

County of Orange Health Care Agency

Orange County Birth Outcomes, 2004



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**County of Orange
Health Care Agency**

Birth Outcomes 2004

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**County of Orange
Health Care Agency**

Birth Outcomes in Orange County

INTRODUCTION

This document provides tabulations of vital statistics on births in the County of Orange, California, in 2004, as part of a historical series of similar annual reports. These data are compiled from information provided on birth, fetal death and death certificates filed with the Birth and Death Registration Office in the County of Orange Health Care Agency.

The Executive Summary provides an overview of the Orange County population, birth characteristics, crude birth rate, fertility rate, teen births, fetal death rate, and infant mortality rate by race/ethnicity.

This document is divided into eight sections. Section 1 presents birth and infant mortality rates. Section 2 presents statistics on complications and procedures performed during pregnancy and labor and delivery, in addition to abnormal conditions and clinical procedures relating to the newborn. Section 3 presents the number and rate of Cesarean deliveries by Orange County hospitals. Section 4 presents statistics related to the birthweight of the infant and plurality. Section 5 presents statistics related to initiation of prenatal care. Section 6 presents statistics on payment source for prenatal care and delivery. The first page at the beginning of each section provides an overview of the data presented in that section.

The first two appendices provide additional information on the number of births by age and race/ethnicity of the mother, age-specific fertility rates by race/ethnicity, number and percent of infant and fetal deaths by race/ethnicity, birthweight by age and race/ethnicity, number and rate of Cesarean deliveries by race/ethnicity, and data on exclusive breastfeeding by race/ethnicity, as well as population statistics from the California Department of Finance used to calculate rates. Appendix 3, Technical Notes, contains information on definitions and methods. Data on race and ethnicity in this report differ from reports for 1999 and previous years. Beginning with the 2000 report, additional categories for race and ethnicity were used, as per the revised guidelines of the Federal Office of Management and Budget (OMB). Further information on race/ethnicity categories is detailed in Appendix 3.

The information presented can be considered official 2004 data. If you have questions or comments regarding the data presented, or for more information on birth statistics, please telephone the County of Orange Health Care Agency, Epidemiology & Assessment at (714) 834-8180.

Users are welcome to reproduce or quote this document in whole or in part provided that acknowledgement is given. Suggested citation: *County of Orange, California, Birth Outcomes, 2004*, County of Orange Health Care Agency, Santa Ana, California, July 2008. The report is available and can be downloaded from the Epidemiology & Assessment website:

<http://www.ochealthinfo.com/epi/statistics.htm>

Orange County Birth Outcomes, 2004: Executive Summary

Orange County Population

In 2004, Orange County's population of 3,036,712 consisted of 49.8% males and 50.2% females; however, males made up the majority for those < 45 years old (Appendix 2). Persons under 20 years of age constituted 29.0% of the population; 20-34 years, 21.6%; 35-54 years, 30.1%; and 55 years and older, 19.3% of the Orange County population. Orange County's increasingly diverse population consisted of 48.3% White, 32.9% Hispanic, 14.6% Asian, 1.6% Black, 0.6% American Indian or Alaskan Native (AIAN), 0.4% Native Hawaiian or Other Pacific Islander (NHOPI), and 1.7% Two or More Races. Women of childbearing age (15-44 years) constituted 22.0% of Orange County's population.

Birth Characteristics

In 2004, a total of 50,588 births took place in Orange County, of which 45,049 births were to residents of Orange County, an increase of 1.3% from 45,345 in 2003. As in previous years, there were more male births (22,900) than female births (22,149) in 2004.

The highest numbers of births (7,976) were to residents of Santa Ana, accounting for 17.7% of all resident births, followed by Anaheim (6,581), accounting for 14.6% of the births. Villa Park recorded the lowest number of births (29), accounting for 0.06% of all live births to residents of Orange County. Out of hospital births dropped slightly to 5.1% of all resident births in 2004, from 5.3% in 2003. As in 2003, the mean age of mothers giving birth in 2004 was 29.1 years.

The singleton birth rate increased slightly to 967.4 per 1,000 live births in 2004, from 967.0 in 2003; whereas, the twin rate dropped to 29.9 in 2004, from 30.5 in 2003. The triplet birth rate increased to 2.5 in 2004, from 2.1 in 2003; while the quadruplet births dropped to 8 (at a rate of 0.2) from 16 (at a rate of 0.4) in 2003.

In 2004, Cesarean section (C-Section) deliveries were performed in 31.1% of all live births, an increase of 7.2% over the 2003 rate of 29.0%. Of the 14,019 C-Section deliveries, 8,070 (57.6%) were first time C-Section births. The remaining 5,949 (42.4%) were repeat C-Section deliveries. The percentage of repeat C-Section births among women who had previous C-Section deliveries was 94.4%. Repeat C-Section births were above the Healthy People 2010 goal of 63%.

Crude Birth Rate, Fertility Rate, and Teen Birth Rate

The 2004 crude birth rate dropped slightly to 14.8 per 1,000 population, from 15.1 in 2003. The Orange County rate was 1.3% lower than the California rate of 15.0, and 5.7% higher than the U.S. rate of 14.0. The crude birth rates varied considerably by race/ethnicity (Table A). The fertility rate (number of births per 1,000 females aged 15-44 years) also dropped slightly to 67.3, from the 2003 rate of 68.1. The Orange County fertility rate of 67.3 was 2.9% lower than the California rate of 69.3, but 1.5% higher than the U.S. rate of 66.3.

The number of births to teens (15-19 years of age) was 3,079, a rate of 30.0 per 1,000 females in that age group (a slight decline from the 2003 rate of 30.8). The rate for the youngest teenagers (10-14 years of age)

remained the same as 2003 (0.4 per 1,000 females in that age group). The Orange County teen birth rate of 30.0 was 21.3% lower than the California rate of 38.1, and 27.0% lower than the U. S. rate of 41.1.

Fetal Death Rate

The number of fetal deaths (death of a fetus \geq 20 weeks of gestation) increased to 251 (5.5 deaths per 1,000 live births plus fetal deaths) in 2004 from 188 deaths (a rate of 4.1 per 1,000) in 2003. The Healthy People 2010 goal is a rate of 4.1 per 1,000.

Infant Mortality Rate and Maternal Mortality

The infant mortality rate declined to 4.0 per 1,000 live births in 2004 from 4.4 in 2003. The number of neonatal deaths (occurring in the first 27 days of life) decreased to 128 (2.8 per 1,000 live births) in 2004, from 137 (3.0 per 1,000 live births) in 2003. The number of post-neonatal deaths (occurring between the 28th day and the end of the first year of life) dropped to 50 (1.1 per 1,000 live births) in 2004, from 63 (1.4 per 1,000 live births) in 2003. Orange County met the Healthy People 2010 infant mortality target rate of 4.5 in 2003. The number of maternal deaths decreased from 7 in 2003 to 2 in 2004.

The variability in the crude, fertility, teen birth, fetal death, and infant mortality rates by race/ethnicity is shown in Table A and Figure A.

**Table A. Crude Birth Rates, Fertility Rates, Teen Birth Rates, Infant Mortality, and Fetal Death Rates by Race/Ethnicity of the Mother
County of Orange, Resident Births/Deaths, 2004**

Race/Ethnicity of the Mother	Crude Birth Rate	Fertility Rate	Teen Birth Rate	Infant Mortality Rate	Fetal Death Rate
Hispanic	22.4	89.4	63.2	4.6	6.0
Asian	15.5	62.7	4.6	2.3	4.5
NHOPI	16.0	59.6	22.6	--	--
White	9.7	50.7	8.0	4.0	4.8
Black	9.3	40.4	22.0	--	15.5
Two or More Races	7.2	35.7	12.8	0.0	--
AIAN	4.3	18.3	--	0.0	--
Total	14.8	67.3	30.0	4.0	4.1

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

--Rates not calculated for fewer than five events.

Prenatal Care

In 2004, 91.7% of Orange County mothers reported beginning prenatal care in the first trimester. This is an increase of 0.1% over 2003, when 91.6% of mothers reported beginning prenatal care in the first trimester. Orange County met the Healthy People 2010 goal of 90% of mothers receiving prenatal care in the first trimester. Between 1995 and 2004, the percent of women initiating prenatal care in the first trimester increased by 11.4%.

Low Birthweight Infants

There were 2,782 infants of low birthweight (less than 2,500 grams or 5 pounds, 8 ounces), a rate of 61.8 per 1,000 live births, which was an increase of 3.2% from the rate of 59.9 per 1,000 live births in 2003. In 2004, Orange County did not achieve the Healthy People 2010 goal of no more than 50 low birthweight births per 1,000 live births. The rate of very low birthweight (less than 1,500 grams or 3 pounds, 5 ounces) in 2004 was 10.6 per 1,000 live births, an increase of 6.0% from 2003 when the rate was 10.0 per 1,000 live births. Orange County did not meet the Healthy People 2010 goal of no more than 9 very low birthweight births per 1,000 live births. Between 1995 and 2004, the Orange County low birthweight rate increased 16.8%.

Section 1. Birth, Fetal & Infant Mortality Rates

Crude birth, fertility, and teen birth rates are measures of birth patterns, provide comparisons across different race/ethnicity and age categories, and allow for comparison between geographic regions.

The number of live births to Orange County residents decreased from 45,345 in 2003 to 45,049 in 2004, a decline of 0.7%. Within Orange County, the crude birth rates for cities varied from a high of 22.8 in Santa Ana to a low of 4.7 in Villa Park (Table 1). The 2004 crude birth rate of 14.8 per 1,000 total population was 2.0% lower than the 2003 rate of 15.1. The 2004 rate is the lowest rate on record for Orange County beginning with 1986. The Orange County rate was 1.3% lower than the California rate of 15.0, but 5.7% higher than the U.S. rate of 14.0 (Table 2). The crude rates in Orange County varied markedly by race/ethnicity of the mother, from a high of 22.4 among Hispanics to a low of 4.3 among American Indians or Alaskan Natives (AIAN) (Table 3, Figure 1). The percent of births to Hispanic mothers was 49.7%, although Hispanics made up 32.9% of the Orange County population. This was in contrast with the pattern seen among Whites; the percentage of births to White mothers was 31.6%; Whites comprised 48.3% of the Orange County population in 2004 (Figures 2 & 3 on page 9).

In 2004, the Orange County fertility rate of 67.3 per 1,000 females aged 15-44 years was 1.2% lower than the 2003 rate of 68.1. The 2004 Orange County rate was 2.9% lower than the California rate of 69.3, but 1.5% higher than the U.S. rate of 66.3 (Table 4). Although the Orange County fertility rate was lower than the California rate, the Orange County Hispanic fertility rate (89.4) was 0.9% higher than the California Hispanic rate (88.6) and 8.5% lower than the U.S. Hispanic rate (97.7). The fertility rate in Orange County varied from a high of 89.4 for Hispanics to a low of 18.3 for AIAN (Table 5).

As with the crude and fertility rates, the 2004 teen birth rate is the lowest rate on record for Orange County beginning with 1986. The 2004 Orange County teen birth rate of 30.0 per 1,000 females aged 15-19 years decreased 2.6%, compared to the 2003 rate of 30.8. The Orange County rate was 21.3% lower than the California rate of 38.1, and 27.0% lower than the U. S. rate of 41.1 (Table 6). In 2004, the Orange County Hispanic teen birth rate (63.2) was 1.7% lower than the California Hispanic teen birth rate (64.3) and 23.5% lower than the U.S. Hispanic teen birth rate (82.6). The Orange County teen birth rate of 30.0 was markedly lower compared to the neighboring California counties: San Diego (35.5), Los Angeles (40.9), Riverside (42.5), and San Bernardino (45.1) (Table 7). Among groups for whom a rate could be calculated, the teen birth rate in Orange County varied from a high of 63.2 per 1,000 live births for Hispanics to a low of 4.6 for Asians (Table 8).

In 2004, the infant mortality rate of 4.0 per 1,000 live births decreased from the 2003 rate of 4.4. Orange County met and surpassed the Healthy People 2010 infant mortality goal of 4.5 per 1,000 live births. The Orange County infant mortality rate was 23.1% lower than the California rate of 5.2, and 41.2% lower than the U.S. rate of 6.8 (Table 9). The infant mortality rate for Orange County varied from a high of 4.6 for Hispanics to a low of 2.3 for Asians (Table 10). The fetal death rate for Orange County increased from 4.1 per 1,000 live births plus fetal deaths in 2003 to 5.5 in 2004, an increase of 34.1%. The fetal death rate varied from a high of 15.5 for Blacks to a low of 4.5 for Asians (Table 11). Orange County did not meet the Healthy People 2010 fetal death goal of 4.1 in 2004.

Section 1. Birth, Fetal & Infant Mortality Rates

Table 1. Live Births & Birth Rates for Orange County Cities
County of Orange
Resident Births, 2004

City of Residence	Live Births	Population ¹	Rate /1,000 Population
Aliso Viejo	868	44,846	19.4
Anaheim	6,581	341,044	19.3
Brea	453	38,991	11.6
Buena Park	1,229	80,697	15.2
Costa Mesa	1,709	113,101	15.1
Cypress	458	48,488	9.4
Dana Point	259	36,561	7.1
Fountain Valley	584	56,566	10.3
Fullerton	2,027	134,293	15.1
Garden Grove	2,823	171,178	16.5
Huntington Beach	2,239	198,996	11.3
Irvine	2,053	171,961	11.9
Laguna Beach	197	24,794	7.9
Laguna Hills	382	33,038	11.6
Laguna Niguel	689	65,721	10.5
La Habra	1,010	61,504	16.4
Lake Forest	806	77,728	10.4
La Palma	173	16,053	10.8
Los Alamitos	181	11,942	15.2
Mission Viejo	1,078	97,831	11.0
Newport Beach	559	82,244	6.8
Orange	2,097	136,809	15.3
Placentia	782	49,932	15.7
Rancho Santa Margarita	821	49,063	16.7
San Clemente	999	63,069	15.8
San Juan Capistrano	500	35,863	13.9
Santa Ana	7,976	349,407	22.8
Seal Beach	136	24,984	5.4
Stanton	597	38,645	15.4
Tustin	1,269	70,397	18.0
Villa Park	29	6,207	4.7
Westminster	1,325	91,538	14.5
Yorba Linda	623	64,042	9.7
Balance of County ²	1,537	132,356	11.6
Total ³	45,049	3,019,889	14.9

¹ State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2006, with 2000 Benchmark*. Sacramento, California, May, 2006.

² Population and rate are different from page two because Revised Historical City, County, and State Population Estimates are derived differently than are Population Projections by Race/Ethnicity, Gender and Age.

³ Includes one mother for whom city of residence is unknown.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 2. Comparison of Orange County Crude Birth Rates with California & the United States
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Rate /1,000 Population		
	OC ^a	CA ^b	US ^c
Hispanic	22.4	21.5	22.9
Asian	15.5	15.4	16.8 ^e
NHOPI	16.0	20.1	N/A
White	9.7	10.0 ^d	11.7
Black	9.3	11.8	15.1
Two or More Races	7.2	9.8	N/A
AIAN	4.3	7.5	14.0
Other ^f	N/A	N/A	N/A
Withheld ^f	N/A	N/A	N/A
Unknown ^f	N/A	N/A	N/A
Total	14.8	15.0	14.0

^a Rates are based on State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

^b California birth rates were computed using number of births from TABLE 2-4 of the Vital Statistics of California reports (VSCA 02-04): Number of Live Births by Age and Race/Ethnic Group of Mother, California, 2000-2004 (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>), and population projections from State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

^c Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2004. National vital statistics reports; vol 55 no 1. Hyattsville, MD: National Center for Health Statistics. 2006.

^d Includes White/Other/Unknown, therefore may not be comparable to Whites in Orange County and the U.S.

^e Includes Asian & Pacific Islander, therefore may not be comparable to Asians in Orange County and California.

^f Rates not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 3. Crude Birth Rates by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Population¹
Hispanic	22,381	22.4
Asian	6,889	15.5
NHOPI	171	16.0
White	14,237	9.7
Black	446	9.3
Two or More Races	378	7.2
AIAN	72	4.3
Other ²	7	N/A
Withheld ²	456	N/A
Unknown ²	12	N/A
Total	45,049	14.8

¹ State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

² Rate not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

Withheld includes those who did not specify their race/ethnicity.

AIAN is American Indian or Alaskan Native.

