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INFANT HEALTH PROBLEMS

◆ *Infant Mortality* ◆ *Low Birthweight*

INFANT MORTALITY

Background

Infant mortality describes the number of infants who die before their first birthday.[1]

The most common reasons for infant mortality are:[2]

- Birth defects
- Prematurity/low birthweight
- Sudden Infant Death Syndrome (SIDS)
- Respiratory Distress Syndrome (RDS)
- Maternal Pregnancy Complications

Infant mortality statistics are key indicators of maternal and child health.

Size

San Diego County[3]

In 1996, 243 infants died before their first birthday in San Diego County.

San Diego County infant mortality (Table 1)

- **1996 Rate:** 5.4 per 1,000 live births per year.
- **1993-1996 Trend:** Decreased from 6.2/1,000 to 5.4/1,000.

National

In 1996, the US infant mortality rate was 7.2 deaths per 1,000 live births.[2]

The United States has one of the highest infant mortality rates among industrialized countries.[4]

In 1996, 81.8% of mothers received prenatal care in the first trimester and 4.1% received late or no prenatal care in the US.[2]

Table 1
San Diego vs. the Nation—Infant Mortality Rates*,[3]

San Diego County 1996	County Trends 1993-1996	California 1996	National 1996	HP2000 Objective
5.4	Decreased 6.2 - 5.4	5.9	7.2	7.0

* Rates per 1,000 live births

Seriousness

Years of Productive Life Lost: 62.5 years per infant death in San Diego County.

Healthy People 2000 Objective: The 1996 San Diego County rate of infant mortality (5.4) is less than the 1996 state rate (5.9) and the Healthy People 2000 Objective (7.0).

Between 1994 and 1997 the leading causes of infant deaths in San Diego County were:[1]

- Birth defects/congenital anomalies (26%)
- Low birthweight/short gestation (20%)
- Conditions arising in the perinatal period (such as maternal hypertension or infection, or newborn problems such as birth asphyxia or shoulder dystocia) (18%)
- Sudden Infant Death Syndrome (SIDS) (12%)
- Respiratory conditions (7%)
- Intentional and unintentional injuries (4%)
- Other (13%)

Risk Factors

Maternal age is a risk factor for infant mortality. Infant mortality rates are highest among infants born to teenagers and to mothers over age 44.[5]

High Risk Populations

Age: Mothers under age 18 and over age 44.[5]

Ethnicity(s)/Races: Blacks **(Fig. 1)**

In 1996, the African American infant mortality rate in San Diego (10.6) was almost twice that of the overall County rate (5.4).

County Subregional Areas:[3] (1995-96 average) **(Fig. 2)**

- Kearny Mesa
- Southeast San Diego
- Oceanside
- South Bay

Women who do not receive prenatal care are put their fetus and infant at greater risk of developing health problems. Women least likely to receive adequate prenatal care include adolescents, African American women, and low income women.[5]

Figure 1
Infant Death Rate* by Race/Ethnicity, San Diego County 1996[3]

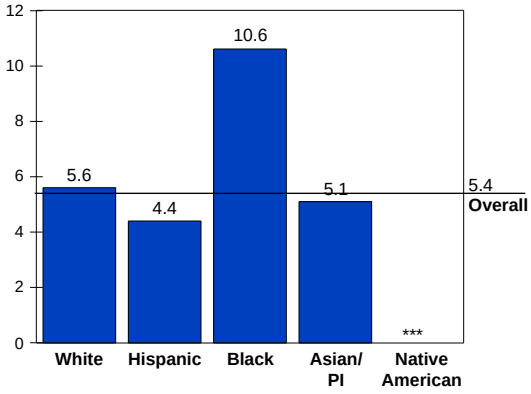
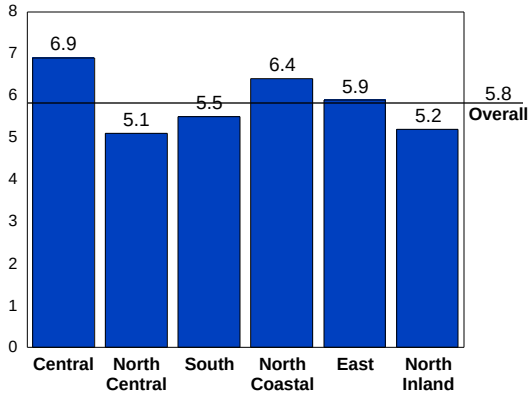


