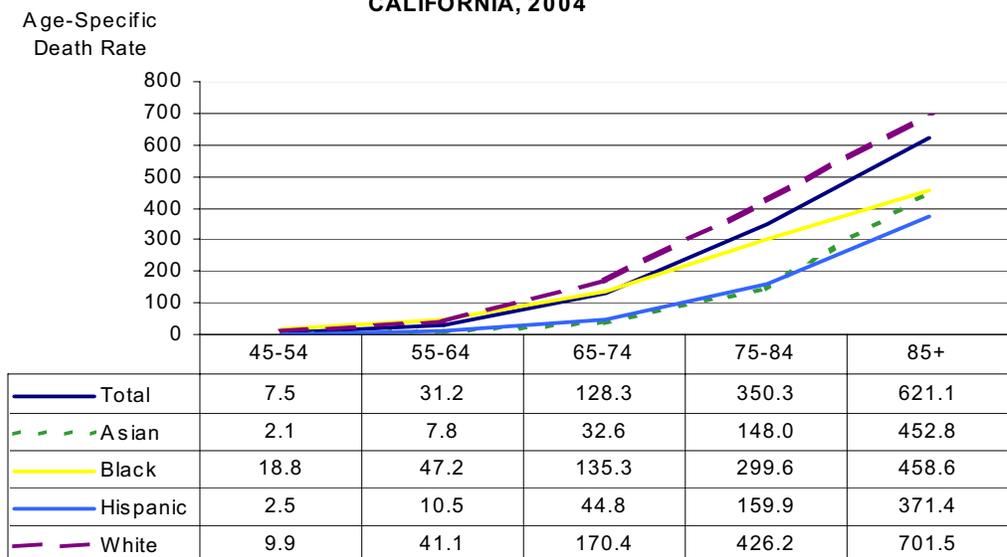
Notes: Total includes American Indian, Pacific Islander, and Two or More Races not shown due to unreliable rates.
Asian rate in the 45-54 age group is unreliable.
*Calculated using death data for California residents only.

Source: State of California, Department of Health Services. Death Records, 2004.
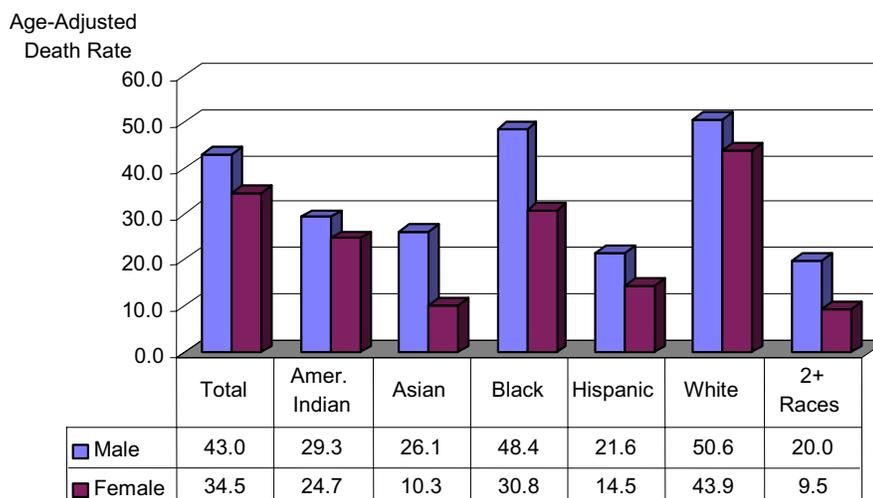
CLRD Age-Adjusted Death Rates

For more information about crude and age-adjusted death rates, refer to the National Center for Health Statistics website at http://www.cdc.gov/nchs/

Table 1 (pages 11 to 12) shows the age-adjusted CLRD death rate for California in 2004 was 38.0 per 100,000 population. California's rate continues to be lower than the U.S. rate of 41.8 for 2004.[2]

Among the race/ethnic groups, Whites had the highest reliable age-adjusted 2004 CLRD death rate (46.6) in California followed by Blacks (37.6), American Indians (26.7), Hispanics (17.4), Asians (16.9), and Two or More Races (14.3). The rate for the White group was significantly higher than all of the other race/ethnic groups. Also, rates for Blacks and American Indians were significantly different from reliable rates among the other race/ethnic groups.

Figure 4 displays the reliable age-adjusted death rates by sex and race/ethnicity. In 2004 males consistently showed higher rates than females across race/ethnic groups. With the exception of American Indians, significant differences between age-adjusted rates among males and females were found in each race/ethnic group. The largest difference in rates between gender is found among Asians, where the rate of CLRD deaths for male Asians (26.1) was 153.4 percent higher than the rate for female Asians (10.3). The three highest age-adjusted death rates were found in White males (50.6), Black males (48.4), and White females (43.9). The three lowest reliable rates were in Asian females (10.3), Hispanic females (14.5), and males of Two or More Races (20.0). The rate for females in the Two or More Races group was not compared because it is unreliable.

