Combating Health Disparities in Infant Mortality among African Americans: The Reproductive Life Course Approach

by

Jacquetta A. Woods

A paper presented to the faculty of The University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of (Master of Science in) Public Health in the Department of Maternal and Child Health.

Chapel Hill, N.C.

April 18th, 2011

Approved by:

Advisor:

Reader:
ABSTRACT

In the United States, African American infants are more than twice as likely to die during the first year of life when compared to White infants. Even more alarming is the fact that this disparity has not decreased in over fifty years despite advances in medicine, medical technology, and public health interventions. Until recently, prenatal care has been considered the most effective way to combat health disparities by improving the quality of the care and making prenatal care more accessible; however, more recent studies have found that prenatal care through the 12-point approach may be more effective in reducing racial disparities in infant mortality. The 12-point approach combines preconception care, inter-conception care, prenatal care, and health care throughout the life course combined with efforts to strengthen African American homes, and address social/economic equities. In order to close the gap between African American and Whites, the life course approach is necessary as it addresses health and other social determinants early in life and throughout the life course.
# Table of Contents

Problem Statement ............................................................................................................ 4

Literature Review .................................................................................................................. 5

Infant Mortality in the United States ...................................................................................... 5

Trends in Infant Mortality ..................................................................................................... 7

Racial/Ethnic Disparities in Infant Mortality ....................................................................... 10

The Life Course Perspective ................................................................................................. 15

Interventions ........................................................................................................................ 16

Improving Health Care for African American Women ......................................................... 16

Strengthening African American Families and Communities .............................................. 24

Addressing Social and Economic Inequities ...................................................................... 26

Conclusion, Recommendations, & Policy Implications ....................................................... 28

References ............................................................................................................................ 29
**Problem Statement**

Infant mortality is one of the most important indicators of the health of a nation, as it is associated with a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices \(^1\). Infant mortality rates are often used in public health practice as surrogate measures of a population’s general health status, socioeconomic conditions, and availability and access to quality health care \(^2\).

Infant mortality is defined as the number of deaths of infants under one year of age per 1,000 live births in a given population. Although progress has been made over the past century to reduce infant mortality rates in the United States, the current infant mortality estimate is 6.71 infant deaths per 1,000 live births, or 28,000 infant deaths each year \(^3\). This rate falls short of the Healthy People 2010 goal of 4.5 infant deaths per 1,000 live births each year. Disparities between racial and ethnic groups in infant mortality rates are also of major concern. In the United States, Black infants are more than twice as likely to die within the first year of life as a White infant \(^4\). This paper will discuss the history of infant mortality in the United States, trends in infant mortality rates, and describe the racial and ethnic disparities associated with infant mortality, more specifically among African Americans in the United States.

The purpose of this paper, through a critical review of the literature, is to identify strategies to improve infant mortality rates in the United States, improve the infant mortality rates for African Americans, and reduce the gap in racial and ethnic disparities.
**Literature Review**

**Infant Mortality in the United States**

The present concept of infant mortality was first developed in the 1870’s and was defined as the number of infant deaths per 1,000 live births. During the turn of the 20th century, infant deaths during the first year of life were mainly a result of infectious diseases and poor nutrition. It was also during this time that the maternal and child health community divided infant mortality into two groups, neonatal mortality and post neonatal mortality. Neonatal mortality was defined as the number of infant deaths in the first 27 days of life per 1,000 births, and post neonatal mortality was defined as the number of infant deaths from 28 to 364 days of life per 1,000 births minus the neonatal deaths. Neonatal deaths were generally attributed to biological birth complications and post neonatal deaths to environmental conditions and infectious diseases.

In the United States, large-scale efforts to secure the health of children began in the late 1890s during the Progressive Era, where national efforts to improve child health focused on reducing the country’s infant mortality rate. Public health officials argued that accurate determinations of the infant mortality rate were the only way to begin reducing infant deaths. At the time, public health officials were only gathering information from mothers of sick infants in hospitals. Therefore, in the early 1900s, health officials significantly improved the accuracy of the infant mortality rate by improving their methods of recording births. By improving the
accuracy of the rate, and improving methods to gather data more accurate data, public health officials gained a better outlook on the health status of infants at this time.

