

**County of Orange
Health Care Agency**

Orange County Birth Outcomes, 1999



March 2002

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March 2002

To our colleagues in public health,

We are pleased to announce the availability of our statistical report, "Birth Outcomes, 1999." This information is compiled from birth, death, and fetal death certificates filed with the Birth and Death Registration Office of the County of Orange Health Care Agency, and is the most recent report in the annual series. This report is one of the crucial elements in monitoring the health status of Orange County and provides data necessary for the development of policies to improve the health of Orange County's population.

The information presented in this report can be considered to be the official data for 1999. Unless otherwise noted, reference is made to births and death *to Orange County residents*, regardless of where the event occurred. Similarly, births and deaths occurring within the county, but to residents of other jurisdictions, are *not* included in this report.

The report is available and can be downloaded from the Epidemiology and Assessment website, <http://www.ochealthinfo.com/epi/statistics.htm>.

Thank you for your interest in this special report. We encourage you to make other interested colleagues aware of its publication. If you would like more information, please feel free to contact Epidemiology and Assessment at (714) 834-8180.

Sincerely,

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**County of Orange
Health Care Agency**

Birth Outcomes 1999

INTRODUCTION

This document provides tabulations of vital statistics on births in the County of Orange, California, in 1999, 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 Birth and Death Registration Office in the County of Orange Health Care Agency.

This document is divided into eight sections based on the data presented. 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 hospital. Section 4 presents statistics related to the birth weight of the infant. Section 5 presents statistics related to when prenatal care was initiated. Section 6 presents statistics on payment source for prenatal care and delivery. Section 7 presents statistics on parental age, focusing on comparing father's age with mother's age. Section 8 compares the ethnicity of the mother with the ethnicity of the father.

The appendices provide additional information on the number of births by ethnicity of the mother, as well as population statistics from the California Department of Finance used to calculate rates. Appendix 3, Technical Notes, contains valuable information on a variety of issues related to the construction of the tables in this report, e.g. categorization of ethnicity, important definitions of terms used in this report, and calculation of rates and ratios.

The information presented can be considered official 1999 data. Official data for 2000 is not expected to be released until the Fall of 2002, followed by the release of official data for 2001 in Fall of 2003.

If you have questions or comments regarding the data presented, or for more information on birth statistics, please telephone County of Orange Health Care Agency, Assessment and Epidemiology 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, 1999*, County of Orange Health Care Agency, Santa Ana, California, March 2002.

**County of Orange
Health Care Agency**

Birth Outcomes 1999

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**County of Orange
Health Care Agency**

Birth Outcomes 1999

HIGHLIGHTS

The number of births to Orange County residents in 1999 was 46,478, an increase of 0.6% from the 46,186 births in 1998.

The fertility rate (number of births per 1,000 females aged 15-44) was 78.2, an increase of 1.6% from the rate of 77.0 in 1998. The fertility rate differed markedly among racial/ethnic groups:

- Hispanic 128.4
- Asian/Pacific Islander 65.9
- African American 58.2
- White 54.5
- American Indian 38.2

Teenagers (15 – 19 years old) gave birth to 3,673 infants, resulting in a rate of 44.4 per 1,000; this is a decrease of 3.1% from the 1998 rate of 45.8 per 1,000.

- Hispanic 105.9
- African American 36.6
- American Indian 28.0
- White 14.3
- Asian/Pacific Islander 11.3

The infant mortality rate in 1999 was 4.50 per 1,000 live births, an increase of 1.8% from the 1998 infant mortality rate of 4.42. In 1999, Orange County had already surpassed the Healthy People 2000 target rate of 7.00 per 1,000 live births and already met the Healthy People 2010 rate of 4.50.

In 1999, 86.6% of Orange County mothers reported seeking prenatal care in the first trimester. This is an increase of 1.5% over 1998, when 85.3% of mothers reported beginning prenatal care in the first trimester. However, Orange County fell below the Healthy People 2000 and 2010 goal of 90% of mothers receiving prenatal care in the first trimester. Nearly two-thirds (64.8%) of mothers were reported to have at least one ultrasound during pregnancy; electronic fetal monitoring was reported for 9.6% of mothers.

There were 2,564 infants of low birth weight (less than 2,500 grams), a rate of 55.17 per 1,000 live births, which is a small increase (0.3%) from the rate of 55.0 in 1998. The rate in 1999 was slightly higher than the Healthy People 2000 and 2010 goal of no more than 50.0 low birth weight infants per 1,000 live births. The rate of very low birth weight (less than 1,500 grams) infants in 1999 was 9.55 per 1,000 live births, a decrease of 5.0% from the rate of 10.05 in 1998. However, the 1999 Orange County rate of very low birth weight infants is higher than the Healthy People 2000 and 2010 goals of 10.0 and 9.0, respectively.