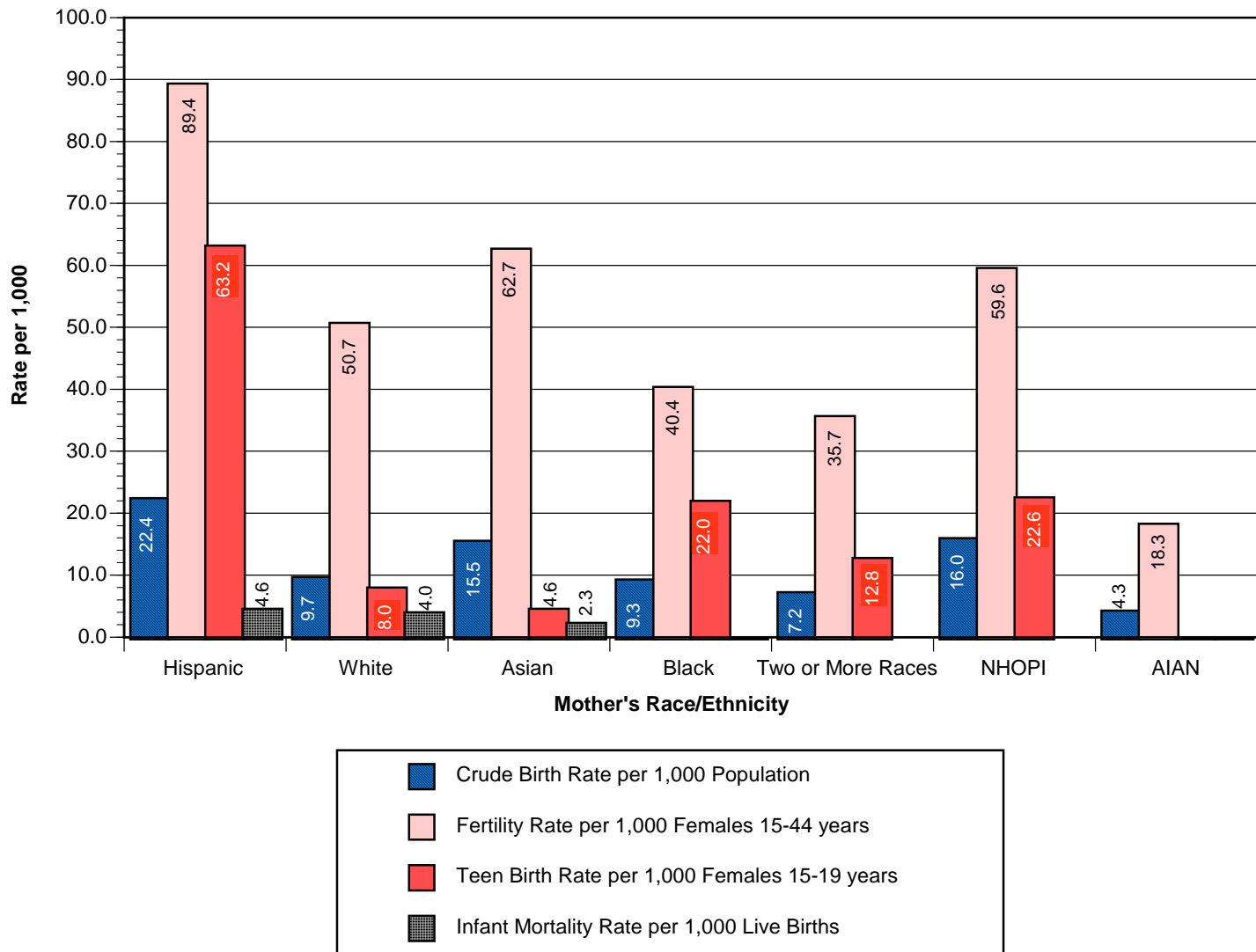
NHOPI is Native Hawaiian or Other Pacific Islander.

Asian includes Other Asian & Southeast Asian.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Figure 1. Crude Birth Rates, Fertility Rates, Teen Birth Rates & Infant Mortality Rates by Race/Ethnicity
County of Orange
Resident Births, 2004**



Rates not calculated for fewer than five events.

Note: Infant deaths are based on 2004 Orange County Death Statistical Master File (Two or More race/ethnicity category is not available in the death file).

Asian includes Other Asian and Southeast Asian.

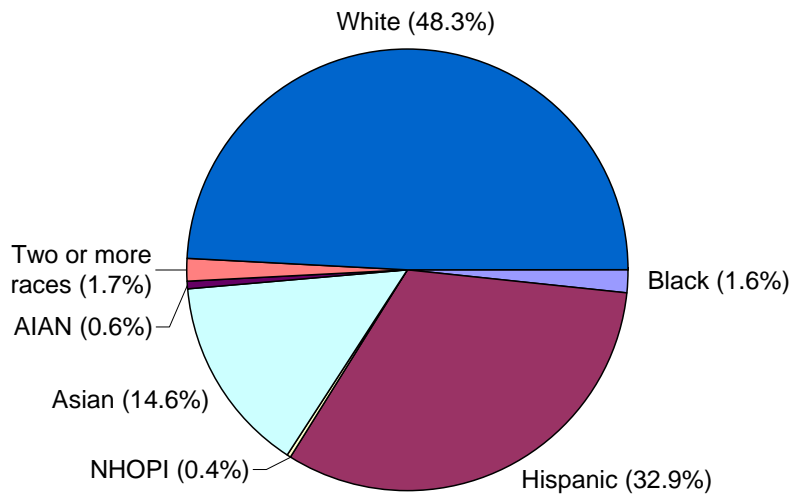
AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

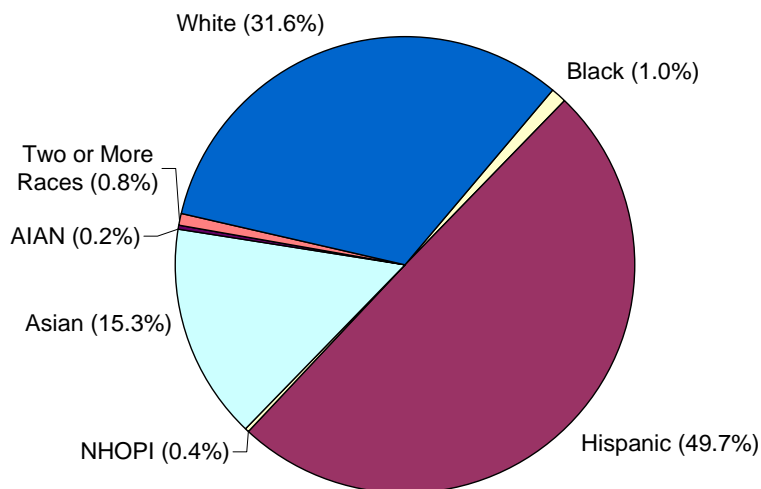
Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Figure 2. Population Composition¹ by Race/Ethnicity
County of Orange, Population Estimates², 2004**



**Figure 3. Live Births by Race/Ethnicity Composition¹ of the Mother
County of Orange, Resident Births, 2004**



¹ Due to rounding, percentages may not add to 100.

² *State of California, department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000-2050.* Sacramento, California, May 2004.

Births among Withheld/Unknown/Other race/ethnicity (n=475) were excluded; therefore percent may not add to 100.

AIAN is American Indian and Natives of Alaska; NHOPI is Native of Hawaii and Other Pacific Islanders.

Asian includes Other Asian and Southeast Asian.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 4. Comparison of Orange County Fertility Rates with California & the United States
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Rate /1,000 Females 15-44 Years		
	OC ^a	CA ^b	US ^c
Hispanic	89.4	88.6	97.7
Asian	62.7	66.0	67.2 ^e
NHOPI	59.6	78.5	N/A ^e
White	50.7	55.5 ^d	58.5
Black	40.4	51.6	66.7
Two or More Races	35.7	46.8	N/A
AIAN	18.3	32.7	58.9
Other ^f	N/A	N/A	N/A
Withheld ^f	N/A	N/A	N/A
Unknown ^f	N/A	N/A	N/A
Total	67.3	69.3	66.3

^a Rates are based on State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

^b TABLE 2-2 of the Vital Statistics of California reports: (VSCA 02-02): General Fertility Rates, Total Fertility Rates, and Birth Rates by Age and Race/Ethnic Group of Mother, 2000-2004. (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>).

^c Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2004. National vital statistics reports; vol 55 no 1. Hyattsville, MD: National Center for Health Statistics. 2006.

^d Includes White/Other/Unknown, therefore may not be comparable to Whites in Orange County and the U.S.

^e Includes Asian and Pacific Islander, therefore may not be comparable to Asians in Orange County and California.

^f Rates not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 5. Fertility Rates by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Females 15-44 Years¹
Hispanic	22,316	89.4
Asian	6,867	62.7
NHOPI	171	59.6
White	14,182	50.7
Black	446	40.4
Two or More Races	378	35.7
AIAN	72	18.3
Other ²	7	N/A
Withheld ²	450	N/A
Unknown ²	9	N/A
Total	44,898	67.3

¹ State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

² Rate not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

Withheld includes those who did not specify their race/ethnicity.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Asian includes Other Asian & Southeast Asian.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 6. Comparison of Orange County Teen Birth Rates with California & the United States
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Rate /1,000 Females 15-19 Years		
	OC ^a	CA ^b	US ^c
Hispanic	63.2	64.3	82.6
Black	22.0	37.3	63.1
NHOPI	22.6	33.7	N/A ^e
Two or More Races	12.8	22.8	N/A
White	8.0	16.7 ^d	26.7
Asian	4.6	11.3	17.3 ^e
AIAN	--	20.9	52.5
Other ^f	N/A	N/A	N/A
Withheld ^f	N/A	N/A	N/A
Unknown ^f	N/A	N/A	N/A
Total	30.0	38.1	41.1

^a Rates are based on State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

^b TABLE 2-2 of the Vital Statistics of California reports: (VSCA 02-02): General Fertility Rates, Total Fertility Rates, and Birth Rates by Age and Race/Ethnic Group of Mother, 2000-2004. (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>).

^c Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2004. National vital statistics reports; vol 55 no 1. Hyattsville, MD: National Center for Health Statistics. 2006.

^d Includes White/Other/Unknown, therefore may not be comparable to Whites in Orange County and the U.S.

^e Includes Asian and Pacific Islander, therefore may not be comparable to Asians in Orange County and California. AIAN is American Indian or Alaskan Native. NHOPI is Native Hawaiian or Other Pacific Islander.

^f Rate not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

-- Rates not calculated for fewer than five events.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

Table 7. Comparison of Orange County Teen Birth Rate with Selected Counties ¹
County of Orange
Resident Births, 2004

Selected California Counties	Rate /1,000 Females 15-19 Years²
Orange	30.0
San Diego	35.5
Los Angeles	40.9
Riverside	42.5
San Bernardino	45.1

¹ TABLE 2-30 of the Vital Statistics of California reports: (VSCA 02-30): General Fertility Rates by Age of Mother, California Counties, 2004. (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>).

² Rates are based on State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.
Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 8. Teen Birth Rates by Race/Ethnicity of the Mother (Aged 15-19 Years)
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Females 15-19 Years¹
Hispanic	2,560	63.2
Black	40	22.0
NHOPi	11	22.6
Two or More Races	31	12.8
White	338	8.0
Asian	66	4.6
AIAN	3	--
Other ²	0	N/A
Withheld ²	30	N/A
Unknown ²	0	N/A
Total	3,079	30.0

¹ State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

² Rate not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

Withheld includes those who did not specify their race/ethnicity.

AIAN is American Indian or Alaskan Native.

NHOPi is Native Hawaiian or Other Pacific Islander.

Asian includes Other Asian & Southeast Asian.

-- Rates not calculated for fewer than five events.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 9. Comparison of Orange County Infant Mortality Rates with California & the United States
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Infant	Rate /1,000 Live Births		
	OC	CA ¹	US ²
Hispanic	4.6	5.2	N/A
White	4.0	4.6	5.7
Black	--	12.0	13.8
Asian	2.3	N/A	N/A
NHOPI	--	N/A	N/A
Total	4.0	5.2	6.8

Healthy People 2000 Infant Mortality Goal per 1,000 Live Births	7.0
Healthy People 2010 Infant Mortality Goal per 1,000 Live Births	4.5

Note: Infant deaths are based on 2004 Orange County Death Statistical Master File.

Asian includes Other Asian and Southeast Asian.

¹ <http://www.dhs.ca.gov/hisp/chs/OHIR/reports/others/infantdeath2004.pdf>

² Minino AM, Heron M, Smith BL, Kochanek KD. Deaths: Final data for 2004. Health E-Stats.

Released November 24, 2006. (<http://www.cdc.gov/nchs/products/pubs/hestats/finaldeaths04/finaldeaths04.htm>)

-- Rates not calculated for fewer than five deaths.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 1. Birth, Fetal & Infant Mortality Rates

**Table 10. Infant Mortality Rates by Race/Ethnicity of the Infant
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Infant	Infant Deaths	Rate /1,000 Live Births
Hispanic	102	4.6
White	57	4.0
Asian	16	2.3
Black	3	--
NHOPI	1	--
Total	179	4.0
Healthy People 2000 Infant Mortality Goal per 1,000 Live Births		7.0
Healthy People 2010 Infant Mortality Goal per 1,000 Live Births		4.5

Note: Infant deaths are based on 2004 Orange County Death Statistical Master File.

-- Rates not calculated for fewer than five deaths.

Asian includes Other Asian and Southeast Asian.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 11. Fetal Death Rates by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Fetal Deaths	Rate /1,000 Live Births Plus Fetal Deaths
Hispanic	134	6.0
White	69	4.8
Asian	31	4.5
Black	7	15.5
Other/Unknown/Withheld	8	16.6
AIAN	1	--
NHOPI	1	--
Total	251	5.5
Healthy People 2000 Fetal Death Goal per 1,000 Live Births		5.0
Healthy People 2010 Fetal Death Goal per 1,000 Live Births		4.1

Note: Fetal deaths are based on 2004 Orange County Fetal Death File.

-- Rates not calculated for fewer than five deaths.

Asian includes Other Asian and Southeast Asian.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 2. Complications, Procedures & Abnormal Conditions

The rate for complications, concurrent illnesses and risk factors during pregnancy remained essentially unchanged between 2003 (130.9 per 1,000 live births) and 2004 (131.0) (Table 12). The rate for complications during labor and delivery dropped from 203.6 in 2003 to 176.1 in 2004, a decrease of 13.5%. The rate for abnormal conditions among newborns dropped from 8.8 in 2003 to 7.2 in 2004, a decrease of 18.2%. There was also a decrease of 7.7%, in the rate of clinical procedures related to newborns per 1,000 live births (from 54.5 per 1,000 live births in 2003 to 50.3 in 2004).

At 17.6 per 100 deliveries, Orange County attained the Healthy People 2010 goal of reducing maternal complications during hospitalized labor and delivery to 24.0 per 100 deliveries (Table 13). There was a 13.7% decrease in the rate of maternal complications during hospitalized labor and delivery between 2003 (20.4) and 2004 (17.6). The number of maternal deaths fell from 7 in 2003 (15.4 per 100,000 live births) to 2 in 2004 (4.4), a drop of 71.4%. The Orange County maternal death rate at 4.4 exceeded the Healthy People 2010 goal of 3.3 per 100,000 live births (Table 13). Maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (World Health Organization).

Section 2. Complications, Procedures & Abnormal Conditions

Table 12. Complications & Procedures of Pregnancy & Concurrent Illnesses
County of Orange
Resident Births, 2004

Complications and procedures of pregnancy and concurrent illnesses are selected from a predetermined list of numeric codes that are entered onto the birth certificate.