Essential to infant mortality rates, birth weight has been universally recognized as an important predictor of infant mortality. Historically, all societies have known that tiny babies were more likely to die and that small infants who survived were developmentally vulnerable. Birth weight categories are generally defined as normal birth weight (≥ 2,500g), low birth weight (< 2,500g), moderately low birth weight (1,500-2,499g), and very low birth weight (< 1,500g).

Low birth weight is generally thought of as having two major causes, prematurity (infants that are born too soon), and intrauterine growth retardation (infants that are born too small). Prematurity is an important factor because infants born prematurely are at risk for birth complications related to immaturity versus size. Normal gestation is defined as 37 – 41 weeks, premature gestation as 36 weeks or less, and extremely premature gestation as 32 weeks or less. In contrast, infants that are subject to intrauterine growth retardation are usually born at term, between 37-41 weeks, but are born small for gestational age (SGA), usually due to an early insult during pregnancy. These infants usually rank in the lowest 10th percentile for a given gestational age.

These two causes are important to identify, and distinguish, because of the specific implications for prevention efforts and for subsequent morbidity and treatment of an infant. For example, premature infants are more vulnerable to mortality, but if they survive, their life course
may be quite normal. In contrast, infants who are small for gestational age (SGA) have better survival rates, but are more vulnerable to developmental and health problems later on in life.

In addition to low birth weight, there are several other leading causes of infant death in the United States. Although these causes may change each year with regard to the percentages of infant deaths they cause, these specific causes most often account for the majority of infant deaths in the United States. In 2007, the five leading causes of infant death were:

1. Congenital malformations, deformations, and chromosomal abnormalities (congenital malformations)
2. Disorders related to short gestations and low birth weight (low birth weight)
3. Sudden infant death syndrome (SIDS)
4. Newborn affected by maternal complications of pregnancy (maternal complications)
5. Accidents (Unintentional injuries)

Trends in Infant Mortality

Over the last century, infant mortality has gone from being a common family tragedy to a relatively rare event, and infant deaths continue to remain a widely used indicator of the general health and well being of a society. The reduction of the infant mortality rate from 150 infant deaths per 1,000 live births in 1900 to approximately 7 infant deaths per 1,000 live births today is one the great public health success stories in the United States. The infant mortality rate in the United States demonstrated an impressive, and consistent, downward trend between 1950
and 1991, with the average decline being 3.11% per year \(^8\). The rate of decline was rather modest during 1950 through 1965, with only a 1.03% per year; however, the rate fell sharply from 1966 through 1981, showing approximately a 50% reduction in that time frame \(^8\). During the Great Depression, the 1950’s to mid 1960’s, the early 1980’s, and more recently from 2000-2005, the United States experienced either a minimal or no decline in infant mortality rates \(^5\) \(^1\).

The plateau in the United States infant mortality rate from 2000 – 2005 represents the first period of sustained lack of decline since the 1950’s \(^1\). Moreover, the infant mortality rate did decline slightly, and significantly, from 6.86 infant deaths per 1,000 live births in 2005 to 6.68 infant deaths per 1,000 live births in 2006 \(^9\).

**Figure 1. Infant mortality rate: United States, 2000-2005**

![Infant mortality rate graph]

*Source: 2000-2005 data are from the linked birth/infant death data sets*

Lastly, in 2007, a total of 29,138 deaths occurred in children under 1 year, 611 more deaths than
in 2006\textsuperscript{7}. The 2007 infant mortality rate (6.75), although higher, was not significantly different from the 2006 infant mortality rate\textsuperscript{9}.

