African American Infant Mortality in Fresno County

This publication was commissioned by:

FIRST 5 FRESNO COUNTY
www.first5fresno.org

Prepared and Published by:
Central Valley Health Policy Institute
Central California Center for Health and Human Services
College of Health and Human Services
California State University, Fresno
11/4/2015

A Call to Action

Fellow Community Members,

Infant mortality is an indicator of a community's overall health. It reflects the condition of important community matters such as maternal health, healthcare accessibility and the availability of community resources. In just seven years between 2007 and 2014, infant mortality among the African American community in Fresno County increased by a shocking 87 percent. What does this appalling statistic say about Fresno County's overall health?

At First 5 Fresno County, we are charged with promoting, supporting and improving the early development of children from the prenatal stage through five years of age. We want all children to have a strong foundation so they can reach their full potential. The prevalence of high rates of infant mortality in Fresno County became our call to action. To get to the heart of the issue, First 5 Fresno County commissioned a needs assessment to find answers and guide future investments and decision making. We knew this assessment would require intense research and in-depth community input. The Central Valley Health Policy Institute was the agency selected to undertake this project.

The following pages detail the Central Valley Health Policy Institute's research methods, findings, community input and recommendations. The report underscores barriers and highlights opportunities to change the odds for African American babies in Fresno County. It is our hope that this report will be a catalyst to reverse the high infant mortality rate and help improve Fresno County's overall health. First 5 Fresno County is committed to working alongside other agencies and community members to implement recommendations presented in the report.

Emilia Reyes

Executive Director

Funding and Contributors:

First 5 Fresno County commissioned this project to better understand the issues surrounding infant mortality and to make policy, research, and practice recommendations. First 5 Fresno County contracted with the Central Valley Health Policy Institute (CVHPI) at Fresno State to conduct an assessment of the social determinants of infant mortality. This document includes zip code analysis of infant mortality secondary data from county and state sources, delineates barriers and challenges to pre and post conception health for African American expectant mothers and clinical and social services providers in Fresno County. Several preliminary recommendations from the project were explored in detail at a community forum on August 11, 2015 and the results of this event are included as well. We would also like to acknowledge the contribution of many CVHPI staff including: Dr. John Capitman, Emanuel Alcala, Cindy Ballesteros, Jacqueline Cortez and Yesenia Silva.

Marlene Bengiamin, PhD- Research Director

Lauren Lessard, PhD MPH- Research Scientist

Suggested Citation:

Central Valley Health Policy Institute (2015). Determinants of Infant Mortality in Fresno County: California State University, Fresno.

Special Thanks and Acknowledgements

First 5 Fresno County and the Central Valley Health Policy Institute would like to express our appreciation to the individuals and organizations who have contributed their time and insight. Our deepest appreciation goes out to the women of Fresno County who enlightened us with their presence and had the courage to speak on difficult issues relating to their personal experiences; without which this report would not be as rich or vibrant in the daily struggle to obtain quality health care. The over 100 Fresno residents who participated in the August 11 community meeting made an invaluable contribution to prioritizing possible actions to improve African American birth outcomes in our communities.

We would like to extend our gratitude to those who participated in our in-depth interviews: Neonatal Intensive-Care Unit (NICU) staff at Saint Agnes Medical Center, perinatology and maternal medicine representatives from Valley Children's Hospital, contributors from Fresno Women's Medical Group and Spirit of Women, staff from Women, Infants and Children (WIC), and coordinators of the Comprehensive Perinatal Services Program (CPSP).

We would also like to thank the following community members who participated in our Maternal and Child Health Expert Panel. The Panel was chaired by Gail Newell, MD MPH- UCSF Fresno, Director of Department of Obstetrics and Gynecology. Dr. Newel and the Panel members provided invaluable insight and feedback throughout the research and development of recommendations process.

Erica Alexander, RN PHN	Fresno County Department of Public Health, Black Infant Health Program
Lilith Assadourian, MS	First 5 Fresno County
Kris Aubry, MSN, BSN, RN	Valley Children's Hospital
Maria Elena Avila-Toledo, MPH	Health Net
Diana Courmier, DNP, MPH	Community Regional Medical Center
Venise Curry, MD	Communities for a New California
Sandra Flores	Fresno Regional Foundation
Rose Mary Garrone, RN BSN PHN	Fresno County Department of Public Health, Maternal and Child Health
Kevin Hamilton, RRT, RCP	Clinica Sierra Vista
Eric Linville, MBA	St. Agnes Medical Center
Gail Mallard-Warren, MD	Private Practice- Obstetrician
Gwen Morris	Cecil C. Hinton Center
Francine Oputa, Ed. D	Fresno State Women's Center
Yolanda Randles, MPH	West Fresno Family Resource Center
John Scholefield, MD	UCSF Fresno, Department of Pediatrics
Juanita Stevenson	Media Professional/Communication Specialist
Veronica Wilson	Fresno Street Saints