<u>Complications, Concurrent Illnesses¹ and Risk Factors</u>	<u>Number</u>	<u>Rate /1,000 Live Births</u>
Premature labor	1,650	36.6
Diabetes	1,474	32.7
Pre-Eclampsia (pregnancy-induced hypertension, edema, and/or proteinuria)	724	16.1
Tobacco use during pregnancy	393	8.7
Polyhydramnios / Oligohydramnios	370	8.2
Anemia (hct. < 30 and/or hgb. < 10)	278	6.2
Hepatitis B (acute infection or carrier)	190	4.2
Any previous live birth or fetal death < 37 weeks gestation	106	2.4
Hypertension, chronic	97	2.2
Rh sensitization	91	2.0
Genital herpes	90	2.0
Any previous live birth or fetal death > 3,999 grams birthweight	79	1.8
Sexually transmitted disease, other than genital herpes	76	1.7
Uterine bleeding before labor	75	1.7
Incompetent cervix (with or without cerclage)	68	1.5
Any previous live birth or fetal death < 2,500 grams birthweight	39	0.9
Cardiac disease	27	0.6
Lung disease (acute or chronic)	23	0.5
Pyelonephritis	22	0.5
Hemoglobinopathy	14	0.3
Renal disease	8	0.2
<u>Eclampsia (convulsions or coma)</u>	<u>7</u>	<u>0.2</u>
Total	5,901	131.0
<u>Procedures (Number of mothers reporting at least one of the following)</u>		
Ultrasound	32,794	728.0
Electronic fetal monitoring	3,305	73.4
Amniocentesis	371	8.2
Tocolysis	114	2.5
Cervical cerclage	66	1.5
<u>Chorionic villus sampling</u>	<u>11</u>	<u>0.2</u>
Total Procedures	36,661	813.8
Other Complications and Procedures	1,699	37.7

¹ Rubella was reported as a concurrent illness for 8 mothers; however, historically this has been miscoded to represent the immune status of the mother.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 2. Complications, Procedures & Abnormal Conditions

**Table 13. Complications & Procedures of Labor & Delivery
County of Orange
Resident Births, 2004**

Complications and procedures of labor and delivery are selected from a predetermined list of numeric codes that are entered onto the birth certificate.

<u>Complications</u>	<u>Number</u>	<u>Rate /1,000 Live Births</u>
Presence of meconium, moderate to heavy	1,764	39.2
Breech or other abnormal presentation	1,182	26.2
Fetal distress	751	16.7
Febrile (>100° F, or >38° C)	713	15.8
Other dysfunctional labor	688	15.3
Fetopelvic disproportion	655	14.5
Pre-eclampsia (pregnancy-induced hypertension, edema, and/or proteinuria)	470	10.4
Prolonged labor (>20 hours)	409	9.1
Premature rupture of membrane (>12 hours)	370	8.2
Precipitous labor	282	6.3
Placenta previa	157	3.5
Abruptio placenta	115	2.6
Other excessive bleeding	99	2.2
Shoulder dystocia	67	1.5
Genital herpes	59	1.3
Amnionitis / sepsis	52	1.2
Unsuccessful vaginal birth (after C-section)	40	0.9
Cord prolapse	33	0.7
Eclampsia (convulsions or coma)	10	0.2
Seizures during labor	7	0.2
Anesthetic complications	6	0.1
<u>Maternal death¹</u>	<u>2</u>	<u>0.0</u>
Total Complications	7,931	176.1
<u>Procedures (Number of mothers reporting at least one of the following)</u>		
Electronic fetal monitoring	35,446	786.8
Stimulation of labor	4,751	105.5
Induction of labor	4,550	101.0
Ultrasound	462	10.3
Amniocentesis	58	1.3
Tocolysis	56	1.2
Transport of mother from another facility prior to delivery	23	0.5
<u>Maternal blood transfusion</u>	<u>12</u>	<u>0.3</u>
Total Procedures	45,358	1,006.9
Other Complications and Procedures	5,236	116.2

¹ Maternal deaths are based on 2004 Orange County Death Statistical Master File.

Healthy People 2010 goal for maternal complications during hospitalized labor and delivery is 24.0 per 100 deliveries.

Healthy People 2010 goal for maternal death is 3.3 per 100,000 live births.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 2. Complications, Procedures & Abnormal Conditions

**Table 14. Abnormal Conditions & Clinical Procedures Relating to the Newborn
County of Orange
Resident Births, 2004**

Abnormal conditions and clinical procedures relating to the newborn are selected from a predetermined list of numeric codes that are entered onto the birth certificate.

<u>Abnormal Conditions</u> ¹	<u>Number</u>	<u>Rate /1,000 Live Births</u>
Hyaline membrane disease or RDS (Respiratory Distress Syndrome)	73	1.6
Other anomalies ²	66	1.5
Other anomalies of the respiratory system	51	1.1
Down's syndrome	25	0.6
Cleft palate with cleft lip	15	0.3
Meconium aspiration syndrome	13	0.3
Other anomalies of ear, face, and/or neck	8	0.2
Drug withdrawal syndrome	7	0.2
Other anomalies of the heart	6	0.1
Anemia	6	0.1
Other anomalies of digestive system	5	0.1
Tracheo esophageal fistula, or esophageal atresia or stenosis	5	0.1
Autosomal Trisomies	5	0.1
Ventricular septal defect	5	0.1
Talipes	5	0.1
Other Polydactyly	4	--
Anencephalus	4	--
Atrial septal defect	4	--
Patent ductus arteriosus	4	--
Cleft palate	4	--
Cleft lip	4	--
Other congenital anomalies	4	--
Total Abnormal Conditions	323	7.2
<u>Procedures Relating to the Newborn</u>		
Neonatal Intensive Care Unit (NICU)	1,381	30.7
Transfer of newborn to another facility	413	9.2
Assisted ventilation >= 30 minutes	349	7.7
<u>Assisted ventilation < 30 minutes</u>	<u>121</u>	<u>2.7</u>
Total Procedures	2,264	50.3
Other Abnormal Conditions and Procedures	1,150	25.5

¹ The Vital Statistics Section of the California Department of Health Services Center for Health Statistics considers the birth certificate data regarding congenital abnormalities to be unreliable. It is well documented that congenital anomalies, except for the most visible and most severe, are incompletely reported on birth certificates. The completeness of reporting specific anomalies depends on how easily they are recognized in the short time between birth and birth-registration.

² Includes all anomalies with fewer than four reported occurrences.

--Rates not calculated for fewer than five events.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 3. Number & Rate of Cesarean Deliveries

In 2004, a Cesarean section (C-Section) delivery was performed in 31.1% of Orange County births, an increase of 7.2% from the 29.0% of C-Section deliveries performed in 2003; the 2004 rate was the highest since 1990. The Orange County C-Section delivery rate was 6.1% higher than California¹ (29.3%), and 6.9% higher than the United States² (29.1%) (Table 15).

The percent of primary or first C-Section births (among women with no previous C-Section delivery) rose marginally, from 17.4 per 100 live births in 2003 to 17.9 in 2004. The Orange County first C-Section delivery rate was 4.7% higher than California¹ (17.1%), and 13.1% lower than the United States² (20.6%). At 16.8%, the rate of first C-Section deliveries among Orange County women giving birth for the first time fell short of meeting the Healthy People 2010 goal of 15.0% (Table 15).

The rate of repeat C-Section delivery (among women who had a previous C-Section delivery) was 94.4% for Orange County, about the same as California¹ (94.6%), but 4.0% higher than the U.S. (90.8%) (Table 15). The Healthy People 2010 goal for prior C-Section births was 63.0% of live births.

In Orange County, Coastal Communities Hospital had the highest (37.1%), and Placentia Linda Community Hospital, the lowest (22.8%) percent of C-Section deliveries among births to Orange County residents in 2004 (Table 16).

¹ TABLE 2-25 of the Vital Statistics of California reports: (VSCA 02 25): Number and Percent of California Counties & Selected City Health Departments, 2004. (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>)

² Martin JA, Hamilton BE, Sutton PD et al. Births: Final data for 2004. National vital statistics reports; vol 55 no1. Hyattsville, Maryland: National Center for Health Statistics. 2006.

Section 3. Number & Rate of Cesarean Deliveries

Table 15. Comparison of Orange County Primary and Repeat Cesarean Section Delivery with California and the United States, 2004
County of Orange
Resident Births, 2004

Cesarean Delivery	Percent of C-Section Delivery		
	OC	CA ^d	US ^e
Primary ^a (First) Cesarean	17.9%	17.1%	20.6%
<i>First C-Section for First Time Birth</i>	16.8%	--	--
Repeat ^b Cesarean	94.4%	94.6%	90.8%
Total ^c Cesarean	31.1%	29.3%	29.1%

^a Percent of mothers with no previous cesarean delivery.

^b Percent of mothers who had a previous cesarean delivery is calculated by dividing the number of repeat cesarean deliveries by the number of repeat cesarean deliveries plus the number of vaginal births after a previous cesarean delivery (VBAC).

^c Percent of all live births by cesarean delivery.

^d TABLE 2-25 of the Vital Statistics of California reports: (VSCA 02 25): Number and Percent of California Counties and Selected City Health Departments, 2004. (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>)

^e Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2004. National vital statistics reports; vol 55 no 1. Hyattsville, MD: National Center for Health Statistics. 2006.

Healthy People 2000 objective for repeat C-Section birth is 65% of live births to women with a prior cesarean birth.

Healthy People 2010 objective for repeat C-Section birth is 63% of live births to women with a prior cesarean birth.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 3. Number & Rate of Cesarean Deliveries

**Table 16. Number & Percent of Cesarean Delivery by Orange County Hospital
County of Orange Births, 2004**

Hospital	Total Births	Total C-Section	First C-Section	Repeat C-Section	C-Section Percent of Total Births
Anaheim General Hospital					
Total Births	511	145	73	72	28.4%
Orange County Residents	488	138	71	67	28.3%
Anaheim Memorial M.C.					
Total Births	1,847	538	284	254	29.1%
Orange County Residents	1,624	475	247	228	29.2%
Coastal Communities Hospital					
Total Births	2,780	1,034	563	471	37.2%
Orange County Residents	2,731	1,014	549	465	37.1%
Fountain Valley Regional M.C.					
Total Births	3,634	1,048	633	415	28.8%
Orange County Residents	3,398	979	589	390	28.8%
Garden Grove Hosp. & M.C.					
Total Births	3,084	972	497	475	31.5%
Orange County Residents	2,789	868	431	437	31.1%
Hoag Memorial Hospital					
Total Births	4,668	1,734	1,101	633	37.1%
Orange County Residents	4,342	1,605	1,016	589	37.0%
Irvine Medical Center					
Total Births	2,044	723	488	235	35.4%
Orange County Residents	1,936	666	453	213	34.4%
Kaiser Foundation, Anaheim					
Total Births	3,231	871	521	350	27.0%
Orange County Residents	2,645	708	425	283	26.8%
La Palma Intercommunity					
Total Births	670	164	85	79	24.5%
Orange County Residents	418	103	56	47	24.6%
Los Alamitos M.C.					
Total Births	1,538	403	200	203	26.2%
Orange County Residents	479	119	59	60	24.8%
Mission Hosp Regional M.C.					
Total Births	3,104	899	552	347	29.0%
Orange County Residents	2,958	846	522	324	28.6%
Orange Coast Memorial M.C.					
Total Births	1,479	412	247	165	27.9%
Orange County Residents	1,225	331	201	130	27.0%

(continued on next page)

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 3. Number & Rate of Cesarean Deliveries

**Table 16. Births & Rates of Cesarean Delivery by Orange County Hospital (continued)
County of Orange Births, 2004**

Hospital	Total Births	Total C-Section	First C-Section	Repeat C-Section	C-Section Percent of Total Births
Placentia Linda Community					
Total Births	814	195	93	102	24.0%
Orange County Residents	658	150	70	80	22.8%
Saddleback Memorial M.C.					
Total Births	3,278	1,052	679	373	32.1%
Orange County Residents	3,068	986	638	348	32.1%
South Coast Medical Center					
Total Births	527	141	86	55	26.8%
Orange County Residents	496	136	85	51	27.4%
St. Joseph Hospital					
Total Births	4,779	1,614	899	715	33.8%
Orange County Residents	4,237	1,429	790	639	33.7%
St. Jude Medical Center - Fullerton					
Total Births	2,255	673	426	247	29.8%
Orange County Residents	1,569	445	278	167	28.4%
UCI Medical Center					
Total Births	1,487	467	252	215	31.4%
Orange County Residents	1,365	429	230	199	31.4%
Western Medical Center-Anaheim					
Total Births	2,916	750	335	415	25.7%
Orange County Residents	2,814	720	319	401	25.6%
Western Medical Center-Santa Ana					
Total Births	3,626	1,186	610	576	32.7%
Orange County Residents	3,511	1,141	587	554	32.5%
At Home					
Total Births	71	N/A	N/A	N/A	N/A
Orange County Residents	70	N/A	N/A	N/A	N/A
Other locations/Unknown					
Total Births	2,245	733	456	277	32.7%
Orange County Residents	2,228	731	454	277	32.8%
Total					
Total Births	50,588	15,754	9,080	6,674	31.1%
Orange County Residents	45,049	14,019	8,070	5,949	31.1%

Note: Due to rounding, percentages may not add to 100.

Healthy People 2010 objective for repeat C-Section birth is 63% of live births to women with a prior cesarean birth.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

The Orange County low birthweight (less than 2,500 grams or 5 pounds, 8 ounces) rate per 1,000 live births increased 3.2% between 2003 (59.9) and 2004 (61.8); Orange County failed to meet the Healthy People 2000 and 2010 goals of 50 per 1,000 live births. In 2004, the Orange County low birthweight rate was the highest since 1990. Very low birthweight (less than 1,500 grams or 3 pounds, 5 ounces), increased from 10.0 in 2003 to 10.6 per 1,000 live births in 2004, an increase of 6.0%, and failed to meet the Healthy People 2010 goal of 9.0 per 1,000 live births. As with the low birthweight rate, very low birthweight rate in 2004 was the highest since 1990. The Orange County low birthweight rates varied by race/ethnicity of the mother. Black infants had the highest rate of low birthweight (103.1 per 1,000 live births) and very low birthweight (31.4) compared to all other race/ethnicity categories (Tables 17 & 18). Between 2000 and 2004, the low birthweight rate rose 13.4%, from 54.5 to 61.8 per 1,000 live births (Figure 4), and remained higher than the Healthy People 2000 and 2010 goals throughout the period. During the same period, the very low birthweight rate met the Healthy People 2000 goal of 10.0 each year except 2001 and 2004, but failed to meet the Healthy People 2010 goal of 9.0. The proportion of low birthweight births were higher among women in the <19 and 35-44 year age groups, compared to women in the 20-34 year age group (Figure 5). The low birthweight rates were higher for younger mothers under 15 and older mothers over 44 years of age (137.3 and 204.1 per 1,000 live births in their respective age categories) (Table 19a).

Among women aged 45 years and older, there were a total of 98 births in 2004. Between 2000 and 2004, the multiple births in this age group increased from 15 (194.8 per 1,000 live births) to 24 births (244.9). There were 62 singleton births (805.2 per 1,000 live births) in 2000 for women in this age group, compared to 74 (755.1) in 2004 (Table 21).

Of the 43,579 singleton births, 28.9% were born to mothers in the 30-34 year age group, followed by the 25-29 year age group with 25.2%. Of the 1,349 twin births, 32.0% were born to mothers in the 30-34 year age group, followed by the 35-39 year age group with 26.2%. Triplet births (n=111) reflected a pattern similar to the twin births: 42.3% in 30-34 year maternal age group, followed by 32.4% in the 35-39 year age group (Table 20). There were two quadruplet births in 30-34 and over 44 year age groups each.

As in previous years, the percent of singleton births in 2004 was higher among Hispanics (97.8%) compared to Whites (95.2%) (Table 22). Of the 45,049 births, the highest percentages of twin and triplet births were among Whites, 4.3% and 0.5% respectively, compared to Blacks: 4.0% (twin births) and 0.2% (triplet births); Hispanics: 2.0% (twin births) and 0.1% (triplet births); and Asians: 2.9% (twin births) and 0.3% (triplet births). Of the 1,349 twin births that occurred in Orange County in 2004, 45.9% were born to White mothers and 33.9% to Hispanics mothers. Triplet births reflected a pattern similar to the twin births; of the 111 triplet births, 62.2% were among Whites, compared to 16.2% among Hispanics.

Section 4. Birthweight & Plurality

Table 17. Low Birthweight Incidence by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004

Birthweight (g) ¹	Race/Ethnicity of Mother											Total
	White	Black	Hispanic	Asian	S.E. Asian ³	Other Asian ⁴	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ⁵	
<2,500	863	46	1,279	493	191	302	6	15	24	3	53	2,782
Rate ²	60.6	103.1	57.1	71.6	66.0	75.6	83.3	87.7	63.5	--	113.2	61.8

Table 18. Very Low Birthweight Incidence by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004

Birthweight (g) ¹	Race/Ethnicity of Mother											Total
	White	Black	Hispanic	Asian	S.E. Asian ³	Other Asian ⁴	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ⁶	
<1,500	131	14	237	76	24	52	0	7	5	1	7	478
Rate ²	9.2	31.4	10.6	11.0	8.3	13.0	--	40.9	13.2	--	15.0	10.6

¹ Birthweight in grams.

