Intervention Models to Impact Low Birth Weight and Infant Mortality

April 13, 2010

Presenter: Calvin Anderson
Mission: To support research initiatives and innovative programs that create a healthier state of life in Tennessee

The BlueCross BlueShield of Tennessee Health Foundation, Inc. (THF) was established in December, 2003 as a 501(c)(3) foundation organized to promote the philanthropic mission of BlueCross BlueShield of Tennessee by awarding grants focused on high-impact initiatives across the state, which promote healthy lifestyle choices and help control health care costs for all Tennessee residents. THF, working with civic and economic partners, is dedicated to the support of research, innovative programs and creative approaches to improve the health and quality of life of Tennesseans for generations to come.
Since inception, The Foundation has awarded over $14 million in grants supporting:

- Children’s Health
- Patient Safety & Quality Improvement
- Healthcare Workforce Needs
- The Uninsured
Children’s Health: **Infant Mortality** and Childhood Obesity

- Patient Safety & Quality Improvement
- The Uninsured
“In 2007, 718 babies born in Tennessee died before their first birthdays. These numbers are a call to action for every community, health care provider, teenager, mother and grandmother in Tennessee to learn about behaviors, lifestyle choices and conditions that impact birth outcome.”

What is infant mortality?

The infant mortality rate (IMR) is the number of deaths of infants under one year of age per 1,000 live births in a given population.

Tennessee Facts
• In 2006, Tennessee’s infant mortality rate (8.7) exceeded the provisional national rate of 6.6 by 31.8 percent.
• From 2005 to 2006, the rate decreased from 8.8 to 8.7 per 1,000 live births.
• In 2006, the black infant death rate (16.8 per 1,000 live births) was 2.5 times the rate for white babies (6.6 per 1,000 live births).

Infant Mortality Rate Comparisons, 2006*

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<th>Total rate per 1,000; U.S. 6.6; TN 8.7</th>
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*Tennessee Department of Health
Addressing Infant Morbidity & Mortality

BlueCross BlueShield of Tennessee investment
$6.7 Million

Goals
• Improve pregnancy, delivery, and child health outcomes
• Reduce Prematurity Incidents and Infant Deaths
• Collect best practices and information to share among target population
• Drive Awareness to the Issue
• Promote Public Policy changes that incorporate coverage on “social” aspects of prevention

Results to Date
• The Blues Project - Over 1,000 women served since inception
• Better Birth Outcomes project – 209 study participants met study criteria, over 600 interviews and educational opportunities
• STORC Telemedicine Project - Since the first demonstration February 26, 2009 there have been 147 patients served connecting rural areas in Cookeville, Tullahoma McMinnville and Newport with Hubs in Knoxville and Chattanooga
According to the National Institute of Health, the State of Tennessee ranks 45th in the per capita rate of infant mortality in the US, 43rd in the rate of low birth weight babies and 50th.

Grants and Contributions supporting Infant Mortality:

- $2.4M to the University of Tennessee Health Science Center for the “Blues Project” an Infant Mortality Study in Memphis, TN. A Clinic and Home Based Social Intervention Program

- $2.5M to Vanderbilt University Medical Center in Nashville for “Reducing Preterm Births Through Tennessee Connections for Better Birth Outcomes” research project. A Research Based Program to improve the gestational age of newborns carried by women at increased risk for preterm birth.

- $1.8M to Community Health Network, Inc. in support of STORC – Solutions to Obstetrics in Rural Counties A Telemedicine technology to connect health care providers to patients in remote areas of Tennessee
The Blues Project - Intervention

- Features clinic-based group visits for mothers
- Pre- and post-natal education
- Linkages to community resources and services
- The provision of social support
- Onset of prenatal care to child’s 2nd birthday
- Eligible participants are:
  - At least 14 years of age
  - Less than 29 weeks gestation
  - Volunteer to receive prenatal, post-partum follow-up, and pediatric care at participating Blues clinical sites

**Infant Mortality Rate**
Blues Project (in Shelby Co.) 0.26% (US. Rate 6.6% & TN Rate 8.7%)
Shelby County TN 11.1%
Hamilton County TN 12.0%