FIGURE 4
CHRONIC LOWER RESPIRATORY DISEASE AGE-ADJUSTED DEATH RATES
BY SEX AND RACE/ETHNICITY*
CALIFORNIA, 2004

Age-Adjusted Death Rate

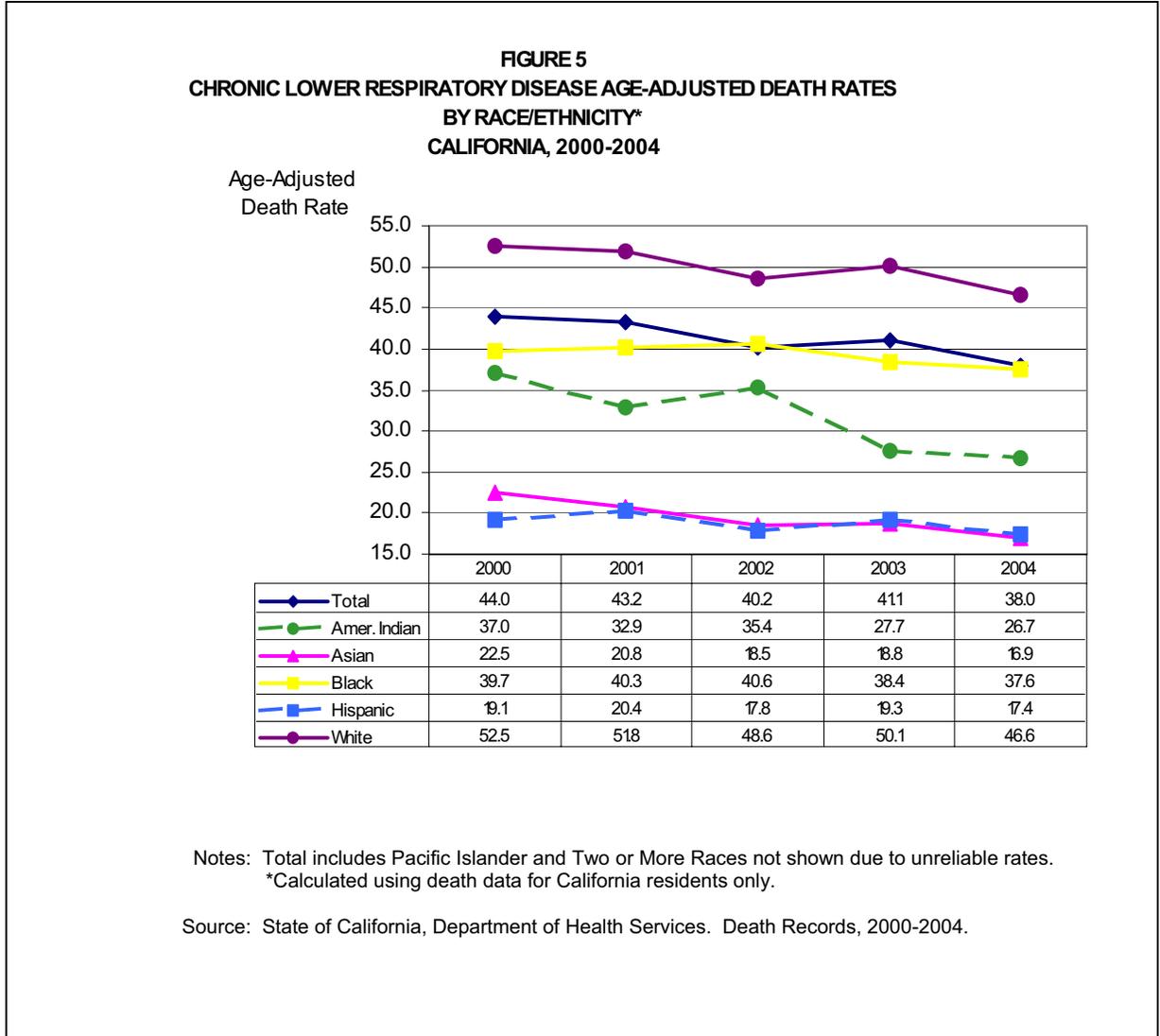|	Total	Amer. Indian	Asian	Black	Hispanic	White	2+ Races
Male	43.0	29.3	26.1	48.4	21.6	50.6	20.0
Female	34.5	24.7	10.3	30.8	14.5	43.9	9.5

Notes: Total includes Pacific Islanders who are not shown separately due to unreliable rates.
Rate for females of Two or More Races is not reliable.
*Calculated using death data for California residents only.

Source: State of California, Department of Health Services. Death Records, 2004.

Figure 5 displays the reliable age-adjusted death rates by race/ethnicity from 2000 to 2004.[7] Overall, the age-adjusted death rate decreased significantly from 44.0 per 100,000 population in 2000 to 38.0 in 2004. The rates decreased in all race/ethnic groups over this five-year period, however the decreases were significant only among Whites (52.5 to 46.6) and Asians (22.5 to 16.9).

FIGURE 5
CHRONIC LOWER RESPIRATORY DISEASE AGE-ADJUSTED DEATH RATES
BY RACE/ETHNICITY*
CALIFORNIA, 2000-2004

Age-Adjusted Death Rate

	2000	2001	2002	2003	2004
Total	44.0	43.2	40.2	41.1	38.0
Amer. Indian	37.0	32.9	35.4	27.7	26.7
Asian	22.5	20.8	18.5	18.8	16.9
Black	39.7	40.3	40.6	38.4	37.6
Hispanic	19.1	20.4	17.8	19.3	17.4
White	52.5	51.8	48.6	50.1	46.6

Notes: Total includes Pacific Islander and Two or More Races not shown due to unreliable rates.
*Calculated using death data for California residents only.

