

LOW BIRTH-WEIGHT

WHY THIS MATTERS

Low birth-weight (LBW) is defined as weight less than 2,500 grams (5 pounds, 8 ounces) at birth. Birth-weight is one of the most important factors for predicting the health status of newborns. Given the importance of birth-weight, the Healthy People 2010 Objectives aim to reduce the incidence of LBW in live births to five percent or less.

Infant Mortality

In 2003, LBW infants accounted for almost two-thirds of all infant deaths.¹ Despite medical advances in neonatal care, LBW infants continue to have a much higher risk of neonatal mortality than normal birth-weight infants.²

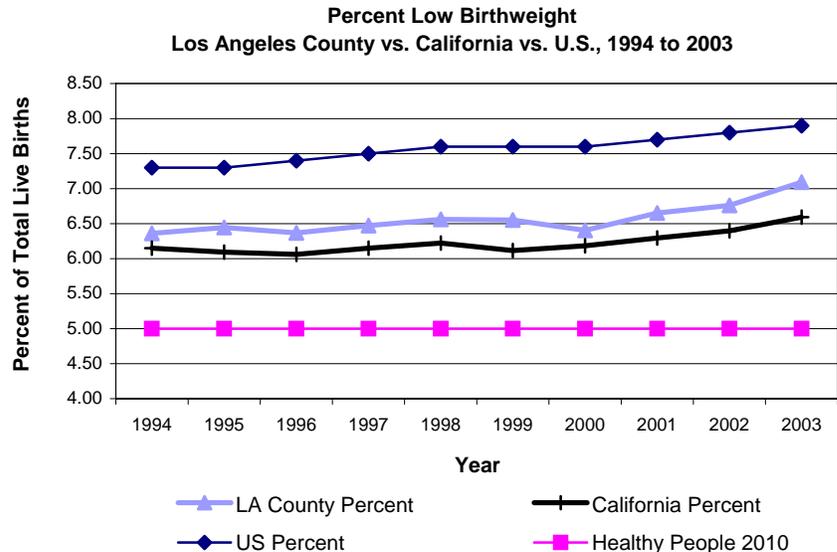
Childhood Morbidity

LBW infants have a higher risk of neuro-developmental delays, respiratory problems, congenital abnormalities, and complications due to neonatal intensive care.³ Further, LBW infants have a higher prevalence of behavioral and learning problems, which are predictors of school failure.^{2, 4}

Emotional and Economic Impact

Taking care of LBW infants can have significant emotional impacts on families, such as, marital instability, strained parental employment opportunities, and problems with siblings.^{2,4} An Institute of Medicine report estimated for every dollar spent on prenatal care for high risk women, \$3.38 is saved in medical care costs for LBW infants.⁵ In 2002, nearly half of the total charge for infant hospital stays—\$15.5 billion dollars—was spent on neonatal care for pre-term or LBW infants.⁵

WHAT THE DATA SAY



The figure above shows the prevalence of LBW births from 1994 to 2003. In 2003, approximately one in every 14 births (7.1 percent) in Los Angeles County was a LBW birth. While the percentage of LBW births in Los Angeles County was fairly consistent from 1994 through 2000, it has increased by almost 11 percent over the past three years. Since 1994, the prevalence of LBW births in Los Angeles County has consistently been higher than the prevalence statewide. Furthermore, the prevalence has increased at a faster rate in Los Angeles County than in the rest of California. Los Angeles County and California however, remain well below the national prevalence of LBW births.

The IOM recently released a report titled “Preterm Birth: Causes, Consequences, and Prevention” which cited several causes for the rising preterm birthrates, including an increasing number of births to adolescent girls and older women, whether a woman previously had delivered a preterm infant, a greater willingness by some ob-gyns and pregnant women to induce labor in a “medically chosen” preterm birth and more frequent use of in vitro fertilization⁶.

Concerns about increases in the percent of LBW births have led to efforts to improve birth outcomes on both national and local levels. The March of Dimes has launched a campaign to prevent prematurity and LBW births. Within Los Angeles County, the Maternal, Child, and Adolescent Health Programs are collaborating with the Los Angeles Best Babies Network to organize a Perinatal Summit. Through this effort, health care leaders and politicians collaborate to promote a system change.