Table of Contents

List of Tables and Figures

African American Infant Mortality in Fresno County
Executive Summary

Background:

Much higher rates of infant mortality and other adverse birth outcomes have been noted for African Americans compared to whites nationwide and locally, even as overall rates of infant mortality have declined for many years. In response to an 87% increase in infant mortality among African Americans from 2007-08 to 2013-14, First 5 Fresno County commissioned Fresno State's Central Valley Health Policy Institute (CVHPI) to conduct a mixed method assessment, between January 2015 and July 2015. At the onset of the project, representatives from First 5 Fresno grantee service providers, organizations providing public health education, representatives from the Cecil C. Hinton Center, obstetricians, neonatal nurses, and other individuals serving communities significantly impacted by infant mortality formed a maternal and child health expert panel to direct the project and develop recommendations based on findings. Quantitative secondary data from county and state sources were analyzed, including issues of health care access, pollution burden and relevant socio-economic factors. Qualitative data was collected from two focus group discussions with African American women of child bearing age living in Fresno County's most distressed neighborhoods. The first focus group was introduced to Photo Voice, a qualitative research method in which participants photographed images of their communities that influence their health. The second focus group watched an 8 minute segment from the Unnatural Causes series: "*Is Inequality Making Us Sick*?" (Available at: http://www.pbs.org/unnaturalcauses/hour_02.htm). We then engaged each group in a dialogue about social determinants of reproductive and infant health. Findings and potential recommendations were explored by Maternal and Child Health Expert Panel, convened for the project, and presented to the First 5 Fresno County Commission on July 15, 2015. With guidance from the Commission a community and stakeholders event to further discuss and prioritize these recommendations was held on August 11. The final report from the project highlights key findings and recommendations.

Quantitative Findings:

Many personal and environmental factors contribute to a mother's and infant's risk of experiencing poor health outcomes, including race/ethnicity, maternal age, socio-economic status and time between pregnancies. Our data revealed that Fresno County's African-American population experiences an infant mortality rate of 25.3 per 1,000 live births compared to a rate of 8.1 per 1,000 live births for white residents (3.13 times higher rate, Table 1). This is considerably higher than the racial infant mortality disparity in California as a whole (2.5 times higher for African Americans) or the national rates (2.21 times higher for African Americans). Results also indicate that income, access to care, and health care coverage are predictive of infant mortality. Persons enrolled in Medi-Cal benefits are at nearly 50% higher risk than privately insured individuals. Since preterm birth (PTB) is a key risk factor for infant mortality, the predictors of PTB were also examined. Table 2 and Figure 1 show some of the factors that were found to increase or decrease the chances of this outcome.

Table 1: Infant Mortality by Race/Ethnicity, Fresno County, 2013

Race/Ethnicity	# of Infant Deaths	Rate of Infant Death^	% of Infant Mortality	% of Live Births	% of Excess Infant Deaths
White	25	8.1	17%	19.7%	-10.70%
Black	21	25.3	15%	5.3%	76%*
Hispanic	82	9.0	58%	58.9%	-1.91%
Asian	14	7.8	10%	11.5%	-12.50%
Total	142	9.1	100%	100%	--
Notes: *Chi square significant <.001. ^Rate is per 1,000 live births. Data was collected from the Fresno County Department of Public Health as well as Birth and Death Statistical Master Files from the California Department of Public Health.					

Table 2: Factors Associated with Infant Mortality and Pre-Term Birth (Regression Analysis)

Outcome	*Risk*	*Protective*
Infant Mortality	Pre-term Birth African American Maternal Age Older than 35 Inter-pregnancy Period <33 Months	Receiving WIC College Degree for Women Older than 22 (*p*-value= .07)
Pre-term Birth	Previous Pre-term Birth African American Asian Maternal Age Older than 35 Hypertension During Pregnancy Medi-Cal Recipient Inter-pregnancy Period <33 Months	Increased Economic Opportunity Receiving WIC Foreign Born College Degree for Women Older than 22
Note: All factors significant at *p*-value =<.05, unless otherwise indicated. Data was collected from the Fresno County Department of Public Health as well as Birth and Death Statistical Master Files from the California Department of Public Health (2013).		