Despite the fact that the infant mortality rate in the United States has declined steadily since the early 1900’s, it is consistently higher than hoped, and higher than that of most other developed countries, and some less developed countries as well\textsuperscript{8}. According to 2003 data from that National Center for Health Statistics, the United States ranked 11\textsuperscript{th} worldwide in 1960, but by 1999 had slipped to 28\textsuperscript{th} place. As of 2004 the United States ranked 29\textsuperscript{th} in the world. The continued ranking of the United States at the bottom of developed countries is primarily due to the higher proportion of low birth weight infants\textsuperscript{5}. In addition, the infant mortality rate in the United States was higher than the rate for the majority of other developed countries, in part because of a substantially higher percentage of preterm births, a critical risk factor, and predictor, for infant mortality\textsuperscript{9}. Infant mortality rates are substantially higher for preterm and low birth weight infants, and even limited changes in the percentages of preterm or low birth weight births can have a major impact on infant mortality rates overall\textsuperscript{9}. 
Racial/Ethnic Disparities in Infant Mortality

Despite tremendous advances in medical technology, public health campaigns, and improvements in prenatal care infant mortality disparities continue to persist and negatively affect vulnerable populations, specifically African Americans. Although infant mortality rates have declined over time for all races, these reductions have not led to reductions in infant mortality rates among race and ethnic groups, especially between whites and blacks, resulting in a disparity between the two groups. As seen in both Figure 3 and Figure 4, African American infants only account for approximately 29% of infant deaths in the United States; however, the infant mortality rate for African American infants is more than twice the infant mortality rate of White infants.
Figure 3. U.S. Percent of Infant Deaths, 2004-2006 average


Figure 4. U.S. Infant Mortality Rate, 2004-2006 average

Much of the racial disparity in infant mortality can be explained by low birth weight and preterm delivery, which are also disproportionately experienced by Black Americans\textsuperscript{10}. As stated earlier, the higher percentage of preterm and low birth weight births play a major role in the increased infant mortality rate nationwide. Nearly two thirds of low birth weight infants and nearly all very-low-birth weight infants are born preterm\textsuperscript{11}. Moreover, African American women are nearly twice as likely as White women to deliver preterm births\textsuperscript{12}. This results in a higher prevalence of low birth weight and very low birth weight infants in the African American community and an increase in their infant mortality rates\textsuperscript{12}. African American women are also twice as likely to have low birth weight infants, which accounts for nearly two-thirds of all infant deaths, and three times as likely to have very low birth weight infants, which accounts for more than half of all infant deaths\textsuperscript{12}. Furthermore, African American infants, as a group, are more likely than White infants to die, largely because more African American infants than White infants are born at the lower end of the low birth weight and very low birth weight range\textsuperscript{12}. Table 1 clearly demonstrates the disparity in infant mortality rates between African Americans and non-Hispanic Whites. Although the infant mortality rate decreased for infants born to African American mothers from years 2000-2006 (13.59 to 13.35), the difference when compared with non-Hispanic mothers, or disparity, increased.
Although the data clearly demonstrate a disparity in infant mortality rates between the two racial groups, the cause of the disparity remains largely unexplained and poorly understood. Essentially, we know that African American infants are more likely to be born premature, and underweight, but we still have yet to fully understand why. Racial/ethnic differences in infant mortality rates might reflect, in part, differences in maternal sociodemographic and behavioral risk factors. For example, infants that have infant mortality rates higher than the U.S. average are born to adolescent or unmarried mothers, a mother who smokes, a mother with lower educational levels, or a mother that did not obtain adequate prenatal care. Racial/ethnic groups with the lowest infant mortality rates tend to have a smaller percentage of births to women with some or all of these characteristics, whereas the racial/ethnic groups with the highest infant mortality rates tend to have a higher percentage of births to women with some or all of these characteristics. Other factors often mentioned as contributing to racial/ethnic differences in infant mortality include differences in maternal preconception health, infection, racism, social
and cultural differences, and more recently stress. Stress is increasingly being considered as an explanation for racial disparities in birth outcomes. Some evidence suggests that the accumulation of stress over a lifetime, labeled allostatic load, results in poorer physiological adaptation, culminating in health problems. Racism is an important variable typically considered as a contributor to both lifetime and prenatal stress. This cumulative effect of stress from repeated exposure to discrimination and other life stressors, or "weathering," is believed to contribute to African Americans’ poorer health.