Source: State of California, Department of Health Services. Death Records, 2000-2004.

CLRD Death Data for California Counties

Table 2 (page 13) displays the 2002 to 2004 average numbers of deaths, crude death rates, and age-adjusted death rates for California and its 58 counties. The highest average number of CLRD deaths occurred in Los Angeles County (2,838.0) followed by San Diego County (1,046.3) and Riverside County (936.0). The highest and lowest reliable average crude CLRD death rates per 100,000 population were in Lake County (103.2) and Santa Clara County (24.8).

[7]Jew-Lochman, S. Chronic Lower Respiratory Disease Deaths, California, 2000-2003. Center for Health Statistics, California Department of Health Services, October 2005.

Of the counties with reliable average age-adjusted CLRD death rates, Yuba County had the highest rate at 78.5 while Marin County had the lowest rate at 28.3. Twenty-five counties had significantly different rates than California's average age-adjusted rate of 39.5 per 100,000 population. Eighteen county rates were higher and seven were lower than the state rate. Please refer to the Data Limitations and Qualifications section for information regarding significance testing between the county and State age-adjusted rates.

Figure 6 (page 14) shows a thematic map of the 2002 to 2004 average age-adjusted death rates for all California counties. The Jenks natural breaks classification was used to determine the four interval breaks of reliable rates for the counties.

CLRD Death Data for City Health Jurisdictions

The 2002 to 2004 three-year average number of CLRD deaths and crude death rates for California's three city health jurisdictions are shown in **Table 3**. These numbers are included in their respective county totals. Age-adjusted death rates were not calculated for the city health jurisdictions because city population estimates by age were not available.

Long Beach had the highest average number of deaths (197.7) followed by Pasadena (49.0) and Berkeley (20.7). The CLRD crude death rates were 41.1 per 100,000 population for Long Beach, 34.5 for Pasadena, and 19.8 for Berkeley. Berkeley's crude death rate was significantly lower than that of Long Beach and Pasadena. However, the difference in crude rates between Long Beach and Pasadena was not significant.

TABLE 3
CHRONIC LOWER RESPIRATORY DISEASE DEATHS
AMONG THE CITY HEALTH JURISDICTIONS*
CALIFORNIA, 2002-2004

CITY HEALTH JURISDICTION	NUMBER OF DEATHS (Average)	2003 POPULATION	CRUDE DEATH RATE
BERKELEY	20.7	104,195	19.8
LONG BEACH	197.7	481,015	41.1
PASADENA	49.0	142,214	34.5

Note: Rates are per 100,000 population.
*Calculated using death data for California residents only.

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

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.[8] 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 CLRD disease death data presented in this report are based on the vital statistics records with ICD-10 codes J40-J47 as defined by the NCHS.[6] 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.[9]

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.

---

[8]Choi BCK, de Guia NA, and Walsh P. Look before you leap: Stratify before you standardize. American Journal of Epidemiology, 149: 1087-1096. 1999.
[9]van Belle G. Statistical Rules of Thumb, Rule 2.5. Wiley Publishing. March 2002.

Beginning in 1999 cause of death is reported using ICD-10.[10] 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.

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.[11] This problem could contribute to understatements of rates for the Two or More Races group as well. All race groups may not be individually displayed on the tables due to unreliable rates, but the State totals do include their data.

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.[12] 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.

_____

[10]World Health Organization. International Statistical Classification of Diseases and Related Health Problems. Tenth Revision. Geneva: World Health Organization. 1992.

[11]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.

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

A more complete explanation of age-adjustment methodology is available in the "Healthy People 2010 Statistical Notes" publication.[13] Detailed information on data quality and limitations is presented in the appendix of the annual report, "Vital Statistics of California."[14] Formulas used to calculate death rates are included in the technical notes of the "County Health Status Profiles" report.[15]

This Data Summary was prepared by Sally Jew-Lochman, Office of Health Information and Research, Department of Health Services, 1616 Capitol Avenue, Suite 74.165, MS 5103, P.O. Box 997410, Sacramento, CA 95814, telephone (916) 650-6898, fax (916) 650-6898, sjewloch@dhs.ca.gov

---

[13]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.
[14]Ficenec S, Bindra K. Vital Statistics of California, 2003. Center for Health Statistics, California Department of Health Services, August 2005.
[15]Shippen S, County Health Status Profiles 2006. Center for Health Statistics, California Department of Health Services, April 2006.

