

# **Eliminating Health Disparities in Infant Mortality**

**SACIM Subcommittee on Eliminating Health Disparities  
October 14, 2006**

## **I. Statement of the Problem**

Infant mortality in the United States has two striking characteristics: it is very high compared with other industrialized countries, and the death rates for African-Americans are greater than twice as high as those of other ethnic/racial groups except American Indians where the difference is about 40% higher. These differences demonstrate a disparity that has persisted for more than 100 years despite an overall dramatic downward trend in infant mortality.

## **II. Background**

The United States' overall infant mortality rate has declined significantly in the last 50 years, from 26 infant deaths per 1000 live births in 1960 to 6.84 in 2003. The U.S. ranks approximately 28<sup>th</sup> in the world when industrialized nations are compared. The reason for this ranking is due in large part to disparities, which continue to exist among various racial and ethnic groups in this country, when compared with African-Americans (<http://www.cdc.gov>). In 2003, infant mortality among Asian or Pacific Islanders was 4.8 per 1000 live births, Hispanics 5.6, Non-Hispanic Whites 5.8, American Indians 8.6, and Non-Hispanic Blacks 13.9 (National Vital Statistics Reports, May, 2005).

Over the same period, the ratio of African-American to White infant mortality rates in this country rose from 1.61 to 2.40 ((National Vital Statistics Reports, May, 2005). It is clear that an improved outcome for all infants depends on understanding the causes of these stark disparities. However, despite hundreds of studies addressing this issue, researchers have to date been unable to explain why African-American infants are at greater risk for low birth weight, intrauterine growth restriction, prematurity, and consequently, die at higher rates. Reflecting the public health relevance of this

phenomenon, *Healthy People 2010* calls for a lowering of the overall infant mortality and an elimination of the racial disparities in infant mortality rates (<http://www.cdc.gov>).

### **A. State-of-the-Science Conference**

While advances in biomedical science will continue to impact overall infant mortality in the U. S., this conference will focus on better understanding factors that impact the disparities in infant mortality. An epidemiological examination of factors and determinants of the disparities in infant mortality will focus on pre-pregnancy health status, weight gain, the relationship between maternal weight gain and infant birth weight, infant well-being as assessed by the Dubowitz developmental tests, ultrasound and other measures, as well as timing of the loss of the products of conception (miscarriages). This epidemiological examination, with a focus on the disparities in infant mortality, will lay the foundation for the development and evaluation of a strategic action plan. In addition to examining these traditional factors, there are social scientists investigating other factors using ecological models and psycho-social/behavioral constructs. Psycho-social factors include stress, intergenerational effects, partner and community violence, employment and housing in areas with toxic exposures, and the influence of poor education and low socio-economic status. Behavioral risk factors such as smoking, alcohol and substance use and abuse along the continuum of demographic variables must also be examined. By developing and funding a strategic research agenda focused on determinants of the disparities in infant mortality, efficacy and cost-benefit outcomes of this iterative process will inspire toward problem solution.

### **B. Research Gaps**

The approximate 1% of births occurring at very low birth weight (<1500g) accounts

for approximately two-thirds of the racial gap in infant mortality. Extensive research has been unable to delineate the mechanisms underlying African-American women's three-fold greater rate of delivering a very low birth weight (VLBW) infant. A seminal study found a widening racial gap in the incidence of VLBW infants as sociodemographic risk declined. Behavioral risk factors during pregnancy, including cigarette smoking, alcohol, and illicit drug usage, also have a minimal effect on the racial gap. Another study found that in a prepaid health plan, the racial disparity in the rates of VLBW persisted among college-educated mothers who received adequate prenatal care (Murray and Bernfield). This is an area which merits more research.

Another area meriting additional research is the association between infant mortality rates and the lack of involvement of the father in an infant's life. Evolutionarily, parental investment by both parents proves beneficial for the infant's well being and actual survival (DC Geary, *Psychological Bulletin*. 2000,126(1):55-77). Understandably, father involvement in a child's life occurs in many forms and on multiple levels; however, something as simple as the father's name not being listed on the birth certificate is independently correlated with doubling the risk of infant mortality and increasing the risk of specific causes of infant death (Gaudino, JA, Jenkins, B, Rochat, RW, *Social Science and Medicine*, 1999;48:253-265). Given the high proportion of African American infants without father involvement, further research is merited.