Stress provoked by the experience of racism during pregnancy, over one’s lifetime, and by exposure to racism toward other Black Americans, has shown in several studies on African American women to be a predictor of low birth weight and preterm delivery. A study by Parker Dominguez et al. (2008) found that perceived racism as a child and across the lifetime predicted lower birth weight for children of Black American but not for White American women.

Survivors of low birth weight and preterm delivery experience greater problems in infancy, childhood, and adulthood, including higher rates of respiratory illness and impaired growth; cognitive, emotional, and neurodevelopmental deficits; and lower intelligence and academic achievement. As adults, preterm and low birth weight infants are at risk for cardiovascular disease, hypertension, diabetes, and psychiatric illness. In addition, female infants who are born preterm are more likely, when they become mothers, to give birth to a preterm infant. A study by Porter in 1997 found that the risk of preterm birth was significantly higher in preterm mothers than in term mothers (OR 1.18; 95% CI 1.02, 1.37). The effects of racial disparities...
on adverse birth outcomes are far-reaching, so understanding how social determinants such as socioeconomic status, poverty, stress and lack of social support, lack of social capital, access to health care services, environment, and individual behaviors contribute to the black and white infant mortality gap, and why they exist, are essential to developing interventions to reduce the gap in infant mortality rates and improve the health of African Americans overall.

The Life Course Perspective

Most studies focus on differential exposures to risk and protective factors during pregnancy, such as maternal behaviors, prenatal care utilization, or infections; however, these factors do not adequately account for the racial gap in birth outcomes. In addition, much emphasis is often placed on improving the quality and access to prenatal care, as an effective intervention to combat negative birth outcomes, and women are strongly encouraged to initiate care during the first trimester of pregnancy. However, it has been estimated that approximately 15% to 30% of women do not meet this goal.

More recently, the life course perspective suggests that closing the Black-White gap in birth outcomes requires more than improving access to prenatal care for African American women. The life course perspective goes beyond prenatal care and addresses healthcare needs of African American women from preconception to inter-conception and through the life course. Secondly, it goes beyond individual level interventions and addresses family and community system, and lastly, it goes beyond the medical model and addresses social and economic inequities that underlie much of health disparities. The goals of the life course perspective are to: 1) improve healthcare for African American women; 2) strengthen African American families.
and communities; and 3) address social and economic inequities that take a disproportionate toll on the health of African American women over their life course. For the purpose of this paper, we will focus on the 12-point plan as the major strategies to implement in order to close the Black-White gap in birth outcomes (Table 2).

**Table 2. A 12-point plan to close the Black-White gap in birth outcomes: A life-course approach**

| 1. | Provide interconception care to women with prior adverse pregnancy outcomes |
| 2. | Increase access to preconception care to African American women |
| 3. | Improve the quality of prenatal care |
| 4. | Expand healthcare access over the life course |
| 5. | Strengthen father involvement in African American families |
| 6. | Enhance coordination and integration of family support services |
| 7. | Create reproductive social capital in African American communities |
| 8. | Invest in community building and urban renewal |
| 9. | Close the education gap |
| 10. | Reduce poverty among African American families |
| 11. | Support working mothers and families |
| 12. | Undo racism |


**INTERVENTIONS**

**Improving Health Care for African American Women**

**Preconception Care**

In 2006, the Centers for Disease Control and Prevention (CDC) issued a report containing a broad range of recommendations to improve the preconception health of women in the United States. Preconception care is defined as a series of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman’s health or pregnancy outcome through prevention and management. During preconception care the focus is on optimizing a woman’s health before conception occurs to decrease risk to the woman or fetus. Studies
reveal that 40% to 50% of pregnancies in the United States are unplanned and that women may become pregnant in less than optimal health, or without knowledge of preexisting health conditions. Incorporating preconception health into routine care is termed opportunistic because every clinical encounter before pregnancy offers an opening to explore and reinforce health promotion by addressing such topics as weight management, dietary supplementation, psychological stressors, exercise, immunization status, benefits of deliberate decisions regarding pregnancy and contraceptive options, protection against sexually transmitted infections (STIs), and avoidance of exposures that include tobacco, alcohol, and other drugs.

