

**County of Orange
Health Care Agency**

Orange County Birth Outcomes, 2003



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Health Care Agency**

Birth Outcomes 2003

Introduction

This document provides tabulations of vital statistics on births in the County of Orange, California, in 2003, 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 birth, 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, 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, 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 valuable 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 2003 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, 2003*, County of Orange Health Care Agency, Santa Ana, California, October 2007. The report is available and can be downloaded from the Epidemiology & Assessment website,

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

Orange County Birth Outcomes, 2003: Executive Summary

Orange County Population

In 2003, Orange County's population of 3,001,146 consisted of 49.8% males and 50.2% females; however, males made up the majority for those < 45 years (Appendix 2). Persons under 20 years of age constituted 29.1% of the population, 20-34 years, 22.0%; 35-54 years, 29.9%; and 55 years and older, 19.0% of the Orange County population. Orange County's increasingly diverse population consisted of 49.2% White, 32.2% Hispanic, 14.3% Asian, 1.6% Black, 0.5% American Indian and Alaskan Native (AIAN), 0.3% Native Hawaiian and Other Pacific Islander (NHOPI), and 1.7% Two or More Races. Women of childbearing age (15-44 years) constituted 22.1% of Orange County's population.

Birth Characteristics

In 2003, a total of 50,390 births took place in Orange County; of which 45,345 births were to residents of Orange County, which was an increase of 1.3% from 44,760 in 2002. As in the previous years, there were more male births (23,323) than female births (22,021) in 2003.

The highest number of births (8,131) were to residents of Santa Ana, accounting for 17.9% of all resident births, followed by Anaheim (6,496), accounting for 14.3% of the births. Villa Park recorded the lowest number of births (29), accounting for .06% of all live births to residents of Orange County. Out of hospital births dropped slightly to 5.3% of all resident births in 2003, from 5.5% in 2002. The mean age of mothers giving birth in 2003 increased slightly, to 29.1 years from 28.9 years in 2002.

The singleton and twin birth rates were similar to the 2002 rates, while the triplet birth rate dropped to 2.1 in 2003, from 2.8 in 2002. Quadruplet births doubled to 16 in 2003, from 8 in 2002.

In 2003, Cesarean section (C-Section) deliveries were performed in 29.0% of all live births, an increase of 3.9% over the 2002 rate of 27.9%. Of the 13,169 C-Section deliveries, 7,894 (59.9%) were first time C-Section births. The remaining 5,275 (40.1%) were repeat C-Section deliveries. The percentage of repeat C-Section births among women who had previous C-Section deliveries was 92.2%. Repeat C-Section births were above the Healthy People 2000 and 2010 goals of 65% and 63%, respectively.

Crude Birth Rate, Fertility Rate, and Teen Birth Rate

The 2003 crude birth rate remained unchanged from the 2002 rate of 15.1 per 1,000 population. In 2003, the fertility rate (number of births per 1,000 females aged 15-44 years) increased slightly (68.1), from the 2002 rate of 67.6. The crude birth rates varied considerably by race/ethnicity (Table A & Figure A). The Orange County crude birth rate was equal to the California rate but 7.1% higher than the U.S. rate of 14.1. The Orange County fertility rate of 68.1 was 2.0% lower than the California rate of 69.5, but 3.0% higher than the U.S. rate of 66.1.

The number of births to teens (15-19 years of age) decreased to 3,068, a rate of 30.8 per 1,000 females in that age group (a decline of 5.2% from the 2002 rate of 32.5). The rate for the youngest teenagers (10-14 years of age) remained the same as 2002 (0.4 per 1,000 females in that age group). The Orange County teen birth rate of 30.8 was 20.8% lower than the California rate of 38.9, and 26.0% lower than the U. S. rate of 41.6.

Fetal Death Rate

The number of fetal deaths (death of a fetus \geq 20 weeks of gestation) decreased to 188 (4.1 deaths per 1,000 live births plus fetal deaths) in 2003. This was a decline from the 231 deaths in 2002. The Orange County fetal death rate met the Healthy People 2010 goal in 2003.

Infant Mortality Rate and Maternal Mortality

The infant mortality rate declined to 4.4 per 1,000 live births in 2003, a decline of 8.3% from the 2002 rate of 4.8. The number of neonatal deaths (occurring in the first 27 days of life) decreased to 137 (3.0 per 1,000 live births) in 2003, from 150 (3.4) in 2002. The number of post-neonatal deaths (occurring between the 28th day and the end of the first year of life) fell to 63 (1.4) in 2003, from 66 (1.5) in 2002. Orange County met the Healthy People 2010 infant mortality target rate of 4.5 in 2003. The number of maternal deaths increased from 1 in 2002 to 7 in 2003.

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, 2003**

Race/Ethnicity of the Mother	Crude Birth Rate	Fertility Rate	Teen Birth Rate	Infant Mortality Rate	Fetal Death Rate
Hispanic	23.1	92.1	66.1	4.6	4.5
Asian	16.1	64.3	5.0	3.5	4.0
NHOPI	14.4	54.2	15.6	--	--
White	9.9	51.0	8.6	4.4	3.3
Black	9.5	40.4	25.1	13.5	
Two or More Races	6.9	34.6	10.3	--	--
AIAN	3.5	14.8	--		
Total	15.1	68.1	30.8	4.4	4.1

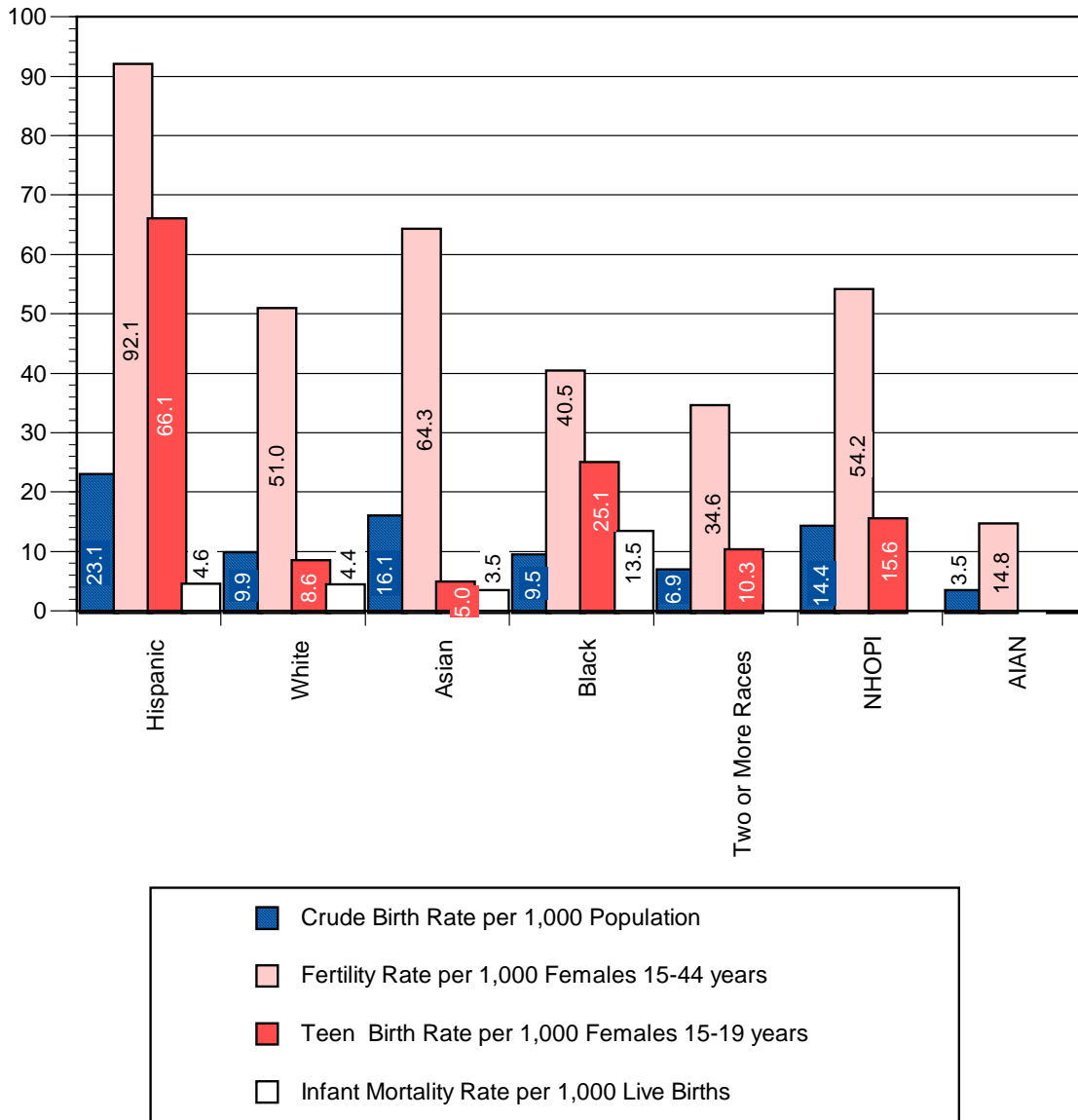
AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

--Rates not calculated for fewer than five deaths.

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

**Figure A. Crude Birth Rates, Fertility Rates, Teen Birth Rates & Infant Mortality Rates by Race/Ethnicity
County of Orange, Resident Births/Deaths, 2003**



Rates not calculated for fewer than five deaths.

Note: Infant deaths are based on 2003 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

Prenatal Care

In 2003, 91.6% of Orange County mothers reported beginning prenatal care in the first trimester. This is an increase of 0.9% over 2002, when 90.8% 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 1994 and 2003, the percent of women initiating prenatal care in the first trimester increased by 13.2%.

Low Birthweight Infants

There were 2,718 infants of low birthweight (less than 2,500 grams or 5 pounds, 8 ounces), a rate of 59.9 per 1,000 live births, which was a decline of 1.2% from the rate of 60.6 per 1,000 live births in 2002. In 2003, 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 2003 was 10.0 per 1,000 live births, an increase of 4.2% from 2002 when the rate was 9.6 per 1,000 live births. Orange County exceeded the Healthy People 2010 goal of no more than 9 very low birthweight births per 1,000 live births. Between 1994 and 2003, the Orange County low birthweight rate increased 13.2%.

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 increased 1.3%, from 44,760 in 2002 to 45,345 in 2003. Within Orange County, crude birth rates varied from a high of 23.4 per 1,000 population in Santa Ana to a low of 4.7 per 1,000 population in Villa Park (Table 1). The Orange County crude birth rate of 15.1 per 1,000 population remained unchanged between 2002 and 2003, and was equal to the California rate, but 7.1% higher than the U.S. rate of 14.1 (Table 2). The crude birth rate in Orange County varied from a high of 23.1 among Hispanics to a low of 3.5 among American Indians or Alaskan Natives (AIAN) (Table 3, Figure 1). The percent of Hispanic births was 49.7%, although they constituted only 32.3% of the Orange County population in 2003. This was in contrast with the pattern seen among Whites; the percentage of White births was 32.6%, although they comprised 49.2% of the Orange County population in 2003 (Figures 2 & 3).

In 2003, the Orange County fertility rate of 68.1 per 1,000 females ages 15-44 years increased slightly, compared to the 2002 rate of 67.6. The Orange County fertility rate of 68.1 was 2.0% lower than the California rate of 69.5, but 3.0% higher than the U.S. rate of 66.1 (Table 4). Although the Orange County fertility rate was lower than the California rate, the Orange County Hispanic fertility rate (92.1) was 2.8% higher than the California Hispanic rate (89.6). The fertility rate in Orange County varied from a high of 92.1 per 1,000 live births among Hispanics to a low of 14.8 among AIAN in 2003 (Table 5).

The 2003 Orange County teen birth rate of 30.8 per 1,000 females aged 15-19 years decreased 5.2%, compared to the 2002 rate of 32.5. The Orange County teen birth rate of 30.8 was 20.8% lower than the California rate of 38.9, and 26.0% lower than the U. S. rate of 41.6 (Table 6). Although the Orange County teen birth rate of 30.8 was lower than the teen birth rate for California, the Orange County Hispanic teen birth rate (66.1) was slightly higher than the California Hispanic teen birth rate (65.2). The Orange County teen birth rate of 30.8 was markedly lower compared to the teen birth rates of neighboring California counties: San Diego (36.1), Los Angeles (41.5), Riverside (43.5), and San Bernardino (45.4) (Table 7). Among groups for whom a rate could be calculated, the teen birth rate in Orange County varied from a high of 66.1 per 1,000 live births for Hispanics to a low of 5.0 for Asians (Table 8).

In 2003, the Orange County infant mortality rate of 4.4 per 1,000 live births decreased 8.3% compared to the 2002 rate of 4.8. Orange County met and surpassed the Healthy People 2010 infant mortality goal of 4.5 per 1,000 live births in 2003. The Orange County infant mortality rate of 4.4 was 15.4% lower than the California rate of 5.2, and 36.2% lower than the U. S. rate of 6.9 (Table 9). Although the Orange County infant mortality rate of 4.4 was lower than the rate of California, the Orange County Black infant mortality rate (13.5) was higher than the California Black infant mortality rate (12.3). The infant mortality rate in Orange County varied from a high of 13.5 per 1,000 live births among Blacks to a low of 3.5 among Asians (Table 10). The 2003 Orange County fetal death rate of 4.1 per 1,000 live births plus fetal deaths decreased 21.2%, compared to the 2002 rate of 5.2. The fetal death rate varied from a high of 4.5 among Hispanics to a low of 3.3 among Whites (Table 11).

