




Executive Summary

Bringing The Issues Home

A Special Report on Infant Mortality

North Carolina has made tremendous progress over the last 15 years in reducing the rate of babies who die in their first year of life. The 2002 state rate of 8.2 deaths per 1,000 live births is a historic low. However, the primary causes of infant mortality today are still somewhat of a mystery. And while the rate of babies dying is decreasing, the rate of those born too early or too small is increasing.

In May 2003, the North Carolina Healthy Start Foundation convened a statewide summit on prematurity and low birthweight—the leading causes of infant mortality. It showcased successful community and hospital-based programs in the state along with the lessons learned from the Foundation's Community Grants Program.

Established in 1990 with funding from Glaxo, Inc., the North Carolina Healthy Start Foundation coordinated the activities of the Governor's Commission on Reduction of Infant Mortality until it ended in 1995. It currently conducts six of the state's largest bilingual, public education campaigns and advises state and local policy makers on women's and infant's health issues. As part of its mission to reduce infant mortality and morbidity and to improve the health of young children in North Carolina, the Foundation coordinated an innovative Community Grants Program, awarding nearly $4 million to 265 public and private agencies, serving nearly all 100 counties over its first 12 years.

N.C. Prematurity And Low Birthweight

In 1988, North Carolina had nearly the highest infant mortality rate in the country. Since then the rate has declined by more than a third and now stands at a historic low. Several public health efforts have contributed to this reduction including expansion of Medicaid eligibility to 185% of federal poverty level, the state's Baby Love program and its case management services, the Governor's Commission on Reduction of Infant Mortality, the N.C. Back to Sleep campaign, and teenage pregnancy prevention and smoking cessation programs.

However, as the rate of infant mortality has decreased, the rate of prematurity and low birthweight has increased. Approximately 9% of live births in North Carolina are low birthweight (less than 2,500 grams or 5.5 pounds) and around 14% are premature (less than 36 completed weeks of gestation). Of the babies born less than 2,500 grams, approximately 70% were also preterm. Some of the contributing factors include maternal diseases, poor nutrition, reproductive tract infections, smoking, drug use, multiple births and environmental factors. Preventing low birthweight requires going beyond just medical interventions.

Preterm Birth Prevention Strategies

When it comes to what causes preterm births, there are more questions than answers. The problem of poor birth outcomes is complex and multifaceted. Too often the most important prenatal visit is the one that rarely happens—the one

before a woman gets pregnant that allows her to improve her health and increase her chances for a good birth outcome. Powerful targeted interventions also need to continue such as smoking prevention and cessation counseling, alcohol and substance abuse prevention and access to healthcare for all women of reproductive age.

Perhaps the most direct strategy to prevent preterm birth is to reduce unintended pregnancies and the poor birth outcomes associated with them. The goal is to enable people to have pregnancies when they want them and when they are physically, economically and socially prepared for raising a child. One of North Carolina's most important family planning opportunities today is its pending application to the federal Centers for Medicare and Medicaid Services for a family planning waiver. When approved, this will increase the income eligibility for family planning services to 185% of the federal poverty level, as it is for pregnant women and infants.

Prematurity Price Tag

Families of premature and low birthweight babies may face many unexpected expenses once their babies come home. During a preemie's first year, expenses can reach tens of thousands of dollars for home nurse visits; early intervention services; physical, speech and occupational therapy; medical equipment; special formula and medical care. Lost income, resulting from a parent needing to stay home to care for the sick child, is perhaps one of the greatest family hardships. An itemized "Prematurity Price Tag," calculated by the North Carolina Healthy Start Foundation, is included in this report.

The cost of health care for low birthweight infants is substantial. In any given year, more than 40% of the infants born in North Carolina are to Medicaid recipients. In 2000, 10.5% (5,149) of these infants weighed less than 2,500 grams compared to the state average of 8.8%. The average Medicaid expenditure for a low birthweight baby's medical care in its first year of life ranged from $4,976 to $59,017 per child. Total Medicaid costs for low birthweight babies in 2000 was $244,744,668, the state's contribution was close to $27 million.