The Magnolia Project, a program which targets African-American women who live in a high-risk socioeconomic area of Jacksonville (Duval County), FL, focuses on providing preconception care services to women who are of childbearing age (15-44). The program is intended to reduce the risk of poor birth outcomes through social and behavioral interventions tailored for women who have some identified risk factor associated with poor birth outcomes. Heavily reliant on case management interventions, the Magnolia Project addresses life issues influenced by stress and social class. The Magnolia Project provides early evidence of the effectiveness of social determinants focused interventions with a primary purpose of mitigating the effects of racism and class, prior to a subsequent pregnancy.

The Magnolia Project includes the following intervention strategies: 1. Providing outreach, education and support to women in need of well-woman care, prenatal care and other services; 2. Increasing the availability of case management and care coordination to at-risk women who are either pregnant or ineligible for existing services because they are not pregnant; 3. Providing health education directed at specific risk factors identified through Fetal and Infant Mortality...
Review (FIMR) and other community studies; 4. Increasing the accessibility and availability of well- women health care and prenatal care. Combined with these strategies, and social and behavioral case management, the Magnolia project aims to build resilience against negative social determinants that adversely affect health.

### Table 3. Comparison of Infant Mortality Rates*; Magnolia case management clients and non participants, 1995-2005

<table>
<thead>
<tr>
<th>Birth outcomes</th>
<th>Magnolia case management clients (n = 206)</th>
<th>Similar risk factor group (n = 412)</th>
<th>Magnolia clinic only clients</th>
<th>Non-Magnolia clients in Magnolia zip codes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before CM</td>
<td>After CM</td>
<td>Before CM</td>
<td>After CM</td>
</tr>
<tr>
<td>Infant death</td>
<td>10</td>
<td>3</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Live birth</td>
<td>123</td>
<td>84</td>
<td>404</td>
<td>320</td>
</tr>
<tr>
<td>Infant mortality rate</td>
<td>81.3</td>
<td>35.7</td>
<td>27.2</td>
<td>37.5</td>
</tr>
</tbody>
</table>

*Rate = per 1,000 live births

The results of the Magnolia Project revealed promising outcomes of pre-conception interventions to improve birth outcomes. The infant mortality rate dropped from 81.3 infant deaths per 1,000 live births to 35.7 infant deaths per 1,000 live births for Magnolia case management clients following case management, while the similar risk-factor comparison group experienced an increase in infant mortality from 27.2 infant deaths per 1,000 live births to 37.5 infant deaths per 1,000 live births following a similar period of case management.

Intervention programs and initiatives are pertinent, but increasing access to preconception care health services for low-income women is essential as well. The current Medicaid program focuses on providing coverage to low-income mothers, expectant mothers, and dependent children. Medicaid does not provide coverage for women who have not yet had or choose not to
have children. Many of the core services in preconception care are already covered under the basic Medicaid program; however, more can be done to assure that at-risk, low-income women receive the optimal level of care before they become pregnant, so they can have the healthiest birth outcomes possible. Essentially, strengthening the existing Medicaid program, and potentially expanding both eligibility and scope of coverage, is necessary to maximize its potential to improve the health of reproductive-age women, thus improving birth outcomes.

**Figure 5. Health insurance coverage of women ages 19–44, by income, 2006**

Note. The FPL was $16,600 for a family of 3 in 2006. *Individual/other coverage includes individually purchased private coverage and other public insurance such as Medicare and TRI-CARE.