Table 1. Live Births & Birth Rates for Orange County Cities
County of Orange
Resident Births, 2003

City of Residence	Live Births	Population¹	Rate /1,000 Population
Aliso Viejo	886	43,958	20.2
Anaheim	6,496	337,920	19.2
Brea	435	37,961	11.5
Buena Park	1,182	80,407	14.7
Costa Mesa	1,741	111,668	15.6
Cypress	474	47,987	9.9
Dana Point/Capistrano Beach	389	36,298	10.7
Fountain Valley	574	56,348	10.2
Fullerton	1,834	131,659	13.9
Garden Grove	2,942	170,151	17.3
Huntington Beach	2,349	197,269	11.9
Irvine	2,052	165,148	12.4
Laguna Beach	212	24,609	8.6
Laguna Hills/Laguna Woods	389	51,112	7.6
Laguna Niguel	765	65,184	11.7
La Habra	1,040	61,273	17.0
Lake Forest	816	77,442	10.5
La Palma	172	15,976	10.8
Los Alamitos	201	11,834	17.0
Mission Viejo	1,062	97,470	10.9
Newport Beach/Corona Del Mar	797	81,435	9.8
Orange	2,082	134,757	15.5
Placentia	825	49,166	16.8
Rancho Santa Margarita	788	48,881	16.1
San Clemente	903	60,788	14.9
San Juan Capistrano	531	35,265	15.1
Santa Ana	8,131	347,691	23.4
Seal Beach	150	24,957	6.0
Stanton	614	38,466	16.0
Tustin	1,316	69,854	18.8
Villa Park	29	6,166	4.7
Westminster	1,400	90,773	15.4
Yorba Linda	604	62,769	9.6
Balance of County*	1,164	111,115	10.5
Total ²	45,345	2,983,757	15.2

¹ State of California, Department of Finance, *E-5 City/County Population and Housing Estimates 2005, Revised 2001-2004, with 2000 DRU Benchmark*. Sacramento, California, May, 2005.

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.

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

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

**Table 2. Comparison of Orange County Crude Birth Rates with California & the United States
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Mother	Rate /1,000 Population		
	OC ^a	CA ^b	US ^c
Hispanic	23.1	21.7	22.9
Asian	16.1	15.7	16.8 ²
NHOPI	14.4	19.8	N/A
White	9.9	10.1 ¹	11.8
Black	9.5	12.2	15.9
Two or More Races	6.9	9.9	N/A
AIAN	3.5	7.8	13.8
Other	N/A*	N/A	N/A
Withheld	N/A*	N/A	N/A
Unknown	N/A*	N/A	N/A
Total	15.1	15.1	14.1

^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 California birth rates were computed using number of births from TABLE 2-33 of the Vital Statistics of California, 2003 report (<http://www.dhs.ca.gov/hisp/chs/OHIR/reports/vitalstatistics/california/>) 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 2003. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.

¹ Includes White/Other/Unknown, therefore may not be comparable to Whites in Orange County and the U.S.

² Includes Asian & Pacific Islander, therefore may not be comparable to Asians in Orange County and the U.S.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

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

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

**Table 3. Crude Birth Rates by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Population¹
Hispanic	22,368	23.1
Asian	6,923	16.1
NHOPI	147	14.4
White	14,669	9.9
Black	446	9.5
Two or More Races	358	6.9
AIAN	53	3.5
Other*	4	N/A
Withheld*	369	N/A
Unknown*	8	N/A
Total	45,345	15.1

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

* 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.

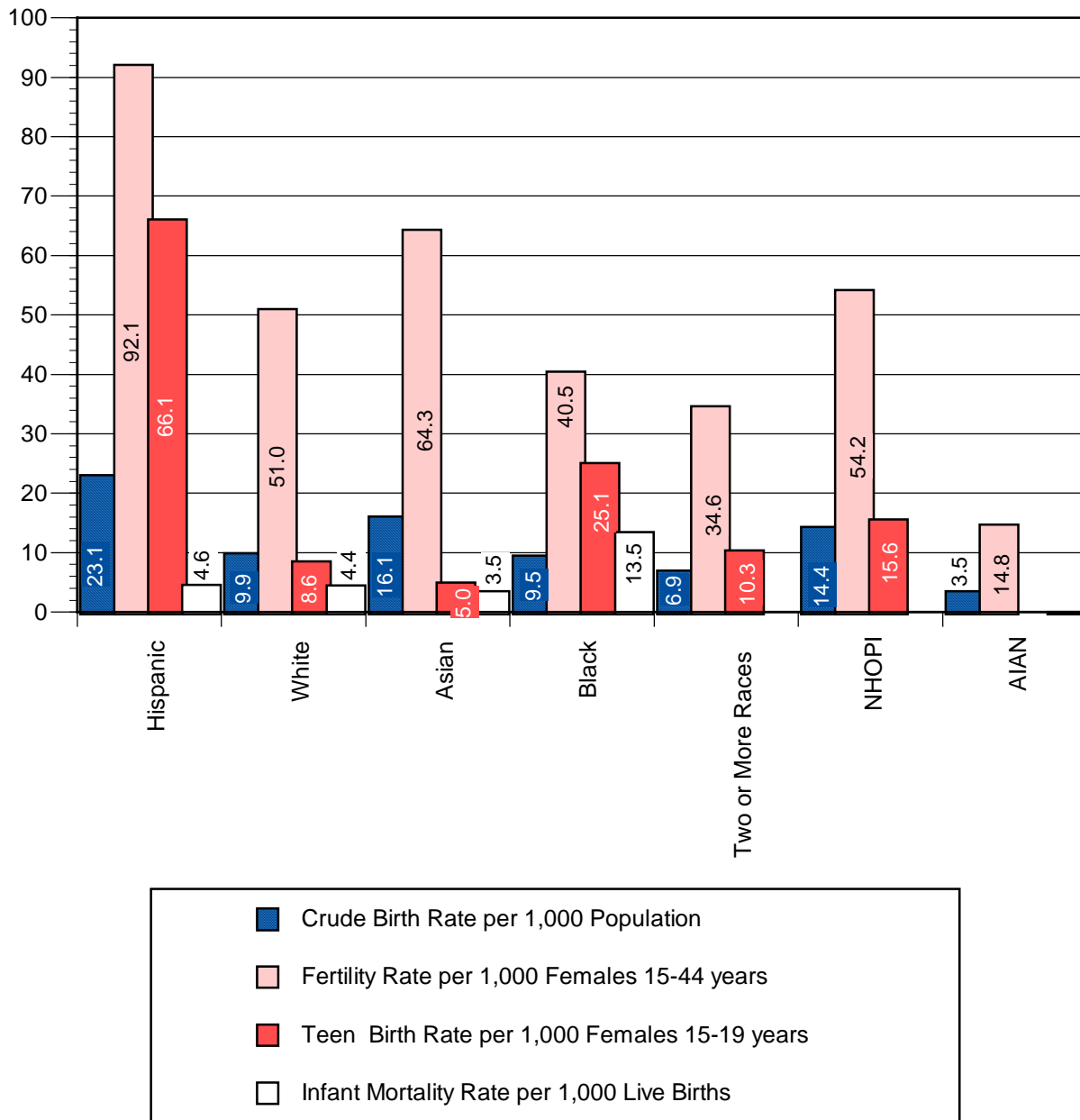
AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

Asian includes Other Asian & Southeast Asian.

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

**Figure 1. Crude Birth Rates, Fertility Rates, Teen Birth Rates & Infant Mortality Rates by Race/Ethnicity
County of Orange
Resident Births, 2003**



Rates not calculated for fewer than five deaths.

Note: Infant deaths are based on 2003 Orange County Death Statistical Master File (Two or More race/ethnicity category is not available in the death file).

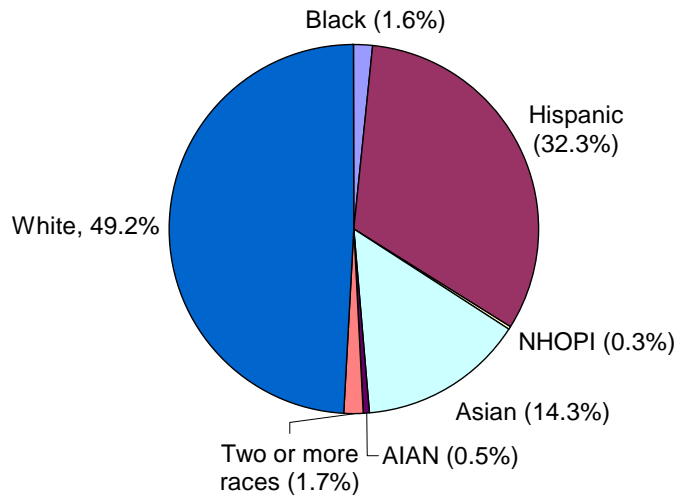
Asian includes Other Asian and Southeast Asian.

AIAN is American Indian or Alaskan Native.

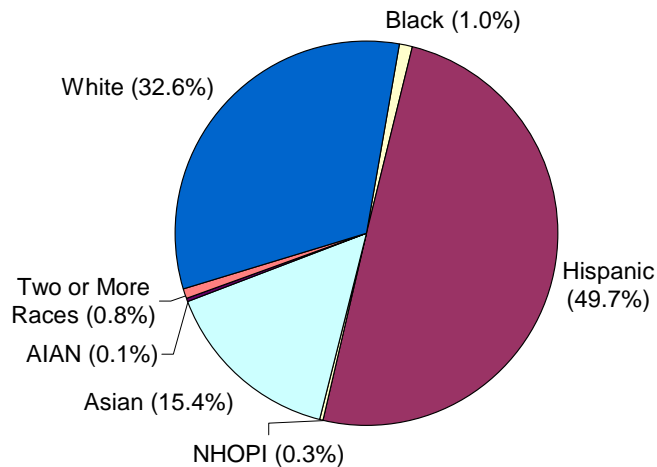
NHOPI is Native Hawaiian or Other Pacific Islander.

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

**Figure 2. Population Proportion* by Race/Ethnicity
County of Orange, Population Estimates¹, 2003**



**Figure 3. Proportion* of Live Births by Race/Ethnicity of the Mother
County of Orange, Resident Births, 2003**



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

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

Births among Withheld/Unknown and Other race/ethnicity (n=381) were excluded, and may differ from data presented elsewhere in the report.

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

Table 4. Comparison of Orange County Fertility Rates with California & the United States
County of Orange
Resident Births, 2003

Race/Ethnicity of the Mother	Rate /1,000 Females 15-44 Years		
	OC ^a	CA ^b	US ^c
Hispanic	92.1	89.6	96.9
Asian	64.3	67.0	66.3 ²
NHOPI	54.2	77.2	N/A ²
White	51.0	55.0 ¹	58.5
Black	40.5	53.1	67.1
Two or More Races	34.6	47.6	N/A
AIAN	14.8	33.9	58.4
Other	N/A*	N/A	N/A
Withheld	N/A*	N/A	N/A
Missing/Unknown	N/A*	N/A	N/A
Total	68.1	69.5	66.1

^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 2003 Birth Data Tables (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>).

^c Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2003. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.

¹ Includes White/Other/Unknown, therefore may not be comparable to Whites in Orange County and the U.S.

² Includes Asian and Pacific Islander, therefore may not be comparable to Asians in Orange County and the U.S.
 AIAN is American Indian or Alaskan Native.
 NHOPI is Native Hawaiian or Other Pacific Islander.

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

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

**Table 5. Fertility Rates by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Females 15-44 Years¹
Hispanic	22,298	92.1
Asian	6,902	64.3
NHOPI	147	54.2
White	14,610	51.0
Black	445	40.4
Two or More Races	358	34.6
AIAN	53	14.8
Other*	4	N/A
Withheld*	365	N/A
Unknown*	5	N/A
Total	45,187	68.1

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

* 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

**Table 6. Comparison of Orange County Teen Birth Rates with California & the United States
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Mother	Rate /1,000 Females 15-19 Years		
	OC ^a	CA ^b	US ^c
Hispanic	66.1	65.2	82.3
Black	25.1	39.2	64.7
NHOPI	15.6	32.4	N/A ²
Two or More Races	10.3	23.2	N/A
White	8.6	17.9 ¹	27.4
Asian	5.0	12.8	17.4 ²
AIAN	--	23.4	52.6
Other	N/A *	N/A	N/A
Withheld	N/A *	N/A	N/A
Unknown	N/A *	N/A	N/A
Total	30.8	38.9	41.6

^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 2003 Birth Data Tables (<http://www.dhs.ca.gov/hisp/chs/OHIR/tables/birth>).

^c Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2003. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.

¹ Includes White/Other/Unknown, therefore may not be comparable to Whites in Orange County and the U.S.

² Includes Asian and Pacific Islander, therefore may not be comparable to Asians in Orange County and the U.S.

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

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

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

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

Table 7. Comparison of Orange County Teen Birth Rate with Selected California Counties¹
County of Orange
Resident Births, 2003

Selected California Counties	Rate /1,000 Females 15-19 Years²
Orange	30.8
San Diego	36.1
Los Angeles	41.5
Riverside	43.5
San Bernardino	45.4

¹ Vital Statistics of California, 2003 (<http://www.dhs.ca.gov/hisp/chs/OHIR/reports/vitalstatisticsocalifornia/>)

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

Table 8. Teen Birth Rates by Race/Ethnicity of the Mother (Aged 15-19 Years)
County of Orange
Resident Births, 2003

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Females 15-19 Years¹
Hispanic	2,544	66.1
Black	44	25.1
NHOPI	7	15.6
Two or More Races	24	10.3
White	357	8.6
Asian	71	5.0
AIAN	4	--
Other*	0	N/A
Withheld*	16	N/A
Unknown*	1	N/A
Total	3,068	30.8

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

* 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 are not calculated for fewer than five events.

