

ONE HUNDRED ELEVENTH CONGRESS
Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6115

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MEMORANDUM

May 10, 2010

To: Members of the Subcommittee on Health

Fr: Majority Staff of the Subcommittee on Health

Re: Hearing on “Prematurity and Infant Mortality: What Happens When Babies Are Born Too Early?”

On Wednesday, May 12, 2010, at 2:00 p.m. in room 2322 of the Rayburn House Office Building, the Subcommittee on Health will hold a hearing titled “Prematurity and Infant Mortality: What Happens When Babies Are Born Too Early?” The hearing will examine the causes and consequences of premature births and infant mortality.

I. BACKGROUND

Note: Section V below offers definitions of terms, as provided by the Centers for Disease Control and Prevention.

According to the Centers for Disease Control and Prevention (CDC), more than half a million babies in the U.S. – or about 1 in every 8 – are born prematurely every year.¹ Between 1990 and 2006, the preterm birth rate rose by more than 20% in the United States.² The majority of this increase was among late preterm infants, babies born between 34 and 36 weeks of gestation.³ Although babies born before the 34th week of pregnancy are at greatest risk of early death and life-long morbidity, research demonstrates that infants born late preterm are also at increased risk.⁴

¹ CDC, *Maternal and Infant Health Research: Preterm Birth* (online at www.cdc.gov/reproductivehealth/maternalinfanthealth/PBP.htm) (accessed May 5, 2010).

² CDC National Center for Health Statistics, *Born a Bit Too Early: Recent Trends in Late Preterm Birth* (online at www.cdc.gov/nchs/data/databriefs/db24.pdf) (accessed May 5, 2010).

³ *Id.*

⁴ *Id.*

CDC notes that prematurity is the “greatest risk factor for infant mortality,” with preterm-related deaths accounting for more than a third of all deaths during the first year of life.⁵ According to CDC, prematurity is an important reason why, “[d]espite the dramatic decline in infant mortality during the 20th century, the U.S. infant mortality rate appears to have plateaued in the first few years of the 21st century.”⁶ The reason for this plateau is “an increase in the percentage of infants born preterm (including very preterm and late preterm), together with a lack of decline in the infant mortality rate for very preterm infants.”⁷

II. CAUSES & CONSEQUENCES

Causes

The Institute of Medicine (IOM) Committee on Understanding Premature Birth and Assuring Healthy Outcomes describes the issue of prematurity as “complex.” According to the report, the causes of prematurity “may include individual level behavioral and psychosocial factors, neighborhood characteristics, environmental exposures, medical conditions, infertility treatments, biological factors, and genetics. Many of these factors occur in combination, particularly in those who are socioeconomically disadvantaged or who are members of racial and ethnic minority groups.”⁸

Despite the lack of definitive research linking early induction and cesareans to prematurity, CDC studies suggest there may be a relationship. A 2009 brief by the National Center for Health Statistics reported: “Although it is not possible to know whether an infant would be born preterm if the birth was not induced or delivered by cesarean, recent studies suggest that the increasing use of induction of labor and cesarean delivery at 34 to 36 weeks has influenced the upswing in the late preterm birth rate.”⁹ However, experts are concerned that the margin of error associated with calculating gestational age may affect a physician’s decision to perform an elective cesarean section or early induction; a physician may erroneously think he/she is performing a c-section at 39 weeks of gestation, when in fact the baby is late preterm.¹⁰

⁵ CDC, *Maternal and Infant Health Research: Preterm Birth* (online at www.cdc.gov/reproductivehealth/maternalinfanthealth/PBP.htm) (accessed May 5,2010).

⁶ CDC National Center for Health Statistics, *Recent Trends in Infant Mortality in the US*, ([online at www.cdc.gov/nchs/data/databriefs/db09.pdf](http://online.at www.cdc.gov/nchs/data/databriefs/db09.pdf)) (accessed May 5, 2010).

⁷ *Id*

⁸ *Id*

⁹ The percentage of late preterm vaginal births for which labor was induced more than doubled between 1990 and 2006, climbing from 7.5% to 17.3%. The percentage of late preterm births delivered by cesarean also rose substantially, by 46%, from 23.5% to 34.3%.”CDC National Center of Health Statistics, *Born a Bit too Early: Recent Trends in Late Preterm Births*, (online at www.cdc.gov/nchs/data/databriefs/db24.pdf) (accessed May 5, 2010).

¹⁰ National Academies of Science, Behrman, Richard, Committee on Understanding Premature Birth and Assuring Health Outcomes, *Preterm Birth: Causes, Consequences, and Prevention*. (2007).