**Inter-conception Care**

Inter-conception care is the care of women of reproductive age between pregnancies to ensure that conditions and behaviors that may pose a risk to mothers and infants are identified.
and managed and 2) reduce the risks indicated by a prior adverse pregnancy outcome. Interconception care consists of similar services provided during preconception care and allows for continuity of health care from one pregnancy to the next. Ideally inter-conception care should be provided to all women between pregnancies as part of comprehensive women’s health care; however health care in the inter-conception period is limited for many African American women, particularly low-income women whose pregnancy-related Medicaid coverage generally terminates at sixty days post-partum.

Some intervention programs providing inter-conception care and counseling have shown to be beneficial, and helpful in improving birth outcomes. In 1998 the Georgia Task Force on Perinatal Care convened to make recommendations for reducing Georgia’s overall infant mortality rate and racial disparities in infant mortality. In response to the recommendation of the task force, the Grady Memorial Hospital Interpregnancy Care (IPC) Program was initiated. The target population of this program was African American women residing in Fulton or DeKalb counties in Georgia, who qualified for county-support indigent care services, and had delivered a live born or stillborn infant, or a very low birth weight infant at Grady Memorial Hospital in Atlanta, Georgia. Through enhanced nurse case management and community outreach, the program provides 24 months, or until subsequent pregnancy, of integrated primary health care and dental services for participants. Through a 24-month care plan, the program addresses: 1) pregnancy preparedness and child spacing; 2) management of chronic disease; 3) screening and treatment for nutritional deficiencies; 4) prevention, screening, and treatment for STDs; 5) treatment and referrals for substance abuse; 6) screening and treatment for depression, stressors, and domestic violence; 7) prevention, screening, and treatment for periodontal disease.
In the pilot study that compared 29 women to a control group of 58 women, 21 women (72%) in the IPC (Interpregnancy Care) cohort completed 12 of the planned 24 months of the intervention, and sixteen of 29 women (55%) completed all planned 24 months. None of the women in the IPC cohort became pregnant within 9 months of the index VLBW delivery, in comparison with 31% (18/58) of women in the control cohort (P-value < 0.001), and only five women in the IPC cohort became pregnant within 18 months in comparison with 50% (29/58) of the women in the historical control cohort (P-value = 0.003).

**Table 4. Distribution of pregnancies conceived within 18-months of the index VLBW**

<table>
<thead>
<tr>
<th>No. of pregnancies conceived within 18-months</th>
<th>Number of women in each cohort experiencing 0, 1, or 2 pregnancies within 18-months</th>
<th>IPC intervention (n₁ = 29)</th>
<th>Control (n₂ = 58)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>24</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Sample mean</td>
<td>0.24*</td>
<td>0.62*</td>
<td></td>
</tr>
</tbody>
</table>

*P-value for Poisson regression = 0.02

Table 5. Distribution of adverse outcomes of pregnancies for pregnancies conceived within 18-months of the index VLBW

<table>
<thead>
<tr>
<th>No. of adverse pregnancy outcomes</th>
<th>Number of women in each cohort experiencing 0, 1, or 2 adverse pregnancy outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IPC intervention (n = 29)</td>
</tr>
<tr>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sample mean</td>
<td>0.10*</td>
</tr>
</tbody>
</table>

* P-value for Poisson regression = 0.04


The IPC program demonstrated promising advances in providing inter-conception care to African American women, and preventing a subsequent pregnancy that could possibly result in another LBW or VLBW infant. In addition, as mentioned earlier, the Magnolia project showed potential in helping reduce infant mortality. However, due to the low sample size, these results are not statistically significant and should be viewed as hypothesis generating studies.

As stated earlier, in addition to programs and interventions, health policy plays a vital role in the access to these resources. Medicaid has been identified as a potential avenue to increase public and private health insurance coverage for women with low incomes, particularly given that employer-sponsored coverage and individually purchased insurance policies are beyond the reach of many low-income women. Since 1995, a total of 22 states have used their federal waiver authority to extend family planning services to women who do not otherwise qualify for Medicaid through family planning waivers. However, in most states, low-income women of reproductive age do not have access to primary health care between pregnancies, as Medicaid
coverage typically ends 60 days postpartum, and resumes only after conceiving a subsequent pregnancy. Rather than discontinuing funding for medical care 60 days after delivery, women who have experienced a poor pregnancy outcome, especially a VLBW delivery, could retain coverage to promote pregnancy intendedness, optimum child-spacing, and improved health status prior to the next pregnancy. Continuing Medicaid services for low-income African American women after an adverse outcome could impact subsequent birth outcomes for African Americans, and overall help to improve infant mortality rates.

