



Syracuse Healthy Start Newsletter

October 2004

Edition 7

Syracuse Healthy Start At a Glance

- Term: refunded for years 2001-2005
- Grantee: Onondaga County Health Department
- Goal: eliminate disparities in perinatal health
- Project area: City of Syracuse
- Target population: pregnant and/or parenting women with children under the age of 2
- Components:
 - Outreach
 - Case Management/Care Coordination
 - Health Education
 - Consortium
 - Addressing depression during the perinatal period
 - Interconceptional Care
- Objectives:
 - conduct intensive outreach to minority women, and women with high risk, to better link them with health and human services;
 - provide integrated case management services to enhance the care coordination, intervention for identified risks, and cultural competence of the services
 - increase provider competence in addressing multifaceted risks faced by participants
 - empower consumers with information
- Commissioner of Health and Principal Investigator: Lloyd F. Novick, MD, MPH
- Syracuse Healthy Start Project Director: Brenda Paul, MPH, MSW
- Syracuse Healthy Start Hotline: 435-2000

Richard H. Aubry, MD, MPH
Obstetrical Advisor, Syracuse Healthy Start
Kristen Luke-Houseman, RN, BA
Mary Jensen, MSW

In collaboration with:

- Onondaga County Health Department
- Upstate Medical University Center for Maternal and Child Health
- Family Ties Network, Inc.

Preterm Birth: the Continuing Challenge

In this newsletter we are presenting information regarding the issues associated with Preterm Birth in the hope that the knowledge will stimulate the process of effecting positive change regarding this challenge. It is essential that health care providers understand that the problem of Preterm Birth is substantial and appears to be getting worse. The reduction in the rate of Preterm Birth must be a priority for anyone interested in the subject of maternal / child health.

To begin, it is necessary to understand that Preterm Birth is most-often a multi-factorial problem/process, and in order to outline an effective strategy, we need to understand its genesis. A Preterm Birth can happen to *any* pregnant woman. By definition, a **Preterm Birth** is a birth that occurs anytime between 20 to 37 weeks gestation. Further broken down, a **Very Preterm Birth** occurs anywhere between 20 to 32 weeks gestation, and an **Extremely Preterm Birth** occurs between gestational weeks 20 to 28.

How are we doing?

The answer here is - not too well. Unfortunately, the rate of Preterm Birth in the U.S.A. is increasing at an alarming rate. While we spend nearly four times as much money in medical care per birth than any other nation, we continue to rank far behind other industrialized nations internationally for Preterm Birth Rates and Infant Mortality.

In 1981, the rate of Preterm Birth in the U.S. was 9.4%. By 2002 the rate was 12.1%; a **27% increase**. In central New York, over the last seven years there has been an increase from 7.6% to 9.5%, a 24% increase. The frequency and trend of **Preterm Births** in the Syracuse Healthy Start (city of Syracuse) population are also worth noting. In 1996, when Syracuse Healthy Start, was first beginning, the Preterm Birth rate among Syracuse city residents was 10.4% total; broken down by race, the data shows a rate of 8.5% for White women and 13.3% for women identified as Black. By 2003, the Preterm Birth rate for this same population was 11.6% overall; broken down by race, the data shows a rate of 10.1% for Whites, and 13.3% for Blacks. This is an 11% increase overall, with a 17% increase among Whites, while the rate for Blacks essentially remained the same. Using this data, it appears as though the women identified as Black are less affected by this upward trend than are women identified as White, resulting in a decrease in the relative risk or "disparity." The relative risk of Preterm Birth among Black women has thereby decreased significantly; nationally from 2.2 in 1990 to 1.6 in 2000, while it has fallen to 1.3 in 2003 for the Healthy Start Population. We are therefore affecting the relative distribution of Preterm Birth along racial lines.