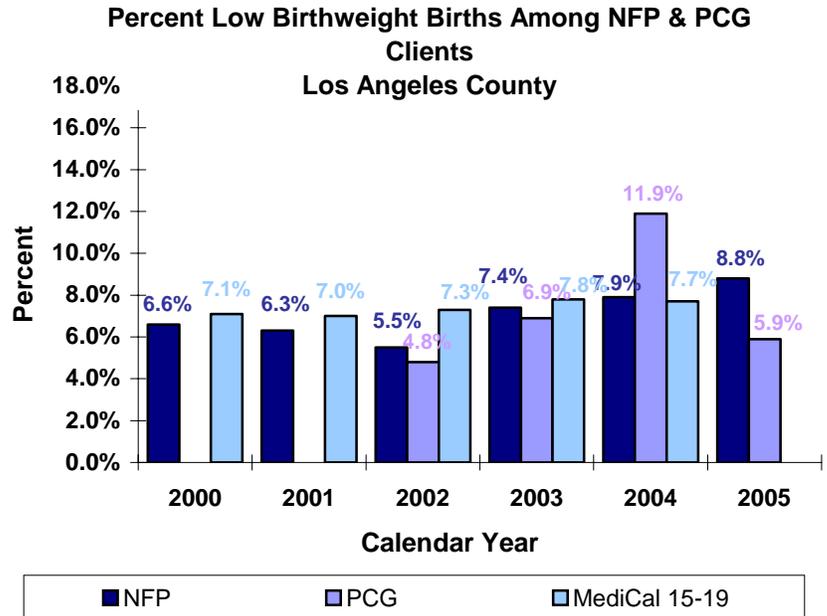
WHAT MCAH PROGRAMS ARE DOING

MCAH programs employ various strategies to address low birthweight within Los Angeles County.

The **Nurse Family Partnership (NFP)** is a home visitation program that uses Public Health Nurses (PHNs) to provide intensive home visitation services to first-time pregnant young women in Los Angeles County who are living in poverty. The NFP Program utilizes Dr. David Olds' "Prenatal and Early Childhood Nurse Home Visitation" model to guide PHNs in providing home visitation services from pregnancy to when the child turns two years. The PHN Home visitors follow recommended visit schedules from weekly to bi-monthly visits. The Model focuses on six domains of functioning including personal health, environmental health, maternal role development, maternal life-course development, building family and friends support networks, and understanding available programs in the community. PHNs contribute to decrease low birth-weight births by providing education and case management to ensure early prenatal care and decrease prenatal risk factors

The **Prenatal Care Guidance Program (PCG)** focuses on outreaching and identifying Medi-Cal eligible, high-risk women and ensuring their access to appropriate prenatal care through case management services. Women can enroll in the program at any time during their pregnancy and are visited by a PHN until their baby is 12 months old. The objectives of the program are to increase case coordination and follow-up, assure timely access to prenatal care, increase enrollment in Medi-Cal and other health coverage programs, and enhance access to other community resources. PCG nurses educate and ensure that high-risk pregnant women seek early prenatal care, provide monthly follow up, and decrease prenatal risk-factors such as smoking, substance abuse, and other infections.

WHAT THE DATA SAY



The above figure shows LBW births as a percent of total live births among Nurse Family Partnership and Prenatal Care Guidance Program clients compared with Los Angeles County Medi-Cal clients ages 15-19. This comparison is appropriate because both populations are similarly at high risk for poor pregnancy outcomes. No data from 2005 to present is currently available for low birth-weight births among Los Angeles County Medi-Cal recipients.

Between 2000 and 2005, the percent of LBW babies among NFP clients increased from 6.6 to 8.8 percent (an increase of 33.3 percent). During the same reporting period the percent of LBW babies among PCG clients increased from 4.8 to 5.9 percent (an increase of 22.9 percent). Although the percent of LBW babies has increased it should be noted that both programs recruit high risk clients who are most in need of the program services. The increasing LBW trends for 2004 and 2005 have been consistent with local state and national trends.

As mentioned, the NFP and PCG programs provide many resources to improve healthy birth outcomes. These activities include providing training to health care providers; care coordination services to ensure timely access to health services; health education about issues impacting mothers and infants; and ensuring that at-risk mothers and their infants have access to quality maternal and child health services.

