Fetal and Infant Death

Fetal and infant death was most likely to occur among African American mothers.

- On average, there were 77 fetal deaths, and 58 infant deaths per year.
- Contra Costa's fetal mortality rate did not meet the Healthy People 2010 objective.
- Contra Costa's infant mortality rate was lower than the rate for California and met the Healthy People 2010 objective.

Fetal Death

Between 2005 and 2007 there were 231 fetal deaths in Contra Costa —an average of 77 per year. The fetal mortality rate for the county was 5.7 per 1,000 live births and fetal deaths. The county rate was similar to that of California's 2005–2007 rate (5.2 per 1,000 live births and fetal deaths) and did not meet the Healthy People 2010 objective (4.1 per 1,000 live births and fetal deaths).

Table 1 ■ Fetal Deaths by Race/Ethnicity

Contra Costa County 2005–2007

	Deaths	Percent	Total births	Rate	
White	74	32.0%	14,429	5.1	
Hispanic	71	30.7%	14,556	4.9	
African American	43	18.6%	3,625	11.9	*
Asian/Pacific Islander	27	11.7%	5,958	4.5	
Total	**231**	**100.0%**	**40,424**	**5.7**	

The fetal death rate includes deaths occurring 20 weeks after conception but before birth.

These are unadjusted crude rates per 1,000 live births plus fetal deaths.
Total births includes live births plus fetal deaths.
Total includes some racial/ethnic groups not shown.
* Significantly higher rate than the county.

In Contra Costa County, the greatest number of fetal deaths occurred among whites (74), followed by Hispanics (71), African Americans (43) and Asians/Pacific Islanders (27). Although African Americans had a lower number of fetal deaths, African Americans had the highest rate of fetal deaths (11.9 per 1,000 live births and fetal deaths). This rate was higher than the county rate overall (5.7 per 1,000 live births and fetal deaths) and higher than any other race/ethnic group listed.

Infant Death

There were 173 infant deaths in Contra Costa between 2005 and 2007—an average of 58 per year. The infant mortality rate for the county was 4.3 per 1,000 live births. The county rate was lower than the California rate for 2005–2007 (5.2 per 1,000 live births) and met the Healthy People 2010 objective (4.5 per 1,000 live births).[1]

Table 2 ■ Infant Deaths by Race/Ethnicity

Contra Costa County 2005–2007

	Deaths	Percent	Live births	Rate	
Hispanic	57	32.9%	14,485	3.9	
African American	41	23.7%	3,582	11.4	*
White	41	23.7%	14,355	2.9	
Asian/Pacific Islander	13	7.5%	5,931	NA	
Total	**173**	**100.0%**	**40,193**	**4.3**	

Infant deaths are deaths to live-born babies younger than 1 year old.

These are unadjusted crude rates per 1,000 live births.
Total includes some racial/ethnic groups not shown.
* Significantly higher rate than the county.

In Contra Costa, the greatest number of infant deaths occurred among Hispanics (57), followed by African Americans (41), whites (41), and Asians/Pacific Islanders (13). Although Hispanics had the highest number of infant deaths, African Americans had the highest rate of infant death (11.4 per 1,000 live births). The African American rate was higher than the county rate overall (4.3 per 1,000 live births), more than three times the rate of whites (2.9 per 1,000 live births) and higher than any other racial/ethnic group listed.

Infant deaths are divided into two groups—those that occur to infants younger than 28 days old (neonatal deaths) and those that occur to infants 28 days to 1 year old (post-neonatal deaths). Of the 173 infant deaths that occurred in Contra Costa between 2005 and 2007, 115 (66.5%) occurred in the first 27 days of life (neonatal).

Although Hispanics had the greatest number of neonatal deaths (41), African Americans had the highest neonatal death rate (6.4 per 1,000 live births). This rate for African Americans was higher than the rate for the county overall (2.9 per 1,000 live births) and higher than any other racial/ethnic group listed. The neonatal death rate for whites (1.5 per 1,000 live births) was lower than the county rate.