2004 Blues Project Phase I – 433 women enrolled/357 deliveries
2007 Blues Project Phase II – 635 women enrolled/270 deliveries
Compared to historical controls, Blues Project participants demonstrate:

- reductions in preterm and low birth weight deliveries (9.0% Blues Project vs. 11.1% in Shelby Co TN),
- a significant earlier onset of prenatal care,
- fewer sexually transmitted diseases,
- less substance abuse during pregnancy,
- fewer complications at delivery and
- shorter lengths of hospital stay.
Better Birth Outcomes - Research

Control Group: receive conventional prenatal and postpartum medical care delivered in a Vanderbilt University Medical Center (VUMC) clinic that may include intramuscular (IM) progesterone (17-P) administration during the prenatal period.

Treatment Group: receives the same conventional medical care that the women in the control group receive plus study specific biobehavioral interventions within an integrated System of Care (SOC) that includes nurse home visitors who engage women during their prenatal care and through the 18 months after delivery.

The primary study questions for this project are:

(1) Is there a difference in:
   • the length of gestational age of infants of high-risk pregnant women who only receive the medical intervention and high-risk pregnant women who receive the SOC?
   • health care costs between women who receive only the medical intervention and the SOC?
   • Intervals between the current pregnancy and a subsequent pregnancy across groups?

(2) What are the required capacities of stakeholders, key aspects of the intervention, potential barriers, and challenges to wide-scale implementation of the interventions?
Goals

Connect 11 rural sites in Tennessee
Reduce cost of Care
Reduce unnecessary patient transportation
Reduce unnecessary hospitalizations
Reduce days of NICU stays
Reduce infant and maternal mortality rates

Results to Date

STORC Telemedicine Project - Since the first demonstration February 26, 2009 and as of December 31, 2009, there have been 147 patients served connecting rural areas in Cookeville, Tullahoma McMinnville and Newport with Hubs in Knoxville and Chattanooga
(L) Dr. David Adair explains the telemedicine screen; connected to Tullahoma, Newport, Knoxville and Chattanooga; (Above) Dr. Joseph Kipikasa (ROC) reviews an ultrasound of a Tullahoma patient.
“The Blues Project is reaching a large number of women and is proving to be an effective model for reducing infant mortality, premature delivery and low birth weight. It empowers women to overcome social and economic barriers adversely affecting their health and that of their children.” *Commercial Appeal*, Memphis TN 10/3/2008

Better Birth Outcomes: “One of the largest funding grants ever awarded by the Tennessee Health Foundation, the $2.48 million project follows high-risk pregnant women from early pregnancy through 18 months postpartum. ‘We are really interested in helping Tennessee deal with the issue of preterm births and infant mortality,’ noted Dr. Melanie Lutenbacher, Principal Investigator with Vanderbilt School of Medicine. ‘The goal of this whole project is to come up with a replicable model for service delivery,’ she added of the translational research.” *Nashville Medical News*

STORC: “Expanding a medical video network in Tennessee will allow small-town doctors who treat pregnant women to consult electronically with obstetrics specialists in Knoxville and Chattanooga when there are serious problems.” *ABC News 2009 The Associated Press*
Infant Mortality – Support Summary

BlueCross BlueShield of Tennessee $6.7M Investment

- Infant Mortality: *Clinic and Home Based Social Intervention* – West Tennessee
- Infant Mortality: *Research to improve the gestational age of newborns carried by women at increased risk for preterm birth* – Middle Tennessee
- Infant Mortality: *Telemedicine technology to connect health care providers to patients in remote areas of Tennessee* – Rural Counties Middle and East Tennessee

2010 Plans

Continue and enhance the Blues Project (Clinic and Home Based Social Intervention) in West Tennessee and expand to East Tennessee in Hamilton County
As a company, we’re working to improve and sustain an environment of good health by connecting communities across our state to healthier futures. Through the Tennessee Health Foundation, our Community Trust, and with our employees and volunteers, BlueCross BlueShield of Tennessee invites you to join us in leading those served to better health.

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