Why the Challenge Continues/Worsens:

A change in the demographics of women who are giving birth appears to be a major contributing factor generating the rising rate of Preterm Births. Older mothers, especially those with medical problems, and / or

Continued on page 2

other life stressors, and the increased number of pregnancies from reproductive technology are major contributors to this worrisome trend.

Changes in the rate of Preterm Birth are actually shifting the relative importance of the leading causes of Infant Mortality. As noted in figure 1, while there has been a significant reduction (during the 1990's) in infant mortality from Birth Defects, SIDS and RDS, the rates of infant mortality related to Preterm Birth and Low Birth Weight (LBW) have continued to steadily rise. Where genetic counseling/screening and Folic Acid supplementation have helped to decrease infant mortality rates due to Birth Defects, the *Back to Sleep* campaign to reduce SIDS, and steroid administration antenatally and in the NICU to decrease RDS; Preterm Birth and LBW remain and are even increasing as an overshadowing presence.

Therefore, it is not surprising that with the Preterm Birth rate rising, the national Infant Mortality Rate rose in 2002 for the first time in 30 years. Nor is it surprising that the lower rates of Infant Mortality in other developed nations are matched by a comparably lower rate of Preterm Birth.

Overall Impact

Prematurity is: a factor in 75% of perinatal mortalities (death from 20 weeks gestation through 28

days of newborn life); the leading cause of neonatal mortality (death occurring in the first month of life); the second leading cause of overall infant mortality; and the leading cause of Black Infant Mortality. Its survivors are at an increased risk of developmental disability- Mental Retardation, Cerebral Palsy, Epilepsy, Pulmonary / Vision /Hearing Deficits, Learning Disabilities, and a plethora of Behavioral Problems.

Preterm birth can also be a threat to family integrity and independence, with an immense cost, both emotionally and financially. Prematurity deprives families of the full capabilities of their children, our culture of future leaders and our nation of strong and healthy citizens. It also places tremendous financial burdens on all of us. Premature birth accounts for about half of all infant hospitalization charges. A conservative estimate by the Agency for Healthcare Research and Quality (2001), Nationwide Inpatient Sample places a price tag of \$13.6 Billion annually spent in the United States for the in-patient hospital care of premature infants, approximately half of all infant in-patient hospital care costs. The expenses associated with services in Early Intervention, Special Education, SSI, etc. are **not** factored into this estimate. With overall hospital charges increasing, we can expect this cost to rise as well.

Types of Preterm Birth

Causes of Preterm Birth can be subdivided into three main types: Spontaneous Preterm Labor (50%); Spontaneous Premature Rupture of the Membranes (25%); and Medical Interventions (25%). While this data suggests three distinct pathways, many of the underlying risk factors are similar for all three.

The leading causes of Preterm Birth, accounting for 75% of all such births, are Spontaneous Premature Labor (PTL) and Spontaneous Premature Rupture of the Membranes (PPROM). Further broken down, the dominant risk factors associated PTL and PPROM include the following: Idiopathic (unknown cause but with a multi-factorial correlation of risk factors) – 50%; Infection (Bacterial Vaginosis, STDs, Bactiuria, Peridontal) – 20%; Uterine (Anomalies, Incompetent Cervix, LEEP) -10%; Fetal (Multiple Gestations, Anomalies, Polyhydramnios) – 10%; and Placental (Threatened AB, Abruptio, Previa) – 10%.

Maternal Risk Factors

While no one knows exactly what causes almost half of the Preterm Births related to PTL and PPROM, researchers have identified certain factors that put some women at an increased risk. As illustrated in figure 2, the mother's birth weight, age, race, stature, pre-pregnancy