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

**Table 9. Comparison of Orange County Infant Mortality Rates with California & the United States
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Infant	Rate /1,000 Live Births		
	OC	CA ¹	US ²
Black	13.5	12.3	14.1
Hispanic	4.6	5.2	5.9
White	4.4	5.1	5.8
Asian	3.5	3.5	N/A
Total	4.4	5.2	6.9

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

Note: Infant deaths are based on 2003 Orange County Death Statistical Master File.

Asian includes Other Asian and Southeast Asian.

¹ Vital Statistics of California, 2003 (<http://www.dhs.ca.gov/hisp/chs/OHIR/reports/vitalstatisticsocalifornia/>).

² Hoyert DL, Kung HC, Smith BL. Deaths: Preliminary data for 2003. National vital statistics reports; vol 53 no 15. Hyattsville, Maryland: National Center for Health Statistics. 2005

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

**Table 10. Infant Mortality Rates by Race/Ethnicity of the Infant
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Infant	Infant Deaths	Rate /1,000 Live Births
Black	6	13.5
Hispanic	102	4.6
White	65	4.4
Asian	24	3.5
NHOPI	3	--
Total	200	4.4
Healthy People 2000 Infant Mortality Goal per 1,000 Live Births		7.0
Healthy People 2000 Infant Mortality Goal per 1,000 Live Births		4.5

Note: Infant deaths are based on 2003 Orange County Death Statistical Master File.

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

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, 2003**

Race/Ethnicity of the Mother	Fetal Deaths	Rate /1,000 Live Births Plus Fetal Deaths
Hispanic	102	4.5
Asian	28	4.0
White	48	3.3
Black	4	--
Unknown	4	--
AIAN	1	--
NHOPI	1	--
Total	188	4.1
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 2003 Orange County Fetal Death File.

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

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 (Table 12) increased 4.9% (from 124.8 per 1,000 live births in 2002 to 130.9 in 2003). The rate of complications during labor and delivery (Table 13) rose from 188.1 per 1,000 live births in 2002 to 203.6 in 2003, an increase of 8.2%. The rate of abnormal conditions among newborns (Table 14) rose from 7.5 per 1,000 live births in 2002 to 8.8 in 2003, an increase of 17.3%. There was also an increase of 7.5% in the rate of clinical procedures related to newborns per 1,000 live births (from 50.7 in 2002 to 54.5 in 2003).

At 20.4 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). The 7 maternal deaths in 2003 resulted in a rate of 15.4 per 100,000 live births, exceeding the Healthy People 2010 goal of 3.3 per 100,000 live births (Table 13). In 2002, there was 1 maternal death resulting in a rate of 2.2. Maternal death is defined by the World Health Organization 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.

**Table 12. Complications & Procedures of Pregnancy & Concurrent Illnesses
County of Orange
Resident Births, 2003**

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	1,653	36.5
Diabetes	1,321	29.1
Pre-Eclampsia (pregnancy-induced hypertension, edema, and/or proteinuria)	708	15.6
Polyhydramnios / Oligohydraminos	374	8.2
Tobacco use during pregnancy	327	7.2
Anemia (hct. < 30 and/or hgb. < 10)	313	6.9
Hepatitis B (acute infection or carrier)	246	5.4
Genital herpes	136	3.0
Hypertension, chronic	122	2.7
Rh sensitization	118	2.6
Uterine bleeding before labor	112	2.5
Any previous live birth or fetal death < 37 weeks gestation	100	2.2
Any previous live birth or fetal death > 3,999 grams birth weight	94	2.1
Sexually transmitted disease, other than genital herpes	75	1.7
Incompetent cervix (with or without cerclage)	51	1.1
Any previous live birth or fetal death < 2,500 grams birth weight	49	1.1
Cardiac disease	37	0.8
Lung disease (acute or chronic)	26	0.6
Hemoglobinopathy	25	0.6
Pyelonephritis	24	0.5
Eclampsia (convulsions or coma)	15	0.3
<u>Renal disease</u>	<u>10</u>	<u>0.2</u>
Total	5,936	130.9
 <u>Procedures (Number of mothers reporting at least one of the following)</u>		
Ultrasound	32,639	719.8
Electronic fetal monitoring	3,580	79.0
Amniocentesis	327	7.2
Tocolysis	85	1.9
Cervical cerclage	47	1.0
<u>Chorionic villus sampling</u>	<u>10</u>	<u>0.2</u>
Total Procedures	36,688	809.1
 Other Complications and Procedures	 1,765	 38.9

¹ Rubella was reported as a concurrent illness for 13 mothers; however, historically this has been miscoded to represent the immune status of the mother.

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

**Table 13. Complications & Procedures of Labor & Delivery
County of Orange
Resident Births, 2003**

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	2,195	48.4
Breech or other abnormal presentation	1,306	28.8
Febrile (>100° F, or >38° C)	1,099	24.2
Fetal distress	815	18.0
Premature rupture of membrane (>12 hours)	716	15.8
Fetopelvic disproportion	630	13.9
Other dysfunctional labor	614	13.5
Pre-eclampsia (pregnancy-induced hypertension, edema, and/or proteinuria)	523	11.5
Prolonged labor (>20 hours)	329	7.3
Precipitous labor	266	5.9
Placenta previa	164	3.6
Abruptio placenta	131	2.9
Other excessive bleeding	116	2.6
Shoulder dystocia	99	2.2
Unsuccessful vaginal birth (after C-section)	59	1.3
Amnionitis / sepsis	48	1.1
Genital herpes	44	1.0
Cord prolapse	25	0.6
Anesthetic complications	23	0.5
Seizures during labor	13	0.3
Eclampsia (convulsions or coma)	8	0.2
<u>Maternal death¹</u>	<u>7</u>	<u>0.2</u>
Total Complications	9,230	203.6
<u>Procedures (Number of mothers reporting at least one of the following)</u>		
Electronic fetal monitoring	35,209	776.5
Stimulation of labor	5,955	131.3
Induction of labor	5,340	117.8
Ultrasound	1,142	25.2
Amniocentesis	72	1.6
Tocolysis	62	1.4
Transport of mother from another facility prior to delivery	23	0.5
<u>Maternal blood transfusion</u>	<u>17</u>	<u>0.4</u>
Total Procedures	47,820	1,054.6
Other Complications and Procedures	4,859	107.2

¹ Maternal deaths are based on 2003 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

**Table 14. Abnormal Conditions & Clinical Procedures Relating to the Newborn
County of Orange
Resident Births, 2003**

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)	94	2.1
Other anomalies of the respiratory system	68	1.5
Other anomalies*	51	1.1
Down's syndrome	29	0.6
Cleft palate, lip	23	0.5
Other anomalies of ear, face, and/or neck	16	0.4
Meconium aspiration syndrome	15	0.3
Other anomalies of musculoskeletal system	10	0.2
Drug withdrawal syndrome	9	0.2
Talipes	8	0.2
Other anomalies of the heart	7	0.2
Other anomalies of the circulatory system	6	0.1
Other anomalies of digestive system	6	0.1
Anencephalus	5	0.1
Abnormalities of the skin, hair or nail	5	0.1
Other conditions due to chromosomal anomalies	5	0.1
Preaxial polydactyly	5	0.1
Anomalies of diaphragm	4	--
Branchial clefts	4	--
Atrial septal defect	4	--
Valve stenosis and/or insufficiency	4	--
Other anomalies of urinary system	4	--
Open spina bifida	4	--
Hydrocephalus	4	--
Birth injury with or without specific site	4	--
Tracheo-esophageal fistula, or esophageal atresia or stenosis	4	--
Total Abnormal Conditions	398	8.8
<u>Procedures Relating to the Newborn</u>		
Neonatal Intensive Care Unit (NICU)	1,502	33.1
Transfer of newborn to another facility	423	9.3
Assisted ventilation >= 30 minutes	404	8.9
<u>Assisted ventilation < 30 minutes</u>	<u>143</u>	<u>3.2</u>
Total Procedures	2,472	54.5
Other Abnormal Conditions and Procedures	1,324	29.2

* Includes all anomalies with fewer than four reported occurrences.

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.

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

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

Section 3. Number & Rate of Cesarean Deliveries

In 2003, a Cesarean section (C-Section) delivery was performed in 29.0% of Orange County births; an increase of 3.9% from the 27.9% of C-Section deliveries performed in 2002. This percentage was higher than that for California¹ (27.9%) and the United States² (27.5%) (Table 15).

The percent of primary or first C-Section births (among women with no previous C-Section delivery) rose 7.4%, from 16.2% in 2002 to 17.4% in 2003. The Orange County first C-Section delivery rate was 33.3% lower than California¹ (26.1%), and 8.9% lower than the United States² (19.1%). At 16.3%, the percent 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 deliveries (among women who had a previous C-Section delivery) was 92.2% for Orange County, compared to 96.2% for California¹ and 89.4% for the United States² (Table 15). The Healthy People 2010 goal for prior C-Section births was 63.0% of live births.

In Orange County, Hoag Memorial Hospital had the highest (34.4%), and Orange Coast Memorial Medical Center the lowest (22.8%) percent of C-Section deliveries among births to Orange County residents in 2003 (Table 16).

¹ Vital Statistics of California, 2003. Department of Health Services, Birth Records.

² Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2003. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.

Table 15. Comparison of Orange County Primary and Repeat Cesarean Section Deliveries with California & the United States, 2003

**County of Orange
Resident Births, 2003**

Cesarean Delivery	Percent		
	OC	CA ¹	US ²
Primary ^a (First) C-Section Birth	17.4%	26.1%	19.1%
<i>First C-Section for First Time Birth</i>	16.3%	--	--
Repeat ^b C-Section Birth	92.2%	96.2%	89.4%
Total ^c C-Section Birth	29.0%	27.9%	27.5%

^a Percent of mothers with no previous Cesarean delivery.

^b Percent of mothers who had a previous Cesarean delivery.

^c Percent of all live births by Cesarean delivery.

¹ Vital Statistics of California, 2003. Department of Health Services, Birth Records.

² Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2003. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.

Healthy People 2000 & 2010 objective for first C-Section birth is 15.0% of live births to women giving birth for the first time.

Healthy People 2000 objective for repeat C-Section birth is 65.0% of live births to women with a prior Cesarean birth.

Healthy People 2010 objective for repeat C-Section birth is 63.0% of live births to women with a prior Cesarean birth.

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

**Table 16. Number & Percent of Cesarean Deliveries by Orange County Hospital
County of Orange Births, 2003**

Hospital	Total Births	Total C-Section	First C-Section	Repeat C-Section	C-Section Percent of Total Births
Anaheim General Hospital					
Total Births	403	122	67	55	30.3%
Orange County Residents	372	108	60	48	29.0%
Anaheim Memorial M.C.					
Total Births	2,407	638	347	291	26.5%
Orange County Residents	2,179	574	311	263	26.3%
Chapman General Hospital					
Total Births	1	0	0	0	0.0%
Orange County Residents	1	0	0	0	0.0%
Coastal Communities Hospital					
Total Births	2,631	909	528	381	34.5%
Orange County Residents	2,579	883	515	368	34.2%
Fountain Valley Regional M.C.					
Total Births	4,183	1,152	705	447	27.5%
Orange County Residents	3,946	1,075	650	425	27.2%
Garden Grove Hosp. & M.C.					
Total Births	2,518	771	397	374	30.6%
Orange County Residents	2,332	705	361	344	30.2%
Hoag Memorial Hospital					
Total Births	4,784	1,651	1,085	566	34.5%
Orange County Residents	4,481	1,540	1,028	512	34.4%
Irvine Medical Center					
Total Births	2,230	679	419	260	30.4%
Orange County Residents	2,095	631	393	238	30.1%
Kaiser Foundation, Anaheim					
Total Births	3,342	857	504	353	25.6%
Orange County Residents	2,752	718	427	291	26.1%
La Palma Intercommunity					
Total Births	616	149	80	69	24.2%
Orange County Residents	380	90	50	40	23.7%
Los Alamitos M.C.					
Total Births	1,304	349	201	148	26.8%
Orange County Residents	445	125	71	54	28.1%
Mission Hosp Regional M.C.					
Total Births	2,953	813	506	307	27.5%
Orange County Residents	2,811	774	485	289	27.5%
Orange Coast Memorial M.C.					
Total Births	1,286	308	191	117	24.0%
Orange County Residents	1,048	239	142	97	22.8%

(continued on next page)

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

**Table 16. Number & Percent of Cesarean Deliveries by Orange County Hospital (continued)
County of Orange Births, 2003**

Hospital	Total Births	Total C-Section	First C-Section	Repeat C-Section	C-Section Percent of Total Births
Placentia Linda Community					
Total Births	901	235	137	98	26.1%
Orange County Residents	733	195	113	82	26.6%
Saddleback Memorial M.C.					
Total Births	3,225	988	645	343	30.6%
Orange County Residents	3,064	931	607	324	30.4%
Santa Ana Medical Center					
Total Births	448	145	84	61	32.4%
Orange County Residents	444	144	84	60	32.4%
South Coast Medical Center					
Total Births	512	138	101	37	27.0%
Orange County Residents	491	131	95	36	26.7%
St. Joseph Hospital					
Total Births	4,570	1,430	881	549	31.3%
Orange County Residents	4,082	1,278	792	486	31.3%
St. Jude Medical Center - Fullerton					
Total Births	2,247	572	357	215	25.5%
Orange County Residents	1,591	397	244	153	25.0%
UCI Medical Center					
Total Births	1,375	450	280	170	32.7%
Orange County Residents	1,275	401	241	160	31.5%
Western Medical Center-Anaheim					
Total Births	2,600	615	321	294	23.7%
Orange County Residents	2,521	595	308	287	23.6%
Western Medical Center-Santa Ana					
Total Births	3,427	954	486	468	27.8%
Orange County Residents	3,321	922	475	447	27.8%
At Home					
Total Births	105	N/A	N/A	N/A	N/A
Orange County Residents	102	N/A	N/A	N/A	N/A
Other locations/Unknown					
Total Births	2,322	715	443	272	30.8%
Orange County Residents	2,300	713	442	271	31.0%
Total					
Total Births	50,390	14,640	8,765	5,875	29.1%
Orange County Residents	45,345	13,169	7,894	5,275	29.0%

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

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 improved 1.2% between 2002 (60.6) and 2003 (59.9), but fell short of meeting the Healthy People 2000 and 2010 goals of 50 per 1,000 live births. Very low birthweight (less than 1,500 grams or 3 pounds, 5 ounces), increased from 9.6 in 2002 to 10.0 per 1,000 live births in 2003, an increase of 4.2%, and failed to meet the Healthy People 2010 goal of 9.0 per 1,000 live births. Black infants had the highest rate of low birthweight (103.1) and very low birthweight (29.1) compared to all other race/ethnicity categories (Tables 17 & 18). Between 1999 and 2003, the low birthweight rate rose 8.5%, from 55.2 to 59.9 per 1,000 live births (Figure 4). Throughout the period 1999 to 2003, the low birthweight rate remained higher than the Healthy People 2000 and 2010 goals. During the same period, the very low birthweight rate met the Healthy People 2000 goal of 10.0 each year except 2001, 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).