WHAT MCAH PROGRAMS ARE DOING

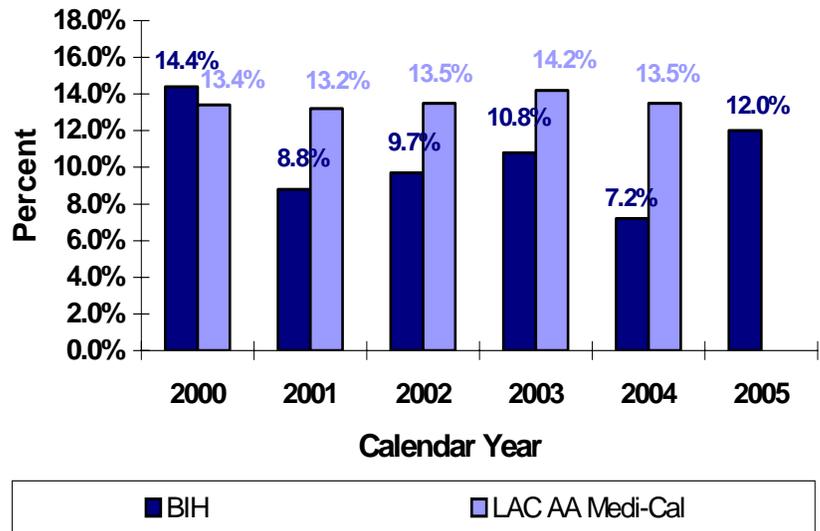
MCAH programs employ various strategies to address low birthweight within Los Angeles County.

The **Black Infant Health Program (BIH)** is designed to decrease preterm births, low birth-weight births, and infant mortality within the African American community. BIH workers identify eligible pregnant and parenting African American women to enroll in the program. The clients receive home visitations, referrals to family supportive services, health education, and continuous encouragement and positive support.

The **Comprehensive Perinatal Services Program (CPSP)** is a Medi-Cal funded Perinatal health program incorporated into Title 22 regulations (CCR) in 1987, following the success of the Obstetrical (OB) Access Project. The primary goal of the program is to decrease the incidence of low birthweight and reduce overall morbidity and mortality for low-income women and their infants by ameliorating health education, nutrition, and psychosocial risk factors that affect pregnancy outcome. Although County CPSP staff do not provide direct services, they oversee approximately 500 state-approved CPSP providers, assisting with program implementation and quality assurance activities.

WHAT THE DATA SAY

**Percent Low Birthweight Births Among BIH Clients
Los Angeles County**



The above figure shows LBW births as a percent of total live births among Black Infant Health Programs clients compared with Los Angeles County African American Medi-Cal clients ages 18 to 44. No data from 2005 is currently available for LBW births among Los Angeles County African American Medi-Cal recipients.

Between 2000 and 2005, the percent of low birth-weight babies among MCAH clients decreased from 14.4 to 12 percent (a decrease of 16.7 percent). Although the trend is encouraging the prevalence of low birth-weight births among BIH clients needs to improve to bring the percent closer to the Healthy People 2010 goal of less than 5 percent of live births.

As mentioned, BIH programs provide many resources to improve healthy birth outcomes. One of the unique aspects of the BIH program is its social support and empowerment classes which address issues such as culture and self-awareness, self-acceptance parenting and self-esteem. Based on the Antelope Valley LAMB findings an interconceptional care curriculum was developed and is in the process of being tested.

WHAT MCAH PROGRAMS ARE DOING

Substance Abuse and low birthweight births

The Healthy People 2010 (HP2010) initiative recognizes substance abuse by pregnant women as a major risk factor for poor birth outcomes and sets rates of smoking and alcohol consumption by pregnant women at less than one percent and six percent respectively.¹ In addition, for those pregnant women who smoke, HP2010 recommends a 30 percent smoking cessation within the first trimester.²

The lower birth weight of babies born to mothers who smoke has been documented for almost 40 years. Nicotine affects the developing fetus by reducing blood flow through the placenta, which retards growth and contributes directly to low birth weight.