TABLE 1
CHRONIC LOWER RESPIRATORY 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[1]															
Under 1	4	2	2	534,769	272,800	261,969	0.7 *	0.7 *	0.8 *	0.0	1.5	0.0	1.7	0.0	1.8
1 to 4	7	6	1	2,047,621	1,045,813	1,001,808	0.3 *	0.6 *	0.1 *	0.1	0.6	0.1	1.0	0.0	0.3
5 to 14	12	8	4	5,369,098	2,750,853	2,618,245	0.2 *	0.3 *	0.2 *	0.1	0.3	0.1	0.5	0.0	0.3
15 to 24	20	14	6	5,294,261	2,757,217	2,537,044	0.4	0.5 *	0.2 *	0.2	0.5	0.2	0.8	0.0	0.4
25 to 34	25	17	8	5,231,086	2,701,183	2,529,903	0.5	0.6 *	0.3 *	0.3	0.7	0.3	0.9	0.1	0.5
35 to 44	83	48	35	5,672,590	2,883,426	2,789,164	1.5	1.7	1.3	1.1	1.8	1.2	2.1	0.8	1.7
45 to 54	369	192	177	4,931,148	2,440,823	2,490,325	7.5	7.9	7.1	6.7	8.2	6.8	9.0	6.1	8.2
55 to 64	1,029	540	489	3,303,083	1,594,612	1,708,471	31.2	33.9	28.6	29.2	33.1	31.0	36.7	26.1	31.2
65 to 74	2,599	1,335	1,264	2,025,575	936,610	1,088,965	128.3	142.5	116.1	123.4	133.2	134.9	150.2	109.7	122.5
75 to 84	4,975	2,305	2,670	1,420,413	590,956	829,457	350.3	390.0	321.9	340.5	360.0	374.1	406.0	309.7	334.1
85 & Older	3,396	1,404	1,992	546,767	187,361	359,406	621.1	749.4	554.2	600.2	642.0	710.2	788.6	529.9	578.6
Unknown	0	0	0												
Total	12,519	5,871	6,648	36,376,411	18,161,654	18,214,757	34.4	32.3	36.5	33.8	35.0	31.5	33.2	35.6	37.4
Age-Adjusted							38.0	43.0	34.5	37.3	38.6	41.9	44.2	33.6	35.3
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	0	0	0	45,586	23,211	22,375	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
25 to 34	1	0	1	36,784	18,309	18,475	2.7 *	0.0 +	5.4 *	0.0	8.0	-	-	0.0	16.0
35 to 44	1	1	0	43,965	21,368	22,597	2.3 *	4.7 *	0.0 +	0.0	6.7	0.0	13.9	-	-
45 to 54	3	2	1	42,504	20,200	22,304	7.1 *	9.9 *	4.5 *	0.0	15.0	0.0	23.6	0.0	13.3
55 to 64	6	2	4	26,857	12,754	14,103	22.3 *	15.7 *	28.4 *	4.5	40.2	0.0	37.4	0.6	56.2
65 to 74	23	11	12	12,903	5,996	6,907	178.3	183.5 *	173.7 *	105.4	251.1	75.0	291.9	75.4	272.0
75 to 84	14	8	6	6,734	2,840	3,894	207.9 *	281.7 *	154.1 *	99.0	316.8	86.5	476.9	30.8	277.4
85 & Older	5	1	4	3,868	1,435	2,433	129.3 *	69.7 *	164.4 *	16.0	242.6	0.0	206.3	3.3	325.5
Unknown	0	0	0												
Total	53	25	28	276,851	135,398	141,453	19.1	18.5	19.8	14.0	24.3	11.2	25.7	12.5	27.1
Age-Adjusted							26.7	29.3	24.7	19.3	34.1	17.4	41.2	15.3	34.1
ASIAN															
Under 1	0	0	0	48,115	24,552	23,563	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
1 to 4	1	1	0	188,290	96,379	91,911	0.5 *	1.0 *	0.0 +	0.0	1.6	0.0	3.1	-	-
5 to 14	1	1	0	498,432	257,125	241,307	0.2 *	0.4 *	0.0 +	0.0	0.6	0.0	1.2	-	-
15 to 24	2	2	0	567,146	291,640	275,506	0.4 *	0.7 *	0.0 +	0.0	0.8	0.0	1.6	-	-
25 to 34	0	0	0	618,710	302,916	315,794	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
35 to 44	1	1	0	671,272	321,320	349,952	0.1 *	0.3 *	0.0 +	0.0	0.4	0.0	0.9	-	-
45 to 54	13	7	6	609,567	284,594	324,973	2.1 *	2.5 *	1.8 *	1.0	3.3	0.6	4.3	0.4	3.3