Among women aged 45 years and older, there were a total of 111 births in 2003. The percent of multiple births increased from 14.9% in 1999 to 36.9% in 2003, an increase of 147.7%, and singleton births among this age group decreased from 85.1% in 1999 to 63.1% in 2003, a decline of 25.9% (Table 21).

Of the 43,847 singleton births, 28.9% were born to mothers in the 30-34 year age group, followed by the 25-29 year age group with 25.7%. Of the 1,385 twin births, 32.6% were born to mothers in the 30-34 year age group, followed by the 35-39 year age group with 23.0%. Triplet births (n=94) reflected a similar birth pattern as the twin births: 45.7% in 30-34 maternal age group, followed by 31.9% in the 35-39 year age group (Table 20).

As in previous years, the percent of singleton births in 2003 was higher among Hispanics (97.6%) compared to Whites (95.1%) (Table 22). Of the 45,345 births, the highest percentages of twin and triplet births were among Whites, 4.4% and 0.5% respectively, compared to Hispanics, 2.2% (twin births), and 0.1% (triplet births). Of the 1,385 twin births that occurred in Orange County in 2003, 46.1% were born to White mothers and 36.0% to Hispanic mothers; and of the 94 triplet births, 73.4% were among Whites, compared to 23.4% among Hispanics.

**Table 17. Low Birthweight Incidence by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Birthweight (g) ¹	Race/Ethnicity of Mother										
	White	Black	Hispanic	S.E. Asian ³	Other Asian ⁴	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ⁵	Total
<2,500	851	46	1,258	223	278	8	6	18	0	30	2,718
Rate ²	58.0	103.1	56.2	70.9	73.6	150.9	40.8	50.3	--	79.6	59.9

**Table 18. Very Low Birthweight Incidence by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Birthweight (g) ¹	Race/Ethnicity of Mother										
	White	Black	Hispanic	S.E. Asian ³	Other Asian ⁴	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ⁵	Total
<1,500	141	13	220	29	42	1	1	3	0	4	454
Rate ²	9.6	29.1	9.8	9.2	11.1	--	--	--	--	--	10.0

¹ Birthweight in grams.

² Rate is calculated per 1,000 live births.

³ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

⁴ Other 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=30).

⁶ Withheld/Unknown includes those who did not specify their race/ethnicity (n=4).

AIAN is American Indian or Alaskan Native.

NHOPI is Native Hawaiian or Other Pacific Islander.

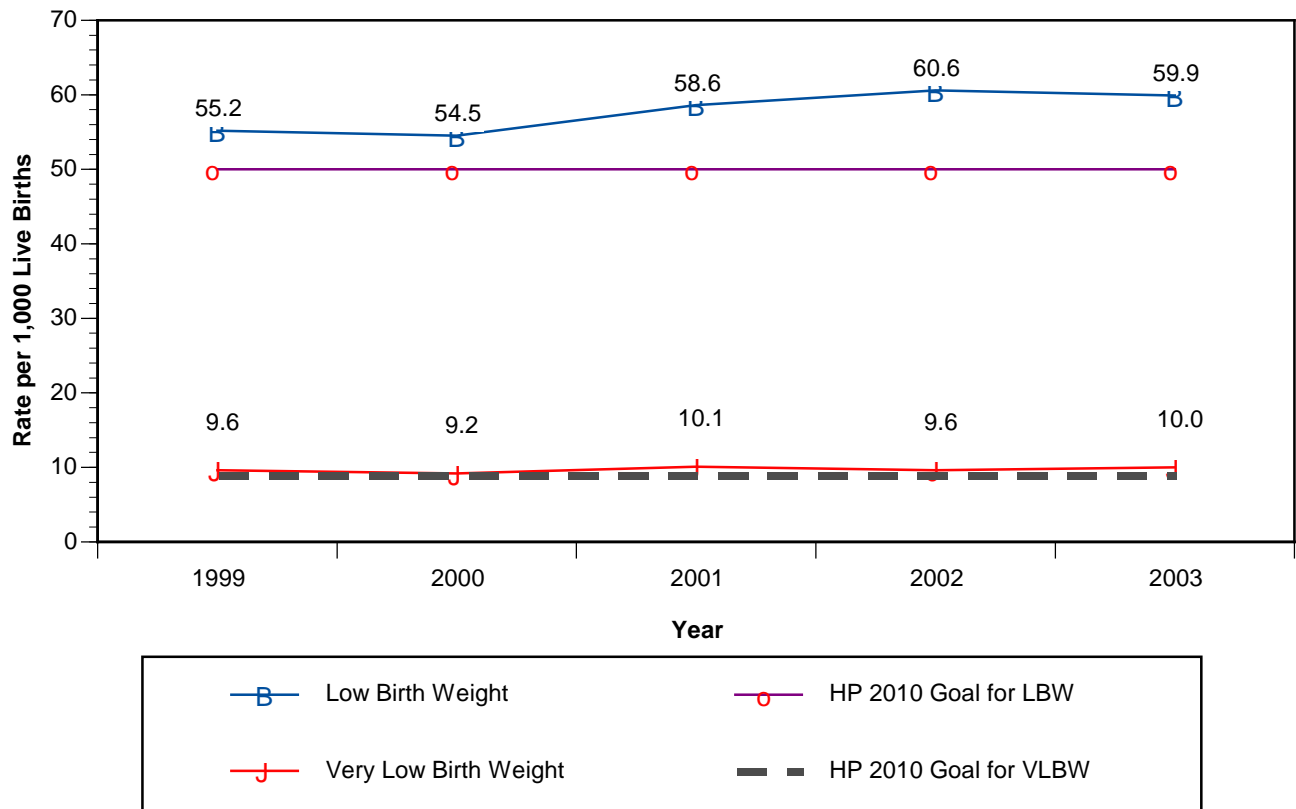
-- Rates are not calculated for fewer than five events.

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.

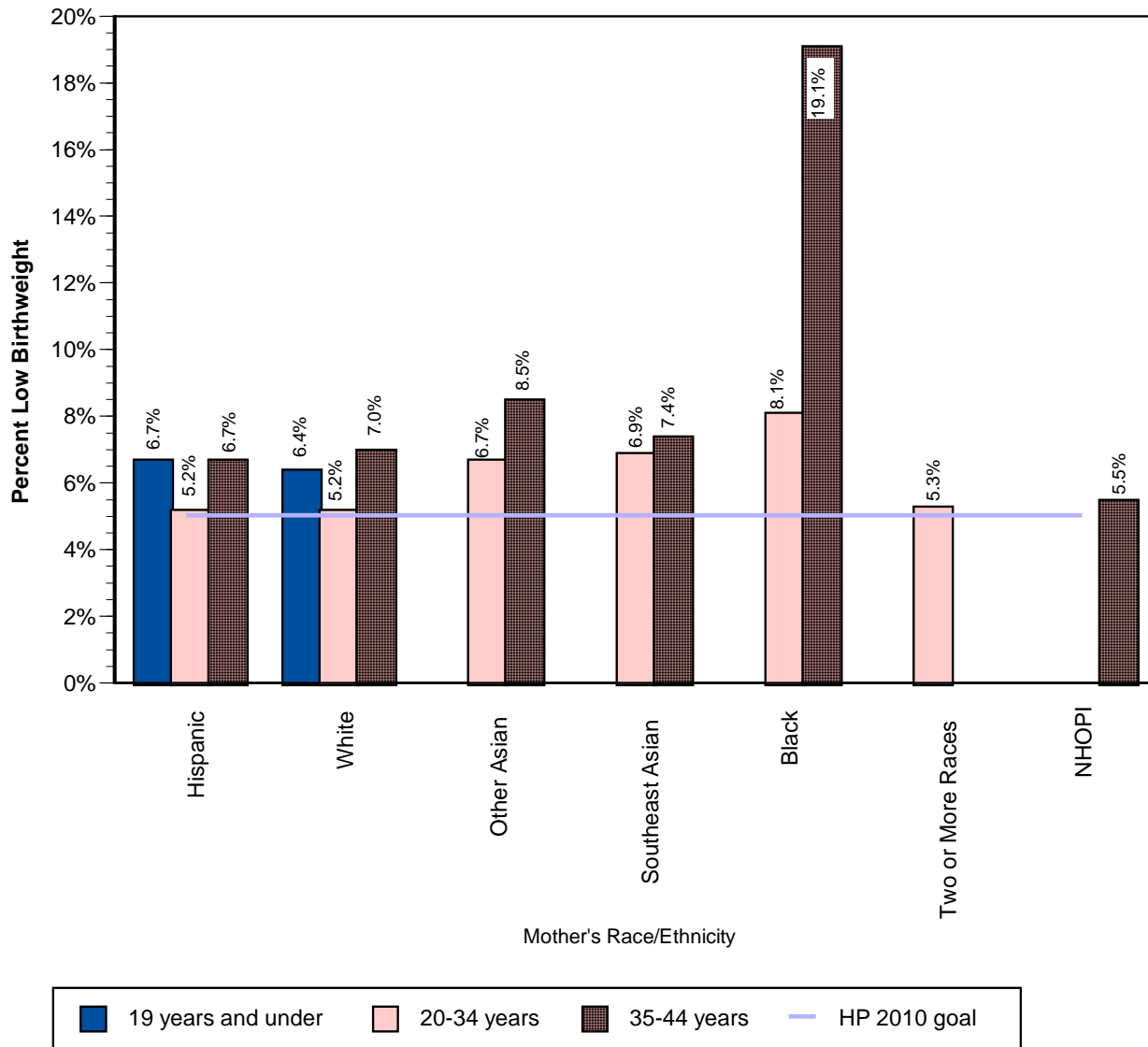
Figure 4. Trends in Low & Very Low Birthweight Rates & Comparison with Healthy People 2010 Goals
County of Orange
Resident Births, 1999-2003



Low birth weight is defined as < 2,500 grams of weight at birth.
 Very low birth weight is defined as < 1,500 grams of weight at birth.

Healthy People 2000 goal for very low birth weight infants is 10.0 per 1,000 live births.
 Healthy People 2010 goal for very low birth weight infants is 9.0 per 1,000 live births.
 Healthy People 2000 & 2010 goal for low birth weight infants is 50.0 per 1,000 live births.
 Source: County of Orange Health Care Agency, Epidemiology & Assessment

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, 2003



* Percentages are not calculated for fewer than five events.

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

Less than five events are not included in 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 birth weight is 50.0 per 1,000 live births (5.0%).

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

Table 19. Infant's Birthweight by Mother's Age Group (Years)
County of Orange
Resident Births, 2003

Mother's Age Group ^{1,2}	Infant's Birth Weight ³					Total
	< 1,500 g	1,500 - 2,499 g	2,500 - 3,499 g	3,500 - 4,499 g	4,500 + g	
< 15 Years	1	4	28	11	0	44
% of column	0.2	0.2	0.1	0.1	0.0	0.1
% of row	2.3	9.1	63.6	25.0	0.0	100.0
15-17 Years	18	49	657	292	9	1,025
% of column	4.0	2.2	2.6	1.7	1.5	2.3
% of row	1.8	4.8	64.1	28.5	0.9	100.0
18-19 Years	26	106	1,252	645	14	2,043
% of column	5.7	4.7	5.0	3.8	2.3	4.5
% of row	1.3	5.2	61.3	31.6	0.7	100.0
20-24 Years	79	358	4,975	2,926	70	8,408
% of column	17.4	15.8	19.8	17.3	11.5	18.5
% of row	0.9	4.3	59.2	34.8	0.8	100.0
25-29 Years	103	523	6,419	4,348	145	11,538
% of column	22.7	23.1	25.6	25.7	23.9	25.4
% of row	0.9	4.5	55.6	37.7	1.3	100.0
30-34 Years	107	657	7,111	5,107	202	13,184
% of column	23.6	29.0	28.3	30.2	33.3	29.1
% of row	0.8	5.0	53.9	38.7	1.5	100.0
35-39 Years	89	413	3,751	2,938	134	7,325
% of column	19.6	18.2	14.9	17.4	22.1	16.2
% of row	1.2	5.6	51.2	40.1	1.8	100.0
40-44 Years	20	129	853	631	31	1,664
% of column	4.4	5.7	3.4	3.7	5.1	3.7
% of row	1.2	7.8	51.3	37.9	1.9	100.0
45 + Years	11	25	48	25	2	111
% of column	2.4	1.1	0.2	0.1	0.3	0.2
% of row	9.9	22.5	43.2	22.5	1.8	100.0
Total	454	2,264	25,094	16,923	607	45,342
% of column	100.0	100.0	100.0	100.0	100.0	100.0
% of row	1.0	5.0	55.3	37.3	1.3	100.0

¹ Mother's age at time of delivery.