² Rate is calculated per 1,000 live births.

³ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

⁴ Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

⁵ Withheld/Unknown includes those who did not specify their race/ethnicity (n=41), and those with Unknown race/ethnicity (n=5).

⁶ Withheld/Unknown includes those who did not specify their race/ethnicity (n=7); there were no Unknown race/ethnicity.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

-- Rates are not calculated for fewer than five events.

Healthy People 2000 goal for very low birthweight infants is 10.0 per 1,000 live births.

Healthy People 2010 goal for very low birthweight infants is 9.0 per 1,000 live births.

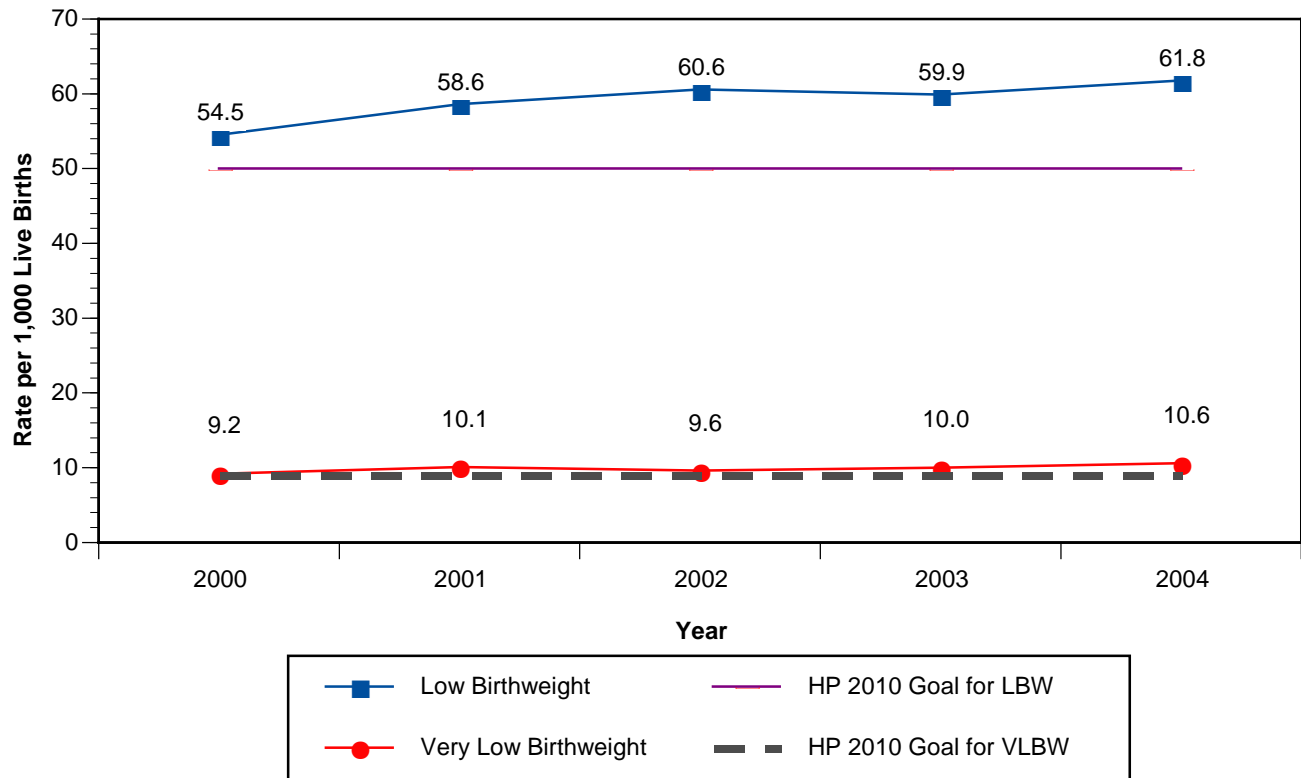
Healthy People 2000 & 2010 goal for low birthweight infants is 50.0 per 1,000 live births.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

Figure 4. Trends in Low & Very Low Birthweight Rates & Comparison with Healthy People 2010 Goals

**County of Orange
Resident Births, 2000-2004**



Low birthweight is defined as < 2,500 grams of weight at birth.

Very low birthweight is defined as < 1,500 grams of weight at birth.

Healthy People 2000 goal for very low birthweight infants is 10.0 per 1,000 live births.

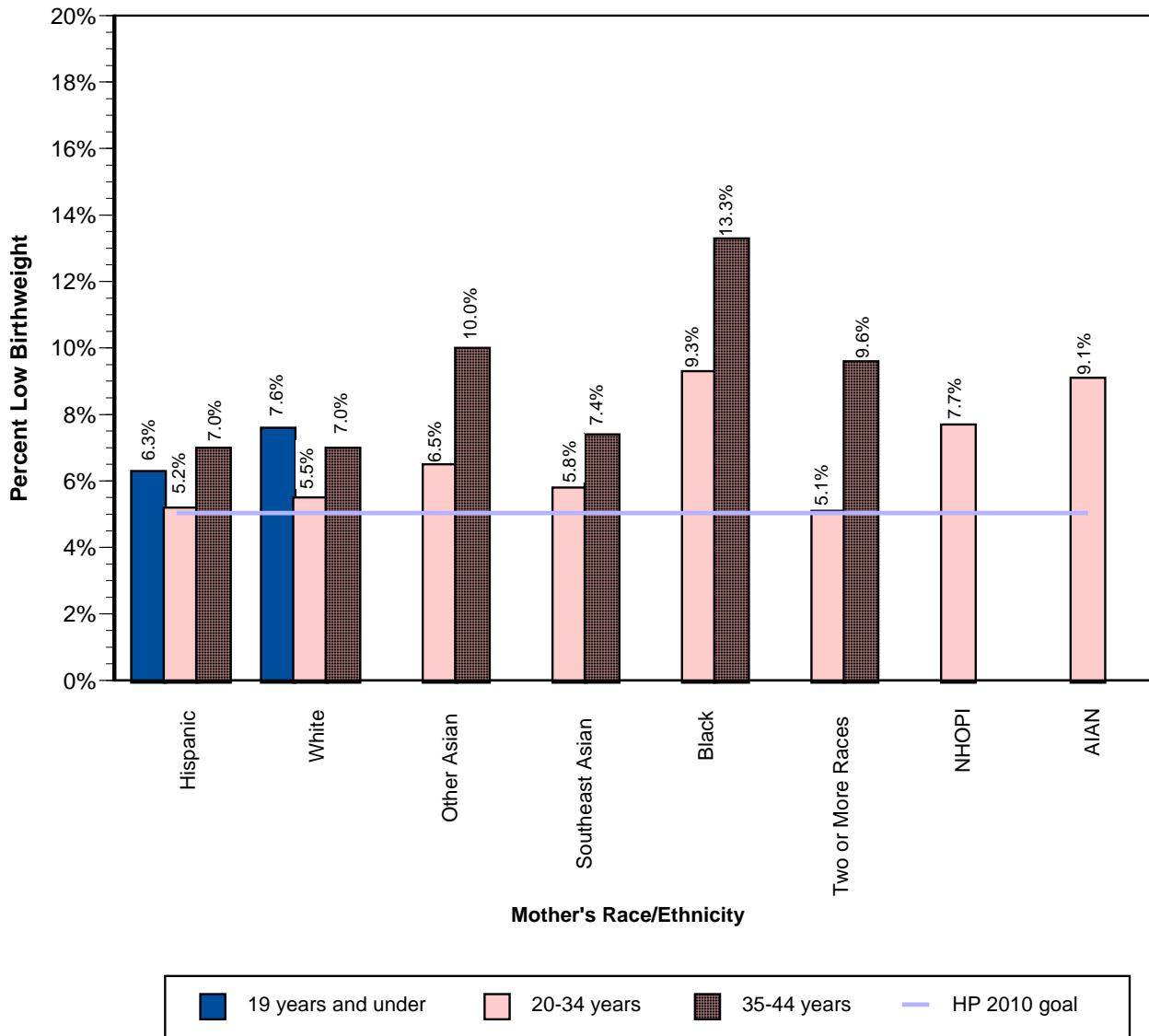
Healthy People 2010 goal for very low birthweight infants is 9.0 per 1,000 live births.

Healthy People 2000 & 2010 goal for low birthweight infants is 50.0 per 1,000 live births.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

**Figure 5. Percent of Births that were Low Birthweight by Age Category & Race/Ethnicity of the Mother* & Comparison with Healthy People 2010 Goal
County of Orange
Resident Births, 2004**



* Percentages are not calculated for fewer than five events.

Low birthweight is defined as < 2,500 grams of weight at birth.

Less than five events are not included in the analysis.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Other Asian includes Asian Specified & Unspecified, Asian Indian, Chinese, Filipino, Japanese, & Korean.

Southeast Asian includes Cambodian, Hmong, Laotian, Thai & Vietnamese.

Healthy People 2000 & 2010 goal for low birthweight is 50.0 per 1,000 live births (5.0%).

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

**Table 19a. Infant's Birthweight Rate¹ by Mother's Age Group² (Years)
County of Orange
Resident Births, 2004**

Infant's Birthweight ³	< 2,499 g		2,500 - 3,499 g		3,500 - 4,499 g		4,500 + g		Total Births
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.
< 15 Years	7	137.3	30	588.2	14	274.5	0	0.0	51
15-17 Years	80	78.4	659	645.4	276	270.3	6	5.9	1,021
18-19 Years	120	58.3	1,325	643.8	601	292.0	12	5.8	2,058
20-24 Years	463	55.4	4,934	590.6	2,896	346.7	61	7.3	8,354
25-29 Years	557	49.1	6,324	557.7	4,315	380.5	143	12.6	11,339
30-34 Years	803	61.8	6,981	537.0	5,019	386.1	196	15.1	12,999
35-39 Years	559	75.3	3,861	520.3	2,878	387.8	123	16.6	7,421
40-44 Years	172	100.8	880	515.8	620	363.4	34	19.9	1,706
45 Years & Over	20	204.1	49	500.0	29	295.9	0	0.0	98
Total	2,781	61.7	25,043	555.9	16,648	369.6	575	12.8	45,047

¹ Rates based on per 1,000 live births within specified age groups.

² Age unknown for two mothers; one in each 1,500-2,499 g. and 2,500-3,499 g. birthweight categories.

³ Birthweight in grams.

Mother's age at time of delivery.

Healthy People 2000 & 2010 goal for low birthweight infants is 50.0 per 1,000 live births (5.0%).

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

Table 19b. Infant's Birthweight by Mother's Age Group (Years)
County of Orange
Resident Births, 2004

Mother's Age ^{1,2}	Child's Birthweight ³					
	< 1,500 g	1,500 - 2,499 g	2,500 - 3,499 g	3,500 - 4,499 g	4,500 + g	Total
< 15 Years	0	7	30	14	0	51
% of column	0.0	0.3	0.1	0.1	0.0	0.1
% of row	0.0	13.7	58.8	27.5	0.0	100.0
15-17 Years	19	61	659	276	6	1,021
% of column	4.0	2.6	2.6	1.7	1.0	2.3
% of row	1.9	6.0	64.5	27.0	0.6	100.0
18-19 Years	22	98	1,325	601	12	2,058
% of column	4.6	4.3	5.3	3.6	2.1	4.6
% of row	1.1	4.8	64.4	29.2	0.6	100.0
20-24 Years	85	378	4,934	2,896	61	8,354
% of column	17.8	16.4	19.7	17.4	10.6	18.5
% of row	1.0	4.5	59.1	34.7	0.7	100.0
25-29 Years	81	476	6,324	4,315	143	11,339
% of column	16.9	20.7	25.3	25.9	24.9	25.2
% of row	0.7	4.2	55.8	38.1	1.3	100.0
30-34 Years	136	667	6,981	5,019	196	12,999
% of column	28.5	29.0	27.9	30.1	34.1	28.9
% of row	1.0	5.1	53.7	38.6	1.5	100.0
35-39 Years	104	455	3,861	2,878	123	7,421
% of column	21.8	19.8	15.4	17.3	21.4	16.5
% of row	1.4	6.1	52.0	38.8	1.7	100.0
40-44 Years	28	144	880	620	34	1,706
% of column	5.9	6.3	3.5	3.7	5.9	3.8
% of row	1.6	8.4	51.6	36.3	2.0	100.0
45 Years & Over	3	17	49	29	0	98
% of column	0.6	0.7	0.2	0.2	0.0	0.2
% of row	3.1	17.3	50.0	29.6	0.0	100.0
Total	478	2,303	25,043	16,648	575	45,047
% of column	100.0	100.0	100.0	100.0	100.0	100.0
% of row	1.1	5.1	55.6	37.0	1.3	100.0

¹ Mother's age at time of delivery.

² Age unknown for two mothers, one in each 1,500-2,499 g. and 2,500-3,499 g. categories.

³ Birthweight in grams.

Note: Due to rounding, percentages may not add to 100.

Healthy People 2000 goal for very low birthweight infants is 10.0 per 1,000 live births (1.0%).

Healthy People 2010 goal for very low birthweight infants is 9.0 per 1,000 live births (0.9%).

Healthy People 2000 & 2010 goal for low birthweight infants is 50.0 per 1,000 live births (5.0%).

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

Table 20. Infant's Plurality by Mother's Age Group (Years)
County of Orange
Resident Births, 2004

Mother's Age ^{1, 2}	Infant's Plurality				
	Single	Twin	Triplet	Quadruplet	Total
< 15 Years	51	0	0	0	51
% of column	0.1	0.0	0.0	0.0	0.1
% of row	100.0	0.0	0.0	0.0	100.0
15-17 Years	1,011	10	0	0	1,021
% of column	2.3	0.7	0.0	0.0	2.3
% of row	99.0	1.0	0.0	0.0	100.0
18-19 Years	2,034	24	0	0	2,058
% of column	4.7	1.8	0.0	0.0	4.6
% of row	98.8	1.2	0.0	0.0	100.0
20-24 Years	8,192	159	3	0	8,354
% of column	18.8	11.8	2.7	0.0	18.5
% of row	98.1	1.9	0.0	0.0	100.0
25-29 Years	11,077	246	16	0	11,339
% of column	25.4	18.2	14.4	0.0	25.2
% of row	97.7	2.2	0.1	0.0	100.0
30-34 Years	12,516	432	47	4	12,999
% of column	28.7	32.0	42.3	50.0	28.9
% of row	96.3	3.3	0.4	0.0	100.0
35-39 Years	7,032	353	36	0	7,421
% of column	16.1	26.2	32.4	0.0	16.5
% of row	94.8	4.8	0.5	0.0	100.0
40-44 Years	1,592	105	9	0	1,706
% of column	3.7	7.8	8.1	0.0	3.8
% of row	93.3	6.2	0.5	0.0	100.0
45 Years & Over	74	20	0	4	98
% of column	0.2	1.5	0.0	50.0	0.2
% of row	75.5	20.4	0.0	4.1	100.0
Total	43,579	1,349	111	8	45,047
% of column	100.0	100.0	100.0	100.0	100.0
% of row	96.7	3.0	0.2	0.0	100.0

¹ Mother's age at time of delivery.

² Age unknown for two mothers, both of them gave births to singletons.

