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DATA  
SUMMARY  
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This Data  
Summary is  
one of a  
series of  
Infant  
Mortality  
Reports.

## Highlights

- **The infant mortality rate in California was unchanged at 5.2 for both 2004 and 2003.**
- **In 2004 California's infant mortality rate of 5.2 was below the U.S. preliminary rate of 6.8.**
- **The Non-Hispanic Black infant mortality rate remained more than twice as high as the Non-Hispanic White and Hispanic rates.**

# CALIFORNIA'S INFANT MORTALITY RATE, 2004

By Robert Richard Springborn Ph.D.

## Introduction

The infant mortality rate (deaths among infants under one year old per 1,000 live births) continues to be one of the most widely used indicators of overall health status of a community. In the report Healthy People 2010 Objectives, the United States (U.S.) Department of Health and Human Services set an infant mortality rate of 4.5 as the target national objective rate to be met by the year 2010.<sup>1</sup>

## California's Infant Mortality Rate

In 2004 there were a total of 2,811 infant deaths and 544,685 live births among California residents for an infant mortality rate of 5.2. The 2004 infant mortality rate did not change from the rate in 2003. However, the 2004 rate decreased 1.9 percent from an average rate of 5.3 from 2000 to 2003. This decrease continues a multiple year decline in infant mortality, after a small increase in 2002 (**Table 1**). The rate decreased 34.2 percent since 1990 and 53.2 percent since 1980. California's infant mortality rate of 5.2 for 2004 was lower than the preliminary rate of 6.8 for the U.S..<sup>2</sup> Since 1980 California's infant mortality rate has remained lower than the U.S. infant mortality rate.

## California's Infant Mortality Rates By Race and Ethnicity

**Table 2** and **Figure 1** show the infant mortality rates by race and ethnicity for Hispanic, non-Hispanic Black, and non-Hispanic White.<sup>3</sup> Although there have been several increases during the 10-year period, the rates for these three race and ethnic groups have generally declined between 1995 and 2004. From 2003 to 2004 the rate decreased for Blacks, slightly increased for Whites, and was unchanged for Hispanics.

<sup>1</sup> U.S. Department of Health and Human Services, *Healthy People 2010 Objectives*, Volume II, January 2001.

<sup>2</sup> Minino, A.M., Heron, M., Smith, B.L. Deaths: Preliminary data for 2004. National Center for Health Statistics, Health E-Stats. Released April 19, 2006.

<sup>3</sup> In 2000, new race collection methods cause a slight discontinuity between White and Black infant mortality rates. See Vital Statistics of California 2000, Chapter 6 for details.

Reports from prior periods are available on this subject.

Further substantiation of the gradual decline in these infant rates was seen by comparing the infant mortality for each race and ethnic group in 2004 with their four-year average rate from 2000 to 2003. The rate of infant mortality for Blacks in 2004 (12.0) was less than their average of the four previous years (12.6, 2000-2003). For Whites the infant mortality rate in 2004 (4.6) was less than their four-year average (4.9, 2000-2003). For Hispanics the infant mortality rate in 2004 (5.2) was equal to their four-year average (5.2, 2000-2003).

## County Infant Mortality Rates

Infant mortality rates for 37 of California's 58 counties are shown on **Table 3**. These 37 counties accounted for 98.2 percent of California's live births and 98.8 percent of the infant deaths in 2004. Infant mortality rates were not presented for counties with fewer than the 1,000 live births or fewer than five infant deaths. Even in some of the medium and large counties, the infant mortality rate can vary substantially from year to year. Therefore considerable caution should be observed in interpreting the occurrence of infrequent events.

For more Vital Statistics data, see the Department of Health Services, Center for Health Statistics Home Page at:

[www.dhs.ca.gov/OHIR](http://www.dhs.ca.gov/OHIR)

In 2004 county infant mortality rates varied from a high of 8.9 in Mendocino County to a low of 2.5 in Sonoma County (**Table 3**). Eighteen counties had a lower rate in 2004 compared to 2003, and 16 had a higher rate. For San Joaquin County the rate was unchanged from 2003 to 2004. For El Dorado and Sutter counties the change in rate could not be evaluated because in 2003 either the number of death events was less than five or the number of live births was less than 1,000.

**Table 3** also shows infant mortality rates for the two city health departments of Long Beach and Pasadena. In 2004 these rates ranged from 4.3 in Long Beach to 5.3 in Pasadena. Both city health departments showed a decrease in infant mortality rate from 2003 to 2004.