² Age unknown for three mothers.

³ Birth weight in grams.

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

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

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

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

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

Table 20. Infant's Plurality by Mother's Age Group (Years)
County of Orange
Resident Births, 2003

Mother's Age Group ^{1, 2}	Infant's Plurality				
	Single	Twin ³	Triplet ³	Quadruplet ³	Total
< 15 Years	44	0	0	0	44
% 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	1,015	10	0	0	1,025
% 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	2,009	31	3	0	2,043
% of column	4.6	2.2	3.2	0.0	4.5
% of row	98.3	1.5	0.1	0.0	100.0
20-24 Years	8,230	168	6	4	8,408
% of column	18.8	12.1	6.4	25.0	18.5
% of row	97.9	2.0	0.1	0.0	100.0
25-29 Years	11,249	279	6	4	11,538
% of column	25.7	20.1	6.4	25.0	25.4
% of row	97.5	2.4	0.1	0.0	100.0
30-34 Years	12,685	452	43	4	13,184
% of column	28.9	32.6	45.7	25.0	29.1
% of row	96.2	3.4	0.3	0.0	100.0
35-39 Years	6,973	318	30	4	7,325
% of column	15.9	23.0	31.9	25.0	16.2
% of row	95.2	4.3	0.4	0.1	100.0
40-44 Years	1,572	89	3	0	1,664
% of column	3.6	6.4	3.2	0.0	3.7
% of row	94.5	5.3	0.2	0.0	100.0
45 + Years	70	38	3	0	111
% of column	0.2	2.7	3.2	0.0	0.2
% of row	63.1	34.2	2.7	0.0	100.0
Total	43,847	1,385	94	16	45,342
% of column	100.0	100.0	100.0	100.0	100.0
% of row	96.7	3.1	0.2	0.0	100.0

¹ Mother's age at time of delivery.

² Age unknown for three mothers, all of whom gave births to singletons.

³ Still-born infants are excluded from birth files, and therefore, the number of live births in twin, triplet, and quadruplet categories may not depict the exact set of numbers in these categories.

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

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

Table 21. Trends in Plurality by Mother's Age Group (Years)
County of Orange
Resident Births, 1999 - 2003

Mother's Age ^{1,2}	Infant's Plurality				
	1999	2000	2001	2002	2003
19 Years & Under	3,732	3,659	3,408	3,194	3,112
Single	3,663	3,622	3,368	3,155	3,068
%	98.2	99.0	98.8	98.8	98.6
Twin ³	66	37	40	39	41
%	1.8	1.0	1.2	1.2	1.3
Triplet ³	3	0	0	0	3
%	0.1	0.0	0.0	0.0	0.1
Quadruplet ³	0	0	0	0	0
%	0.0	0.0	0.0	0.0	0.0
20-34 Years	34,900	34,856	33,547	32,841	33,130
Single	33,995	33,951	32,652	31,893	32,164
%	97.4	97.4	97.3	97.1	97.1
Twin ³	836	860	826	868	899
%	2.4	2.5	2.5	2.6	2.7
Triplet ³	59	45	53	76	55
%	0.2	0.1	0.2	0.2	0.2
Quadruplet ³	10	0	16	4	12
%	0.0	0.0	0.0	0.0	0.0
35-44 Years	7,770	8,387	8,422	8,612	8,989
Single	7,468	8,015	7,977	8,138	8,545
%	96.1	95.6	94.7	94.5	95.1
Twin ³	258	335	399	426	407
%	3.3	4.0	4.7	4.9	4.5
Triplet ³	36	33	38	48	33
%	0.5	0.4	0.5	0.6	0.4
Quadruplet ³	8	4	8	0	4
%	0.1	0.0	0.1	0.0	0.0
45+ Years	74	77	84	111	111
Single	63	62	68	66	70
%	85.1	80.5	81.0	59.5	63.1
Twin ³	11	15	16	38	38
%	14.9	19.5	19.0	34.2	34.2
Triplet ³	0	0	0	3	3
%	0.0	0.0	0.0	2.7	2.7
Quadruplet ³	0	0	0	4	0
%	0.0	0.0	0.0	3.6	0.0
Total⁴	46,476	46,979	45,461	44,758	45,342

¹ Mother's age at time of delivery.

² Mothers with unknown ages were excluded for 1999 (n=2), 2000 (n=1), 2001 (n=1), 2002 (n=2), & 2003 (n=3).

³ Still-born infants are excluded from birth files, and therefore, the number of live births in twin, triplet, and quadruplet categories may not depict the exact set of numbers in these categories.

**Table 22. Plurality by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Mother's Race/Ethnicity	Infant's Plurality				
	Single	Twin ⁴	Triplet ⁴	Quadruplet ⁴	Total
White	13,953	639	69	8	14,669
% of column	31.8	46.1	73.4	50.0	32.3
% of row	95.1	4.4	0.5	0.1	100.0
Black	438	8	0	0	446
% of column	1.0	0.6	0.0	0.0	1.0
% of row	98.2	1.8	0.0	0.0	100.0
Hispanic	21,839	499	22	8	22,368
% of column	49.8	36.0	23.4	50.0	49.3
% of row	97.6	2.2	0.1	0.0	100.0
S.E. Asian ¹	3,069	75	3	0	3,147
% of column	7.0	5.4	3.2	0.0	6.9
% of row	97.5	2.4	0.1	0.0	100.0
Other Asian ²	3,663	113	0	0	3,776
% of column	8.4	8.2	0.0	0.0	8.3
% of row	97.0	3.0	0.0	0.0	100.0
NHOPI	145	2	0	0	147
% of column	0.3	0.1	0.0	0.0	0.3
% of row	98.6	1.4	0.0	0.0	100.0
AIAN	51	2	0	0	53
% of column	0.1	0.1	0.0	0.0	0.1
% of row	96.2	3.8	0.0	0.0	100.0
Two or More Races	342	16	0	0	358
% of column	0.8	1.2	0.0	0.0	0.8
% of row	95.5	4.5	0.0	0.0	100.0
Other	4	0	0	0	4
% 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/Unknown ³	346	31	0	0	377
% of column	0.8	2.2	0.0	0.0	0.8
% of row	91.8	8.2	0.0	0.0	100.0
Total	43,850	1,385	94	16	45,345
% of column	100.0	100.0	100.0	100.0	100.0
% of row	96.7	3.1	0.2	0.0	100.0

¹ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other 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=369) those with unknown race/ethnicity (n=8).

⁴ Still-born infants are excluded from birth files, and therefore, the number of live births in twin, triplet, and quadruplet categories may not depict the exact set of numbers in these categories.

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

AIAN is American Indian or Alaskan Native.

Section 5. Prenatal Care

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 90.8% in 2002 to 91.6% in 2003, an increase of 0.9%. In 2003, 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 93.4% with some college to 97.2% at the post-graduate level), relative to mothers with no high school (88.2%), some high school (85.4%), and a high school diploma, 89.9% (Table 23 & Figure 6). While White (95.0%), Southeast Asian (94.6%), Other Asian (94.9%), and AIAN (90.6%) mothers met the Healthy People 2010 goal in 2003, Black (85.9%), Hispanic (88.6%), and NHOPI (78.2%) mothers did not meet the goal (Table 24). Younger teen mothers were less likely to initiate prenatal care in the first trimester. Only 43.2% (19 out of 44) of women under the age of 15 years initiated prenatal care in the first trimester, as compared to 75.2% of mothers aged 15-17 years, 82.4% aged 18-19 years, 88.0% aged 20- 24 years, and 91% of mothers aged 25 years and older (Table 25 & Figure 7).

Table 23. Trimester Prenatal Care Initiated by Mother's Education Level
County of Orange
Resident Births, 2003

Trimester Prenatal Care Initiated	Mother's Education Level ¹						Total
	No High School	Some High School	High School Graduate	Some College	College Graduate	Post-Graduate	
First trimester	4,928	6,253	9,756	7,362	7,384	5,454	41,137
% of column	88.2	85.4	89.9	93.4	96.9	97.2	91.7
% of row	12.0	15.2	23.7	17.9	17.9	13.3	100.0
Second trimester	532	876	910	439	182	133	3,072
% of column	9.5	12.0	8.4	5.6	2.4	2.4	6.8
% of row	17.3	28.5	29.6	14.3	5.9	4.3	100.0
Third trimester	101	146	131	47	45	14	484
% of column	1.8	2.0	1.2	0.6	0.6	0.2	1.1
% of row	20.9	30.2	27.1	9.7	9.3	2.9	100.0
No prenatal care	23	38	39	20	3	3	126
% of column	0.4	0.5	0.4	0.3	0.0	0.1	0.3
% of row	18.3	30.2	31.0	15.9	2.4	2.4	100.0
Unknown	6	13	17	11	5	6	58
% of column	0.1	0.2	0.2	0.1	0.1	0.1	0.1
% of row	10.3	22.4	29.3	19.0	8.6	10.3	100.0
Total	5,590	7,326	10,853	7,879	7,619	5,610	44,877
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	12.5	16.3	24.2	17.6	17.0	12.5	100.0

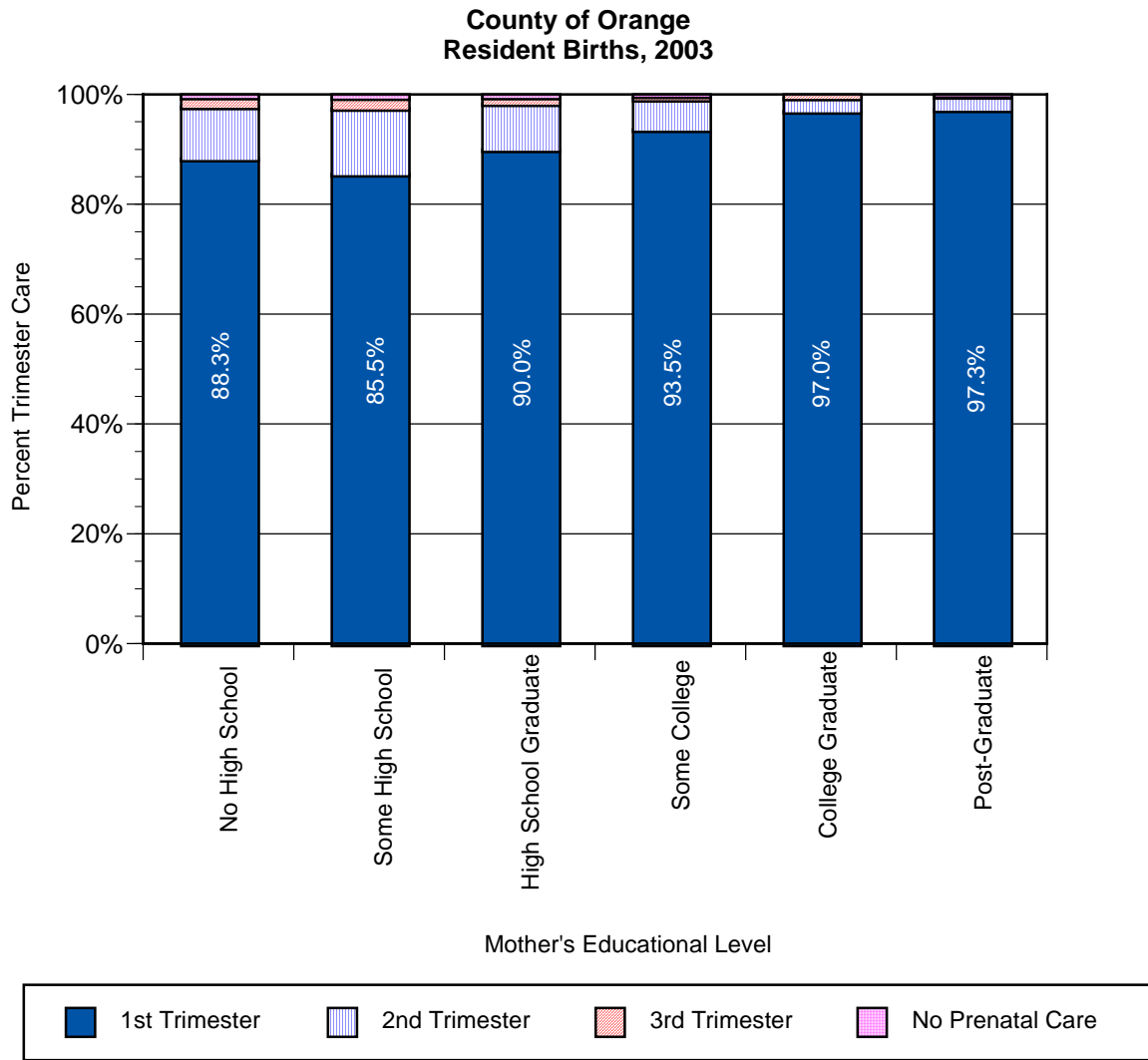
¹ Unknowns for mother's education level are excluded from analysis (n=468).