Note: Due to rounding, percentages may not add to 100.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

Table 21. Trends in Plurality by Mother's Age Group (Years)
County of Orange
Resident Births, 2000 - 2004

Mother's Age ¹	Infant's Plurality				
	2000	2001	2002	2003	2004
19 Years & Under	3,659	3,408	3,194	3,112	3,130
Single	3,622	3,368	3,155	3,068	3,096
%	99.0	98.8	98.8	98.6	98.9
Twin	37	40	39	41	34
%	1.0	1.2	1.2	1.3	1.1
Triplet	0	0	0	3	0
%	0.0	0.0	0.0	0.1	0.0
Quadruplet	0	0	0	0	0
%	0.0	0.0	0.0	0.0	0.0
20-34 Years	34,856	33,547	32,841	33,130	32,692
Single	33,951	32,652	31,893	32,164	31,785
%	97.4	97.3	97.1	97.1	97.2
Twin	860	826	868	899	837
%	2.5	2.5	2.6	2.7	2.6
Triplet	45	53	76	55	66
%	0.1	0.2	0.2	0.2	0.2
Quadruplet	0	16	4	12	4
%	0.0	0.0	0.0	0.0	0.0
35-44 Years	8,387	8,422	8,612	8,989	9,127
Single	8,015	7,977	8,138	8,545	8,624
%	95.6	94.7	94.5	95.1	94.5
Twin	335	399	426	407	458
%	4.0	4.7	4.9	4.5	5.0
Triplet	33	38	48	33	45
%	0.4	0.5	0.6	0.4	0.5
Quadruplet	4	8	0	4	0
%	0.0	0.1	0.0	0.0	0.0
45 Years & Over	77	84	111	111	98
Single	62	68	66	70	74
%	80.5	81.0	59.5	63.1	75.5
Twin	15	16	38	38	20
%	19.5	19.0	34.2	34.2	20.4
Triplet	0	0	3	3	0
%	0.0	0.0	2.7	2.7	0.0
Quadruplet	0	0	4	0	4
%	0.0	0.0	3.6	0.0	4.1
<i>Total Twin Births</i>	<i>1,247</i>	<i>1,281</i>	<i>1,371</i>	<i>1,385</i>	<i>1,349</i>
<i>Total Triplet Births</i>	<i>78</i>	<i>91</i>	<i>127</i>	<i>94</i>	<i>111</i>
<i>Total Quadruplet Births</i>	<i>4</i>	<i>24</i>	<i>8</i>	<i>16</i>	<i>8</i>
<i>Total Multiple Births</i>	<i>1,329</i>	<i>1,396</i>	<i>1,506</i>	<i>1,495</i>	<i>1,468</i>
Total Singleton Births	45,650	44,065	43,252	43,847	43,579
Total²	46,979	45,461	44,758	45,342	45,047

¹ Mother's age at time of delivery.

² Mothers with unknown ages were excluded for 2000 (n=1), 2001 (n=1), 2002 (n=2), 2003 (n=3), & 2004 (n=2).

Note: Due to rounding, percentages may not add to 100.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 4. Birthweight & Plurality

**Table 22. Infant's Plurality by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Mother's Race/Ethnicity	Infant's Plurality				
	Single	Twin	Triplet	Quadruplet	Total
White	13,549	619	69	0	14,237
% of column	31.1	45.9	62.2	0.0	31.6
% of row	95.2	4.3	0.5	0.0	100.0
Black	427	18	1	0	446
% of column	1.0	1.3	0.9	0.0	1.0
% of row	95.7	4.0	0.2	0.0	100.0
Hispanic	21,898	457	18	8	22,381
% of column	50.2	33.9	16.2	100.0	49.7
% of row	97.8	2.0	0.1	0.0	100.0
Asian	6,667	202	20	0	6,889
% of column	15.3	15.0	18.0	0.0	15.3
% of row	96.8	2.9	0.3	0.0	100.0
<i>S.E. Asian¹</i>	2,833	60	0	0	2,893
% of column	6.5	4.4	0.0	0.0	6.4
% of row	97.9	2.1	0.0	0.0	100.0
<i>Other Asian²</i>	3,834	142	20	0	3,996
% of column	8.8	10.5	18.0	0.0	8.9
% of row	95.9	3.6	0.5	0.0	100.0
NHOPI	159	12	0	0	171
% of column	0.36	0.89	0.00	0.00	0.38
% of row	93.0	7.0	0.0	0.0	100.0
AIAN	70	2	0	0	72
% of column	0.2	0.1	0.0	0.0	0.2
% of row	97.2	2.8	0.0	0.0	100.0
Two or More Races	363	15	0	0	378
% of column	0.8	1.1	0.0	0.0	0.8
% of row	96.0	4.0	0.0	0.0	100.0
Other	7	0	0	0	7
% of column	0.0	0.0	0.0	0.0	0.0
% of row	100.0	0.0	0.0	0.0	100.0
Withheld/Unknown³	441	24	3	0	468
% of column	1.0	1.8	2.7	0.0	1.0
% of row	94.2	5.1	0.6	0.0	100.0
Total	43,581	1,349	111	8	45,049
% of column	100.0	100.0	100.0	100.0	100.0
% of row	96.7	3.0	0.2	0.0	100.0

¹ Southeast Asian is a subset of Asian: includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other Asian is subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456) those with unknown race/ethnicity (n=12).

Note: Due to rounding, percentages may not add to 100.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

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The Healthy People 2010 goal is that 90% of all pregnant women initiate prenatal care during the first trimester of pregnancy. Early prenatal care or prenatal care in the first trimester is defined as care before the onset of 13 weeks of gestation. The percent of pregnant women seeking prenatal care in the first trimester increased from 91.6% in 2003 to 91.7% in 2004 (Table 24). In 2004, Orange County met the Healthy People 2010 goal (90%), although differences in timely initiation of care were observed based on educational level, race/ethnicity, and age. Mothers with a college education were more likely to seek prenatal care in the first trimester (ranging from 93.8% with some college to 97.0% at the post-graduate level), relative to mothers with no high school (88.0%), some high school (86.1%), and a high school diploma, 89.8% (Table 23 & Figure 6). While White (95.1%) and Asian mothers (94.4%) (including Southeast Asian, 93.7%, and Other Asian, 94.8%) met the Healthy People 2010 goal, Black (89.0%), Hispanic (89.0%), NHOPI (81.3%), and AIAN (79.2%) mothers did not meet the goal (Table 24). Younger teen mothers were less likely to initiate prenatal care in the first trimester. Only 54.9% (28 out of 51) of women under the age of 15 years initiated prenatal care in the first trimester, as compared to 74.1% of teens aged 15-17 years, 83.0% in the 18-19 year age groups (Table 25 & Figure 7).

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Table 23. Trimester Prenatal Care Initiated by Mother's Education Level
County of Orange
Resident Births, 2004

Trimester Prenatal Care Initiated	Mother's Education Level							Unknown	Total
	No High School	Some High School	High School Graduate	Some College	College Graduate	Post-Graduate	No Education		
First trimester	4,565	6,330	9,513	7,100	7,574	5,645	88	491	41,306
% of column	88.0	86.1	89.8	93.8	96.8	97.0	79.3	83.6	91.7
% of row	11.1	15.3	23.0	17.2	18.3	13.7	0.2	1.2	100.0
Second trimester	500	792	867	382	199	135	16	50	2,941
% of column	9.6	10.8	8.2	5.0	2.5	2.3	14.4	8.5	6.5
% of row	17.0	26.9	29.5	13.0	6.8	4.6	0.5	1.7	100.0
Third trimester	82	144	130	55	37	23	2	9	482
% of column	1.6	2.0	1.2	0.7	0.5	0.4	1.8	1.5	1.1
% of row	17.0	29.9	27.0	11.4	7.7	4.8	0.4	1.9	100.0
No prenatal care	10	39	46	17	8	3	1	11	135
% of column	0.2	0.5	0.4	0.2	0.1	0.1	0.9	1.9	0.3
% of row	7.4	28.9	34.1	12.6	5.9	2.2	0.7	8.1	100.0
Unknown	33	44	37	19	9	13	4	26	185
% of column	0.6	0.6	0.3	0.3	0.1	0.2	3.6	4.4	0.4
% of row	17.8	23.8	20.0	10.3	4.9	7.0	2.2	14.1	100.0
Total	5,190	7,349	10,593	7,573	7,827	5,819	111	587	45,049
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	11.5	16.3	23.5	16.8	17.4	12.9	0.2	1.3	100.0

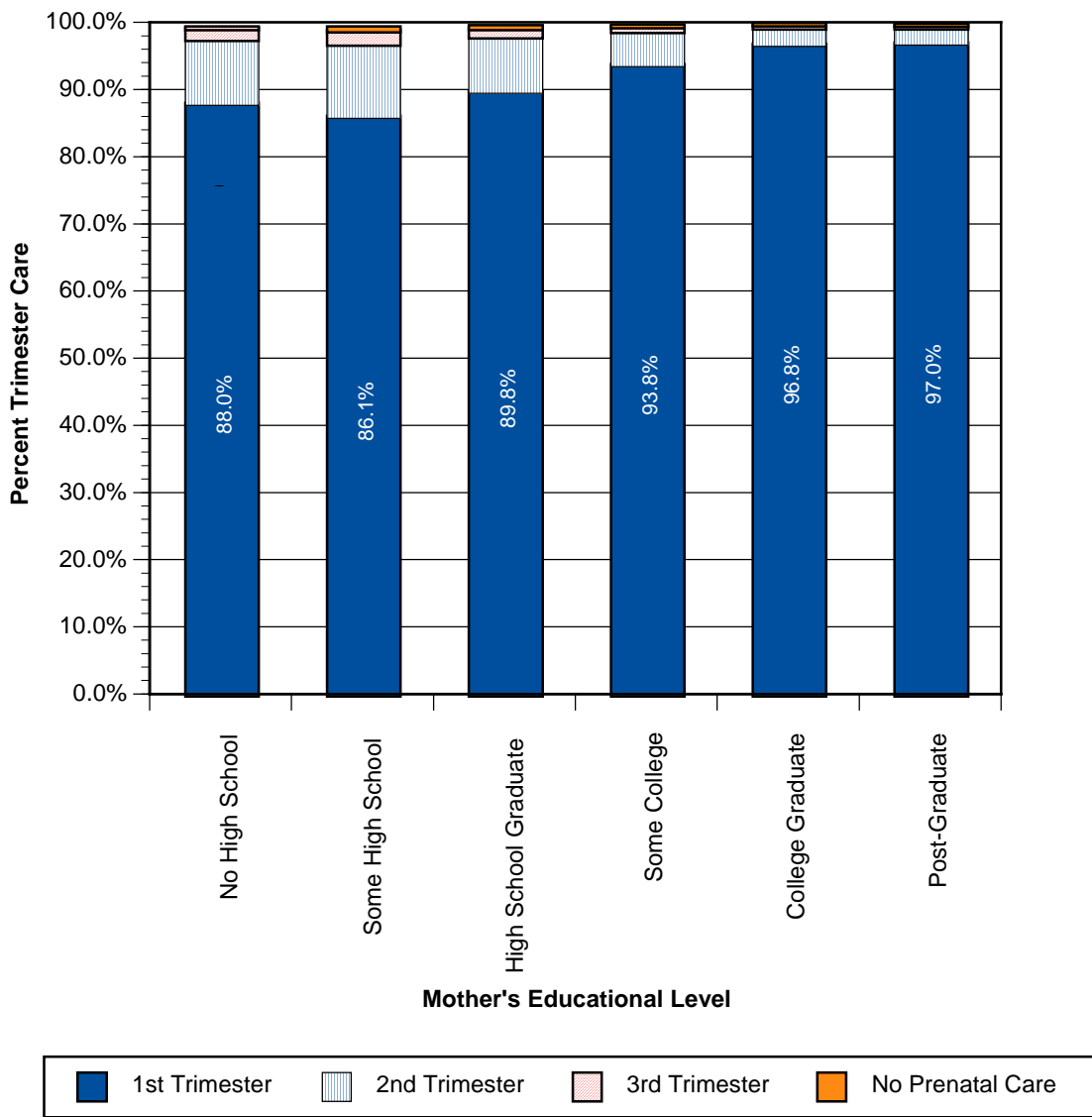
Note: Due to rounding, percentages may not add to 100.

Healthy People 2000 & 2010 prenatal care goal is that 90% of mothers initiate care in first trimester.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

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**Figure 6. Trimester Prenatal Care Initiated by Mother's Education
County of Orange
Resident Births, 2004**



Note: Due to rounding, percentages may not add to 100.
 Healthy People 2000 & 2010 prenatal care goal is that 90% of mothers initiate care in the first trimester.
 Source: County of Orange Health Care Agency, Epidemiology & Assessment

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Table 24. Trimester Prenatal Care Initiated by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004

Trimester Prenatal Care Initiated	Race/Ethnicity of Mother											Total
	White	Black	Hispanic	Asian	S.E. Asian ¹	Other Asian ²	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ³	
First	13,542	397	19,925	6,501	2,711	3,790	57	139	345	7	393	41,306
% of column	95.1	89.0	89.0	94.4	93.7	94.8	79.2	81.3	91.3	100.0	84.0	91.7
% of row	32.8	1.0	48.2	15.7	6.6	9.2	0.1	0.3	0.8	0.0	1.0	100.0
Second	521	35	1,979	308	150	158	12	21	22	0	43	2,941
% of column	3.7	7.8	8.8	4.5	5.2	4.0	16.7	12.3	5.8	0.0	9.2	6.5
% of row	17.7	1.2	67.3	10.5	5.1	5.4	0.4	0.7	0.7	0.0	1.5	100.0
Third	98	7	304	52	18	34	1	8	7	0	5	482
% of column	0.7	1.6	1.4	0.8	0.6	0.9	1.4	4.7	1.9	0.0	1.1	1.1
% of row	20.3	1.5	63.1	10.8	3.7	7.1	0.2	1.7	1.5	0.0	1.0	100.0
No care	35	6	64	16	9	7	1	2	3	0	8	135
% of column	0.2	1.3	0.3	0.2	0.3	0.2	1.4	1.2	0.8	0.0	1.7	0.3
% of row	25.9	4.4	47.4	11.9	6.7	5.2	0.7	1.5	2.2	0.0	5.9	100.0
Unknown	41	1	109	12	5	7	1	1	1	0	19	185
% of column	0.3	0.2	0.5	0.2	0.2	0.2	1.4	0.6	0.3	0.0	4.1	0.4
% of row	22.2	0.5	58.9	6.5	2.7	3.8	0.5	0.5	0.5	0.0	10.3	100.0
Total	14,237	446	22,381	6,889	2,893	3,996	72	171	378	7	468	45,049
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	31.6	1.0	49.7	15.3	6.4	8.9	0.2	0.4	0.8	0.0	1.0	100.0

¹ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese and Korean.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456) and those with unknown race/ethnicity (n=12).

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Note: Due to rounding, percentages may not add to 100.

Healthy People 2000 & 2010 prenatal care goal is that 90% of mothers initiate care in first trimester.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

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**Table 25. Trimester Prenatal Care Initiated by Mother's Age Group (Years)
County of Orange
Resident Births, 2004**

Trimester Prenatal Care Initiated	Mother's Age ¹									Total
	< 15 Years	15-17 Years	18-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-44 Years	45 & Over Years	
First trimester	28	757	1,708	7,385	10,473	12,258	7,010	1,593	94	41,306
% of column	54.9	74.1	83.0	88.4	92.4	94.3	94.5	93.4	94.0	91.7
% of row	0.1	1.8	4.1	17.9	25.4	29.7	17.0	3.9	0.2	100.0
Second trimester	16	202	280	769	677	589	318	88	2	2,941
% of column	31.4	19.8	13.6	9.2	6.0	4.5	4.3	5.2	2.0	6.5
% of row	0.5	6.9	9.5	26.1	23.0	20.0	10.8	3.0	0.1	100.0
Third trimester	5	48	40	106	111	95	60	17	0	482
% of column	9.8	4.7	1.9	1.3	1.0	0.7	0.8	1.0	0.0	1.1
% of row	1.0	10.0	8.3	22.0	23.0	19.7	12.4	3.5	0.0	100.0
No prenatal care	0	9	15	45	33	18	12	2	1	135
% of column	0.0	0.9	0.7	0.5	0.3	0.1	0.2	0.1	1.0	0.3
% of row	0.0	6.7	11.1	33.3	24.4	13.3	8.9	1.5	0.7	100.0
Unknown	2	5	15	49	45	39	21	6	3	185
% of column	3.9	0.5	0.7	0.6	0.4	0.3	0.3	0.4	3.0	0.4
% of row	1.1	2.7	8.1	26.5	24.3	21.1	11.4	3.2	1.6	100.0
Total	51	1,021	2,058	8,354	11,339	12,999	7,421	1,706	100	45,049
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	0.1	2.3	4.6	18.5	25.2	28.9	16.5	3.8	0.2	100.0

¹ Mother's age at time of delivery.

Two mothers with unknown ages are included in the 45 & over age category.