55 to 64	30	21	9	385,197	179,303	205,894	7.8	11.7	4.4 *	5.0	10.6	6.7	16.7	1.5	7.2
65 to 74	80	52	28	245,629	107,974	137,655	32.6	48.2	20.3	25.4	39.7	35.1	61.2	12.8	27.9
75 to 84	228	158	70	154,086	64,809	89,277	148.0	243.8	78.4	128.8	167.2	205.8	281.8	60.0	96.8
85 & Older	229	134	95	50,569	20,013	30,556	452.8	669.6	310.9	394.2	511.5	556.2	782.9	248.4	373.4
Unknown	0	0	0												
Total	585	377	208	4,037,013	1,950,625	2,086,388	14.5	19.3	10.0	13.3	15.7	17.4	21.3	8.6	11.3
Age-Adjusted							16.9	26.1	10.3	15.5	18.3	23.5	28.8	8.9	11.7
BLACK															
Under 1	1	1	0	32,707	16,671	16,036	3.1 *	6.0 *	0.0 +	0.0	9.1	0.0	17.8	-	-
1 to 4	3	3	0	122,652	62,561	60,091	2.4 *	4.8 *	0.0 +	0.0	5.2	0.0	10.2	-	-
5 to 14	5	4	1	408,879	208,120	200,759	1.2 *	1.9 *	0.5 *	0.2	2.3	0.0	3.8	0.0	1.5
15 to 24	7	4	3	395,238	205,416	189,822	1.8 *	1.9 *	1.6 *	0.5	3.1	0.0	3.9	0.0	3.4
25 to 34	6	5	1	326,490	160,606	165,884	1.8 *	3.1 *	0.6 *	0.4	3.3	0.4	5.8	0.0	1.8
35 to 44	15	7	8	399,615	199,186	200,429	3.8 *	3.5 *	4.0 *	1.9	5.7	0.9	6.1	1.2	6.8
45 to 54	62	30	32	329,298	160,793	168,505	18.8	18.7	19.0	14.1	23.5	12.0	25.3	12.4	25.6
55 to 64	94	59	35	199,142	92,418	106,724	47.2	63.8	32.8	37.7	56.7	47.6	80.1	21.9	43.7
65 to 74	164	89	75	121,222	55,208	66,014	135.3	161.2	113.6	114.6	156.0	127.7	194.7	87.9	139.3
75 to 84	194	91	103	64,749	25,309	39,440	299.6	359.6	261.2	257.5	341.8	285.7	433.4	210.7	311.6
85 & Older	115	57	58	25,074	7,615	17,459	458.6	748.5	332.2	374.8	542.5	554.2	942.8	246.7	417.7
Unknown	0	0	0												
Total	666	350	316	2,425,066	1,193,903	1,231,163	27.5	29.3	25.7	25.4	29.5	26.2	32.4	22.8	28.5
Age-Adjusted							37.6	48.4	30.8	34.7	40.5	43.0	53.7	27.4	34.2
HISPANIC															
Under 1	2	1	1	273,401	139,443	133,958	0.7 *	0.7 *	0.7 *	0.0	1.7	0.0	2.1	0.0	2.2
1 to 4	2	1	1	1,003,339	512,381	490,958	0.2 *	0.2 *	0.2 *	0.0	0.5	0.0	0.6	0.0	0.6
5 to 14	3	1	2	2,503,684	1,279,931	1,223,753	0.1 *	0.1 *	0.2 *	0.0	0.3	0.0	0.2	0.0	0.4
15 to 24	7	5	2	2,275,634	1,199,542	1,076,092	0.3 *	0.4 *	0.2 *	0.1	0.5	0.1	0.8	0.0	0.4
25 to 34	9	6	3	2,332,753	1,244,497	1,088,256	0.4 *	0.5 *	0.3 *	0.1	0.6	0.1	0.9	0.0	0.6
35 to 44	17	12	5	1,954,969	1,014,652	940,317	0.9 *	1.2 *	0.5 *	0.5	1.3	0.5	1.9	0.1	1.0
45 to 54	31	17	14	1,228,904	607,654	621,250	2.5	2.8 *	2.3 *	1.6	3.4	1.5	4.1	1.1	3.4
55 to 64	67	39	28	636,784	298,857	337,927	10.5	13.0	8.3	8.0	13.0	9.0	17.1	5.2	11.4
65 to 74	160	89	71	357,389	157,978	199,411	44.8	56.3	35.6	37.8	51.7	44.6	68.0	27.3	43.9
75 to 84	305	159	146	190,758	78,695	112,063	159.9	202.0	130.3	141.9	177.8	170.6	233.5	109.2	151.4
85 & Older	217	93	124	58,423	20,677	37,746	371.4	449.8	328.5	322.0	420.8	358.4	541.2	270.7	386.3
Unknown	0	0	0												
Total	820	423	397	12,816,038	6,554,307	6,261,731	6.4	6.5	6.3	6.0	6.8	5.8	7.1	5.7	7.0
Age-Adjusted							17.4	21.6	14.5	16.2	18.7	19.4	23.8	13.1	16.0