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

Figure 6. Trimester Prenatal Care Initiated by Mother's Education



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

Table 24. Trimester Prenatal Care Initiated by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003

Trimester Prenatal Care Initiated	Race/Ethnicity of Mother										
	White	Black	Hispanic	S.E. Asian ¹	Other Asian ²	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ³	Total
First	13,935	383	19,821	2,976	3,585	48	115	335	3	315	41,516
% of column	95.0	85.9	88.6	94.6	94.9	90.6	78.2	93.6	75.0	83.6	91.6
% of row	33.6	0.9	47.7	7.2	8.6	0.1	0.3	0.8	0.0	0.8	100.0
Second	579	49	2,101	149	158	4	24	22	1	17	3,104
% of column	3.9	11.0	9.4	4.7	4.2	7.5	16.3	6.1	25.0	4.5	6.8
% of row	18.7	1.6	67.7	4.8	5.1	0.1	0.8	0.7	0.0	0.5	100.0
Third	87	9	339	16	26	1	6	0	0	6	490
% of column	0.6	2.0	1.5	0.5	0.7	1.9	4.1	0.0	0.0	1.6	1.1
% of row	17.8	1.8	69.2	3.3	5.3	0.2	1.2	0.0	0.0	1.2	100.0
No care	41	2	77	4	5	0	2	1	0	1	133
% of column	0.3	0.4	0.3	0.1	0.1	0.0	1.4	0.3	0.0	0.3	0.3
% of row	30.8	1.5	57.9	3.0	3.8	0.0	1.5	0.8	0.0	0.8	100.0
Unknown	27	3	30	2	2	0	0	0	0	38	102
% of column	0.2	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.0	10.1	0.2
% of row	26.5	2.9	29.4	2.0	2.0	0.0	0.0	0.0	0.0	37.3	100.0
Total	14,669	446	22,368	3,147	3,776	53	147	358	4	377	45,345
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	32.3	1.0	49.3	6.9	8.3	0.1	0.3	0.8	0.0	0.8	100.0

¹ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other 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=369) and those with unknown race/ethnicity (n=8).

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

Table 25. Trimester Prenatal Care Initiated by Mother's Age (Years)
County of Orange
Resident Births, 2003

Trimester Prenatal Care Initiated	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 & Over Years	
First trimester	19	771	1,683	7,400	10,605	12,481	6,931	1,524	102	41,516
% of column	43.2	75.2	82.4	88.0	91.9	94.7	94.6	91.6	91.9	91.6
% of row	0.0	1.9	4.1	17.8	25.5	30.1	16.7	3.7	0.2	100.0
Second trimester	19	208	303	820	774	564	304	104	8	3,104
% of column	43.2	20.3	14.8	9.8	6.7	4.3	4.2	6.3	7.2	6.8
% of row	0.6	6.7	9.8	26.4	24.9	18.2	9.8	3.4	0.3	100.0
Third trimester	4	36	45	129	115	85	56	19	1	490
% of column	9.1	3.5	2.2	1.5	1.0	0.6	0.8	1.1	0.9	1.1
% of row	0.8	7.3	9.2	26.3	23.5	17.3	11.4	3.9	0.2	100.0
No prenatal care	2	8	10	34	28	28	17	5	0	132
% of column	4.5	0.8	0.5	0.4	0.2	0.2	0.2	0.3	0.0	0.3
% of row	1.5	6.1	7.6	25.8	21.2	21.2	12.9	3.8	0.0	100.0
Unknown	0	2	2	25	16	26	17	12	0	100
% of column	0.0	0.2	0.1	0.3	0.1	0.2	0.2	0.7	0.0	0.2
% of row	0.0	2.0	2.0	25.0	16.0	26.0	17.0	12.0	0.0	100.0
Total	44	1,025	2,043	8,408	11,538	13,184	7,325	1,664	111	45,342
% 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	4.5	18.5	25.4	29.1	16.2	3.7	0.2	100.0

¹ Mother's age at time of delivery.

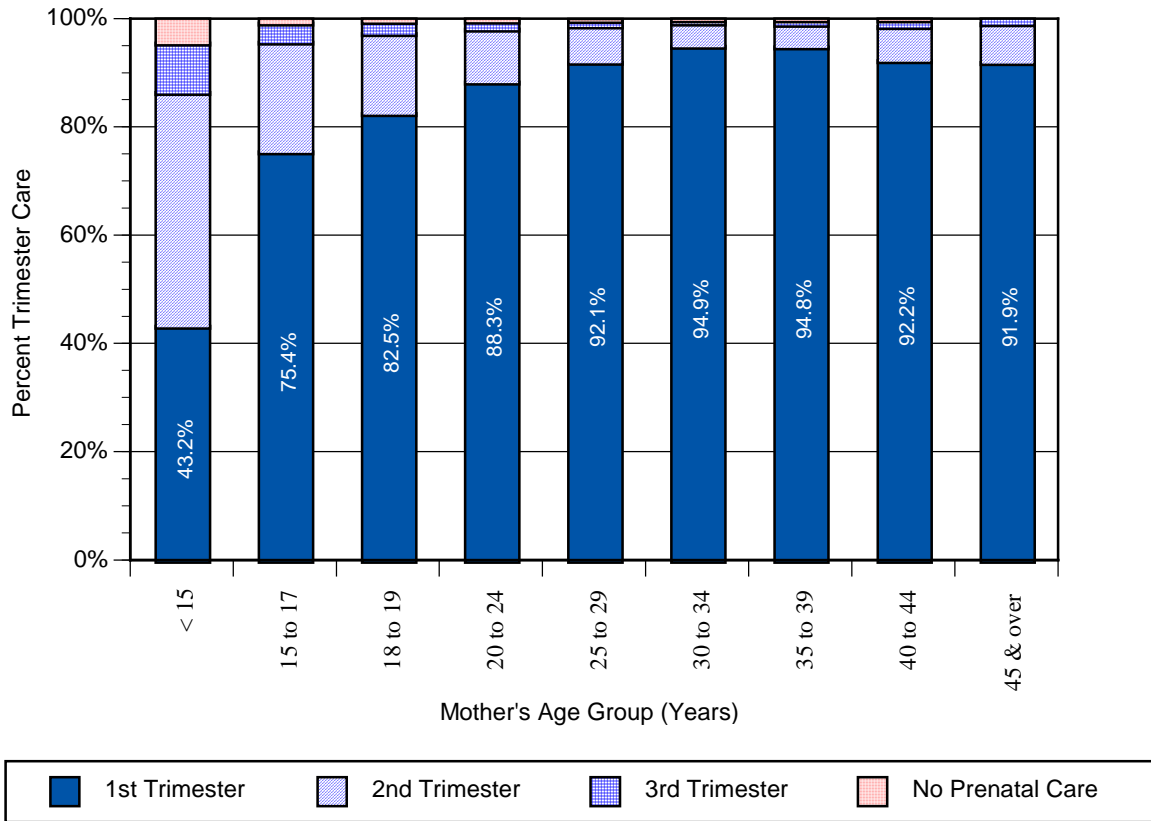
² Age unknown for three mothers, with unknown prenatal care status for two, and no prenatal care status for one.

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

Figure 7. Trimester Prenatal Care Initiated by Mother's Age (Years)
County of Orange
Resident Births, 2003



Note: Unknown for mother's age (n=3) and prenatal care (n=100) are excluded from analysis.
 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

Section 6. Payment Source

The principal sources of payment for prenatal care among Orange County mothers in 2003 were HMO/private insurance (57.3%), and Medi-Cal (39.6%). HMO/private insurance was the main payment source for prenatal care for White (86.2%) and Other Asian (81.4%) births, compared to Southeast Asian (66.0%), Black (60.5%), and Hispanic (32.4%) births (Table 26 & Figure 8). Medi-Cal was the major payment source for prenatal care for Hispanic births (64.9%), compared to AIAN (39.6%), NHOPI (36.7%), Black (36.0%), Southeast Asian (32.3%), Other Asian (12.3%), and White (10.8%) births.

Similar to the primary payment sources for prenatal care, the sources of payment for deliveries among Orange County mothers were HMO/private insurance (57.4%) and Medi-Cal (40.1%). HMO/private insurance was the main payment source for deliveries for White (86.5%) and Other Asian (81.9%) births, compared to Southeast Asian (66.0%), Black (61.1%), and Hispanic (32.3%) births (Table 27 & Figure 9). Medi-Cal was the chief funding source for Hispanic deliveries (65.7%), compared to AIAN (41.5%), NHOPI (38.6%), Black (36.2%), Southeast Asian (32.6%), Other Asian (12.6%), and White (11.0%) deliveries. The percent of Orange County Medi-Cal funded deliveries (40.1%) was 11.5% lower than California Medi-Cal funded deliveries³ (45.3%).

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 18,112 Medi-Cal funded deliveries in Orange County, 80.7% were to Hispanic mothers (n=14,624), whereas of the 244,327 Medi-Cal funded deliveries in California, 68.8% were to Hispanic mothers (n=168,037). Although the percent of Medi-Cal funded deliveries to Orange County Asian/PI mothers (8.6%) was higher than California Asian/PI mothers (6.3%), the percentages for Orange County White (8.9%) and Black (0.9%) mothers were lower than California White (14.5%) and Black (7.2%) mothers.

The principal sources of payment for spontaneous vaginal births for Orange County mothers were HMO/Private insurance (56.1%), followed by Medi-Cal, (41.2%); for vaginal births after previous C-Section deliveries (VBAC), the chief payment sources were HMO/Private insurance (60.2%), and Medi-Cal (38.0%). The major sources of payment for C-Section deliveries were HMO/private (59.2%) and Medi-Cal (38.8%). For first C-Section deliveries, HMO/private insurance (62.3%) was the primary source of payment, followed by Medi-Cal (35.5%); for repeat C-Section deliveries, the principal sources of payment were HMO/private insurance (54.6%) and Medi-Cal (43.6%) (Table 29). The percent of Medi-Cal funded C-Section deliveries for Orange County (28.1%) was 4.5% higher than California³ (26.9%).

³ Medi-Cal Funded Deliveries, 2003. Medical Care Statistics Section, California Department of Health Services. (<http://www.dhs.ca.gov/mcss>)

**Table 26. Principal Payment Source for Prenatal Care by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Payment Source	Race/Ethnicity of Mother										Total ⁴
	White	Black	Hispanic	S.E. Asian ¹	Other Asian ²	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ³	
Medi-Cal	1,587	160	14,503	1,017	464	21	54	69	1	70	17,946
% of column	10.82	35.96	64.85	32.33	12.30	39.62	36.73	19.27	25.00	20.11	39.62
% of row	8.84	0.89	80.81	5.67	2.59	0.12	0.30	0.38	0.01	0.39	100.00
HMO/Private	12,633	269	7,241	2,077	3,069	29	82	275	3	263	25,941
% of column	86.16	60.45	32.38	66.02	81.36	54.72	55.78	76.82	75.00	75.57	57.27
% of row	48.70	1.04	27.91	8.01	11.83	0.11	0.32	1.06	0.01	1.01	100.00
No care	81	4	163	8	26	0	4	3	0	2	291
% of column	0.55	0.90	0.73	0.25	0.69	0.00	2.72	0.84	0.00	0.57	0.64
% of row	27.84	1.37	56.01	2.75	8.93	0.00	1.37	1.03	0.00	0.69	100.00
Other⁵	361	12	456	44	213	3	7	11	0	13	1,120
% of column	2.46	2.70	2.04	1.40	5.65	5.66	4.76	3.07	0.00	3.74	2.47
% of row	32.23	1.07	40.71	3.93	19.02	0.27	0.63	0.98	0.00	1.16	100.00
Total	14,662	445	22,363	3,146	3,772	53	147	358	4	348	45,298
% of column	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
% of row	32.37	0.98	49.37	6.95	8.33	0.12	0.32	0.79	0.01	0.77	100.00

¹ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other 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=342 for payment source for prenatal care and n=365 for expected payment source for delivery) and those with unknown race/ethnicity (n=6 for payment source for prenatal care and n=6 for expected payment source for delivery).

⁴ Missing data for payment source for prenatal care (n=47).

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.