Biologists and anthropologists now acknowledge race as a social, rather than a biological category; "race" as a genetic factor can no longer be considered as an adequate explanation of differences in disease occurrence rates or in infant mortality disparities. In fact, a series of studies challenged the genetic concept of race as it is related to birth

weight. David and Collins found that the birth weight patterns of infants of African-born women and U.S-born white women are more closely related to one another than the birth weights of infants of U.S.-born African-American women. In a follow-up study, the authors found that an intergenerational increase in birth weight occurred among the direct female descendants of European-born White but not African-born women. Further research is needed to determine the social determinants of lifelong minority status and consequent poor pregnancy outcome.

New conceptual models have been proposed to elucidate the contribution of chronic stress to preterm (<37wks) delivery and consequent VLBW risk. Chronic stress is a more prominent feature in the daily lives of African-American women than in the daily lives of White women. Many investigators now hypothesize that race-associated differences in health outcomes should be examined in the sociological context of race (Jones C, Hogan V). They postulate that the answer may lie in the biological, psychological and social effects of the stress of racism, income inequity, and pervasive institutional policies that perpetuate unequal opportunities to realize one's innate potential. Recently published data show that the lifelong accumulated experiences of racial discrimination constitute an independent risk factor for very low birth weight and preterm delivery (Rosenberg, Collins, Mustillo). Additional research is needed to delineate better the impact of personally mediated racism, institutional racism, and internalized racism on birth outcomes.

Residential segregation is a long-standing defining characteristic of American life. A disproportionately large percentage of AA women reside in, or near, urban neighborhoods with concentrated poverty and high rates of violent crimes (Massey). A

growing literature highlights the importance of women's residential environment with respect to pregnancy outcome. Interestingly, neighborhood poverty accelerates the rise in infant LBW rates associated with advancing maternal age among urban African-Americans (Collins, 2006, Geronimus 1996.). A recent study found that positive-income incongruity (a proxy measure of familial wealth) was associated with improved African-American birth weight only among those born to women who resided in predominately African-American neighborhoods (Kate, Collins, Masi). There is some evidence that neighborhood stability moderates the effects of increased stress levels on health. Boardman (2004) found that while neighborhood-level variation in health is primarily mediated by sociodemographic characteristics such as age, race and socioeconomic status, high levels of neighborhood stability provide an important buffer to the otherwise deleterious effects of increased stress levels on adults' overall health. Additional research is needed to disentangle the contribution of maternal lifelong exposure to neighborhood poverty, residential segregation, and neighborhood stability to African-American pregnancy outcome.

There is empirical evidence of an association of poverty, stress, depression, health and pregnancy outcome. It is known that: (a) the prevalence of major depression is double the rate in women than in men; (b) the incidence of major depression in women increases drastically during adolescence; (c) women who develop major depression during pregnancy and postpartum period are more likely to have recurrent episodes during the next 5 years and beyond, and their babies are more likely to develop cognitive, social, and mood problems; and (d) clinical depression is related to many other major public health problems, including smoking., Further research is needed to clarify the role

of stress in birth outcomes among African American women.

### **C. Healthy Start and Other Community-Based Programs**

Interventions that are implemented at the community level may offer the best promise in addressing social, economic and risk behaviors that are unique to each community. Since 1991, HRSA/MCHB has funded the Healthy Start program, a community-based initiative to increase the potential for babies to be born healthy and remain healthy. Healthy Start addresses the real needs of the youngest, poorest, and most vulnerable members of our society, while honoring the autonomy of local communities. It is a model worth celebrating and expanding.

Currently, over 90 projects are funded, with a primary focus of eliminating perinatal health disparities. While benefiting from national and local research, Healthy Start addresses the primary known determinants of infant mortality and the disparities in infant mortality rates. As a result, these projects have become tailored to fit the needs of their specific communities. Some programs have successfully applied for other funding to expand their services to include other important, infant mortality-related services, such as education, screening, referral and case management for HIV clients; teen pregnancy reduction; and fatherhood initiatives. Local partnership agreements with other health providers, churches, ministerial alliances and organizations have resulted in assistance with transportation, parenting classes, translation services, food pantries and other services. In these cases, Healthy Start has served as the agent to bring communities together under an umbrella of services to reduce infant mortality.