Continued on page 3

Figure 1

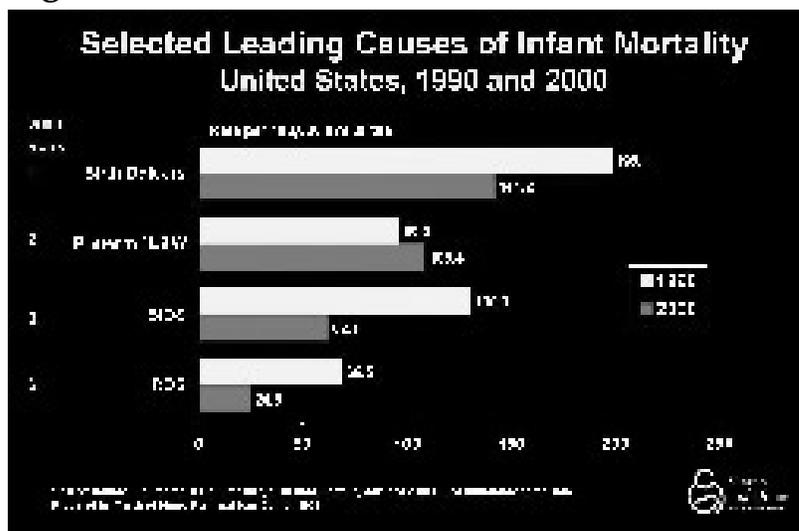


Figure 2



weight, and OB history all factor into the problem of Preterm Birth. Her medical history, nutrition, use of alcohol, nicotine, and other drugs, as well as stress associated with issues of domestic violence, poverty, employment, education, presence and/or absence of a supportive partner, family, depression, and anxiety are all **Inter-related Risk Factors** that influence the Preterm Birth Process.

With such a multi-factorial pathophysiology, the strategy for resolution must also be multifaceted. Stress Reduction needs to be understood and factored into women's health/maternity care. The Prevention of Preterm Birth must be a priority.

Primary Prevention

Being well nourished, wanted, educated, living a healthy lifestyle, and enjoying a meaningful life go a long way in the prevention of Preterm Birth. Certainly, having a stable partner and a planned pregnancy with attention toward proper pregnancy spacing and timing are also beneficial. Reaching a patient before pregnancy, when she may be able to alter her modifiable risk factors, is key. This can be accomplished by encouraging patients to come in for a Preconceptional Evaluation. The Preconceptional Evaluation is especially important to complete during routine postpartum care in patients who have delivered prematurely. The postpartum visit in such patients is actually preconceptional care.

Some attention also needs to be given to the role of Assisted Reproductive Technology in this problem. In-Vitro Fertilization (IVF) has steadily increased – doubling in the past ten years. While the average number of embryos/cycle is decreasing (from 4-3.1) from 1995-2001, the 28-30% risk of twins persists. Increasing the use of blastocyst transfers, with the need for smaller numbers of transfers may be of further help. Some nations have imposed regulations on IVF technology with good results.

The Signs of Preterm Labor

- Contractions every ten minutes or more often.
- Fluid/mucus (bloody or clear) passage from the vagina.
- Pelvic pressure – feels like the baby is pushing down.
- Low, dull backache.
- Menstrual-like cramps (cramps that feel like a period).
- Abdominal cramps (with or without diarrhea).

Secondary Prevention-During the Pregnancy

Early prenatal care registration with a continuing care provider who provides a basic assessment is essential. Identification of any risk factors as well as routine B.V. screening and Cervical Length measures are also important. Optimal nutrition, education about the signs and symptoms of PTL and limited activity (work, travel, sexual), as appropriate, are also valuable pieces in our prevention arsenal.

Teach each of your patients the signs of Preterm Labor

Advise them on the appropriate actions should they experience any of the following. (See above)

B.V. Screening and Treatment

Recent local and international experience is encouraging regarding the value of **early** screening for Bacterial Vaginosis (BV) and treatment using oral Metronidazole or Clindamycin. Diagnosis should be confirmed using a gram stain and recommended treatment is oral Metronidazole 250 mg. T.I.D. x 7 days. Follow-up T.O.C. should be done 2 weeks later and should be repeated at 20 weeks gestation.