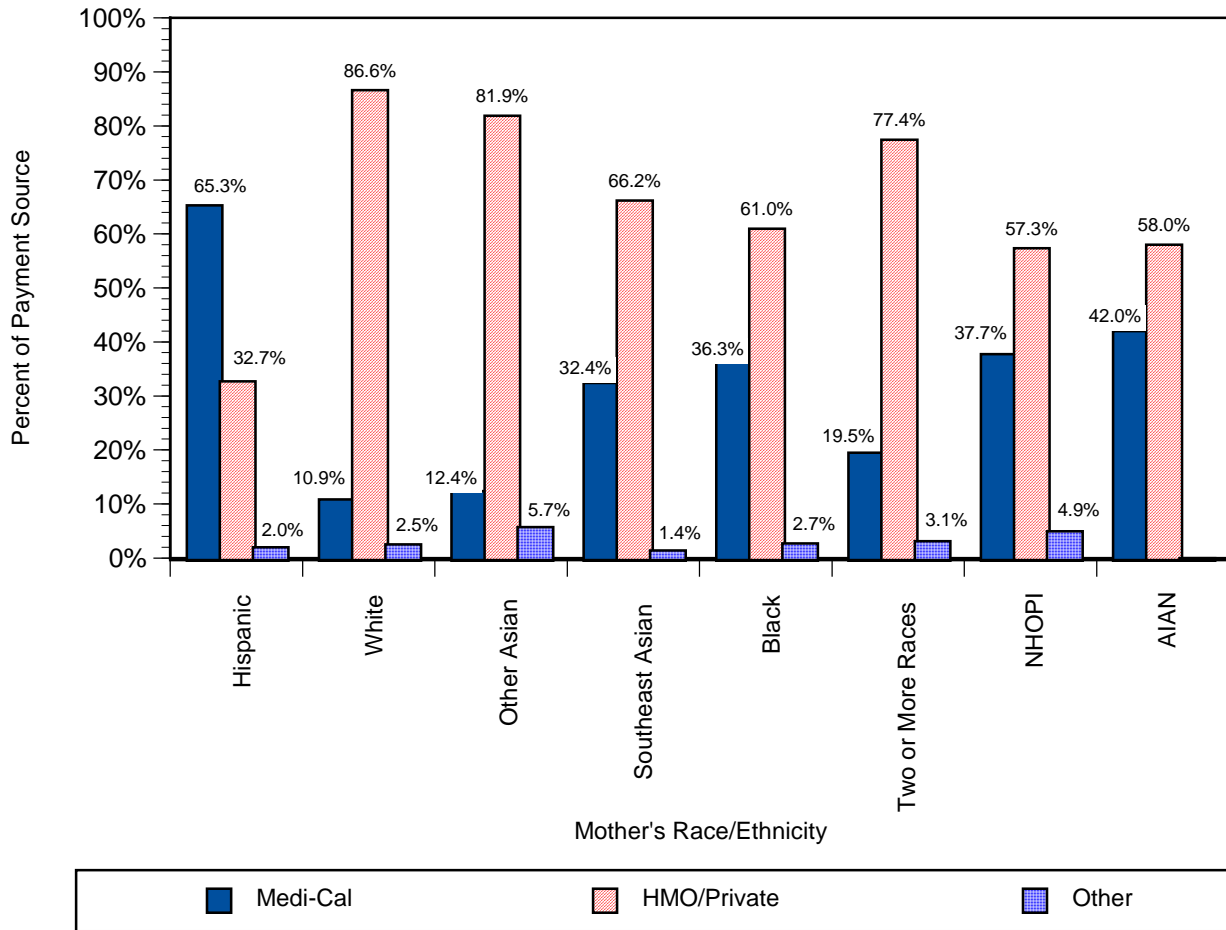
NHOPI is Native Hawaiian or Other Pacific Islander.

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

**Figure 8. Principal Source of Payment for Prenatal Care by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**



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

**Table 27. Expected Payment Source for Delivery by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Payment Source	Race/Ethnicity of Mother										Total ⁴
	White	Black	Hispanic	S.E. Asian ¹	Other Asian ²	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ³	
Medi-Cal	1,611	160	14,624	1,023	474	22	56	71	1	70	18,112
% of column	11.0	36.2	65.7	32.6	12.6	41.5	38.6	19.9	25.0	18.9	40.1
% of row	8.9	0.9	80.7	5.6	2.6	0.1	0.3	0.4	0.0	0.4	100.0
HMO/Private	12,641	270	7,187	2,074	3,069	27	81	273	3	288	25,913
% of column	86.5	61.1	32.3	66.0	81.9	50.9	55.9	76.7	75.0	77.6	57.4
% of row	48.8	1.0	27.7	8.0	11.8	0.1	0.3	1.1	0.0	1.1	100.0
Other⁵	360	12	453	44	206	4	8	12	0	13	1,112
% of column	2.5	2.7	2.0	1.4	5.5	7.5	5.5	3.4	0.0	3.5	2.5
% of row	32.4	1.1	40.7	4.0	18.5	0.4	0.7	1.1	0.0	1.2	100.0
Total	14,612	442	22,264	3,141	3,749	53	145	356	4	371	45,137
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	32.4	1.0	49.3	7.0	8.3	0.1	0.3	0.8	0.0	0.8	100.0

¹ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other 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=342 for payment source for prenatal care and n=365 for expected payment source for delivery) and those with unknown race/ethnicity (n=6 for payment source for prenatal care and n=6 for expected payment source for delivery).

⁴ Missing data for expected payment source for delivery (n=204).

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.

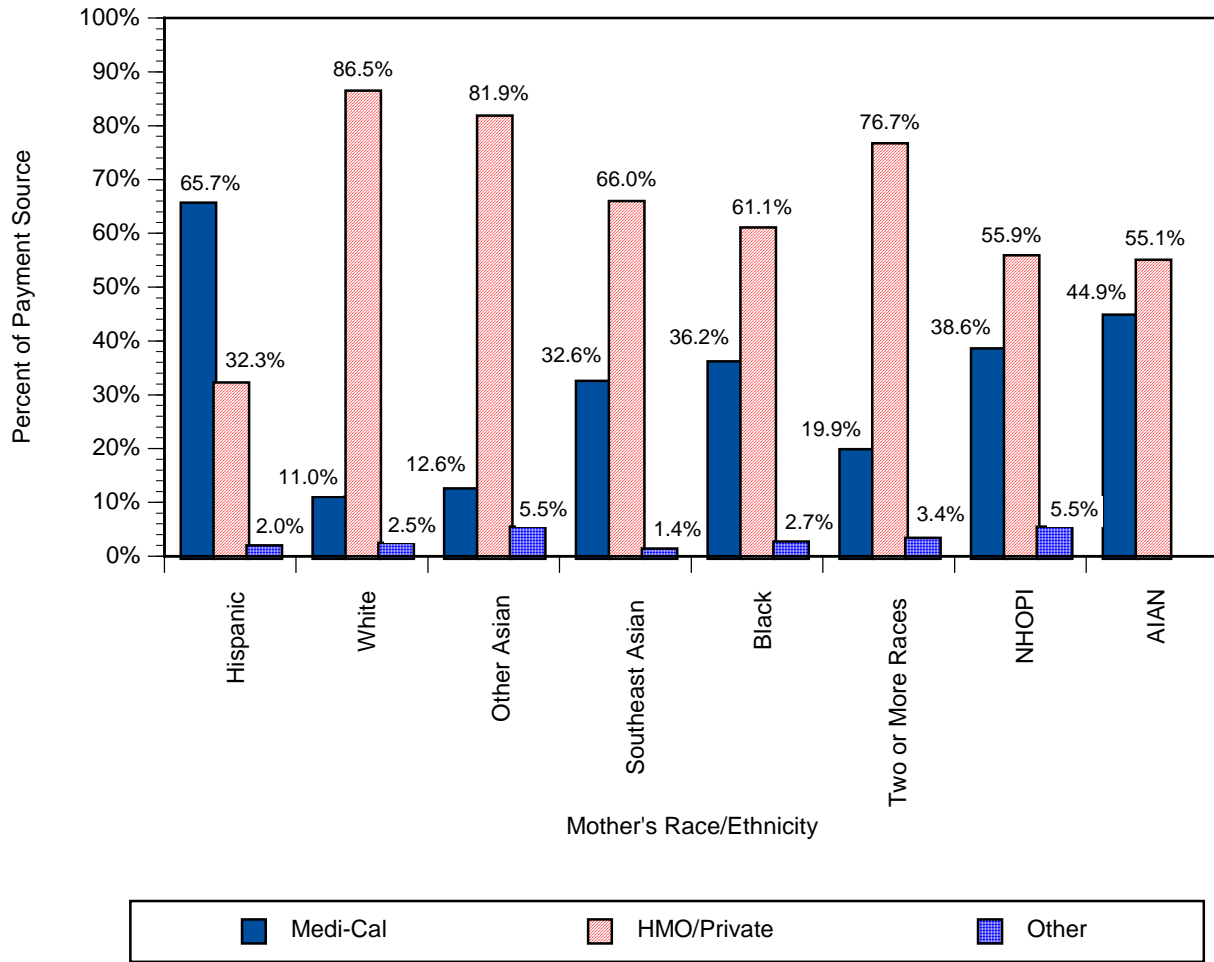
NHOPI is Native Hawaiian or Other Pacific Islander.

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

**Figure 9. Principal Source of Payment for Delivery by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**



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

**Table 28. Comparison of Orange County Medi-Cal Funded Deliveries with California
by Race/Ethnicity of the Mother, 2003**
County of Orange
Resident Births, 2003

Race/Ethnicity of the Mother	OC		CA*	
	Number	Percent	Number	Percent
Hispanic	14,624	80.7%	168,037	68.8%
Asian/PI ¹	1,553	8.6%	15,510	6.3%
White	1,611	8.9%	35,521	14.5%
Black	160	0.9%	17,642	7.2%
AIAN ²	22	0.1%	1,068	0.4%
	OC		CA*	
Total Number of Medi-Cal Funded Deliveries	18,112 ^a		244,327 ^b	
Total Number of Live Births with Known Payment Source	45,137		539,265	
Percent of Medi-Cal Funded Deliveries	40.10%		45.0%	

* Medi-Cal Funded Deliveries, 2003. Medical Care Statistics Section, California Department of Health Services. (<http://www.dhs.ca.gov/mcss>)

^a Includes AIAN (n=22), Two or More Races (n=71), Other (n=1), and Withheld/Unknown (n=70).

^b Includes Unknown race/ethnicity (n=6,549).

¹ Asian/PI includes Other Asian, Southeast Asian, and Native Hawaiian or Other Pacific Islander.

² AIAN is American Indian or Alaskan Native.

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

Table 29. Expected Payment Source by Method of Delivery
County of Orange
Resident Births, 2003

Payment Source	Method of Delivery						Total ¹
	First C-Section	Repeat C-Section	Vaginal Birth Previous C-Section	Vaginal Birth (Spontaneous)	Vaginal Birth (Vacuum)	Vaginal Birth Forceps	
Medi-Cal	2,789	2,293	170	11,688	1,145	27	18,112
% of column	35.5	43.6	38.0	41.2	37.0	28.4	40.1
% of row	15.4	12.7	0.9	64.5	6.3	0.1	100.0
HMO/Private	4,889	2,871	269	15,930	1,893	61	25,913
% of column	62.3	54.6	60.2	56.1	61.2	64.2	57.4
% of row	18.9	11.1	1.0	61.5	7.3	0.2	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	172	92	8	776	57	7	1,112
% of column	2.2	1.8	1.8	2.7	1.8	7.4	2.5
% of row	15.5	8.3	0.7	69.8	5.1	0.6	100.0
Total¹	7,850	5,256	447	28,398	3,095	95	45,141
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	17.4	11.6	1.0	62.9	6.9	0.2	100.0

¹ Excludes Unknown source for expected payment for delivery (n=204).

² Other source of payment includes Medi-Care, Worker's Compensation, other government funds and other 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 the Mother (All Ages)
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Mother	Live Births	Percent
Hispanic	22,368	49.3%
White	14,669	32.3%
Other Asian ¹	3,776	8.3%
Southeast Asian ²	3,147	6.9%
Black	446	1.0%
Two or More Races	358	0.8%
Withheld/Unknown ³	377	0.8%
NHOPI	147	0.3%
AIAN	53	0.1%
Other	4	0.0%
Total	45,345	100.0%

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

¹ Other Asian includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

² Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=369) and those with Unknown race/ethnicity (n=8).

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, 2003**

Race/Ethnicity of the Mother	Live Births	Percent
Hispanic	22,298	49.3%
White	14,610	32.3%
Other Asian ¹	3,762	8.3%
Southeast Asian ²	3,140	6.9%
Black	445	1.0%
Two or More Races	358	0.8%
Withheld/Unknown ³	370	0.8%
NHOPI	147	0.3%
AIAN	53	0.1%
Other	4	0.0%
Total	45,187	100.0%

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

¹ Other Asian includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

² Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

³ Withheld/Unknown includes those who did not specify their race/ethnicity (n=365) and those with Unknown race/ethnicity (n=5).

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 Teen Mothers (Aged 15-19 Years)
by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Race/Ethnicity of Mother	Live Births	Percent
Hispanic	2,544	82.9%
White	357	11.6%
Southeast Asian ¹	45	1.5%
Two or More Races	24	0.8%
Black	44	1.4%
Other Asian ²	26	0.8%
NHOPI	7	0.2%
AIAN	4	0.1%
Withheld/Unknown ³	17	0.6%
Other	0	0.0%
Total	3,068	100.0%

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

¹ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

² Other 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=16) and those with Unknown race/ethnicity (n=1).

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 Group & Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003

Mother's Race/Ethnicity	Mother's Age Group ^{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	40	889	1,655	6,035	6,054	4,731	2,401	533	30	22,368
% of column	90.9	86.7	81.0	71.8	52.5	35.9	32.8	32.0	27.0	49.3
% of row	0.2	4.0	7.4	27.0	27.1	21.2	10.7	2.4	0.1	100.0
White	2	81	276	1,630	3,350	5,244	3,265	764	57	14,669
% of column	4.5	7.9	13.5	19.4	29.0	39.8	44.6	45.9	51.4	32.4
% of row	0.0	0.6	1.9	11.1	22.8	35.7	22.3	5.2	0.4	100.0
Black	1	21	23	86	107	114	74	20	0	446
% of column	2.3	2.0	1.1	1.0	0.9	0.9	1.0	1.2	0.0	1.0
% of row	0.2	4.7	5.2	19.3	24.0	25.6	16.6	4.5	0.0	100.0
AIAN	0	2	2	9	12	18	7	3	0	53
% of column	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1
% of row	0.0	3.8	3.8	17.0	22.6	34.0	13.2	5.7	0.0	100.0
Other Asian³	1	3	23	240	962	1,556	828	150	13	3,776
% of column	2.3	0.3	1.1	2.9	8.3	11.8	11.3	9.0	11.7	8.3
% of row	0.0	0.1	0.6	6.4	25.5	41.2	21.9	4.0	0.3	100.0
S.E. Asian⁴	0	12	33	247	845	1270	590	143	7	3,147
% of column	0.0	1.2	1.6	2.9	7.3	9.6	8.1	8.6	6.3	6.9
% of row	0.0	0.4	1.0	7.8	26.9	40.4	18.7	4.5	0.2	100.0
NHOPI	0	1	6	33	47	30	23	7	0	147
% of column	0.0	0.1	0.3	0.4	0.4	0.2	0.3	0.4	0.0	0.3
% of row	0.0	0.7	4.1	22.4	32.0	20.4	15.6	4.8	0.0	100.0
Other³	0	0	0	1	2	0	1	0	0	4
% of column	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% of row	0.0	0.0	0.0	25.0	50.0	0.0	25.0	0.0	0.0	100.0
Two or More Races	0	9	15	70	93	101	51	19	0	358
% of column	0.0	0.9	0.7	0.8	0.8	0.8	0.7	1.1	0.0	0.8
% of row	0.0	2.5	4.2	19.6	26.0	28.2	14.2	5.3	0.0	100.0
Withheld/Unknown⁵	0	7	10	57	66	120	85	25	4	374
% of column	0.0	0.7	0.5	0.7	0.6	0.9	1.2	1.5	3.6	0.8
% of row	0.0	1.9	2.7	15.2	17.6	32.1	22.7	6.7	1.1	100.0
Total	44	1,025	2,043	8,408	11,538	13,184	7,325	1,664	111	45,342
% 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	4.5	18.5	25.4	29.1	16.2	3.7	0.2	100.0

¹ Mother's age at time of delivery.