Healthy Start projects have improved access to services, created community awareness about infant mortality and women's health, galvanized communities around

the issue of infant mortality, and created jobs. Healthy Start projects have also improved early and appropriate entry to prenatal care, increased appropriate use of Level III NICUs, contributed leadership in male involvement programs and teen pregnancy initiatives, and created community partnerships among health and social agencies and organizations.

In 2000-2001, the Healthy Start program began implementing recommendations from SACIM, including the addition of depression screening and referral and inter-conceptual care. When funds have been available, the core Healthy Start services have been expanded to offer a broader array of services that help reduce overall infant mortality and the disparities in infant mortality rates.

According to the most recent Healthy Start guidelines, Healthy Start eligible communities are those that exhibit infant mortality rates of at least “10.58 infant deaths/1000, which is one and a half times the national infant mortality rate for the period of 1999-2000.” According to a DHHS press release of July 13, 2001, “More than 225 U.S. counties reported an infant mortality rate of at least 50% higher than the national average for the years 1996-1998.” Healthy Start reaches those most at risk and involves whole communities in creating their own future. An evaluation of current Healthy Start programs will hopefully yield useful data on program benefits; however, effective data demonstrating direct effects on infant mortality requires cultural change that will take generations to achieve. These communities have experienced generations of poverty and hopelessness; changing community demographics and behavioral choices will require generations of investment.

Successfully ending disparities in perinatal outcomes depends on federal support of local programs that continue to address local disparities issues. A community approach has the advantage of educating the provider, consumer and citizen community. As stated in the IOM report, raising public and provider awareness about disparities is critical, because a problem cannot be addressed until it is acknowledged as real. A local approach educates a community, empowers the community, and allows the community to address issues most pertinent to the community. Using proven tools such as PRAMS (Prenatal Risk Assessment Monitoring System), FIMR (Fetal Infant Mortality Review), and PPOR (Perinatal Periods of Risk), a community can assess its unique problems, determine its local situation, develop the appropriate partnerships and construct plans to address its issues.

Since its inception, Healthy Start has served the poorest of communities. In addition, over 90% of Healthy Start clients are African American, Hispanic, Native American, Native Hawaiian, or Appalachian—groups bearing the greatest consequences of disparities. Building on the Healthy Start community-based model will reach communities where infant mortality rates and disparities are highest and which offer the greatest opportunity to address disparities at the grass roots level.

Because Healthy Start addresses the determinants infant mortality disparities, the program should be expanded to all communities in which infant mortality disparities are above the national norm. Some of those communities will need practical assistance in discovering and completing the application process. This assistance should be provided, perhaps through coalitions of government, charitable, and faith-based groups. Once a community can produce an application demonstrating a civic will and a workable plan for

implementing Health Start initiatives, funding must be made available to implement the program. The amount of funding must be determined in light of budgetary realities, but also in light of respecting the importance of each new life born in the United States. Funding all viable sites could have a great impact in addressing the disparities in infant mortality in the United States.

### **III. Recommendations**

SACIM concurs with the 2006 IOM recommendation in “Preterm Birth: Causes, Consequences, and Prevention” (pre-publication copy) for a multifaceted approach to disparities and the need for education and research related to disparities. The committee recommends a three-pronged approach:

#### **A. Sponsor a “State-of-the Science” Conference**

This multi-disciplinary conference will enhance the understanding of what is known about the determinants of the disparities in infant mortality. This knowledge base will be used to develop a strategic action plan that will help set the agenda for future research and demonstration projects and their funding.

#### **B. Increase Funding for Research Initiatives Designed to Eliminate the Disparity in Infant Mortality**

Fund well-defined research to increase understanding of: (1) the biological, behavioral, psycho-social, environmental and contextual factors which impact the disparities in infant mortality, with a focus on very low birth weight infants, since this pathologic outcome accounts for a large portion of the disparities and (2) effective strategies for implementing these findings and monitoring the results until the disparities in infant mortality are eliminated.

**C. Celebrate and Expand funding for Healthy Start Programs**

Publicize the government's successful partnerships with local communities through the existing Healthy Start programs. Proclaim Healthy Start as a model for addressing social determinants of disparities in healthy birth outcomes noting the male role in improving family health. Offer technical assistance and funding for similar, culturally-sensitive programs in other communities that make a serious effort to meet the stringent criteria needed to begin and continue a Healthy Start program.

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