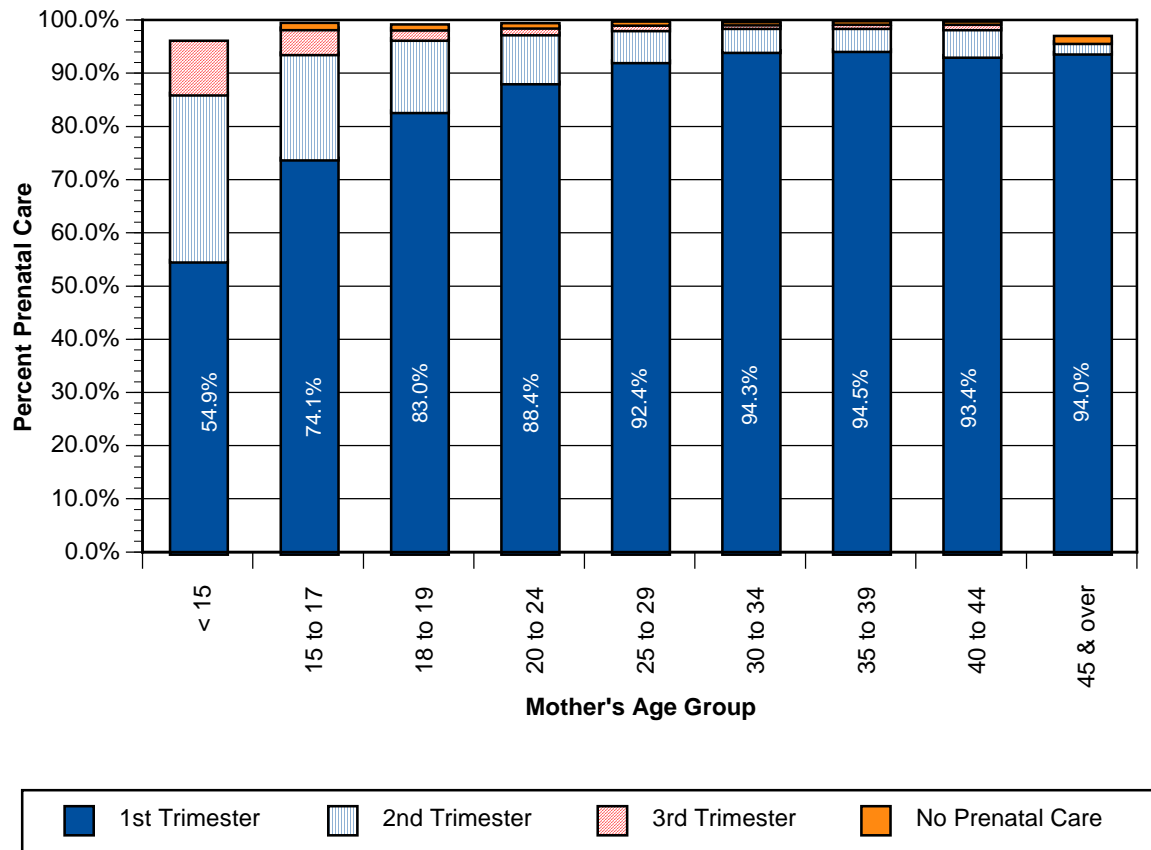
Note: Due to rounding, percentages may not add to 100.

Healthy People 2000 & 2010 prenatal care goal is that 90% of mothers initiate care in first trimester.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 5. Prenatal Care

**Figure 7. Trimester Prenatal Care* Initiated by Mother's Age (Years)
County of Orange
Resident Births, 2004**



Note: Due to rounding, percentages may not add to 100.

* Unknown prenatal care (n=185) is not shown in the chart.

Healthy People 2000 & 2010 prenatal care goal is that 90% of mothers initiate care in the first trimester.

Source: County of Orange Health Care Agency, Epidemiology

Section 6. Payment Source

The principal sources of payment for prenatal care among Orange County mothers in 2004 were HMO/private insurance (56.0%), and Medi-Cal (40.8%). HMO/private insurance was the main payment source for prenatal care for White (85.9%), Asian (75.2%) (including Other Asian, 81.0%, Southeast Asian, 67.3%), and Black (60.3%), compared to Hispanic (30.6%) births (Table 26 & Figure 8). Medi-Cal was the major payment source for prenatal care for Hispanic births (66.6%), compared to AIAN (45.8%), NHOPI (41.5%), Black (34.3%), Asian (20.3%) (including Southeast Asian, 30.5%, Other Asian, 12.9%), and White (11.1%) births.

Similar to the primary payment source for prenatal care, the source of payment for deliveries among Orange County mothers were HMO/private insurance (56.0%) and Medi-Cal (40.8%). HMO/private insurance was the main payment source for deliveries for White (86.2%), Asian (75.5%) (including Other Asian, 81.4%, Southeast Asian, 67.5%), and Black (60.7%), compared to Hispanic (30.6%) births (Table 27 & Figure 9). Medi-Cal was the chief funding source for Hispanic deliveries (67.1%), compared to AIAN (44.4%), NHOPI (42.1%), Black (34.5%), Asian (20.5%) (including Southeast Asian, 30.8%, Other Asian, 13.1%), and White (11.3%) deliveries. The percent of Orange County Medi-Cal funded deliveries (41.1%) was 10.1% lower than the California Medi-Cal funded deliveries³ (45.7%).

The proportion of Medi-Cal funded deliveries differed markedly among the major racial and ethnic groups. Hispanic mothers constituted the majority of the Medi-Cal funded deliveries in Orange County and California, although Orange County Hispanic mothers represented a higher proportion of Medi-Cal funded deliveries, compared to California Hispanic mothers (Table 28). Of the 18,471 Medi-Cal funded deliveries in Orange County, 81.1% were to Hispanic mothers (n=14,980), whereas of the 248,086 Medi-Cal funded deliveries in California, 69.0% were to Hispanic mothers (n=171,169). Although the percent of Medi-Cal funded deliveries to Orange County Asian/PI mothers (8.0%) was higher than California Asian/PI mothers (6.7%), the percentages for Orange County White (8.7%) and Black (0.8%) mothers were lower than California White (14.1%) and Black (6.9%) mothers.

The principal sources of payment for spontaneous vaginal births for Orange County mothers were HMO/Private insurance (55.0%), followed by Medi-Cal, (41.9%); for vaginal births after previous C-Section deliveries (VBAC), the chief payment sources were HMO/Private insurance (63.7%), and Medi-Cal (34.3%). The major sources of payment for C-Section deliveries were HMO/private (58.2%) and Medi-Cal (39.7%). For first C-Section deliveries, HMO/private insurance (62.5%) was the primary source of payment, followed by Medi-Cal (35.4%); for repeat C-Section deliveries, the principal sources of payment were HMO/private insurance (52.3%) and Medi-Cal (45.6%) (Table 29). The percent of Medi-Cal funded C-Section deliveries for Orange County (30.0%) was 6.0% higher than California³ (28.3%).

³ Medi-Cal Funded Deliveries, 2004. Medical Care Statistics Section, California Department of Health Services. (<http://www.dhs.ca.gov/mcss>)

Section 6. Payment Source

**Table 26. Principal Payment Source for Prenatal Care by Race/Ethnicity
County of Orange
Resident Births, 2004**

Payment Source	Race/Ethnicity of Mother											Total ⁴
	White	Black	Hispanic	Asian	S.E. Asian ¹	Other Asian ²	AIAN	NHOPI	Two or More Races	Other	Withheld/ Unknown ³	
	Medi-Cal	1,580	153	14,899	1,396	882	514	33	71	83	4	
% of column	11.1	34.3	66.6	20.3	30.5	12.9	45.8	41.5	22.0	57.1	29.2	40.8
% of row	8.6	0.8	81.2	7.6	4.8	2.8	0.2	0.4	0.5	0.0	0.7	100.0
HMO/Private	12,230	269	6,852	5,180	1,945	3,235	34	89	277	3	281	25,215
% of column	85.9	60.3	30.6	75.2	67.3	81.0	47.2	52.0	73.3	42.9	60.8	56.0
% of row	48.5	1.1	27.2	20.5	7.7	12.8	0.1	0.4	1.1	0.0	1.1	100.0
No care	63	8	106	42	17	25	1	2	3	0	9	234
% of column	0.4	1.8	0.5	0.6	0.6	0.6	1.4	1.2	0.8	0.0	1.9	0.5
% of row	26.9	3.4	45.3	17.9	7.3	10.7	0.4	0.9	1.3	0.0	3.8	100.0
Other⁵	358	16	517	268	48	220	4	9	15	0	37	1,224
% of column	2.5	3.6	2.3	3.9	1.7	5.5	5.6	5.3	4.0	0.0	8.0	2.7
% of row	29.2	1.3	42.2	21.9	3.9	18.0	0.3	0.7	1.2	0.0	3.0	100.0
Total	14,231	446	22,374	6,886	2,892	3,994	72	171	378	7	462	45,027
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	31.6	1.0	49.7	15.3	6.4	8.9	0.2	0.4	0.8	0.0	1.0	100.0

¹ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456) for payment source for prenatal care, of which 2 had unknown payment source for prenatal care & are excluded; and those with unknown race/ethnicity (n=12), of which 4 had unknown payment source for prenatal care & are excluded).

⁴ Missing data for payment source for prenatal care includes 6 births with unknown payment source for prenatal care described in footnote 3 (n=22).

⁵ Other source of payment includes Medi-Care, Worker's Compensation, other government funds and other non-government funds.

AIAN is American Indian or Alaskan Native.

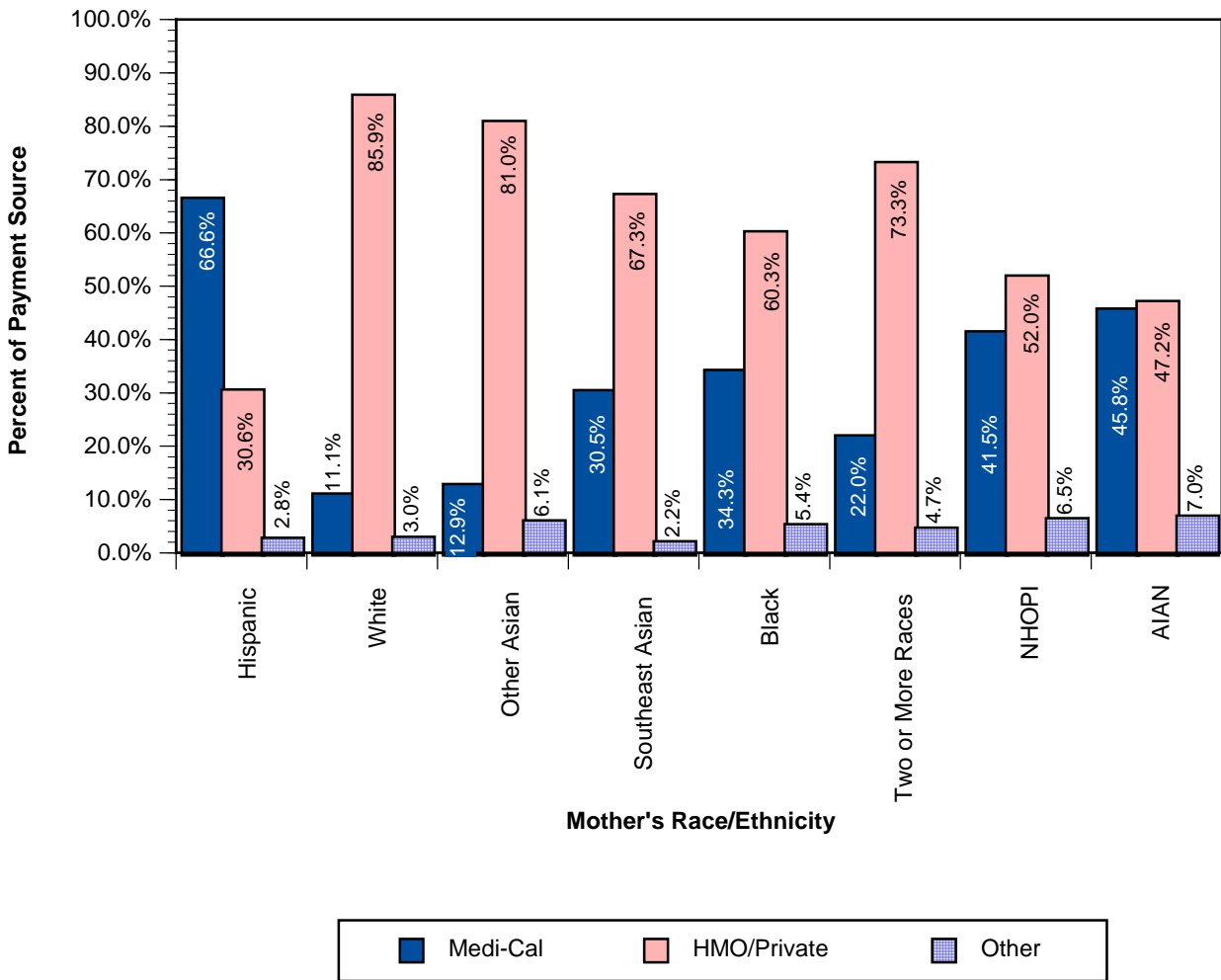
NHOPI is Native Hawaiian or Other Pacific Islander.

Note: Due to rounding, percentages may not add to 100.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 6. Payment Source

Figure 8. Principal Source of Payment for Prenatal Care by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004



Note: Other Asian includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

South Asian includes Cambodia, Hmong, Laotian, Thai, and Vietnamese.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 6. Payment Source

**Table 27. Expected Payment Source for Delivery by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Payment Source	Race/Ethnicity of Mother											
	White	Black	Hispanic	Asian	S.E. Asian ¹	Other Asian ²	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ³	Total ⁴
Medi-Cal	1,602	153	14,980	1,407	887	520	32	72	83	4	138	18,471
% of column	11.3	34.5	67.1	20.5	30.8	13.1	44.4	42.1	22.0	57.1	30.0	41.1
% of row	8.7	0.8	81.1	7.6	4.8	2.8	0.2	0.4	0.4	0.0	0.7	100.0
HMO/Private	12,229	269	6,834	5,181	1,945	3,236	35	91	279	3	284	25,205
% of column	86.2	60.7	30.6	75.5	67.5	81.4	48.6	53.2	74.0	42.9	61.7	56.1
% of row	48.5	1.1	27.1	20.6	7.7	12.8	0.1	0.4	1.1	0.0	1.1	100.0
Other⁵	363	21	508	270	51	219	5	8	15	0	38	1,228
% of column	2.6	4.7	2.3	3.9	1.8	5.5	6.9	4.7	4.0	0.0	8.3	2.7
% of row	29.6	1.7	41.4	22.0	4.2	17.8	0.4	0.7	1.2	0.0	3.1	100.0
Total	14,194	443	22,322	6,858	2,883	3,975	72	171	377	7	460	44,904
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	31.6	1.0	49.7	15.3	6.4	8.9	0.2	0.4	0.8	0.0	1.0	100.0

¹ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456) for expected payment source for delivery, of which 4 had unknown status for expected payment source for delivery and are excluded; and those with unknown race/ethnicity (n=12) for expected payment for delivery, of which 4 had unknown status for expected payment source for delivery and are excluded.

⁴ Missing data for expected payment source for delivery (n=141) includes 8 births described in footnote 3, but excludes 4 medically unattended births (1 White and 3 Hispanic).