Prenatal Care

Prenatal care consists of a series of clinical visits and ancillary services designed to promote the health and well-being of the mother, fetus, and family. It has three major components, 1) early and continuing risk assessment; 2) health promotion; and 3) medical and psychosocial interventions and follow-up. The racial gap in access to prenatal care has been closing over the past ten years, with nearly 95% of African American women access prenatal care at some point during pregnancy; however, the racial gap in the quality of prenatal care remains stagnant.

Prenatal care in its present form is unlikely to reduce the rate of premature and low birth weight infants because it does not address the underlying causes of prematurity and low birth weight. A randomized controlled trial conducted by Klerman in Jefferson County, Alabama investigated whether augmented prenatal care for high risk African American women 16 years and older would improve pregnancy outcomes and improve patients’ knowledge of risks, satisfaction with care, and behavior. Augmented care included educationally oriented peer
groups, additional appointments, extended time with clinicians, and other social support. Those participants in the augmented care group (n=318) perceived their care more helpful and of high quality, but there were no significant differences in low birth weight or preterm birth \(^{22}\).

Although the results may not be statistically significant due to a small sample size, more research with larger sample sizes would provide more accurate data about whether augmented care can reduce outcomes in preterm and low birth weight deliveries in African American women.

To expect prenatal care to reverse the impacts of early life in nine months, or less, may be asking too much of prenatal care \(^{21}\). However, when combined with other components of the life course approach, prenatal care may be effective because care would have been provided over the woman’s life course and not only during pregnancy \(^{4}\).

**Strengthening African American Families and Communities**

In addition to the focus on clinical care, community, family, and partner support can play a large role in reducing negative birth outcomes among African American women. For example, the Centers for Disease Control and Prevention now encourage the inclusion of men in preconception planning. A reproductive life plan for men provides an opportunity for both disease prevention and health promotion. It is essential to improve family planning and pregnancy outcomes, enhance reproductive health and health behaviors of their female partners, and prepare males for fatherhood \(^{16}\). More than 70% of African American infants were born to unmarried mothers in 2006, an increase from 22% in 1960 \(^{4}\). According to Lu et al., studies have shown that children who grow up without a father in the home are at greater risk for various educational or behavioral problems and poorer developmental outcomes \(^{4}\). In conjunction with
the reproductive life course plan, an ecological approach that addresses barriers to father involvement at multiple levels is necessary, and provides involvement on the individual, interpersonal, community, and neighborhood level.

Furthermore, although preconception care, inter-conception care, counseling, and prenatal care all serve a major role in maintaining optimal health of mothers and infants, the coordination of systems must be enhanced to prevention fragmentation in the delivery system of family support services. Fragmentation in service delivery deters access to care, particularly for low-income women with other competing needs. Through case management and visitation, two programs, the Nurse Family Partnership and the Black Infant Health program, have shown success in providing service coordination for low-income pregnant women. Additionally, the Hope Street Family Center in Los Angeles, CA provides several services including prenatal care, well baby care, primary care, on-site child care, Early Head Start, child development and family literacy programs for African American women. Although providing every service a family may need at one site is nearly impossible, the goal through this intervention is to provide as many services that a family may need at one site in order to minimize care fragmentation.