Note : Rates are per 100,000 population. ICD-10 codes J40-J47.
Year 2000 U.S. Standard Population is used for age-adjusted rates.
American Indian, Asian, Black, Pacific Islander, White and Two or More Races 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.
[1] Includes Pacific Islanders (15) not individually shown due to unreliable rates.

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

TABLE 1 (CONTINUED)
CHRONIC LOWER RESPIRATORY 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[1]															
Under 1	4	2	2	534,769	272,800	261,969	0.7 *	0.7 *	0.8 *	0.0	1.5	0.0	1.7	0.0	1.8
1 to 4	7	6	1	2,047,621	1,045,813	1,001,808	0.3 *	0.6 *	0.1 *	0.1	0.6	0.1	1.0	0.0	0.3
5 to 14	12	8	4	5,369,098	2,750,853	2,618,245	0.2 *	0.3 *	0.2 *	0.1	0.3	0.1	0.5	0.0	0.3
15 to 24	20	14	6	5,294,261	2,757,217	2,537,044	0.4	0.5 *	0.2 *	0.2	0.5	0.2	0.8	0.0	0.4
25 to 34	25	17	8	5,231,086	2,701,183	2,529,903	0.5	0.6 *	0.3 *	0.3	0.7	0.3	0.9	0.1	0.5
35 to 44	83	48	35	5,672,590	2,883,426	2,789,164	1.5	1.7	1.3	1.1	1.8	1.2	2.1	0.8	1.7
45 to 54	369	192	177	4,931,148	2,440,823	2,490,325	7.5	7.9	7.1	6.7	8.2	6.8	9.0	6.1	8.2
55 to 64	1,029	540	489	3,303,083	1,594,612	1,708,471	31.2	33.9	28.6	29.2	33.1	31.0	36.7	26.1	31.2
65 to 74	2,599	1,335	1,264	2,025,575	936,610	1,088,965	128.3	142.5	116.1	123.4	133.2	134.9	150.2	109.7	122.5
75 to 84	4,975	2,305	2,670	1,420,413	590,956	829,457	350.3	390.0	321.9	340.5	360.0	374.1	406.0	309.7	334.1
85 & Older	3,396	1,404	1,992	546,767	187,361	359,406	621.1	749.4	554.2	600.2	642.0	710.2	788.6	529.9	578.6
Unknown	0	0	0												
Total	12,519	5,871	6,648	36,376,411	18,161,654	18,214,757	34.4	32.3	36.5	33.8	35.0	31.5	33.2	35.6	37.4
Age-Adjusted							38.0	43.0	34.5	37.3	38.6	41.9	44.2	33.6	35.3
WHITE															
Under 1	1	0	1	164,750	84,066	80,684	0.6 *	0.0 +	1.2 *	0.0	1.8	-	-	0.0	3.7
1 to 4	1	1	0	617,372	315,162	302,210	0.2 *	0.3 *	0.0 +	0.0	0.5	0.0	0.9	-	-
5 to 14	1	1	0	1,722,936	886,271	836,665	0.1 *	0.1 *	0.0 +	0.0	0.2	0.0	0.3	-	-
15 to 24	3	3	0	1,856,335	960,424	895,911	0.2 *	0.3 *	0.0 +	0.0	0.3	0.0	0.7	-	-
25 to 34	8	5	3	1,808,165	922,586	885,579	0.4 *	0.5 *	0.3 *	0.1	0.7	0.1	1.0	0.0	0.7
35 to 44	47	26	21	2,502,123	1,278,269	1,223,854	1.9	2.0	1.7	1.3	2.4	1.3	2.8	1.0	2.4
45 to 54	260	136	124	2,639,194	1,328,451	1,310,743	9.9	10.2	9.5	8.7	11.0	8.5	12.0	7.8	11.1
55 to 64	824	414	410	2,005,398	987,820	1,017,578	41.1	41.9	40.3	38.3	43.9	37.9	45.9	36.4	44.2
65 to 74	2,148	1,076	1,072	1,260,712	596,472	664,240	170.4	180.4	161.4	163.2	177.6	169.6	191.2	151.7	171.0
75 to 84	4,212	1,876	2,336	988,209	412,295	575,914	426.2	455.0	405.6	413.4	439.1	434.4	475.6	389.2	422.1
85 & Older	2,824	1,117	1,707	402,581	135,267	267,314	701.5	825.8	638.6	675.6	727.3	777.3	874.2	608.3	668.9
Unknown	0	0	0												
Total	10,329	4,655	5,674	15,967,775	7,907,083	8,060,692	64.7	58.9	70.4	63.4	65.9	57.2	60.6	68.6	72.2
Age-Adjusted							46.6	50.6	43.9	45.7	47.5	49.2	52.1	42.7	45.0
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	2	1	1	171,009	86,842	84,167	1.2 *	1.2 *	1.2 *	0.0	2.8	0.0	3.4	0.0	3.5
15 to 24	1	0	1	132,609	65,842	66,767	0.8 *	0.0 +	1.5 *	0.0	2.2	-	-	0.0	4.4
25 to 34	1	1	0	87,030	41,857	45,173	1.1 *	2.4 *	0.0 +	0.0	3.4	0.0	7.1	-	-
35 to 44	1	0	1	78,882	37,944	40,938	1.3 *	0.0 +	2.4 *	0.0	3.8	-	-	0.0	7.2
45 to 54	0	0	0	65,728	31,245	34,483	0.0 +	0.0 +	0.0 +	-	-	-	-	-	-
55 to 64	6	3	3	40,271	18,874	21,397	14.9 *	15.9 *	14.0 *	3.0	26.8	0.0	33.9	0.0	29.9
65 to 74	18	12	6	22,432	10,465	11,967	80.2 *	114.7 *	50.1 *	43.2	117.3	49.8	179.5	10.0	90.3
75 to 84	17	13	4	13,515	5,955	7,560	125.8 *	218.3 *	52.9 *	66.0	185.6	99.6	337.0	1.1	104.8
85 & Older	5	1	4	5,380	1,984	3,396	92.9 *	50.4 *	117.8 *	11.5	174.4	0.0	149.2	2.4	233.2
Unknown	0	0	0												
Total	51	31	20	727,444	357,536	369,908	7.0	8.7	5.4	5.1	8.9	5.6	11.7	3.0	7.8
Age-Adjusted							14.3	20.0	9.5 *	10.3	18.3	12.8	27.2	5.2	13.8