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

³ Other Asian includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, and Korean.

⁴ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

⁵ Withheld/Unknown includes those who did not specify their race/ethnicity (n=369) and those with unknown race/ethnicity (n=8).

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

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

**Table 34. Age-specific Fertility Rates* by Race/Ethnicity of the Mother (Aged 15-44 Years)
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Mother	Mother's Age ¹							
	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	37.6	111.5	152.8	138.1	102.1	58.3	16.2	92.1
Asian	1.8	9.1	29.2	104.7	138.3	72.8	15.3	64.3
NHOPI	0.0	36.8	78.4	112.2	59.9	48.7	15.5	54.2
White	3.2	16.7	43.9	91.1	107.5	57.3	11.7	51.0
Black	19.7	33.4	62.6	88.0	61.9	31.6	8.1	40.5
Two or More Races	6.3	16.9	35.2	61.5	64.5	33.9	13.2	34.6
AIAN	--	--	15.9	24.6	31.6	11.3	--	14.8
Total²	16.9	51.5	85.5	113.0	108.9	59.1	13.4	67.5

* 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.

¹ Rates are excluded for mothers aged < 15 & > 44 years.

² Rate not calculated for Other, Withheld, or Missing/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 Missing/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 Infant
County of Orange
Resident Births, 2003**

Race/Ethnicity of the Infant	Infant Deaths	Percent
Hispanic	102	51.0%
White	65	32.5%
Asian	24	12.0%
Black	6	3.0%
NHOPI	3	1.5%
Total	200	100.0%

Due to rounding, percentages may not add to 100.

Infant Deaths based on 2003 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, 2003**

Race/Ethnicity of the Mother	Number of Fetal Deaths	Percent
Hispanic	102	54.3%
White	48	25.5%
Asian	28	14.9%
Black	4	7.5%
Unknown	4	7.5%
AIAN	1	1.9%
NHOPI	1	1.9%
Total	188	100.0%

Due to rounding, percentages may not add to 100.

Fetal deaths based on 2003 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. Birthweight by Race/Ethnicity of the Mother
County of Orange
Resident Births, 2003**

Race/ Ethnicity of Mother											
Birthweight (g) ¹	White	Black	Hispanic	S.E. Asian ²	Other Asian ³	AIAN	NHOPI	Two or More Races	Other	Withheld/Unknown ⁴	Total
Mean	3,398	3,172	3,341	3,181	3,222	3,295	3,430	3,318	3,158	3,327	3,337
Median	3,431	3,232	3,369	3,215	3,256	3,291	3,459	3,325	3,210	3,406	3,365
Std. Deviation	580	688	556	495	539	759	577	568	378	601	565
Birthweight Group (g)											
< 1,500	141	13	220	29	42	1	1	3	0	4	454
% of column	1.0	2.9	1.0	0.9	1.1	1.9	0.7	0.8	0.0	1.1	1.0
% of row	31.1	2.9	48.5	6.4	9.3	0.2	0.2	0.7	0.0	0.9	100.0
1,500-2,499	710	33	1038	194	236	7	5	15	0	26	2,264
% of column	4.8	7.4	4.6	6.2	6.3	13.2	3.4	4.2	0.0	6.9	5.0
% of row	31.4	1.5	45.8	8.6	10.4	0.3	0.2	0.7	0.0	1.1	100.0
2,500-3,999	12,067	361	19,055	2,818	3,301	38	120	308	4	314	38,386
% of column	82.3	80.9	85.2	89.5	87.4	71.7	81.6	86.0	100.0	83.3	84.7
% of row	31.4	0.9	49.6	7.3	8.6	0.1	0.3	0.8	0.0	0.8	100.0
4,000 & over	1,751	39	2,055	106	197	7	21	32	0	33	4,241
% of column	11.9	8.7	9.2	3.4	5.2	13.2	14.3	8.9	0.0	8.8	9.4
% of row	41.3	0.9	48.5	2.5	4.6	0.2	0.5	0.8	0.0	0.8	100.0
Total	14,669	446	22,368	3,147	3,776	53	147	358	4	377	45,345
% of column	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
% of row	32.3	1.0	49.3	6.9	8.3	0.1	0.3	0.8	0.0	0.8	100.0

¹ Birthweight in grams.

² Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

³ Other 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=369) and those with unknown race/ethnicity (n=8).

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

Note: <1,500 grams is very low birthweight, <2,500 grams is low birthweight, 2,500-3,999 grams is normal birthweight, 4,000 grams & over is macrosomia (known as big baby syndrome).

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 Births by Mother's Race/Ethnicity & Age Group (Years)
County of Orange
Resident Births, 2003

	C-Section (Primary)		C-Section (Repeat)		VBAC ¹		All Births [*]
	No.	Percent	No.	Percent	No.	Percent	Total
White							
19 & Under	76	21.2	3	0.8	0	0.0	359
20-34	1,929	18.9	899	8.8	64	0.6	10,224
35-44	916	22.7	687	17.1	42	1.0	4,029
45+ Years	23	40.4	16	28.1	0	0.0	57
Total	2,944	20.1	1,605	10.9	106	0.7	14,669
Black							
19 & Under	11	24.4	0	0.0	0	0.0	45
20-34	55	17.9	31	10.1	5	1.6	307
35-44	31	33.0	23	24.5	0	0.0	94
45+ Years	0	0.0	0	0.0	0	0.0	0
Total	97	21.7	54	12.1	5	1.1	446
Hispanic							
19 & Under	402	15.6	82	3.2	5	0.2	2,584
20-34	2,474	14.7	2,174	12.9	185	1.1	16,820
35-44	515	17.6	601	20.5	59	2.0	2,934
45+ Years	8	26.7	8	26.7	0	0.0	30
Total	3,399	15.2	2,865	12.8	249	1.1	22,368
Other Asian²							
19 & Under	5	18.5	0	0.0	0	0.0	27
20-34	520	18.9	216	7.8	21	0.8	2,758
35-44	209	21.4	190	19.4	15	1.5	978
45+ Years	6	46.2	2	15.4	0	0.0	13
Total	740	19.6	408	10.8	36	1.0	3,776
Southeast Asian³							
19 & Under	6	13.3	0	0.0	0	0.0	45
20-34	366	15.5	152	6.4	29	1.2	2,362
35-44	145	19.8	101	13.8	18	2.5	733
45+ Years	4	57.1	0	0.0	0	0.0	7
Total	521	16.6	253	8.0	47	1.5	3,147
NHOPI							
19 & Under	3	42.9	0	0.0	0	0.0	7
20-34	12	10.9	18	16.4	3	2.7	110
35-44	5	16.7	5	16.7	0	0.0	30
45+ Years	0	0.0	0	0.0	0	0.0	0
Total	20	13.6	23	15.6	3	2.0	147
AIAN							
19 & Under	0	0.0	0	0.0	0	0.0	4
20-34	8	20.5	8	20.5	1	2.6	39
35-44	4	40.0	3	30.0	0	0.0	10
45+ Years	0	0.0	0	0.0	0	0.0	0
Total	12	22.6	11	20.8	1	1.9	53

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

² Other Asian includes Asian Specified and Unspecified, Asian Indian, Chinese, Filipino, Japanese, & Korean.

³ Southeast Asian includes Cambodian, Hmong, Laotian, Thai, and Vietnamese.

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

* Mothers with Two or More Races (n=358), Withheld (n=374), Other (n=4) race/ethnicity, & unknown ages (n=3) are excluded.

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, 2003**

Race/Ethnicity of the Mother	Exclusive Breastfeeding*	Percent
White	6,864	49.9%
Two or More Race/Other	891	39.0%
Missing	52	33.1%
Asian	927	17.5%
Hispanic	2,919	13.4%
Black	93	N/A
NHOPI	11	N/A
Native American	1	N/A
Total	11,758	

Asian includes Other Asian and Southeast Asian.

NHOPI is Native Hawaiian or Other Pacific Islander.

*The World Health Organization defines exclusive breastfeeding as the practice of feeding newborn infants only breast milk, including expressed breast milk, but excluding water, breast milk substitutes, and other solid or liquid food.

Source: California Department of Health Services, MCAH, Newborn Screening Database, Genetic Disease Branch

Appendix 2
July 1, 2003 Population Estimates¹
County of Orange

Male (Years)	Total	Hispanic	White	Black	AIAN²	Asian	NHOPI³	Two or More
<15	342,321	153,182	130,111	5,214	1,600	40,095	1,085	11,034
15-17	63,418	24,718	26,609	1,199	387	8,728	283	1,494
18-19	42,182	16,121	17,426	787	242	6,495	206	905
20-24	106,931	47,182	38,514	1,607	555	16,723	447	1,903
25-29	106,880	49,757	36,954	1,410	514	16,363	434	1,448
30-34	125,931	52,685	49,819	2,202	559	18,631	491	1,544
35-39	127,071	45,891	58,008	2,490	630	18,080	487	1,485
40-44	125,135	34,852	67,661	2,764	643	17,326	453	1,436
45-49	108,627	24,173	64,441	2,183	585	15,756	321	1,168
50-54	89,023	16,235	55,610	1,620	500	13,907	275	876
55 & Over	256,556	32,623	180,250	3,032	1,223	36,400	668	2,360
Sub-Total	1,494,075	497,419	725,403	24,508	7,438	208,504	5,150	25,653

Female (Years)	Total	Hispanic	White	Black	AIAN²	Asian	NHOPI³	Two or More
<15	326,820	146,934	123,893	4,784	1,527	37,949	1,041	10,692
15-17	60,130	23,658	25,195	1,067	371	8,119	286	1,434
18-19	39,469	14,837	16,502	689	253	6,135	163	890
20-24	97,628	39,491	37,101	1,373	565	16,688	421	1,989
25-29	101,514	43,845	36,777	1,216	487	17,258	419	1,512
30-34	119,991	46,318	48,767	1,842	569	20,428	501	1,566
35-39	122,560	41,183	56,970	2,339	618	19,475	472	1,503
40-44	122,462	32,832	65,322	2,476	729	19,210	452	1,441
45-49	109,428	24,030	62,743	1,946	664	18,447	364	1,234
50-54	93,859	17,152	57,355	1,561	567	16,026	269	929
55 & Over	313,210	41,800	221,433	3,206	1,418	41,933	691	2,729
Sub-Total	1,507,071	472,080	752,058	22,499	7,768	221,668	5,079	25,919

Grand Total	3,001,146	969,499	1,477,461	47,007	15,206	430,172	10,229	51,572
Percent	100.00	32.30	49.23	1.57	0.51	14.33	0.34	1.72

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 and Natives of Alaska.

³ 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

Appendix 3

Technical Notes

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.

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.

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 child, these tables have been removed from the 2003 birth document.

Populations

The 2003 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.

Definitions

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 28 th 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.

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

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

Teen fertility rate	=	$\frac{\text{Number of live births to mothers 15-19 years old in a specific time period}}{\text{Estimated female population 15-19 years old in that time period}}$	x 1,000
Low birthweight rate	=	$\frac{\text{Number of infants weighing less than 2,500 g at time of birth in a specific time period}}{\text{Total number of live births in that time period}}$	x 1,000
Very low birthweight rate	=	$\frac{\text{Number of infants weighing less than 1,500 g at time of birth in a specific time period}}{\text{Total number of live births in that time period}}$	x 1,000
Fetal death ratio	=	$\frac{\text{Number of reported fetal deaths in a specific time period}}{\text{Total number of live births in that time period}}$	x 1,000
Infant mortality rate	=	$\frac{\text{Number of deaths under 1 year of age in a specific time period}}{\text{Total number of live births in that time period}}$	x 1,000
Neonatal mortality rate	=	$\frac{\text{Number of deaths under 28 days of age in a specific time period}}{\text{Total number of live births in that time period}}$	x 1,000
Post-neonatal mortality rate	=	$\frac{\text{Number of deaths 28 days of age to less than 1 year of age in a specific time period}}{\text{Total number of live births in that time period}}$	x 1,000
Maternal death rate	=	$\frac{\text{Number of deaths due to complications of pregnancy and childbirth in a specific time period}}{\text{Total number of live births in that time period}}$	x 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:

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

R₁ = first rate
R₂ = second rate
N₁ = first number of births
N₂ = 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:

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

B_1 = number of births in the denominator of the first percent
 B_2 = number of births in the denominator of the second percent
 $p = (B_1 \times p_1 + B_2 \times p_2) / B_1 + B_2$
 p_1 = the first percent/100
 p_2 = 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

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