Qualitative Findings:

Explanations for the increasingly poor birth outcomes among African American women are complex, involving a number of psychological, social, and economic factors that surround pregnancy and birth. The persistence of discrimination and unequal opportunities traps African American women in economic uncertainty, poor housing, lack of transportation, inadequate education, and unsafe neighborhoods. These factors are exacerbated by the absence of material resources as well as the waning social and relational resources that have traditionally mitigated the hopelessness of poverty. Participants experienced severe stress during pregnancy. Most of the women were the sole breadwinners in their families and there was an overall consensus that African American men are discriminated against in hiring practices, face barriers to obtaining job training, and are singled out by the justice system for penalties, such as having their driver's licenses revoked, and thus experience

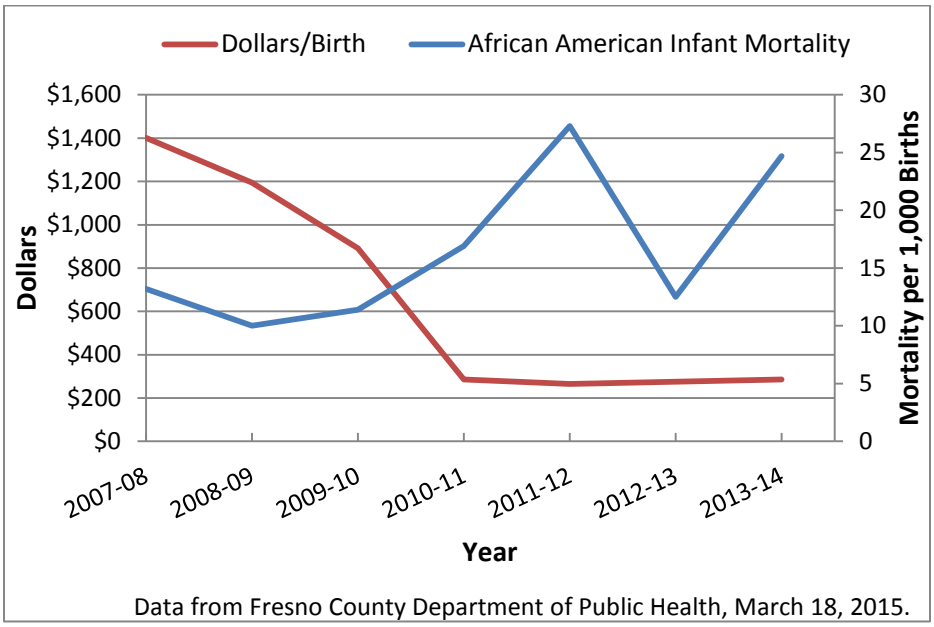
unemployment or underemployment as a result. Subsequently, most mothers reported a high level of social isolation and stress as well as largely unaddressed health and mental health concerns. When seeking health care, expectant mothers often experienced a profound lack of accessible and culturally appropriate health care services. In addition, African American women lacked access to preventive care and health information, particularly during the preconception period. Almost all women conveyed lack of knowledge about the relationship between preconception health and birth outcomes. Additional themes are listed in Table 3.

Table 3: Summary of Qualitative Themes

African American Women Focus Groups	Health and Human Service Professional Interviews
• Day-to day practical challenges (lack of transportation, flexible jobs, education opportunities, unsafe neighborhoods, etc.) • Little to no social support, community is a source of judgement • Substantial maternal stress • Lack of information about preventing poor birth outcomes • Socio-economic differences in quality of care and experiences at clinics • Extensive experience with pre-term birth • Neighborhood can be violent, lacks social resources and healthy food outlets • "Outsiders" need to establish lasting, meaningful relationships to support residents	• Economic uncertainty • Lack of transportation • Poor preconception health status • Lack of emotional support • Barriers to providing services (lack of staff, long wait lists, long wait time at appointment, issues coordinating care) • Cultural barriers (staff does not reflect population, misconceptions circulate in community) • Lack of information about preconception health • Reduction in funding for the Fresno County Department of Public Health, Black Infant Health Program

Interviews with health and social service professionals highlighted many of these same factors. Respondents noted that African American women faced structural barriers to the receipt of needed preconception health care and that these same barriers influenced the quality of care throughout the pregnancy, birth and post-partum period. Health social service professionals also noted how public health investments in the Black Infant Health program, a nationally recognized model for improving African American's birth outcomes had been reduced during the same period as infant mortality was increasing (see Figure 1).