Note : Rates are per 100,000 population. ICD-10 codes J40-J47.
      Year 2000 U.S. Standard Population is used for age-adjusted rates.
      American Indian, Asian, Black, Pacific Islander, White and Two or More Races 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.
[1] Includes Pacific Islanders (15) not individually shown due to unreliable rates.
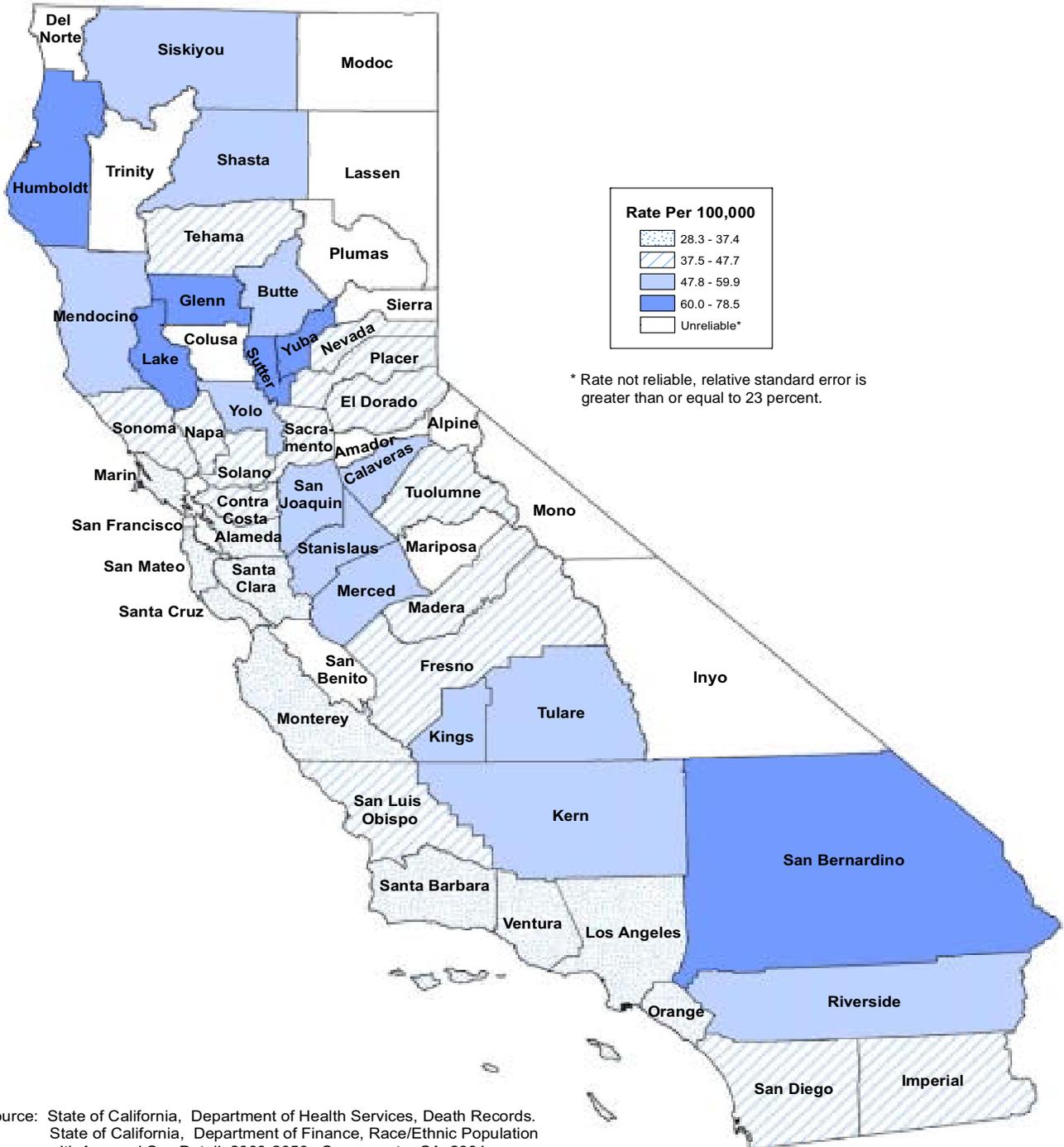
TABLE 2
CHRONIC LOWER RESPIRATORY DISEASE DEATHS
CALIFORNIA, 2002-2004
(By Place of Residence)