⁵ Other source of payment includes Medi-Care, Worker's Compensation, other government funds and other non-government funds.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

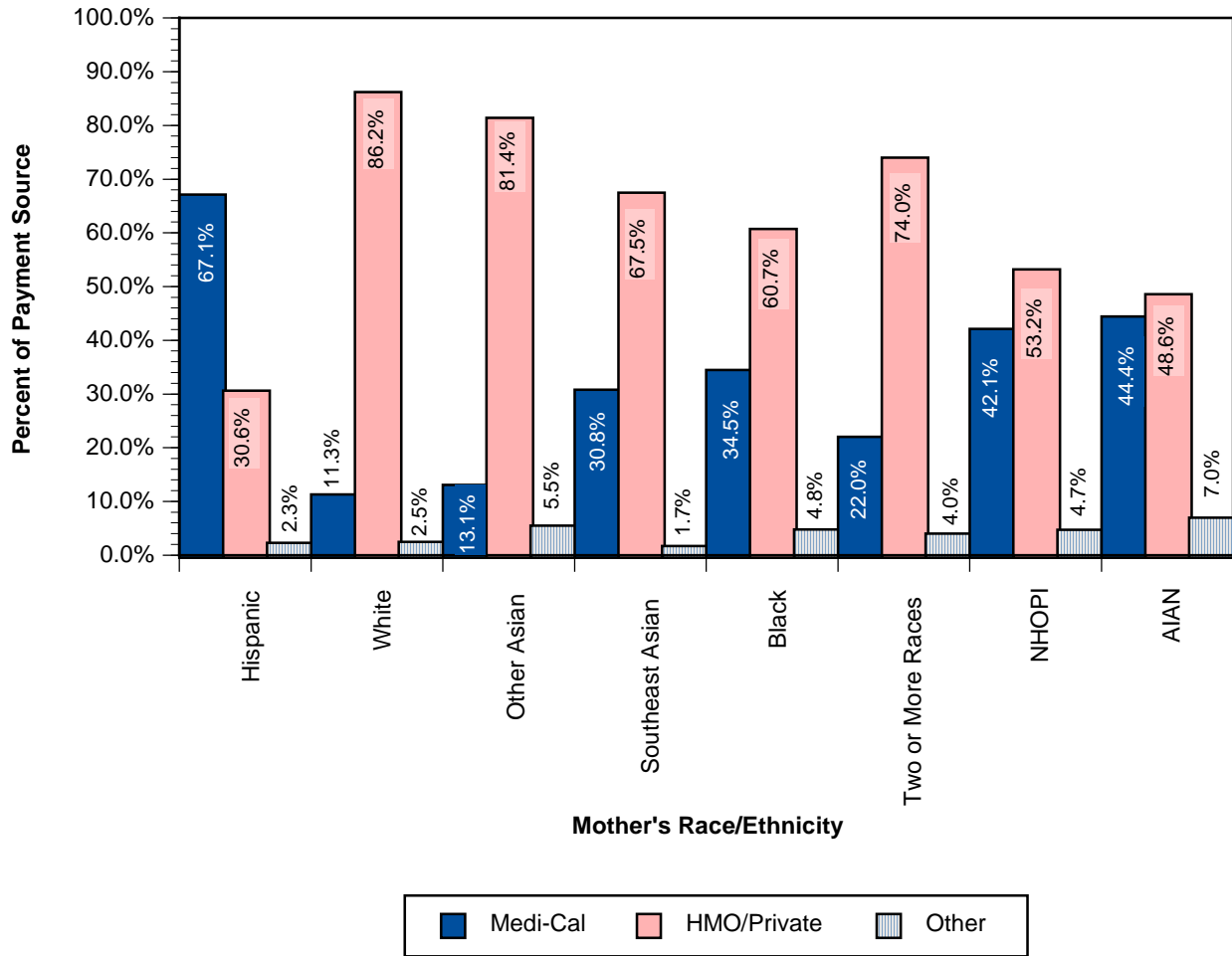
Note: There were 3 White and 1 Hispanic births with Unattended Payment Source status.

Note: Due to rounding, percentages may not add to 100.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 6. Payment Source

Figure 9. Principal Source of Payment for Delivery by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004



Note: Other Asian includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

South Asian includes Cambodia, Hmong, Laotian, Thai, and Vietnamese.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 6. Payment Source

Table 28. Comparison of Orange County Medi-Cal Funded Deliveries with California by Race/Ethnicity of the Mother, 2004
County of Orange
Resident Births, 2004

Race/Ethnicity of the Mother	OC		CA*	
	Number	Percent	Number	Percent
Hispanic	14,980	81.1%	171,169	69.0%
Asian/PI ^a	1,479	8.0%	16,499	6.7%
White	1,602	8.7%	34,999	14.1%
Black	153	0.8%	17,120	6.9%
AIAN ^b	32	0.2%	1,015	0.4%
	OC		CA*	
Total Number of Medi-Cal Funded Deliveries	18,471 ^c		248,086 ^d	
Total Number of Live Births with Known Payment Source	44,904		543,218	
Percent of Medi-Cal Funded Deliveries ^e	41.1%		45.7%	

* Medi-Cal Funded Deliveries, 2004. Medical Care Statistics Section, California Department of Health Services. (<http://www.dhs.ca.gov/mcss>)

^a Asian/PI includes Other Asian, Southeast Asian, and Native Hawaiian or Other Pacific Islander.

^b AIAN is American Indian or Alaskan Native.

^c Includes Two or More Races (n=83), Other (n=4), and Withheld/Unknown (n=138).

^d Includes Unknown race/ethnicity (n=7,284).

^e Total number of live births with known payment source was used as the denominator.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Section 6. Payment Source

**Table 29. Expected Payment Source by Method of Delivery
County of Orange
Resident Births, 2004**

Payment Source	Method of Delivery						Total ¹
	First C- Section	Repeat C- Section	Vaginal Births Previous C-Section	Vaginal Births (Spontaneous)	Vaginal Birth (Vacuum)	Vaginal Birth (Forceps)	
Medi-Cal	2,844	2,706	120	11,527	1,231	43	18,471
% of column	35.4	45.6	34.3	41.9	43.5	18.5	41.1
% of row	15.4	14.6	0.6	62.4	6.7	0.2	100.0
HMO/Private	5,023	3,104	223	15,145	1,526	184	25,205
% of column	62.5	52.3	63.7	55.0	53.9	79.3	56.1
% of row	19.9	12.3	0.9	60.1	6.1	0.7	100.0
Unattended	0	0	0	4	0	0	4
% of column	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% of row	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Other²	176	120	7	845	75	5	1,228
% of column	2.2	2.0	2.0	3.1	2.6	2.2	2.7
% of row	14.3	9.8	0.6	68.8	6.1	0.4	100.0
Total¹	8,043	5,930	350	27,521	2,832	232	44,908
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	17.9	13.2	0.8	61.3	6.3	0.5	100.0

¹ Excludes Unknown source for expected payment for delivery (n=141).

² Other source of payment includes Medi-Care, Worker's Compensation, other government and non-government funds.

Note: Due to rounding, percentages may not add to 100.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Appendix 1

**Table 30. Number & Percent of Births by Race/Ethnicity of Mother (All Ages)
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Live Births	Percent
Hispanic	22,381	49.7%
White	14,237	31.6%
Asian	6,889	15.3%
<i>Other Asian</i> ¹	3,996	8.9%
<i>Southeast Asian</i> ²	2,893	6.4%
Black	446	1.0%
Two or More Races	378	0.8%
Withheld/Unknown ³	468	1.0%
NHOPI	171	0.4%
AIAN	72	0.2%
Other	7	0.0%
Total	45,049	100.0%

Note: Due to rounding, percentages may not add to 100.

¹ Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

² Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456) and those with Unknown race/ethnicity (n=12).

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 31. Number & Percent of Births to Mothers Aged 15-44 Years
by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Live Births	Percent
Hispanic	22,316	49.7%
White	14,182	31.6%
Asian	6,867	15.3%
<i>Other Asian</i> ¹	3,988	8.9%
<i>Southeast Asian</i> ²	2,879	6.4%
Black	446	1.0%
Two or More Races	378	0.8%
Withheld/Unknown ³	459	1.0%
NHOPI	171	0.4%
AIAN	72	0.2%
Other	7	0.0%
Total	44,898	100.0%

Note: Due to rounding, percentages may not add to 100.

¹ Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

² Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=450) and those with Unknown race/ethnicity (n=9).

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 32. Number & Percent of Births to Teens Mother (Aged 15-19)
by Race/Ethnicity of Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of Mother	Live Births	Percent
Hispanic	2,560	83.1%
White	338	11.0%
Asian	66	2.1%
<i>Southeast Asian</i> ¹	39	1.3%
<i>Other Asian</i> ²	27	0.9%
Two or More Races	31	1.0%
Black	40	1.3%
NHOPI	11	0.4%
AIAN	3	0.1%
Withheld ³	30	1.0%
Other	0	0.0%
Total	3,079	100.0%

Note: Due to rounding, percentages may not add to 100.

¹ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

³ Withheld includes those who did not specify their race/ethnicity.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Table 33. Live Births by Age and Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004

Race/Ethnicity of the Mother	Mother's Age ^{1,2}									Total
	< 15 Years	15-17 Years	18-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-44 Years	45 + Years	
Hispanic	46	883	1,677	6,012	6,006	4,754	2,415	569	19	22,381
% of column	90.2	86.5	81.5	72.0	53.0	36.6	32.5	33.4	19.4	49.7
% of row	0.2	3.9	7.5	26.9	26.8	21.2	10.8	2.5	0.1	100.0
White	2	70	268	1,561	3,342	4,963	3,227	751	53	14,237
% of column	3.9	6.9	13.0	18.7	29.5	38.2	43.5	44.0	54.1	31.6
% of row	0.0	0.5	1.9	11.0	23.5	34.9	22.7	5.3	0.4	100.0
Black	0	18	22	88	109	104	83	22	0	446
% of column	0.0	1.8	1.1	1.1	1.0	0.8	1.1	1.3	0.0	1.0
% of row	0.0	4.0	4.9	19.7	24.4	23.3	18.6	4.9	0.0	100.0
AIAN	0	1	2	24	16	15	13	1	0	72
% of column	0.0	0.1	0.1	0.3	0.1	0.1	0.2	0.1	0.0	0.2
% of row	0.0	1.4	2.8	33.3	22.2	20.8	18.1	1.4	0.0	100.0
Asian	2	19	47	462	1,601	2,915	1,516	307	20	6,889
% of column	3.9	1.9	2.3	5.5	14.1	22.4	20.4	18.0	20.4	15.3
% of row	0.0	0.3	0.7	6.7	23.2	42.3	22.0	4.5	0.3	100.0
<i>Other Asian</i> ³	1	6	21	228	937	1,718	889	189	7	3,996
% of column	2.0	0.6	1.0	2.7	8.3	13.2	12.0	11.1	7.1	8.9
% of row	0.0	0.2	0.5	5.7	23.4	43.0	22.2	4.7	0.2	100.0
<i>S.E. Asian</i> ⁴	1	13	26	234	664	1,197	627	118	13	2,893
% of column	2.0	1.3	1.3	2.8	5.9	9.2	8.4	6.9	13.3	6.4
% of row	0.0	0.4	0.9	8.1	23.0	41.4	21.7	4.1	0.4	100.0
NHOPI	0	4	7	43	50	37	21	9	0	171
% of column	0.0	0.4	0.3	0.5	0.4	0.3	0.3	0.5	0.0	0.4
% of row	0.0	2.3	4.1	25.1	29.2	21.6	12.3	5.3	0.0	100.0
Other ³	0	0	0	1	0	3	2	1	0	7
% of column	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
% of row	0.0	0.0	0.0	14.3	0.0	42.9	28.6	14.3	0.0	100.0
Two or More Races	0	11	20	77	99	98	52	21	0	378
% of column	0.0	1.1	1.0	0.9	0.9	0.8	0.7	1.2	0.0	0.8
% of row	0.0	2.9	5.3	20.4	26.2	25.9	13.8	5.6	0.0	100.0
Withheld/Unknown ⁵	1	15	15	86	116	110	92	25	6	466
% of column	2.0	1.5	0.7	1.0	1.0	0.8	1.2	1.5	6.1	1.0
% of row	0.2	3.2	3.2	18.5	24.9	23.6	19.7	5.4	1.3	100.0
Total	51	1,021	2,058	8,354	11,339	12,999	7,421	1,706	98	45,047
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	0.1	2.3	4.6	18.5	25.2	28.9	16.5	3.8	0.2	100.0

¹ Mother's age at time of delivery.

² Age unknown for two mothers of unknown race/ethnicity.

³ Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

⁴ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

⁵ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456), and those with unknown race/ethnicity (n=12), of which 2 mothers of unknown ages are excluded.

AIAN is American Indian or Alaskan Native; NHOPI is Native Hawaiian or Other Pacific Islander.

Note: Due to rounding, percentages may not add to 100.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 34. Age-specific Fertility Rates¹ by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Mother's Age ²							
	15-17 Years	18-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-44 Years	15-44 Years
Hispanic	35.2	108.4	149.9	136.4	101.0	56.3	16.2	89.4
Asian	2.3	7.8	27.3	92.0	140.2	75.1	15.6	62.7
NHOPI	--	38.0	97.7	109.4	74.6	41.1	18.8	59.6
White	2.7	16.2	41.3	94.7	109.7	59.2	11.7	50.7
Black	16.4	30.3	63.4	90.8	59.8	36.4	8.5	40.4
Two or More Races	7.3	21.6	37.1	63.1	63.8	34.1	14.4	35.7
AIAN	--	--	36.9	29.6	24.3	20.1	--	18.3
Total ³	16.1	50.8	83.2	111.7	109.7	59.8	13.5	66.6

¹ Rates are based on State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

Note: Fertility rates are based on females in the specified age and race/ethnicity categories.

² Rates are excluded for mothers aged < 15 & > 44 years.

³ Rates not calculated for Other, Withheld, or Unknown race/ethnicity as appropriate population figures are not available.

--Rates are not calculated for fewer than five events.

Note: Number of births in Other, Withheld, or Unknown race/ethnicity categories are excluded from 15-44 year age group, therefore fertility rate for this age group may differ from tables presented elsewhere.

Asian includes Other Asian & Southeast Asian.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 35. Number & Percent of Infant Deaths by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Infant Deaths	Percent
Hispanic	102	57.0%
White	57	31.8%
Asian	16	8.9%
Black	3	1.7%
NHOPI	1	0.6%
Total	179	100.0%

Due to rounding, percentages may not add to 100.

Infant Deaths based on 2004 Orange County Death Statistical Master File.

Asian includes Other Asian and Southeast Asian.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 36. Number & Percent of Fetal Deaths by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Number of Fetal Deaths	Percent
Hispanic	134	53.4%
White	69	27.5%
Asian	31	12.4%
Other/Unknown/Withheld	8	3.2%
Black	7	2.8%
AIAN	1	0.4%
NHOPI	1	0.4%
Total	251	100.0%

Due to rounding, percentages may not add to 100.

Fetal deaths based on 2004 Orange County fetal death certificate data.

Two or More race/ethnicity category is not available in the death file.

Asian includes Other Asian and Southeast Asian.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 37. Infant's Birthweight by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/ Ethnicity of Mother												
Birthweight (g) ¹	White	Black	Hispanic	Asian	S.E. Asian ²	Other Asian ³	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ⁴	Total
Mean	3,398	3,172	3,331	3,195	3,181	3,205	3,384	3,308	3,307	3,022	3,253	3,329
Median	3,434	3,205	3,357	3,230	3,203	3,240	3,344	3,420	3,314	3,290	3,345	3,357
Std. Deviation	577	656	556	516	478	542	578	743	575	1,146	624	564
Birthweight Group (g)												
< 1,500	131	14	237	76	24	52	0	7	5	1	7	478
% of column	0.9	3.1	1.1	1.1	0.8	1.3	0.0	4.1	1.3	14.3	1.5	1.1
% of row	27.4	2.9	49.6	15.9	5.0	10.9	0.0	1.5	1.0	0.2	1.5	100.0
1,500-2,499	732	32	1,042	417	167	250	6	8	19	2	46	2,304
% of column	5.1	7.2	4.7	6.1	5.8	6.3	8.3	4.7	5.0	28.6	9.8	5.1
% of row	31.8	1.4	45.2	18.1	7.2	10.9	0.3	0.3	0.8	0.1	2.0	100.0
2,500-3,499	7,003	265	12,616	4,589	2,021	2,568	33	79	214	1	244	25,044
% of column	49.2	59.4	56.4	66.6	69.9	64.3	45.8	46.2	56.6	14.3	52.1	55.6
% of row	28.0	1.1	50.4	18.3	8.1	10.3	0.1	0.3	0.9	0.0	1.0	100.0
3,500-4,499	6,123	132	8,199	1,782	674	1,108	32	75	135	3	167	16,648
% of column	43.0	29.6	36.6	25.9	23.3	27.7	44.4	43.9	35.7	42.9	35.7	37.0
% of row	36.8	0.8	49.2	10.7	4.0	6.7	0.2	0.5	0.8	0.0	1.0	100.0
4,500 & over	248	3	287	25	7	18	1	2	5	0	4	575
% of column	1.7	0.7	1.3	0.4	0.2	0.5	1.4	1.2	1.3	0.0	0.9	1.3
% of row	43.1	0.5	49.9	4.3	1.2	3.1	0.2	0.3	0.9	0.0	0.7	100.0
Total	14,237	446	22,381	6,889	2,893	3,996	72	171	378	7	468	45,049
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	31.6	1.0	49.7	15.3	6.4	8.9	0.2	0.4	0.8	0.0	1.0	100.0

¹ Birthweight in grams.

² Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese .

³ Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean

⁴ Withheld/Unknown includes those who did not specify their race/ethnicity (n=456) and those with unknown race/ethnicity (n=12).