Table 3 ■ Neonatal deaths by race/ethnicity

Contra Costa County 2005–2007

	Deaths	Percent	Live births	Rate
Hispanic	41	35.7%	14,485	2.8
African American	23	20.0%	3,582	6.4*
White	22	19.1%	14,355	1.5**
Asian/Pacific Islander	12	10.4%	5,931	NA
Total	**115**	**100.0%**	**40,193**	**2.9**

These are unadjusted crude rates per 1,000 live births.
Total includes some racial/ethnic groups not shown
* Significantly higher rate than the county.
** Significantly lower rate than the county.

In Contra Costa, 58 infant deaths (33.5%) occurred between 28 days and one year of life (post-neonatal). The overall county rate of post-neonatal deaths was 1.4 per 1,000 live births.

Table 4 ■ Post-neonatal deaths by race/ethnicity

Contra Costa County 2005–2007

	Deaths	Percent	Live births	Rate
White	19	32.8%	14,355	NA
African American	18	31.0%	3,582	NA
Hispanic	16	27.6%	14,485	NA
Total	**58**	**100.0%**	**40,193**	**1.4**

These are unadjusted crude rates per 1,000 live births.
Total includes some racial/ethnic groups not shown.

In Contra Costa, the most frequent categories for cause of infant death were:

- Congenital malformations, deformations and chromosomal abnormalities (31 deaths, 17.9% of total infant deaths 2005–2007)
- Disorders related to short gestation/low birth weight—necrotizing enterocolitis (26 deaths, 15% of total infant deaths 2005–2007)
- Sudden infant deaths syndrome (17 deaths, 9.8% of total infant deaths 2005–2007)

What is it?

A fetal death is a spontaneous intrauterine death that occurs prior to birth. In California, data on fetal deaths are restricted to deaths that occur at 20 weeks gestation or older and do not include induced terminations. An infant death is a death that occurs to a live-born baby younger than 1 year of age. Infant deaths do not include fetal deaths.

Why is it important?

Infant mortality is considered a critical measure of a community's social and economic well-being, as well as its health. It reflects a range of factors such as medical issues, the ability of health care systems to respond to the needs of women and infants, environmental factors, and social issues such as poverty, education and culture. Furthermore, infant mortality tells us something about women's lives—their lifestyle and personal habits, their relationships and the stress they experience.[2] Many of these factors also impact fetal mortality, however fetal deaths are less understood than infant deaths. Since infant deaths only include live-born infants, examining both fetal and infant mortality can provide a more complete picture of perinatal health.

Who does it impact the most?

Low birth weight and prematurity accounted for almost 20% of all infant deaths in the United States in 2006.[3] A variety of socioeconomic, behavioral and medical factors can increase a women's risk of having a premature birth or low birth weight baby. These include low income, maternal age (younger than 17 and older than 35 years), smoking, alcohol and drug use, carrying twin and higher-order pregnancies, infection and chronic health problems.[4,5] Many risk factors for infant mortality also apply to fetal mortality.

In the United States, there are significant disparities in fetal and infant mortality rates by race/ethnicity. In 2005, non-Hispanic black women had the highest fetal and infant mortality rates, more than two times that of non-Hispanic whites.[6,7] Traditionally these disparities have been partially explained by factors such as quality and frequency of prenatal care. The Life Course Perspective suggests that these disparities result from the differences in a complex interplay of biological, behavioral, psychological and social protective and risk factors at play throughout women's lives.[8]

What can we do about it?