COUNTY	2002-2004 DEATHS (Average)	PERCENT	2003 POPULATION	CRUDE RATE	AGE-ADJUSTED RATE	95% CONFIDENCE LIMITS LOWER	UPPER
CALIFORNIA	**12,847.3**	**100.0**	**35,934,967**	**35.8**	**39.5**	**38.8**	**40.1**
ALAMEDA[1]	433.3	3.4	1,495,367	29.0	34.3	31.1	37.6
ALPINE	0.3	a	1,268	26.3 *	30.4 *	0.0	133.6
AMADOR	17.0	0.1	37,074	45.9 *	32.7 *	17.1	48.3
BUTTE[1]	146.0	1.1	212,473	68.7	54.1	45.3	63.0
CALAVERAS	29.7	0.2	43,566	68.1	50.9	32.3	69.6
COLUSA	10.3	0.1	20,026	51.6 *	57.7 *	22.5	93.0
CONTRA COSTA	361.0	2.8	1,003,704	36.0	38.2	34.2	42.2
DEL NORTE	18.3	0.1	28,192	65.0 *	62.9 *	34.0	91.8
EL DORADO	77.3	0.6	168,227	46.0	46.6	36.1	57.1
FRESNO	297.7	2.3	855,469	34.8	43.6	38.6	48.5
GLENN[1]	21.7	0.2	27,626	78.4	72.8	42.0	103.6
HUMBOLDT[1]	85.3	0.7	129,515	65.9	65.8	51.8	79.8
IMPERIAL	45.0	0.4	153,673	29.3	38.4	27.0	49.7
INYO	13.3	0.1	18,617	71.6 *	43.1 *	19.7	66.5
KERN[1]	355.7	2.8	717,332	49.6	56.2	50.4	62.1
KINGS[1]	52.0	0.4	138,763	37.5	59.6	43.2	75.9
LAKE[1]	64.3	0.5	62,359	103.2	71.5	54.0	89.1
LASSEN	14.7	0.1	34,633	42.3 *	48.9 *	23.8	74.1
LOS ANGELES[1]	2,838.0	22.1	10,047,236	28.2	31.1	29.9	32.2
MADERA	49.7	0.4	133,965	37.1	38.1	27.5	48.8
MARIN[1]	83.3	0.6	250,252	33.3	28.3	22.2	34.4
MARIPOSA	10.3	0.1	17,886	57.8 *	43.5 *	16.7	70.4
MENDOCINO[1]	59.7	0.5	89,156	66.9	59.9	44.6	75.1
MERCED[1]	90.7	0.7	230,696	39.3	55.4	43.9	66.8
MODOC	9.7	0.1	9,541	101.3 *	68.5 *	25.3	111.7
MONO	1.7	a	13,443	12.4 *	25.5 *	0.0	67.2
MONTEREY	122.7	1.0	418,842	29.3	36.0	29.6	42.3
NAPA	71.3	0.6	130,920	54.5	40.1	30.6	49.6
NEVADA	63.0	0.5	96,923	65.0	47.7	35.9	59.5
ORANGE[1]	870.7	6.8	3,001,146	29.0	35.9	33.5	38.2
PLACER	139.7	1.1	285,336	48.9	44.0	36.7	51.2
PLUMAS	14.0	0.1	21,181	66.1 *	42.3 *	20.1	64.6
RIVERSIDE[1]	936.0	7.3	1,758,719	53.2	52.6	49.2	55.9
SACRAMENTO[1]	571.3	4.4	1,331,563	42.9	47.6	43.7	51.6
SAN BENITO	15.3	0.1	56,605	27.1 *	41.7 *	20.7	62.6
SAN BERNARDINO[1]	812.3	6.3	1,869,219	43.5	64.3	59.9	68.8
SAN DIEGO	1,046.3	8.1	2,989,178	35.0	39.4	37.0	41.8
SAN FRANCISCO[1]	266.7	2.1	786,980	33.9	29.8	26.2	33.4
SAN JOAQUIN[1]	268.0	2.1	625,702	42.8	54.3	47.8	60.8
SAN LUIS OBISPO	137.0	1.1	257,452	53.2	44.3	36.9	51.8
SAN MATEO[1]	242.3	1.9	712,772	34.0	32.4	28.3	36.5
SANTA BARBARA	161.3	1.3	412,069	39.2	37.4	31.6	43.2
SANTA CLARA[1]	427.0	3.3	1,723,819	24.8	30.6	27.7	33.5
SANTA CRUZ	81.3	0.6	259,220	31.4	36.0	28.1	43.9
SHASTA[1]	137.0	1.1	175,421	78.1	57.1	47.3	66.9
SIERRA	2.0	a	3,563	56.1 *	35.4 *	0.0	84.8
SISKIYOU	33.7	0.3	45,081	74.7	50.6	33.2	67.9
SOLANO	161.3	1.3	416,406	38.7	42.4	35.8	49.0
SONOMA	214.3	1.7	473,274	45.3	40.5	35.0	46.0
STANISLAUS[1]	202.3	1.6	489,491	41.3	49.1	42.4	55.9
SUTTER[1]	52.0	0.4	84,978	61.2	63.7	46.4	81.0
TEHAMA	37.0	0.3	58,665	63.1	44.5	29.8	59.3
TRINITY	12.3	0.1	13,579	90.8 *	61.3 *	27.0	95.6
TULARE[1]	148.0	1.2	392,989	37.7	51.7	43.4	60.1
TUOLUMNE	35.7	0.3	57,120	62.4	43.5	29.2	57.8
VENTURA	257.3	2.0	799,114	32.2	36.3	31.8	40.7
YOLO[1]	78.3	0.6	183,602	42.7	57.5	44.7	70.2
YUBA[1]	43.7	0.3	63,979	68.3	78.5	55.2	101.9

Note : Rates are per 100,000 population. ICD-10 codes J40-J47.

Year 2000 U.S. Standard Population is used for age-adjusted rates.

 * 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.

[1] County age-adjusted rate is significantly different from the state age-adjusted rate.

Source: State of California, Department of Finance; 2003 Population: Population Projections by Age, Race/Ethnicity and Sex, May 2004.
State of California, Department of Health Services, Death Records.

FIGURE 6
CHRONIC LOWER RESPIRATORY DISEASE DEATHS
CALIFORNIA, 2002-2004

Rate Per 100,000
- 28.3 - 37.4
- 37.5 - 47.7
- 47.8 - 59.9
- 60.0 - 78.5
- Unreliable*

* Rate not reliable, relative standard error is greater than or equal to 23 percent.

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 2004.