Statistical tests were used to evaluate the change in infant mortality rate from 2003 to 2004 for 23 counties and Long Beach city health department where the relative standard error (RSE) of the infant mortality rate was no more than 23 percent <sup>4</sup> (**Table 3**). For these 23 counties and Long Beach there was no significant change in infant mortality rate from 2003 to 2004.

## Methodological Approach

Number of live births are those where the mother's residence is either one of the 58 California counties or the city health departments of Long Beach or Pasadena (See Table 3). Infant mortality rates are based on live births in either 2003 or 2004 who died during their first year of life in 2004.

<sup>4</sup> Hoyert, D.L., Heron M.P., Murphy, S.L., Kung, H., Deaths: Final Data for 2003. National vital statistics reports; vol 54, no. 13, pages 115-119. Hyattsville, MD: National Center for Health Statistics. 2006.

Reports from prior periods are available on this subject.

Beginning with the 2000 birth and death data, race reporting changed to allow for the reporting of up to three races. Race and ethnicity groups are based on the seven mutually exclusive race and ethnicity categories which comply with the Office of Management and Budget (OMB) minimum categories. These categories are: Hispanic; and the following non-Hispanic groups: Two or More Race Groups, American Indian (includes Alaskan Native), Asian, Black, Pacific Islander (includes Hawaiian), White, Other Race, and Unknown. Because race groups are not strictly comparable to those of prior years, trends by race and ethnicity should be viewed with caution.

For more Vital Statistics data, see the Department of Health Services, Center for Health Statistics Home Page at:

[www.dhs.ca.gov/OHIR](http://www.dhs.ca.gov/OHIR)

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**TABLE 1**  
**NUMBER AND RATE OF INFANT DEATHS**  
**CALIFORNIA 1980 - 2004**  
**(By Place of Residence)**

YEAR	NUMBER OF INFANT DEATHS	INFANT MORTALITY RATE <sup>1</sup>
2004	2,811	5.2
2003	2,819	5.2
2002	2,875	5.4
2001	2,815	5.3
2000	2,884	5.4
1999	2,787	5.4
1998	2,994	5.7
1997	3,091	5.9
1996	3,186	5.9
1995	3,478	6.3
1994	3,948	7.0
1993	3,970	6.8
1992	4,174	6.9
1991	4,596	7.5
1990	4,828	7.9
1989	4,853	8.5
1988	4,559	8.6
1987	4,530	9.0
1986	4,298	8.9
1985	4,475	9.5
1984	4,212	9.4
1983	4,226	9.7
1982	4,218	9.8
1981	4,276	10.2
1980	4,451	11.1

<sup>1</sup> Deaths under one year of age per 1,000 live births.

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

**TABLE 2  
 INFANT MORTALITY RATES BY RACE AND ETHNICITY <sup>1</sup>  
 CALIFORNIA, 1995-2004  
 (By Place of Residence)**

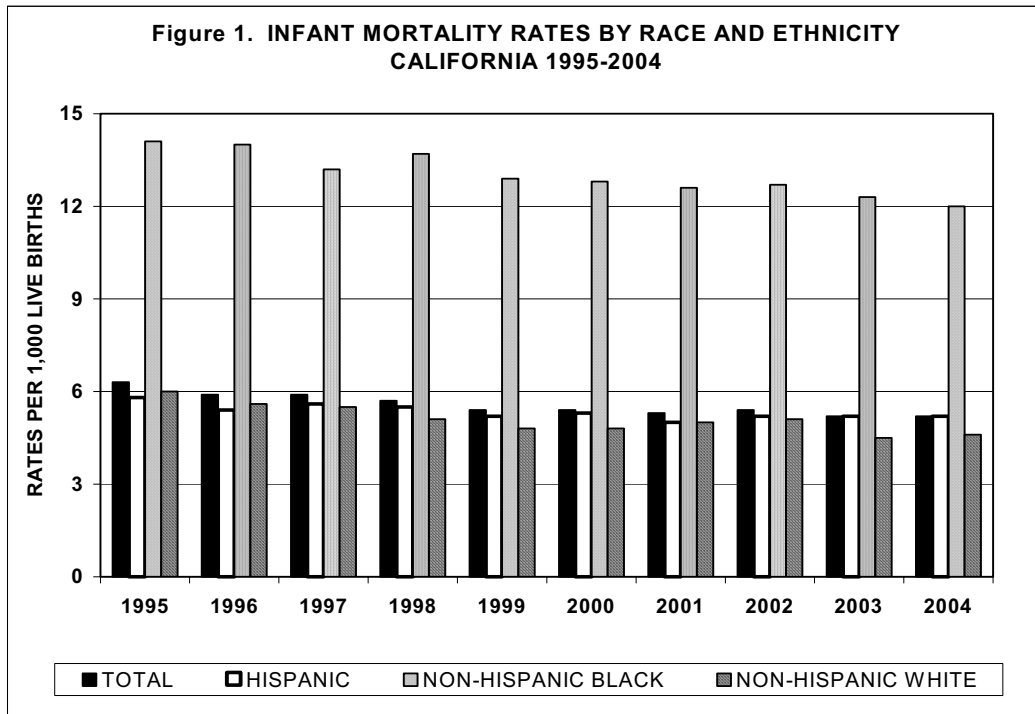
RACE AND ETHNICITY											INFANT DEATHS
	1995	1996	1997	1998	1999	2000 <sup>a</sup>	2001 <sup>a</sup>	2002 <sup>a</sup>	2003 <sup>a</sup>	2004 <sup>a</sup>	2004 <sup>a</sup>
<b>TOTAL <sup>2</sup></b>	6.3	5.9	5.9	5.7	5.4	5.4	5.3	5.4	5.2	5.2	2,811
<b>HISPANIC</b>	5.8	5.4	5.6	5.5	5.2	5.3	5.0	5.2	5.2	5.2	1,426
<b>NON-HISPANIC BLACK</b>	14.1	14.0	13.2	13.7	12.9	12.8	12.6	12.7	12.3	12.0	343
<b>NON-HISPANIC WHITE</b>	6.0	5.6	5.5	5.1	4.8	4.8	5.0	5.1	4.5	4.6	730