Note: Due to rounding, percentages may not add to 100.

AIAN is American Indian or Alaskan Native; NHOPI is Native Hawaiian or Other Pacific Islander.

Healthy People 2000 goal for very low birthweight infants (<1,500 g) is 10.0 per 1,000 live births (1.0%).

Healthy People 2010 goal for very low birthweight infants (<1,500 g) is 9.0 per 1,000 live births (0.9%).

Healthy People 2000 & 2010 goal for low birthweight infants is 50.0 per 1,000 live births (5.0%).

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 38. C-Section Deliveries & Vaginal Births by Mother's Race/Ethnicity & Age (Years)
County of Orange, Resident Births, 2004**

Mother's Race/Ethnicity	C-Section (Primary)		C-Section (Repeat)		VBAC ¹		Other Vaginal Births		All Births ²
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	
White	No.	Percent	No.	Percent	No.	Percent	No.	Percent	Total
19 & Under	61	17.9	4	1.2	0	0.0	275	80.9	340
20-34	1,888	19.1	947	9.6	60	0.6	6,971	70.7	9,866
35-44	913	23.0	724	18.2	46	1.2	2,295	57.7	3,978
45 Years & Over	26	49.1	12	22.6	1	1.9	14	26.4	53
Total	2,888	20.3	1,687	11.8	107	0.8	9,555	67.1	14,237
Black	No.	Percent	No.	Percent	No.	Percent	No.	Percent	Total
19 & Under	6	15.0	1	2.5	0	0.0	33	82.5	40
20-34	61	20.3	42	14.0	1	0.3	197	65.4	301
35-44	29	27.6	20	19.0	0	0.0	56	53.3	105
45 Years & Over	0	0.0	0	0.0	0	0.0	0	0.0	0
Total	96	21.5	63	14.1	1	0.2	286	64.1	446
Hispanic	No.	Percent	No.	Percent	No.	Percent	No.	Percent	Total
19 & Under	426	16.3	97	3.7	2	0.1	2,081	79.9	2,606
20-34	2,479	14.8	2,464	14.7	136	0.8	11,693	69.7	16,772
35-44	589	19.7	752	25.2	36	1.2	1,607	53.9	2,984
45 Years & Over	6	31.6	3	15.8	0	0.0	10	52.6	19
Total	3,500	15.6	3,316	14.8	174	0.8	15,391	68.8	22,381
Asian	No.	Percent	No.	Percent	No.	Percent	No.	Percent	Total
19 & Under	7	10.3	1	1.5	0	0.0	60	88.2	68
20-34	941	18.9	437	8.8	46	0.9	3,554	71.4	4,978
35-44	425	23.3	297	16.3	19	1.0	1,082	59.4	1,823
45 Years & Over	6	30.0	6	30.0	0	0.0	8	40.0	20
Total	1,379	20.0	741	10.8	65	0.9	4,704	68.3	6,889
<i>Other Asian³</i>	<i>No.</i>	<i>Percent</i>	<i>No.</i>	<i>Percent</i>	<i>No.</i>	<i>Percent</i>	<i>No.</i>	<i>Percent</i>	<i>Total</i>
19 & Under	3	10.7	0	0.0	0	0.0	25	89.3	28
20-34	600	20.8	267	9.3	19	0.7	1,997	69.3	2,883
35-44	258	23.9	187	17.3	10	0.9	623	57.8	1,078
45 Years & Over	2	28.6	3	42.9	0	0.0	2	28.6	7
Total	863	21.6	457	11.4	29	0.7	2,647	66.2	3,996
<i>Southeast Asian⁴</i>	<i>No.</i>	<i>Percent</i>	<i>No.</i>	<i>Percent</i>	<i>No.</i>	<i>Percent</i>	<i>No.</i>	<i>Percent</i>	<i>Total</i>
19 & Under	4	10.0	1	2.5	0	0.0	35	87.5	40
20-34	341	16.3	170	8.1	27	1.3	1,557	74.3	2,095
35-44	167	22.4	110	14.8	9	1.2	459	61.6	745
45 Years & Over	4	30.8	3	23.1	0	0.0	6	46.2	13
Total	516	17.8	284	9.8	36	1.2	2,057	71.1	2,893
NHOPI	No.	Percent	No.	Percent	No.	Percent	No.	Percent	Total
19 & Under	5	45.5	0	0.0		0.0	6	54.5	11
20-34	30	23.1	13	10.0		0.0	87	66.9	130
35-44	3	10.0	12	40.0		0.0	15	50.0	30
45 Years & Over	0	0.0	0	0.0	0	0.0	0	0.0	0
Total	38	22.2	25	14.6		0.0	108	63.2	171
AIAN	No.	Percent	No.	Percent	No.	Percent	No.	Percent	Total
19 & Under	0	0.0	0	0.0	0	0.0	3	100.0	3
20-34	13	23.6	8	14.5	1	1.8	33	60.0	55
35-44	1	7.1	3	21.4	0	0.0	10	71.4	14
45 Years & Over	0	0.0	0	0.0	0	0.0	0	0.0	0
Total	14	19.4	11	15.3	1	1.4	46	63.9	72

¹ VBAC is vaginal birth after a previous C-Section birth.

² Mothers with Two or More Races (n=378), Withheld (n=456), Other (n=7) race/ethnicity, & unknown ages (n=12) are excluded.

³ Other Asian is a subset of Asian; includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, & Korean.

⁴ Southeast Asian is a subset of Asian; includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

AIAN is American Indian or Alaskan Native; NHOPI is Native Hawaiian or Other Pacific Islander.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

**Table 39. Number & Percent of Exclusive Breastfeeding* by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2004**

Race/Ethnicity of the Mother	Total Known Feeding	Exclusive Breastfeeding	Percent Exclusive Breast Feeding
White	13,518	6,551	48.5%
Two or More Race/Other	2,490	948	38.1%
Missing	132	31	23.5%
Asian	5,239	880	16.8%
Hispanic	22,437	3,013	13.4%
Black	375	103	N/A
NHOPI	63	7	N/A
Native American	8	N/A	N/A
Total	44,262	11,533	26.1%

* Stated intention of the mother at the time the birth certificate was completed.

Asian includes Other Asian and Southeast Asian.

NHOPI is Native Hawaiian or Other Pacific Islander.

Data were retrieved from Genetic Disease Branch, Newborn Screening Data, 2004. Maternal & Adolescent Health/Office of Family Planning Branch, California Department of Health Services.

http://www.mch.dhs.ca.gov/documents/in-hospital-tables/pdf/BF_County_Level_Table-2004.pdf

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Appendix 2
July 1, 2004 Population Estimates¹
County of Orange

Male (Years)	Total	Hispanic	White	Black	AIAN²	Asian	NHOPI³	Two or More Races
<15	341,953	154,385	128,253	5,180	1,777	40,445	1,090	10,823
15-17	65,674	26,225	26,801	1,256	434	9,094	277	1,587
18-19	42,613	16,567	17,482	782	271	6,352	214	945
20-24	109,307	47,550	39,719	1,654	627	17,227	492	2,038
25-29	106,259	50,525	35,377	1,376	563	16,526	437	1,455
30-34	123,109	52,956	46,538	2,082	594	18,918	508	1,513
35-39	126,908	47,888	55,280	2,461	673	18,593	501	1,512
40-44	127,090	37,102	66,636	2,813	720	17,897	474	1,448
45-49	112,207	26,050	65,232	2,336	634	16,351	357	1,247
50-54	91,652	17,441	56,265	1,728	559	14,450	285	924
55 & Over	265,386	34,662	183,795	3,275	1,368	39,037	733	2,516
Sub-Total	1,512,158	511,351	721,378	24,943	8,220	214,890	5,368	26,008

Female (Years)	Total	Hispanic	White	Black	AIAN²	Asian	NHOPI³	Two or More Races
<15	326,600	148,160	122,019	4,784	1,709	38,405	1,023	10,500
15-17	62,476	25,064	25,664	1,095	411	8,433	303	1,506
18-19	40,230	15,475	16,594	725	285	6,041	184	926
20-24	99,351	40,102	37,787	1,389	650	16,907	440	2,076
25-29	100,511	44,037	35,304	1,200	541	17,404	457	1,568
30-34	117,512	47,074	45,260	1,738	618	20,789	496	1,537
35-39	122,599	42,932	54,521	2,280	646	20,183	511	1,526
40-44	124,425	35,022	64,370	2,600	784	19,716	479	1,454
45-49	112,501	25,793	63,074	2,064	762	19,110	391	1,307
50-54	96,210	18,259	57,607	1,640	622	16,829	306	947
55 & Over	322,139	44,323	224,024	3,444	1,608	45,073	758	2,909
Sub-Total	1,524,554	486,241	746,224	22,959	8,636	228,890	5,348	26,256

Grand Total	3,036,712	997,592	1,467,602	47,902	16,856	443,780	10,716	52,264
Percent	100.0	32.9	48.3	1.6	0.6	14.6	0.4	1.7

¹ State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

² AIAN is American Indian or Alaskan Native.

³ NHOPI is Native of Hawaii or Other Pacific Islanders.

Asian includes Other Asian and Southeast Asian.

Source: County of Orange Health Care Agency, Epidemiology & Assessment

Appendix 3

Technical Notes

Important Definitions

Race/Ethnicity

In reports for years prior to 2000, five reporting categories were used, which were based on the first race listed on the birth certificate. In this document, race/ethnicity are separated into two different coding schemes utilizing eight and ten categories respectively. A category for Two or More Races is included in both coding schemes. To be consistent with changes in the minimum required race categories as promulgated from the Federal government, the racial/ethnic categories used when calculating rates are as follows:

- Hispanic
- Non-Hispanic
 - White Only
 - Black Only
 - American Indian and Natives of Alaska Only (AIAN)
 - Asian Only
 - Native of Hawaii and Pacific Islander Only (NHOP)
 - Other Only
 - Two or More Races

The category for Asian includes the more specific categories of Asian, specified or unspecified, Asian Indian, Cambodian, Chinese, Filipino, Hmong, Japanese, Korean, Laotian, Thai and Vietnamese. Other race/ethnicity are those who described themselves as “Other” race/ethnicity.

However, in other tables where population based rates are not calculated, a second coding scheme was used which is felt to better reflect the diverse population of Orange County. The following categories are used in the second scheme:

- Hispanic
- Non-Hispanic
 - White Only
 - Black Only
 - American Indian and Natives of Alaska Only (AIAN)
 - Southeast Asian Only
 - Other Asian Only
 - Native of Hawaii and Pacific Islander Only (NHOP)
 - Other Only
 - Two or More Races
 - Withheld/Unknown

In this scheme, Asian is separated into two groups, Southeast Asian, which contains Cambodian, Hmong, Laotian, Thai and Vietnamese; and Other Asian, which contains Asian Indian, Chinese, Filipino, Japanese, and Korean. Withheld/Unknown includes those who did not specify their race/ethnicity and those with unknown race/ethnicity.

Abnormal Conditions and Clinical Procedures Relating to the Newborn:

All complications and procedures listed are entered by the physician onto the birth certificate from a list of pre-selected two-digit numeric codes; therefore, no additional information pertaining to these complications or procedures is available from the birth certificate.

Birthweight and Gestational age:

Starting with 1995, to be consistent with the definitions used by the Centers for Disease Control and Prevention, the classification categories of birthweight of the infant have been modified. Due to the large amount of inaccurate data on gestational age of the infant, these tables have been removed from the 2004 birth document.

Populations

The 2004 population projections used to calculate rates in this report were provided by the State of California, Department of Finance, *Race/Ethnic Population with Age and Sex Detail, 2000-2050*. Sacramento, California, May 2004.

Place of occurrence The place where the event occurred (regardless of place of residence).

Place of residence The place where a person lives or maintains legal residency. For live births and fetal deaths, the Mother's residence is used.

Births:

Childbearing age Women 15 through 44 years of age.

Live birth The complete expulsion or extraction from its mother of a product of conception (irrespective of the duration of pregnancy) which, after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. This definition was promulgated by the World Health Organization in 1950, and is set forth in the California Administrative Code, Title 17, Chapter 1, Article 3. If the fetus is 20 weeks or more gestational age, the death must be registered with the local registrar.

Low birthweight A live birth or fetal death weighing less than 2,500 grams (5 pounds 8 ounces).

Very low birthweight A live birth or fetal death weighing less than 1,500 grams (3 pounds 5 ounces).

Deaths:

Fetal death A death prior to the complete expulsion or extraction from its mother of a product of conception (irrespective of the duration of pregnancy); the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. This definition was promulgated by the World Health Organization in 1950, and is set forth in the California Administrative Code, Title 17, Chapter 1, Article 3. If the fetus is 20 weeks or more gestational age, the death must be registered with the local registrar.

Infant death A death occurring in the first year of life.

Maternal death A death resulting from the complications of pregnancy, childbirth and the puerperium (Tenth Revision of International Classification of Disease codes O00-O99).

Neonatal death A death occurring during the first 27 days of life.

Postneonatal death A death occurring between the 28th day and the end of the first year of life.

Rates and Ratios: All refer to a specified time period.

Note: Rates for fewer than 25 cases are considered statistically unreliable.

$$\text{Crude (Live) birth rate} = \frac{\text{Number of live births in a given period}}{\text{Estimated mid year population in that period}} \times 1,000$$

$$\text{General fertility rate} = \frac{\text{Number of live births in a given period}}{\text{Estimated female population 15-44 years old in that period}} \times 1,000$$

$$\text{Teen fertility rate} = \frac{\text{Number of live births to mothers 15-19 years old in a specific time period}}{\text{Estimated female population 15-19 years old in that time period}} \times 1,000$$

$$\text{Low birthweight rate} = \frac{\text{Number of infants weighing less than 2,500 g at time of birth in a specific time period}}{\text{Total number of live births in that time period}} \times 1,000$$

$$\text{Very low birthweight rate} = \frac{\text{Number of infants weighing less than 1,500 g at time of birth in a specific time period}}{\text{Total number of live births in that time period}} \times 1,000$$

$$\text{Fetal death ratio} = \frac{\text{Number of reported fetal deaths in a specific time period}}{\text{Total number of live births in that time period}} \times 1,000$$

$$\text{Infant mortality rate} = \frac{\text{Number of deaths under 1 year of age in a specific time period}}{\text{Total number of live births in that time period}} \times 1,000$$

$$\text{Neonatal mortality rate} = \frac{\text{Number of deaths under 28 days of age in a specific time period}}{\text{Total number of live births in that time period}} \times 1,000$$

$$\text{Post-neonatal mortality rate} = \frac{\text{Number of deaths 28 days of age to less than 1 year of age in a specific time period}}{\text{Total number of live births in that time period}} \times 1,000$$

$$\text{Maternal death rate} = \frac{\text{Number of deaths due to complications of pregnancy and childbirth in a specific time period}}{\text{Total number of live births in that time period}} \times 10,000$$

Significance Testing

When the number of births is used for analytical purposes (i.e., the comparison of numbers, rates, and percentages over time, for different areas, or among different groups), the number of events that actually occurred can be thought of as one outcome in a large series of possible results that could have occurred under the same or similar circumstances. When considered in this way, the number of births is subject to random variation and a probable range of values estimated from the actual figures, according to certain statistical assumptions.

Testing differences between two rates:

$$1.96 \times \sqrt{R_1^2/N_1 + R_2^2/N_2}$$

R_1 = first rate

R_2 = second rate

N_1 = first number of births

N_2 = second number of births

When both rates are based on 100 or more events, the difference between the two rates, irrespective of sign (+/-), is considered statistically significant if it exceeds the statistic in the formula above. If the difference is greater than this statistic, then the difference would occur by chance less than 5 times out of 100. If the difference is less than or equal to this statistic, the difference might occur by chance more than 5 times out of 100.

Testing differences between two percentages:

$$1.96 \times \sqrt{p(1-p) \times (1/B_1 + 1/B_2)}$$

B₁ = number of births in the denominator of the first percent

B₂ = number of births in the denominator of the second percent

$$p = (B_1 \times p_1 + B_2 \times p_2) / B_1 + B_2$$

p₁ = the first percent/100

p₂ = the second percent/100

The difference between the two percentages is considered statistically significant, if it is greater than the statistic in the formula above. When testing the difference between two percentages, both percentages must meet the following conditions:

$$B \times p \geq 5, \text{ and } B \times q \geq 5$$

B = number of births in the denominator

p = percent/100

q = 1-p

Appendix 4

References

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