Figure 2
Infant Death Rate* by San Diego County Region 1993-1996[3]



* Rates per 1,000 live births

***Rate not calculated for less than 5 cases

Prevention

Many infant deaths can be avoided by offering prenatal care to the pregnant woman and quality health care for both the infant and the mother after delivery.[1]

Fetal and infant mortality and morbidity can be reduced by reducing rates of preterm birth and low birthweight. The most effective prevention is:[5]

- Timely and appropriate prenatal care
- Avoidance of tobacco, alcohol, and illicit drugs during pregnancy

Opportunities for preventing unnecessary infant deaths also include: [1]

- Pre-conception counseling, education, and care
- Easy access to maternal and child health care
- Adequate preventive and perinatal care
- Support services for pregnant females and parents of infants
- Safe environments for infants in child care

Model Programs

Fetal and Infant Mortality Review Program

Fetal and Infant Mortality Review (FIMR) is a community process that continually assesses, monitors, and works to improve service systems and community resources for women, infants, and families. When a fetal or infant death occurs, trained staff review medical and other records of the infant and mother to gather information. When staff interview the mother, they obtain additional information and ensure the family is linked with needed resources. A multi-disciplinary team then reviews case summaries with all identification removed. Its charge is to recommend actions to improve services or resources. Finally, community action teams work to implement and track recommendations. The California Department of Health Services oversees approximately 20 FIMR programs in California, and there are 200 programs nationwide. **For further information contact**: San Diego County FIMR program, 619.692.8667.

Resources

Local

Perinatal Care Network, Health and Human Services Agency, County of San Diego, (619) 542-4049

Access to Infants and Mothers (AIM), (619) 492-4422

March of Dimes, (619) 576-1211, *www.modimes.org*

Regional Perinatal System, (619) 294-6142

American Academy of Pediatrics, (619) 576-1700

Fetal-Infant Mortality Review Program, Health and Human Services Agency, County of San Diego, (619) 692-8667

National

Maternal and Child Health Bureau, Department of Health and Human Services, *www.hhs.gov/hrsa/mchb*

National Maternal and Child Health Clearinghouse, *www.circsol.com/mch*

National Center for Education on Maternal and Child Health, *www.ncemch.org*

Centers for Disease Control and Prevention, *www.cdc.gov*

National Institute for Child Health and Human Development, *www.nih.gov/nichd*

American College of Obstetricians and Gynecologists, *www.acog.com*

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3. Unless otherwise noted, all San Diego infant health problems statistics were based upon information provided to the San Diego County Health and Human Services Agency from the California Department of Health Services, Center for Health Statistics, Vital Statistics Section.
4. March of Dimes Health Sheet. Retrieved from the World Wide Web: http://modimes.org/pub/lowbirth.htm
5. United States Department of Health and Human Services. (1998). Healthy People 2010, Draft Report for Public Comment. Washington, DC: US Government Printing Office.

LOW BIRTHWEIGHT

Background

Low birthweight is defined as weighing less than 2,500 grams (5.5 pounds) at birth, either due to prematurity or intrauterine growth retardation.[1]

Very low birthweight is defined as less than 1,500 grams (3 pounds 5 ounces).

Size

San Diego County

In San Diego County, 2,614 babies were classified as low birthweight in 1996.