Lastly, increasing social capital among African Americans women has emerged as a potential protective factor against health. Social capital is the degree of social connectedness within a community and refers to features of the social organization such as networks, norms, and social trust. Creating this solidarity and receiving social support within one’s own community can ease the stress of everyday life and provide a sense of unity. Lu et al. describes an intervention in Los Angeles, CA by the name of One Hundred Intentional Acts of Kindness towards a Pregnant Woman. This effort was designed and created by Health African American
Families to increase reproductive social capital for pregnant women. Fans were designed with specific acts of kindness the pregnancy participants said they would appreciate and distributed in churches, barber shops, and nail salon to inform the community of the efforts. Although the intervention has not been evaluated, efforts such as these illustrate how social capital can positively affect the community, and the residents of the community.

**Addressing Social and Economic Inequities**

Changing social structures and public policies, with the purpose of reducing disparities and disadvantages among African American women, is essential to close the disparity gap in birth outcomes. According to Lu et al., closing the education gap, reducing poverty among African American families, and undoing racism can address these inequities that African American women face.

For example, at the start of Kindergarten African American children are already at a substantial disadvantage in reading and mathematics\(^4\). The education gap widens between first and twelfth grades, and African American children, particularly from low-income families, are more likely to attend schools with fewer resources, poorer quality teachers and lower expectations\(^4\). Moreover, the gap grows after school and during summer months, as African American children have fewer opportunities for learning enrichment outside of school\(^4\). It is important to mention that women who reach lower educational attainment usually give birth to infants with poorer outcomes. This in itself highlights the importance of education, and how education can affect the overall health of African American women and the birth outcomes of their infants. Developing educational programs that target African American youth at an earlier
age can help to begin narrowing the education gap earlier in life. By increasing the level of educational attainment for African American women, perhaps the number of low birth weight infants among the African American population will begin to decline.

In addition to education, disparities exist in differences in income between African Americans and Whites. A disproportionate number of African Americans live below the poverty level, and in 2001 accounted for approximately 25% of the United States population in poverty. Additionally, nearly 30% of African American children live in a poor household, and the poverty rate is highest among single-parent households headed by African American women. Lu et al. hypothesizes that, reflecting greater cumulative allostatic load over the life course and resulting in increased biobehavioral vulnerability during pregnancy, poverty predicts poor health in African American women. A simply change in public policy such as raising the minimum wage could significantly increase incomes for working families. Raising the minimum wage by one dollar will impact approximately 30% of working African American women who work for minimum or low wages.

Lastly, undoing racism may be the most critical component of the 12-point plan, as racism may be the cause of health disparities in the United States. There is increasing evidence that racism has direct and independent health consequences across the lifespan. African American women are more likely to delivery a low birth weight or premature infant due to the experience of racial discrimination in pregnancy or over the life course. Undoing racism may be the most difficult strategy to implement because of the deep roots of racism, discrimination, and oppression. First, a better way to measure racism needs to be developed. Measuring racism is a difficult task because of attitudes, behaviors, and individual perceptions. However, being able to
measure racism throughout the life course and across generations could open the possibility to develop interventions to measure racism more accurately. Secondly, racism must become a leading health issue, meaning racism should be in the forefront our research, data collection, and policy collaboration across all disciplines. Lastly, breaking down social institutions and public policies that create the early life disadvantages for African American women can serve as a catalyst in the reduction of the Black-White gap in birth outcomes and infant mortality.

CONCLUSION

The life course approach goes beyond prenatal care and focuses on the community systems and economic and social inequities that create the disproportionate allostatic load that negatively affects the health of African American women. In order to close the gap in infant mortality rates between African Americans and Whites, all components of the 12-point plan must be addressed. Although a few studies have addressed the concept preconception care, inter-conception care, and prenatal care reducing racial disparities in infant mortality, larger studies need to be conducted to determine whether the interventions are worth further efforts and/or implementation. Additionally, in order to strengthen the African American family and address social and economic equities, state and national policies will have to be developed and implemented. It’s important to remember that a healthy mother equals a healthy baby. Utilizing the life course approach efficiently and effectively will result in healthier outcomes for African American women and infants, and will serve as a catalyst in the reduction of health disparities and infant mortality in African Americans.
REFERENCES


(14) Sanders LLB. Preconception Care: Practice and Policy Implications for Nurses. Policy,