North Carolina Healthy Start Foundation's Community Grants Program

From 1991 until 2002, the North Carolina Healthy Start Foundation invested nearly $4 million in 265 community grants, serving nearly every county. For eight years, one-time grants (up to $25,000) were distributed through a competitive grants process. These funds often were used to leverage other community resources or were matched with in-kind services. Funded program areas included adolescent pregnancy, service linkage/agency coordination, community development, mentoring programs and substance use prevention. The majority of these grants funded incentives, service coordination and training, patient education, transportation, equipment and community networking.

A review of the community grants program in 1999 lead to a new strategy in 2000 to concentrate resources on fewer issues over a two-year cycle and to increase the funding range (to $150,000). Regional pre-application workshops offered information and technical assistance for projects that would focus on smoking cessation, increase birth intervals, or reduce sexually transmitted diseases and reproductive tract infections. A new one-year, rapid-response minigrants program also funded 83 projects up to $2,000 each (or an average of $757).

2000-2002 Priority Community Initiatives

- Smoking Cessation: Two regional, clinic-based projects in western North Carolina had a common goal to reduce prenatal smoking; both achieved 25-30% quit rates. One project funded health departments in six western counties (Avery, Burke, Haywood, McDowell, Transylvania and Wilkes). The second project added a smoking cessation component to the Preterm Prevention Program at Mission Hospitals (Asheville). The greatest challenges were long-term smokers (five years or longer), second-time mothers who smoked in their first pregnancy, adolescents and smokers with minimal family support or who lived with smokers. The best strategy for clients unwilling to quit was educating them about secondhand smoke and maintaining a smoke-free home and car.

- Increasing Birth Intervals: One of the greatest factors for a healthy pregnancy is spacing birth no less than two years apart. About half of all pregnancies in North Carolina are unintended, and 12.7% of all births occur within less than a two year interval. Two health departments demonstrated an appreciation of the complexity of the issues and developed effective new strategies. In Rowan County, lay outreach workers helped at-risk families in a poor minority neighborhood prevent short birth

intervals by enhancing the capacity of mothers to provide a better life for their children. The program offered numerous creative incentives. Staff found that achieving a "non-event" (such as postponing a pregnancy) involves many complex issues including a woman's sense of confidence, empowerment and ambitions. Many services outside the public health domain, such as job programs and educational assistance, are needed. The second project developed a reimbursement tracking system and hired nurses as family care coordinators to follow specific families and address their health issues. Unfortunately this project ended early and was unable to fully implement what was developed.

- Sexually Transmitted Diseases (STDs) and Reproductive Tract Infections (RTIs): A small grassroots, nonprofit agency in Martin and Washington counties had a goal of reducing the rate of infant mortality via detecting and treating STDs and RTIs among sexually active women of reproductive age. (RTIs such as bacterial vaginosis have been associated with preterm birth.) The program reached out to women who had limited access to health care by targeting public housing, trailer parks and rural communities. To gain their trust, the staff provided services in unorthodox places including local food banks, storefront offices and crime-dense neighborhoods—places where these women could be found. Local HIV/AIDS peer educators expanded their training to include prenatal issues, conducted support group meetings to encourage women to limit their personal risk factors, and engaged participants in exercises that would lead to behavior change. Of the more than 2,800 high-risk women who were reached, more than 1,000 were referred for health care; 76% kept their appointments; more than half were diagnosed with an RTI; 100% of them received treatment. The project also revealed that many of the women had very complex psycho-social problems.

Community Grant Successes

Health Management of Pregnancy

Mission Hospitals, in Asheville, was among the first in the country to take on the challenge of health management of pregnancy to stem rising costs associated with preterm and low birthweight babies. Mission's Preterm Prevention Program includes: 1) case management; 2) home visits; 3) telephone contacts; and 4) education. An enhanced smoking cessation component was added later with funding from the North Carolina Healthy Start Foundation. The program was highly successful: in the pilot phase the number of hospital admissions for premature labor was reduced nearly 20%, in the first year no babies were born below 28 weeks gestation to participants, each year African Americans had a reduced rate of prematurity compared to whites, and the target counties lowered prematurity rates from 9.7% to 7.1% (Healthy People 2000 goal) and have sustained reduced rates. Mission Hospitals later adopted this model for its employees. Results: $763 savings per participant in direct costs for hospital care of infants; $2,850 savings per participant for employer-paid health costs.