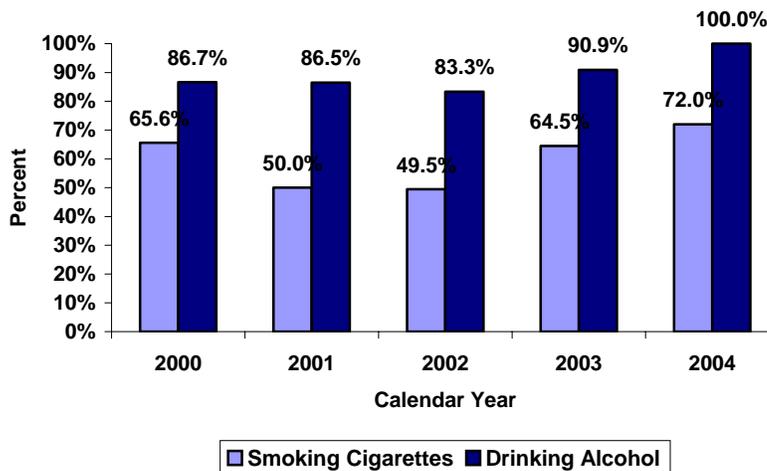
In the **Nurse Family Partnership Program** the consequences of substance abuse and its effects on newborns are constantly stressed in personal health domain visits during pregnancy and enforced through the entire two years of the child's life. Clients who engaged in substance abuse are referred to appropriate agencies for treatment.

The Prenatal Care Guidance Program stresses substance abuse prevention through case management and referring clients accordingly.

In the **Black Infant Health Program** clients receive home visitations, health education, appropriate referrals for substance abuse treatment and continuous encouragement and positive support

WHAT THE DATA SAY

The Percent of BIH Clients Who Report a Reduction/Cessation of Substance Abuse During Pregnancy



Due to a small number (n<10) of clients reporting cigarette smoking or drinking alcohol, rates for the Nurse-Family Partnership are unstable and will not be presented. Therefore, all data shown reflects self-reports by clients of the Black Infant Health Program.

The Black Infant Health Program has shown considerable gains from 2002 to 2004 in both reduction/cessation of cigarette smoking and cessation of alcohol use during pregnancy. Following a decline of cigarette smoking reduction in 2000 (65.6%), the percent of clients who have reported a reduction or cessation of cigarette smoking reached a new high of 72.0% in 2004. Because reduction and cessation are grouped together in the available data, they are not directly comparable with either the Healthy People 2010 goals or previously documented smoking intervention programs. However, the increasing trend over the last several years shows promise.

The data for alcohol use among Black Infant Health clients is similar to its smoking reduction / cessation rates. After reaching a low point of only 83.3% of clients reporting alcohol cessation in 2002, alcohol cessation has reached a new high of 100% in 2005. The upward trend is quite promising. BIH will work to keep alcohol cessation levels among its clients high in the coming years.

Action Plan

Low birth weight births are associated with a number of risk factors including young or old maternal age; low income; race/ethnicity; short interpregnancy interval; multiple gestations; unintended pregnancy; history of low birth weight or preterm birth; late entry and/or lack of comprehensive prenatal care; substance abuse; stress during pregnancy and other factors. In order to improve birth outcomes MCAH will:

- Continue to administer the Los Angeles Mommy and Baby Survey to provide MCAH with important information on the risk factors for low birth-weight babies and other poor birth outcomes in Los Angeles County (please refer to September 2005 AV findings at the end of this document). Information from the survey will enhance services provided by existing MCAH programs and/or develop new interventions to address the specific risk factors for different populations within Los Angeles County to reduce poor birth outcomes (see LAMB website at: lapublichealth.org/mch/LAMB/LAMB.html).
- Continue to administer the LA HOPE Project to provide MCAH with important information on the risk factors associated with infant morbidity and mortality and to promote maternal health by improving maternal and child health programs, policies, and maternal behaviors during pregnancy and early infancy. (see LA HOPE website at: lapublichealth.org/mch/LAHOPE/LAHOPE.html)
- Improve the quality of CPSP services by working with the Los Angeles Best Babies Network's Healthy Births Care Quality Collaborative. Using evidence-based clinical guidelines, the ten CPSP-certified community clinics participating in this 15 month project will study, test, and implement improvement measures in nine areas of CPSP service that are known to improve pregnancy outcomes, including substance abuse, nutrition, intimate partner violence, gestational diabetes, depression, and cultural competency.
- Work with the Los Angeles Best Babies Collaborative and the March of Dimes to develop a policy agenda to educate and improve preconception and interconception care.
- The Fetal Infant Mortality Review Program and REP will collaborate with SPA 6 to identify interventions to address the issue of adverse birth outcomes in the area.
- Increase access to service providers and information about pregnancy-related resources through the 2-1-1 information telephone line (obesity prevention resources; 2-1-1 cards administered to LAMB survey recipients.
- PCG is providing client assessment and short-term case management to detained pregnant teens and after detainment, linking them to other case management programs including NFP and PCG.