Risk Factors

Although researchers are still trying to understand why preterm labor occurs, a set of factors put women at higher risk of having a premature baby. Known risk factors include: carrying more than one baby (twins, triplets, quadruplets or more); having a previous preterm birth; problems with the uterus or cervix; and chronic health problems in the mother, such as high blood pressure, diabetes, clotting disorders, certain infections during pregnancy, cigarette smoking, alcohol use, or illicit drug use during pregnancy. Other risk factors include the mother's age, race, poverty¹¹, marital status, male babies associated with singleton births, stress, lack of social support, exposure to domestic violence, being underweight or overweight before pregnancy, spacing of births (specifically, less than six to nine months between the infant's birth and the beginning of the next pregnancy), and exposure to environmental chemicals.¹²

Consequences

Preterm infants also face a host of health risks. These potentially life-long problems include cerebral palsy, intellectual disabilities, breathing and respiratory problems, vision and hearing loss, and digestive problems.¹³ While the risks of prematurity increase the earlier a baby is born,¹⁴ late preterm babies are susceptible to several health risks as well. For instance, a baby born at 35 weeks is more likely to have jaundice, breathing problems, and longer hospital stays.¹⁵

Prematurity also has a significant economic impact. CDC reports that "in 2005, the annual societal economic cost (medical, educational, and lost productivity) of preterm birth in the United States was at least \$26.2 billion."¹⁶ Furthermore, the average first-year medical costs were approximately ten times greater for preterm babies compared to full-term babies.¹⁷

Research Gaps

¹¹ According to the CDC, African-American women, women younger than 17 years and older than 35 years, and poor women are at greater risk than other women. (online at ephtracking.cdc.gov/showRbPrematureBirthEnv.action).

¹² CDC, *Prematurity* (online at www.cdc.gov/features/prematurebirth/) (accessed May 5, 2010).

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

There is a dearth of research on how to prevent preterm labor.¹⁸ However, women can take specific steps to help mitigate the risk of a preterm birth. These steps include: quitting tobacco use and avoiding substances such as alcohol or drugs; seeking prenatal care; managing high blood pressure or diabetes; and seeking medical attention for any warning signs or symptoms of preterm labor.¹⁹ Although these measures help decrease the risk of prematurity, they do not necessarily prevent prematurity; as CDC notes, “even if a woman does everything ‘right’ during pregnancy, she still can have a premature baby.”²⁰

In terms of clinical interventions, the focus has been on inhibiting contractions. The IOM concluded that many of these treatments have “not reduced the incidence of preterm birth but [have] delayed delivery long enough to allow the administration of antenatal steroids and transfer of the mother and fetus to a hospital where they may receive appropriate care.”²¹ Although these interventions have reduced the rates of perinatal mortality and morbidity, they have contributed to an increase in preterm births, which affects infant mortality.

III. RACIAL DISPARITIES

One of the most disturbing and puzzling aspects of prematurity and infant mortality is the persistence of racial and ethnic disparities. Infant mortality rates vary substantially by race and ethnicity with the “greatest difference being between African–American and Asian women.”²²

Several explanations have been given for these disparities, including socioeconomic status (SES), maternal risk behaviors, prenatal care, maternal infection, maternal stress, institutional racism and genetics. However, studies have shown that “disparities in the rates of preterm birth between African American and white women persist after attempts to adjust for socioeconomic differences.”²³

¹⁸ Institute of Medicine, *Preterm Birth: Causes, Consequences and Prevention*, (2006)

¹⁹ CDC, *Prematurity*, (online at www.cdc.gov/features/prematurebirth/) (accessed May 5,2010).

²⁰ *Id.*

²¹ National Academies of Science, Behrman, Richard, Committee on Understanding Premature Birth and Assuring Health Outcomes, *Preterm Birth: Causes, Consequences, and Prevention*. (2007).