San Diego County percent of low birthweight babies (Table 1)

- **1996:** 5.8% of all births
- **1993-1996 Trend:** Decreased slightly from 6.0% of all births to 5.8%.

National

Annually, 285,152 babies are born low birthweight in the US – 7.4% of births.[2]

Annually, 52,420 babies are born very low birthweight in the US – 1.3% of births.[2]

Annually, there are 424,455 preterm births in the US – 11% of births.[2]

Table 1

San Diego vs. the Nation—Percentage of Infants Born Low Birthweight[3]

San Diego County 1996	County Trends 1993-1996	California 1996	National 1995	HP2000 Objective
5.8%	Decreased 6.0% - 5.8%	6.1%	7.3%	5.0%

Seriousness

Healthy People 2000 Objective:

- The San Diego County percentage of low weight births (5.8%) is less than the state percentage (6.1%) but higher than the Healthy People 2000 Objective percentage (5.0%).
- The San Diego County percentage of low weight births for Black infants (10.5%) is higher than the Healthy People 2000 goal for Black infants (9%).

Low birthweight children are:[1]

- 40 times more likely to die during the first month of life than normal weight children.
- 3 times more likely to experience serious health and developmental problems throughout their childhood than normal weight children.

The March of Dimes reports:[1]

- Some of the problems associated with low birthweight are mental retardation, cerebral palsy,

malfunctioning lungs, and vision and hearing impairments.

- To prevent having a low birthweight baby, mothers are encouraged to seek prenatal care, maintain a healthy lifestyle, keep a balanced diet, and avoid using alcohol, illicit drugs or tobacco.

Despite their low prevalence, expenditures for the care of low birthweight infants total more than half of the costs incurred for all newborns.[4]

Risk Factors

Risk factors for low birthweight include:[5]

- Mother's medical problems including high blood pressure, diabetes, infections, heart, kidney, or lung problems, and abnormal uterus or cervix
- Lack of early and regular prenatal care
- Poor diet before and during pregnancy
- Lack of weight gain during pregnancy
- Smoking and use of alcohol and other drugs
- Low income
- Lack of education

The use of alcohol and tobacco during pregnancy are major risk factors for low birthweight and other poor infant outcomes. Alcohol use during pregnancy is linked to fetal death, low birthweight, growth abnormalities, mental retardation, and fetal alcohol syndrome. Smoking during pregnancy is linked to low birthweight, preterm delivery, sudden infant death syndrome, and respiratory problems in newborns.[4]

A recent study of pregnant women in an urban, public, prenatal clinic found that 16% had been physically abused during their pregnancy, 30% had smoked during their pregnancy, and 12% had used alcohol or illicit drugs during their pregnancy. Physical abuse during pregnancy was significantly related to higher use of alcohol, tobacco, and other drugs. Combined, physical abuse, smoking, and alcohol or illicit drug use during pregnancy was significantly related to low birthweight babies.[6]

Risk factors include biological, intergenerational, socioeconomic, and behavioral influences.[1]