Cervical Length and Cerclage

Local experience is also encouraging to the point that it is recommended that a transvaginal/transabdominal cervix length become a standard part of the routine 16-20 week sonogram. Cervix lengths 1.0 – 2.5 cm. warrant restriction of activity and serial follow-up. Cervix length less than 1 cm., especially with funneling before 22 weeks should raise the possibility of a rescue cerclage.

Management – Highlights: Actual PTL/PPROM

For treatment of Preterm Labor, the diagnosis must be clear – Cervix 80% effaced and/or 1 or 2 cm. dilated. With Rupture of Membranes, a full sterile speculum exam with nitrazine, fern and pooling documentation is necessary.

If the patient is 24-34 weeks gestation, treat with Betamethasone - 12 mg./day X 2 days (1 series), and IV antibiotics until cultures are confirmed negative. Use IV Magnesium Sulfate for tocolysis until full Beta effect - 24 hours after 2nd dose.

If she is less than 28 weeks, you can add oral Indomethacin X 72 hours at 25 mg. Q.I.D.

You can also consider continuing IV Magnesium Sulfate up to 28 weeks if the cervix is open or PPROM present. The evidence indicates that lying down, hydration, and Terbutaline are of little value for true PTL.

Move the mother to a higher level of care, as appropriate, to take advantage of M-FM, Neonatology and NICU.

Prognosis for Infant

The following (see chart on page 4) details the death and disability rates for infants based on their gestational age at birth.

Take Home Points for Health Care Providers

Prevention - especially pre-pregnancy and during early prenatal care - are potentially the most effective means of reducing the Preterm Birth Rate. Remember that a healthy mother is the best predictor for a

Preterm Birth: the Continuing Challenge

healthy baby. As with most things in life, timing can be everything. For healthy pregnancies, the mothers' age and inter-pregnancy spacing can significantly impact the birth outcome. The minimization of multiple gestations from infertility treatments can also impact this problem. Providers must facilitate early entry into prenatal care through the removal of financial and cultural

Health Care Providers must assess all of their pregnant patients for risk factors and establish a prenatal care plan. Use the Standard C.N.Y. Prenatal Database, it is comprehensive. Optimize social supports – partner, social worker, home visitors, and community agencies to reduce stress. Optimize nutrition – dietitian, WIC, other supplements. When appropriate, employ education and behavioral interventions for patients with issues around smoking, alcohol, drug abuse, domestic violence, and depression/ anxiety.

Conclusion: The problem of Preterm Birth is a continuing/

worsening problem with a huge impact. It is an indicator of the poor state of maternal/ family health here in the U.S. Prevention, as demonstrated by comparison with other developed nations, is the key. Pre-conceptional care and stress reduction are two major reduction

strategies to combat the challenge of Preterm Birth. Women's and Maternity care providers can and must make a difference if we are to help the next generation and future families get off to a Healthy Start.

- In 2000, there were 4,058,814 births in the U.S. Of those, 467,201, or 11.6% were premature, (MOD Peristats). <http://peristats.modimes.org/ataglance/us.pdf>.
- In the same year, there were 258,737 births in N.Y. State. Of those, 28,547, or 11.1%, were premature, (MOD Peristats, <http://peristats.modimes.org/ataglance/36.pdf>).
- This means that in an average week in the U.S., 78,054 babies are born with 8,985 being born prematurely. And in an average week in NY, 4,976 babies are born with 549 being born prematurely, (MOD Peristats, <http://peristats.modimes.org/ataglance/us.pdf>, <http://peristats.modimes.org/ataglance/36.pdf>).

Weeks Gestation	Death Rate	Disability Rate
20-22	100%	---
23-24	50%	75%
24-25	25%	50%
26-28	10%	25%
28-32	5%	10%
32-36	<5%	5%

barriers to truly reverse the trend of Preterm Birth. Pre-conceptual counseling, especially using the postpartum checkup in mothers who have recently had a poor outcome of pregnancy, is a wonderful opportunity for prevention.

RETURN SERVICE REQUESTED