TeleHomecare

Eastern Carolina University demonstrated that keeping high-risk pregnant women at home with their support system not only saves money, it saves lives. Women at risk for preeclampsia received a combination of home and TeleHome visits (telephone transmission of health assessment information) from nurses, along with access to clinic visits. In-home services ranged from protein analysis to patient education, from telemonitor evaluations for periorbital edema to fetal kick counts, and from non-stress tests to weight measurements. Results: there were no emergency department visits in the pilot group of 10 women, 187 hospital days were averted at $587 per day ($109,769 total). The total cost for the program was $9,200; resulting in a net savings $100,569. Both the program participants and the hospital medical staff rated this program very highly.

Nurturing Umbrella

This faith-based program provides minority women in Cumberland County prenatal care, education and support and then follow-up care until the infant is 12 months old. Components include home visits, "special delivery" new mother and infant care gift baskets, transportation to clinic visits, Family Night Out, housing assistance and mentoring. In its first year, all participants had full-term deliveries (average healthy weight of 7.14 pounds). The program continues to achieve similar success today.

Other Highlights

- Smoking Cessation: A woman is more likely to quit smoking during pregnancy than at any other time in her life, because she is very motivated to have a

healthy baby. Successful treatment of tobacco dependence can achieve a 20% reduction in low birthweight babies, a 17% decrease in preterm babies, and an average increase in birthweight of 28 grams per baby. A specific counseling protocol has been developed by the SmokeFree Families National Dissemination Office to use with pregnant smokers.

- Oral Health: Periodontal disease may be an indicator for high-risk pregnancy. Women who deliver preterm and/or low birthweight babies have seven times the risk of having had severe periodontal disease than women who have healthy babies, suggesting poor prenatal oral health be considered a risk indicator. Based on a study by UNC researchers, women with moderate to severe periodontal disease at their first prenatal visit were twice as likely to deliver a baby earlier than 37 weeks than women with normal periodontal health. When periodontitis progressed significantly during pregnancy, women were four times more likely to deliver prematurely.

- Minority Infant Mortality: Since 1995, the N.C. General Assembly has provided annual funding to address the disparity between white and minority infant mortality and birthweight rates. Each of the 14 currently funded, community-based Healthy Beginnings projects emphasize support and outreach to hard-to-reach populations, utilize a community advisory board which includes clients, and focus on infrastructure development and capacity building. One of the most productive strategies is to involve people who mirror the families they serve. As is the case with many community-based programs, one of the biggest challenges is insufficient funding, not lack of initiative.

- Healthy Start Baby Love Plus: The priorities of the North Carolina Healthy Start Baby Love Plus Program are to increase access to services for pregnant women, strengthen the relationship between health care providers and consumers, and increase awareness of infant morbidity and mortality. These federally funded projects cover 14 counties in the Eastern, Northeastern and Triad regions, and offer outreach, health education, training and care coordination. At the heart of the program is the belief that the community, guided by a consortium of local individuals and organizations, can best design and implement services that families in their community need. Healthy Start Baby Love Plus is credited for innovation in service delivery, community commitment, increased access to services, integration of health and social services and developing personal responsibility of expectant parents.

The Next Steps

Whether one is new to the issue of infant mortality or has been working on it for years, we all need to take a hard look at the core issues and identify what we can do. Research suggests these directions will make a difference:

- Address several known and preventable risk factors associated with low birthweight and prematurity such as maternal smoking, substance use, inadequate weight gain, closely spaced births and monitoring women with a previous low birthweight baby.

- Increase efforts to improve the general well-being of all women of reproductive years—including meeting their health, social and economic needs.

- Promote intentional pregnancies which allow women time to adopt healthy lifestyles, manage chronic health conditions, and to prepare financially and emotionally for pregnancy and parenthood.

- Continue the rich collaborations established since 1990 and benefit from each other's efforts.