<sup>1</sup> Denominator of rates are by race and ethnicity of mother. All infants and births to mothers of Spanish/Hispanic origin regardless of race are included in the "Hispanic" group.

<sup>2</sup> Total Includes all race groups (White, Black, Hispanic, Asian, Pacific Islander, American Indian, Other, Two or More Races, and Unknown).

<sup>a</sup> Beginning with the 2000 birth and death data, race groups changed to allow for the reporting of up to three races. Mothers in the "White" and "Black" groups are non-Hispanic and reported the single race "White" or "Black" only. This change caused a slight discontinuity with data prior to 2000 for Black and White infants.

Note: Rates are per 1,000 live births.  
 Source: State of California, Department of Health Services, Birth and Death Records.



**TABLE 3**  
**INFANT MORTALITY RATES BY COUNTY OF RESIDENCE <sup>1</sup>, CALIFORNIA, 1995-2004**

COUNTY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	RSE < 23%	INFANT DEATHS 2004	LIVE BIRTHS 2004
<b>CALIFORNIA</b>	<b>6.3</b>	<b>5.9</b>	<b>5.9</b>	<b>5.7</b>	<b>5.4</b>	<b>5.4</b>	<b>5.3</b>	<b>5.4</b>	<b>5.2</b>	<b>5.2</b>	*	<b>2,811</b>	<b>544,685</b>
ALAMEDA	5.4	6.0	6.0	5.1	5.3	4.6	6.0	4.2	4.5	<b>5.3</b>	*	111	20,919
BUTTE	10.3	6.9	6.7	7.9	3.1	6.4	4.3	7.9	6.3	<b>5.9</b>		14	2,354
CONTRA COSTA	6.0	5.5	5.1	5.9	5.2	4.8	4.0	4.1	3.6	<b>3.8</b>	*	51	13,279
EL DORADO	3.5	6.0	a	3.6	4.9	a	5.3	6.8	a	<b>5.3</b>		10	1,897
FRESNO	8.3	7.9	8.4	6.5	6.1	7.2	5.2	6.9	6.6	<b>8.1</b>	*	128	15,896
HUMBOLDT	8.9	4.7	4.1	8.9	4.1	7.3	4.0	6.3	11.1	<b>4.6</b>		7	1,509
IMPERIAL	4.9	4.4	2.5	7.2	4.9	4.7	5.4	3.8	4.1	<b>5.6</b>		16	2,861
KERN	10.9	9.8	6.7	6.7	6.9	7.4	6.6	6.2	5.6	<b>7.1</b>	*	95	13,455
KINGS	6.1	11.5	5.8	7.9	7.4	6.0	4.2	6.5	8.9	<b>7.5</b>	*	19	2,549
LOS ANGELES	6.7	5.9	5.9	5.9	5.4	4.9	5.4	5.5	5.4	<b>5.0</b>	*	757	151,504
Long Beach <sup>2</sup>	8.1	4.9	4.4	7.1	6.1	6.7	4.6	4.3	7.0	<b>4.3</b>	*	34	7,884
Pasadena <sup>2</sup>	7.3	8.5	5.3	6.4	7.1	7.3	4.7	4.1	5.4	<b>5.3</b>		12	2,275
MADERA	7.0	6.5	4.0	6.3	5.1	5.7	5.9	6.1	6.1	<b>2.6</b>		6	2,346
MENDOCINO	8.0	9.8	4.9	5.5	a	8.3	9.4	7.4	6.4	<b>8.9</b>		10	1,125
MERCED	8.2	7.2	6.9	6.2	6.6	4.9	5.3	6.9	7.9	<b>4.4</b>	*	19	4,296