²² *Id.*

²³ *Id.*

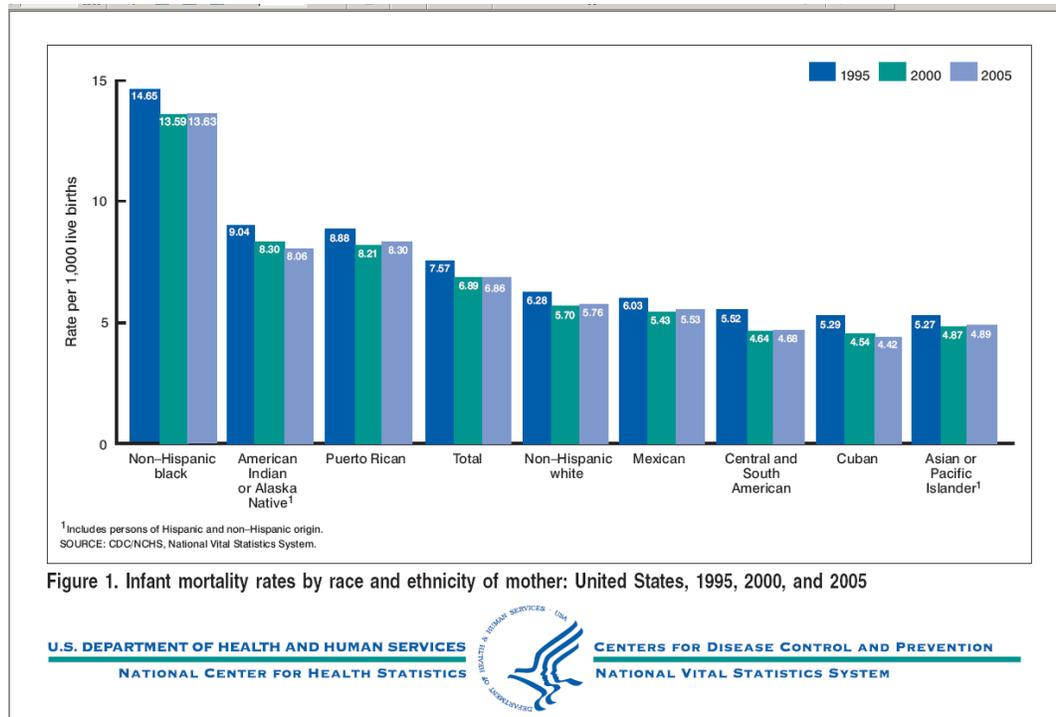


Figure 1. Infant mortality rates by race and ethnicity of mother: United States, 1995, 2000, and 2005

IV. DEFINITIONS

Relevant terms are listed below, as defined by the Centers for Disease Control and Prevention²⁴:

Infant mortality. Death of an infant before his/her first birthday.

Infant mortality rate. Number of infant deaths per 1,000 live births.²⁵

Perinatal mortality I. Infant deaths of less than seven days of age and fetal deaths of 28 weeks of gestation or more.²⁶

Perinatal mortality II. Infant deaths of less than 28 days of age and fetal deaths of 20 weeks or more.

Preterm birth. Birth before 37 completed weeks of gestation.

²⁴ CDC, *Fetal and Perinatal Mortality: Behind International Rankings* (online at www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_08.pdf) (accessed May 4, 2010).

²⁵ For purposes for cross-national comparisons see, National Center of Health Statistics Data Brief, *Behind International Rankings of Infant Mortality: How the United States Compares with Europe*, No. 23. (Nov. 2009).

²⁶ Perinatal definition I is preferred for international comparisons due to differences among countries in completeness of reporting of fetal deaths of 20 to 27 weeks of gestation. Perinatal definition II is useful for monitoring perinatal mortality throughout the gestational age spectrum, as the majority of fetal deaths occur before 28 weeks of gestation.

Extreme preterm. Births less than 28 weeks of gestation.

Severe preterm. Births between 28 and 31 weeks of gestation.

Moderate preterm. Births between 32 and 33 weeks of gestation.

Late preterm. Births between 34 and 36 weeks of gestation.

Stillbirth. Spontaneous fetal death that occurs at 20 or more weeks of gestation.²⁷

VI. WITNESSES

The following witnesses have been invited to testify:

Panel One:

William Callaghan, M.D., MPH
Senior Scientist, Maternal and Infant Health Branch
Division of Reproductive Health, NCCDPHP
Centers for Disease Control and Prevention

Catherine Spong, M.D.
Branch Chief, National Institute of Child Health and Human Development
National Institutes of Health

Panel Two:

Alan R. Fleischman, M.D.
Senior Vice President and Medical Director
March of Dimes Foundation

Charles S. Mahan, MD, FACOG
Dean and Professor Emeritus, USF College of Public Health
Lawton and Rhea Chiles Center for Healthy Mothers and Babies

Nicholas Eberstadt, Ph.D, M.P.A.
Henry Wendt Scholar in Political Economy
American Enterprise Institute for Public Policy Research

²⁷ Each year about 25,000 babies are stillborn in the U.S. Due to advances in medical care over the last 30 years, much more is known about the causes of stillbirth. But for as many as 50% of stillbirths, the cause is never identified. CDC, *Birth Defects*, (online at www.cdc.gov/ncbddd/bd/stillbirths.htm#stillbirth) (accessed May 4,2010).

Hal Lawrence, M.D.

Vice President, Practice Activities

American College of Obstetricians and Gynecologists