Success Story



The Los Angeles Mommy and Baby Project is a population based survey that seeks to better understand the causes of poor birth outcomes in Los Angeles County. This is what LA County moms had to say:

"Thank you for sending me the LAMB Survey. The project is very interesting and it is nice to know that there is a group out there that cares about us"

"I think that it is a very good thing that you are concerned about the health of mothers and their babies. I would really like to receive the results when you are done with the project"

"Well I have never done a survey and it was a very nice experience to tell you about my pregnancy and how difficult it was having a baby"

1. Lu M, Tache V, Alexander GR, et al. Preventing low birthweight: Is prenatal care the answer? *The Journal of Maternal-Fetal and Neonatal Medicine*. 2003; 13:362-380.
2. McCormick MC. The contribution of low birthweight to infant mortality and childhood morbidity. *The New England Journal of Medicine*. 1985; 312: 82-90.
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4. Petrou S, Sach T, Davidson L. The long-term costs of preterm birth and low birthweight: results of a systematic review. *Child: Health Care and Development*. 2001; 27:97-115.
5. Institute of Medicine. Prenatal care and low birthweight: Effects on health care expenditures. *Preventing low birthweight*. Washington D.C.: National Academy Press, 1994: 212-237.
6. Institute of Medicine. Sociodemographic and Community Factors Contributing to Preterm Birth. *Preterm Birth: Causes, Consequences, and Prevention*.



LOS ANGELES MOMMY & BABY (LAMB) PROJECT SEPTEMBER 2005

The Antelope Valley Service Planning Area 1 (SPA 1) infant death rate rose from 5.0 in 1999 to 10.6 deaths per 1,000 live births in 2002. Although SPA 1 represented only 6% of the infant deaths reported in Los Angeles County (LAC) the number of deaths per 1,000 live births (mortality rate) surpassed all other SPAs.

In response to distressing infant mortality statistics in Antelope Valley, the Maternal, Child, and Adolescent Health (MCAH) Programs conducted the Los Angeles Mommy and Baby (LAMB) Survey to assess potential risk factors for low birth weight (LBW) and preterm (PT) births, adverse birth outcomes that are associated with infant mortality. The study examined areas that are known to have an impact on birth outcomes, including preconceptional health, prenatal care, maternal health problems during pregnancy, and psychosocial and behavioral risk factors.

The LAMB project was conducted from October 2004 to April 2005. Three hundred sixty-six (54% response rate) postpartum women residing in SPA 1 completed surveys; 84 (23%) had a low birth weight or preterm infant. The study identified factors that occurred before and during pregnancy that increased the likelihood of having adverse birth outcomes.

Results from LAMB:

Mothers with low birth weight or preterm infants were more likely than other mothers to:

- Lack health insurance before pregnancy
- Have given birth to a low birth weight or preterm infant in the past
- Not receive adequate prenatal care
- Have high blood pressure before or during pregnancy
- Experience early labor pain and have their water break early
- Smoke during pregnancy
- Feel their neighborhood was unsafe
- Feel less happy during pregnancy

To improve birth outcomes in Antelope Valley, this study suggests:

Continuous medical insurance that covers preconception and interconception care

- Increase health insurance coverage among women of childbearing age, particularly prior to pregnancy.

Promote preconception and interconception care

- Preexisting medical conditions, such as high blood pressure, must be identified and controlled before pregnancy.
- Women who have given birth to a low birth weight, preterm, and/or stillborn infant should be evaluated for risk factors before becoming pregnant again and provided specific interconception services.

Risk-appropriate obstetrical care, including high-risk care

- Increase the number of women who receive early and adequate prenatal care.
- Smoking cessation during pregnancy must be a priority.
- Women in high-risk pregnancies should be monitored and educated about high blood pressure, early labor, and other complications that could arise during high-risk pregnancies.

Collaboration among all community stakeholders

- Increase awareness of mental health issues and work with police, community organizations, and Churches to improve neighborhood safety.

Next Steps:

Based on the findings, local community and government agencies, such as SPA 1 and the Antelope Valley Best Babies Collaborative, have made short and long-term recommendations and commitments to improve birth outcomes.

We also prepared a more detailed report based on the survey responses from all the mothers who completed the survey. If you are interested in this report, it is available at our website: www.lapublichealth.org/mch/LAMB/LAMB.html. You can also check the website for ongoing updates for information related to the survey.