An important component of reducing fetal and infant mortality is reducing inequities between racial/ethnic groups. Historically, efforts to address inequities in birth outcomes, such as fetal and infant mortality, have focused on increasing access to prenatal care, however this has not reduced these inequities.[9] The Life Course Perspective suggests that birth outcomes are determined by the entire life course of the woman prior to pregnancy, not just the nine months of pregnancy. As such, efforts to improve birth outcomes should focus on factors at play throughout the life span. The Life Course Perspective proposes that public health efforts to reduce inequities in birth outcomes focus on:[9]

- Access to quality health care across the life span, including before, during and between pregnancies.
- Enhancing family and community systems that can have broad impacts on families and communities (e.g., father involvement, integration of family support services, reproductive social capital, community building).
- Addressing social and economic inequities that impact health (e.g., education, poverty, support for working mothers, racism).

Data Sources: Fetal and Infant Death

TABLES

Table 1-4: Any analyses or interpretations of the data were reached by the Community Health Assessment, Planning and Evaluation (CHAPE) Unit of Contra Costa Health Services and not the California Department of Public Health. Data presented for Hispanics include Hispanic residents of any race. Data presented for whites, Asians/Pacific Islanders and African Americans include non-Hispanic residents. Not all race/ethnicities shown but all are included in totals for the county and for each city. Counts fewer than five are not shown in order to protect anonymity. Rates were not calculated for any group with fewer than 20 cases due to unstable estimates. Data presented for Hispanics include Hispanic residents of any race.

Table 1: Fetal death data from the California Department of Public Health (CDPH), Fetal Death Statistical Master Files, 2005–2007. This table includes fetal deaths to women who are residents of Contra Costa and average crude fetal mortality rates for 2005 through 2007.

Fetal mortality rate is the fetal deaths occurring 20 weeks after conception but before birth divided by total births multiplied by 1,000. The number of total births is the sum of live births and fetal deaths.

Table 2-4: Infant death data (including neonatal and post-neonatal) from the California Department of Public Health (CDPH), Death Statistical Master Files, 2005–2007. These tables include infant, neonatal and post-natal deaths to women who are residents of Contra Costa and average crude infant mortality, neonatal mortality and post-neonatal mortality rates for 2005 through 2007.

Infant mortality rate is the deaths of infants younger than 1 year of age divided by live births multiplied by 1,000.

Neonatal mortality rate is the deaths of infants younger than than 28 days old divided by live births multiplied by 1,000. Post-neonatal mortality rate is the deaths of infants 28 or more days old divided by live births multiplied by 1,000.

TEXT

1. California Department of Public Health, Death and Birth Records. (2009) *Vital Statistics Query System*. Retrieved from http://www.applications.dhs.ca.gov/vsq/ on January 8, 2010.
2. Contra Costa Health Services. Contra Costa Fetal Infant Mortality Review Program. Findings and Accomplishments, 1998–2004. November 2005.
3. March of Dimes, Peristats. Available at http://www.marchofdimes.com/peristats/level1.aspx?reg=99&top=6&stop=116&lev=1&slev=1&obj=1&dv=cr.
4. March of Dimes. Fact Sheet: Low Birthweight. May 2008. http://www.marchofdimes.com/professionals/14332_1153.asp
5. March of Dimes. Fact Sheet: Premature Birth. April 2010. Available at http://www.marchofdimes.com/professionals/14332_1157.asp
6. MacDorman M, Kirmeyer S. The challenge of fetal mortality. NCHS data brief, no 16. Hyattsville, MD: National Center for Health Statistics. 2009. Available at http://www.cdc.gov/nchs/data/databriefs/db16.htm
7. MacDorman MF, Mathews TJ. Recent Trends in Infant Mortality in the United States. NCHS data brief, No 9. Hyattsville, MD: National Center for Health Statistics. 2008. Available at http://www.cdc.gov/nchs/data/databriefs/db09.htm#arethere.
8. Contra Costa Health Services. Family, Maternal & Child Health Programs Life Course Initiative, An Overview. October 2009.
9. Lu M, Kotelchuck M, Hogan V, Jones L, Jones CP, Halfon N. Closeing the Black-white gap in birth outcomes: A life-course approach. Accepted for publication in Ethnicity and Disease. 2010.