Cesarean section births were performed in 22.5% of 1999 births, an increase of 8.2% over the 1998 cesarean birth percentage of 20.8%. Of the 10,456 cesarean births, 6,440 (61.6%) were first time cesarean births and 4,016 (38.4%) were repeat cesarean births. Repeat cesarean births represented 79.7% of births to mothers who reported a previous cesarean birth (5,040), above the Healthy People 2000 and 2010 goals of 65% and 63%, respectively.

County of Orange

Resident Births

1999

Section 1. Birth & Infant Mortality Rates

Birth Rates by Race/Ethnicity of the Mother

Crude Birth Rates by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Population
White/Other ¹	17,407	11.14
African American	595	13.65
Hispanic	22,765	27.93
Asian/Pacific Islander	5,636	15.75
American Indian	75	8.80
Total	46,478	16.67

Fertility Rates by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Females 15-44 Years
White/Other ¹	17,359	54.49
African American	594	58.24
Hispanic	22,691	128.41
Asian/Pacific Islander	5,624	65.86
American Indian	75	38.21
Total	46,343	78.17

Teen (Mother's age 15 to 19) Birth Rates by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Rate /1,000 Females 15-19 Years
White/Other ¹	584	14.27
African American	62	36.58
Hispanic	2,876	105.92
Asian/Pacific Islander	144	11.33
American Indian	7	28.00
Total	3,673	44.40

Infant Mortality Rates by Race/Ethnicity of the Mother²

Race/Ethnicity of the Mother	Infant Deaths	Rate ³ /1,000 Live Births
White/Other ¹	56	3.22
African American	9	15.13
Hispanic	121	5.32
Asian/Pacific Islander	23	4.08
American Indian	0	--
Total	209	4.50

Healthy People 2000 Infant Mortality Goal per 1,000 Live Births 7.00

Healthy People 2000 Infant Mortality Goal per 1,000 Live Births 4.50

¹ The California Department of Finance adds those race/ethnicity categories that do not meet the definitions of Hispanic, African-American, Asian/Pacific Islander or American Indian/Native Alaskan to the White/Other category.

² Birth certificates matched to death certificates.

³ Rates not calculated for fewer than 5 events.

Appendix 1

County of Orange Resident Births 1999

Number of Births by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Percent
White	16,623	35.77%
African American	595	1.28%
Hispanic	22,765	48.98%
Asian/Pacific Islander	5,636	12.13%
American Indian	75	0.16%
Other	609	1.31%
Unknown/Not Stated	175	0.38%
Total	46,478	100.00%

Number of Births to Mothers Aged 15-44 Years by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Percent
White	16,577	35.77%
African American	594	1.28%
Hispanic	22,691	48.96%
Asian/Pacific Islander	5,624	12.14%
American Indian	75	0.16%
Other	609	1.31%
Unknown/Not Stated	173	0.37%
Total	46,343	100.00%

Number of Births to Teens (Mother's Aged 15-19) by Race/Ethnicity of the Mother

Race/Ethnicity of the Mother	Live Births	Percent
White	560	15.25%
African American	62	1.69%
Hispanic	2,876	78.30%
Asian/Pacific Islander	144	3.92%
American Indian	7	0.19%
Other	18	0.49%
Unknown/Not Stated	6	0.16%
Total	3,673	100.00%

Number of Infant Deaths by Race/Ethnicity of the Mother¹

Race/Ethnicity of the Mother	Infant Deaths	Percent
White	52	24.88%
African American	9	4.31%
Hispanic	121	57.89%
Asian/Pacific Islander	23	11.00%
American Indian	0	0.00%
Other	1	0.48%
Unknown/Not Stated	3	1.44%
Total	209	100.00%

¹ Birth certificates matched to death certificates.

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

Appendix 3

Technical Notes

Implementation of Electronic Registration of Births

In 1994, Orange County implemented the Automated Vital Statistics System (AVSS) developed by the University of California at Santa Barbara, for registering births electronically. Prior to 1994, the file of Orange County births consisted of selected items and limited information about some items from the birth certificate. With the implementation of AVSS, all of the information on the birth certificate is now available in the birth file. The data fields most impacted by the change in the system are discussed below.

Mother's Residence:

Previously, only the codes for mother's city of residence and census tract were included in the birth file. Starting in 1994, the data file contains mother's complete address.

Parent's Demographic Information (Race, Ethnicity, City, ZIP code and Census Tract):

In addition to codes for race and Hispanic status from the birth certificate, the 1994 format of the birth file also includes the race and Hispanic background stated by the parents.