High Risk Populations

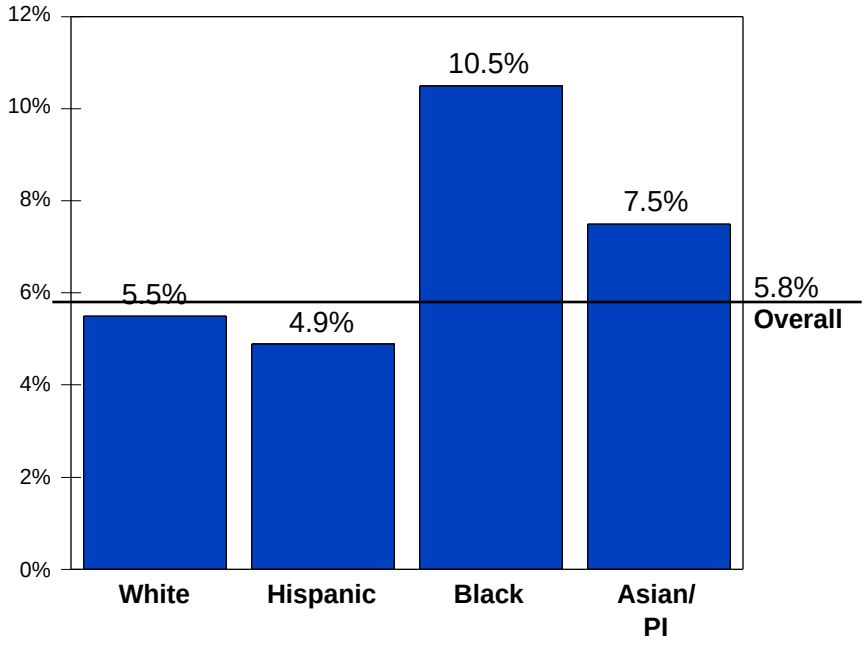
Age(s): Mothers who are under age 18 or over age 44.[4]

Race/Ethnicity(s): 10.5% of African American infants are born with low birthweight compared to 5.8% overall.[1] **(Fig. 1)**

County Subregional Areas:[3] (1996)

- Southeast
- Lemon Grove
- Mid-City

Figure 1
Percentage of Infants Born Low Birthweight by Race/Ethnicity, San Diego County 1996[3]



Prevention

The most effective way to prevent low birthweight is for the woman to access early and regular health care before and during pregnancy. Women who receive early and regular health care learn about health promotion, disease prevention, and ways to reduce the risk of having a low birthweight baby including good nutrition and avoiding risky behavior such as smoking, drinking alcohol, and taking unprescribed drugs. With adequate prenatal care, health care providers can identify problems early and provide treatment to reduce the risk of having a low birthweight baby.[5]

Model Programs

B4 Babies and Beyond – Prenatal and Child Health Outreach (Mesa County, Colorado)[7]

- Created a network of prenatal care providers including obstetricians/gynecologists, family physicians, and nurse/midwives to provide quality care
- Serves as primary access point for low income women to receive financial assistance, secure prenatal care, labor, and delivery services, and get social support
- Expanded to provide access to a continuum of primary health care for children from birth through age 118 who have inadequate or no primary health care
- Rotates assignment of new patients so that providers are not disproportionately burdened
- The percentage of women accessing prenatal care early in their pregnancy has increased steadily since the program started
- Program serves approximately 1,500 children and 700 women each year, most without insurance or primary care providers
- Accounted for 43% of the births in the county in 1996

Managed Care Approaches

Examples of successful managed care approaches to lowering premature birth rates by providing better prenatal care include:[8]

"Ready, Set, Grow", Virginia Chartered Health Plan

- Cut premature births among Medicaid enrollees in half during its first two years
- Case workers make home visits and phone calls to link expectant mothers with services and educational programs, including follow-up and rescheduling of missed appointments
- Includes a physician incentive component that reimburses doctors on an adjusted fee for service basis – they get paid more if their patients are seen early and regularly

Blue Cross/Blue Shield of Florida

- Increased the average gestational age of high-risk newborns by almost two weeks and cut average lengths of stay by almost 8%
- Offers high-risk mothers an intensive prenatal education program

Keystone Mercy Health Plan of Philadelphia

- Reduced the number of newborns requiring hospital stays from 16% to 13%
- Provides social service support and free childbirth education

Resources

Local

Perinatal Care Network, Health and Human Services Agency, County of San Diego, (619) 542-4049

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National Maternal and Child Health Clearinghouse, *www.circsol.com/mch*

National Center for Education on Maternal and Child Health, *www.ncemch.org*

Centers for Disease Control and Prevention, *www.cdc.gov*

National Institute for Child Health and Human Development, *www.nih.gov/nichd*

American College of Obstetricians and Gynecologists, *www.acog.com*

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