MONTEREY	5.7	5.3	5.8	6.2	4.8	5.7	5.4	6.3	5.4	<b>4.3</b>	*	32	7,396
NAPA	5.5	4.6	3.3	3.4	a	4.0	a	3.8	3.0	<b>3.1</b>		5	1,604
ORANGE	5.6	4.4	4.4	4.4	4.4	4.9	4.5	4.8	4.4	<b>4.0</b>	*	179	45,060
PLACER	6.3	6.2	1.9	4.1	6.1	7.2	4.8	5.5	2.7	<b>4.7</b>		18	3,797
RIVERSIDE	7.1	6.4	6.0	7.5	6.8	6.7	4.5	6.4	6.5	<b>5.4</b>	*	160	29,545
SACRAMENTO	7.0	6.9	7.0	6.1	6.2	5.8	6.2	6.1	5.0	<b>5.5</b>	*	114	20,836
SAN BERNARDINO	7.7	7.1	8.3	7.5	7.6	7.0	7.7	7.6	7.0	<b>6.9</b>	*	219	31,914
SAN DIEGO	4.9	5.4	5.5	5.2	5.2	5.9	5.6	4.5	4.6	<b>5.4</b>	*	246	45,758
SAN FRANCISCO	4.3	4.8	4.5	5.0	3.8	4.0	3.8	4.5	3.1	<b>3.6</b>	*	31	8,579
SAN JOAQUIN	6.4	7.6	7.2	6.0	4.6	6.9	7.2	7.3	6.7	<b>6.7</b>	*	74	11,010
SAN LUIS OBISPO	3.8	4.4	6.0	5.9	3.0	4.5	6.2	3.0	3.4	<b>6.3</b>		17	2,694
SAN MATEO	5.1	4.0	5.1	4.3	3.6	5.3	3.8	4.0	3.8	<b>3.6</b>	*	36	10,089
SANTA BARBARA	6.7	3.7	4.5	5.7	4.7	5.6	4.6	4.6	3.4	<b>4.5</b>	*	28	6,209
SANTA CLARA	5.2	5.1	5.6	3.8	4.8	4.5	4.0	3.6	4.1	<b>4.5</b>	*	119	26,537
SANTA CRUZ	3.7	6.1	4.8	5.8	4.9	4.6	3.7	3.9	4.3	<b>5.0</b>		17	3,399
SHASTA	6.9	5.9	8.5	4.6	6.0	6.0	6.2	7.6	6.3	<b>4.9</b>		10	2,046
SOLANO	5.1	7.1	6.4	6.5	5.6	4.6	4.3	7.9	4.3	<b>3.3</b>	*	19	5,688
SONOMA	4.4	4.2	4.1	5.5	5.9	4.8	3.7	5.1	4.1	<b>2.5</b>	*	15	5,964
STANISLAUS	5.9	6.8	7.1	6.8	7.0	7.0	7.4	7.8	6.6	<b>6.5</b>	*	52	8,061
SUTTER	6.0	7.9	6.6	7.8	a	6.0	a	5.5	a	<b>5.2</b>		7	1,342
TULARE	5.7	6.1	6.1	6.8	5.0	6.6	6.6	5.7	5.8	<b>4.0</b>	*	32	7,957
VENTURA	5.4	5.0	7.5	5.6	5.0	4.1	5.3	5.0	5.8	<b>7.5</b>	*	90	11,954
YOLO	5.0	9.7	6.2	3.3	3.7	6.2	5.6	4.2	4.9	<b>2.9</b>		7	2,404
YUBA	8.4	4.6	8.6	a	7.0	9.5	6.7	8.0	5.9	<b>5.1</b>		6	1,184

<sup>1</sup> Counties with 1,000 or more births and five or more infant deaths in 2004.

<sup>2</sup> Long Beach and Pasadena are city health departments. City events are included in their respective county totals.

<sup>a</sup> Rates are not calculated for fewer than five events or less than 1,000 live births.

\* Relative standard error (RSE) of infant mortality rate for 2003 or 2004 was less than 23%. Therefore for only these counties could a test of significant difference be used to evaluate the change in rate from 2003 to 2004.

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