An extensive effort has gone into the verification and correction when necessary, of the codes for parent's race and ethnicity, as well as the mother's city of residence, ZIP code and Census tract using the detailed information now available. A slight difference between the numbers of births by city, ZIP code and the ethnic distribution reported here and those available from other sources may be due to this extensive quality assurance process.

Complication and Procedures of Pregnancy and Concurrent Illnesses:

Prior to 1994, only the first two of the sixteen possible complications and procedures of pregnancy listed on the birth certificate were included on the birth file.

Complications and Procedures of Labor and Delivery:

Prior to 1994, only the first of the nine possible complications and procedure of labor and delivery listed on the birth certificate were included in the birth file.

Abnormal Conditions and Clinical Procedures Relating to the Newborn:

Prior to 1994, only the first of ten possible abnormal conditions and clinical procedures listed on the birth certificate was included in the birth file.

All the complications that are listed on the birth certificate in each of the above categories are included in the birth file beginning in 1994. It is important to note that the increase in the number of births with certain complications and procedures in this document compared to documents prior to 1994 can be attributed to the additional information now available. Additionally, 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.

Notes

Race/Ethnicity of the Child:

To be consistent with the change made by the National Center for Health Statistics, beginning with 1994, only the mother's race and ethnicity is used for determining the race and ethnicity of the child. In previous documents, the race and ethnicity of the father and mother were used. Birth rates and infant death rates by race and ethnicity (page 3) are calculated using California Department of Finance (DOF) population estimates. DOF utilizes five mutually exclusive race and Hispanic origin categories. These categories are Hispanic, White/Other Races/Non-Hispanic, African-American/Black/Non-Hispanic, Asian/Pacific Islander/Non-Hispanic and American Indian/Non-Hispanic (See Appendix 2). For the purposes of space conservation, these categories are listed in the tables on page 3 as Hispanic, White, African-American, Asian/Pacific Islander (API) and American Indian. To be consistent with DOF population data, when fertility rates are calculated, the race and ethnicity categories that do not meet the definition for Hispanic, African-American/Black, Asian/Pacific Islander or American Indian are added to the White category.

Elsewhere in this document, seven race and Hispanic categories are utilized: White, Hispanic, African-American, Southeast Asian, Other Asian, Unknown and Other. Other is used to define Native Americans, Alaskan Natives, Native Hawaiians, and those who describe themselves as "Other" or do not fit into the previously defined categories. It is felt that these seven categories better represent the diverse population of Orange County. The categories are not used in the calculation of rates due to the lack of DOF population estimates for all of these groups.

Abnormal Conditions and Clinical Procedures:

The Vital Statistics Section of the California Department of Health Services Center for Health Statistics considers the birth certificate data regarding congenital abnormalities 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. The State of California collects this information only as a part of their contract with the National Center for Health Statistics. In view of the above information, the data regarding abnormal conditions in this document could be misleading and, therefore, should be used with caution.

Birth Weight 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 birth weight 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 1999 birth document.

Populations

Three different population sources were used to calculate the rates used in this document. All three populations are publicly available from the California Department of Finance (DOF) and are available on the DOF web site, <http://www.dof.ca.gov>. The population statistics used for this document are available in the following publications: E-2 *County Population Estimates and Components of Change, 1999-2000, with Historical Estimates, 1990-1999*; E-4 *Revised Historical City, County and State Population Estimates, 1991-2000, with 1990 and 2000 Census Counts*; and *Race/Ethnic Population with Age and Sex Detail, 1970-2040*.

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, breaths 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 birth weight A live birth or fetal death weighing less than 2,500 grams (5 pounds 8 ounces).
- Very low birth weight 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 breath or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. This definition was promulgated by the World Health Organization in 1950, and is set forth in the California Administrative Code, Title 17, Chapter 1, Article 3. If the fetus is 20 weeks or more gestational age, the death must be registered with the local registrar.
- Infant death A death occurring in the first year of life.
- Maternal death A death resulting from the complications of pregnancy, childbirth and the puerperium (Tenth Revision of International Classification of Disease codes O00-O99).
- Neonatal death A death occurring during the first 27 days of life.
- Postneonatal death A death occurring between the 28th day and the end of the first year of life.

Rates and Ratios

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

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

$$\text{Teen birth rate} = \frac{\text{Number of live births to mothers 15-19 years old}}{\text{Estimated female population 15-19 years old}} \times 1,000$$

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

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

$$\text{Fetal death ratio} = \frac{\text{Number of reportable fetal deaths}}{\text{Total number of live births}} \times 1,000$$

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

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

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

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