Figure 1: Spending and Infant Mortality



Data from Fresno County Department of Public Health, March 18, 2015.

Recommendations for Addressing African American Infant Mortality

Based on this research, reactions from the First 5 Fresno County Commission and results of the community and stakeholder meeting, three primary recommendations are offered to the First 5 Fresno County Commission for consideration and action.

1. **Blue Ribbon Panel to Improve Care for African Americans:** First 5 Fresno County should take the lead role in the formation and staffing of an inclusive Blue Ribbon Panel of health care, education and community leaders to improve the cultural appropriateness of health care for African American women and families. The new Blue Ribbon Panel should explore the barriers to inclusion of African Americans in key health care front line and patient support role, how to create an effective pipeline from education to professional engagement for African Americans in Fresno, and how to combine cultural competence/humility training and structural changes in health settings to prioritize culturally respectful care. The Blue Ribbon Panel should include elected community representatives and diverse health and human professionals. The First 5 Fresno County Commission should insist on broad institutional support for the Blue Ribbon Panel and for measurable initiatives and outcomes for which health and social services across the county will be held responsible.

2. **Develop and Pilot a Centering Pregnancy program for African American women**. Although the BIH program can make important improvements in African American women's use of appropriate prenatal and postnatal health services, First 5 Fresno County can encourage and provide specific financial backing for the development of a Centering Pregnancy program and/or a Fresno-specific adaptation of this program. The intention of group-visit and wraparound services for women throughout the perinatal period (pre-conception to child age 3) is to ensure access to peer and professional social support, coordination of services and dissemination of accurate, timely health information prior to and following pregnancy. This model has been shown efficacious and cost-effective in other communities. The First 5 Fresno County role can be around supporting the

development, siting, and staffing of the program and supporting policy initiatives to ensure adequate reimbursement through public and private insurance. The new program should be sited in a location that is easily accessed and culturally responsive to South West Fresno residents and other Fresno African American communities, recognizing that overcoming transportation and setting barriers is paramount to program success.

3. **Develop initiatives to address living conditions and life supporting for young African American women and families by focusing on jobs, transportation, housing, neighborhood resources, and education**. This recommendation highlights the need for First 5 Fresno County to become a key participant in addressing the social determinants of health inequalities in Fresno. Multiple community advocacy initiatives, such as the California Endowment-supported Building Healthy Communities and Habitat for Humanity, and multiple public initiatives, such as the development of the South West Fresno community-specific development plan, are focused on improving living conditions and life prospects for African Americans and other low-income people of color in Fresno. First 5 Fresno County can function as a supporter of these initiatives by encouraging the child and family services networks to become involved and by outreaching to families with young children to increase their knowledge and engagement around these programs. The First 5 Fresno County Commission can build upon these existing programs by focusing new attention on the living conditions and life prospects for African American families and others, supporting specific efforts to improve career preparation and human resource policies responsiveness to the needs of young African American families. The Commission can also spearhead efforts to improve the responsiveness of educational setting and new business development efforts to the needs of young African American women and their families.

4. **Support, Promote, and Enhance Public Health Services.** In addition to these efforts, the First 5 Fresno County Commission should consider ongoing monitoring and outreach/enrollment processes of the current expansion of the Fresno County Department of Health Black Infant Health and high-risk pregnancy programming. The Commission should determine on an ongoing basis the extent to which these programs are sufficiently funded to meet community needs. At the same time, the First 5 Fresno County Commission can play a central role in promoting the adoption by the Fresno County Department of Public Health of a more robust and inclusive effort to review all cases of adverse birth outcomes and to build a system of feedback and support to maternal and child health providers and others about best practices for improving African American birth outcomes.

Emerging Opportunities to Address Adverse Birth Outcomes in Fresno

Several new initiatives in Fresno, spurred and supported by the First 5 Fresno County attention to African American infant mortality, are bringing together organizations, systems and resources to promote better health and wellbeing outcomes for Fresno mothers and their families. There may be opportunities for First 5 Fresno County to leverage investments in reducing adverse birth outcomes for African Americans by coordinating efforts with these initiatives:

Fresno Preterm Birth Initiative: With support from UCSF Preterm Birth Initiative-California (PTBi-CA), an innovative multi-year research initiative to better understand chronic stressors and protective factors in mothers and babies, particularly among low-income African Americans and Latinas, Fresno has formed a collective impact initiative to cut the rate of preterm birth by one-half over the next few years. The Fresno PTBi and UCSF will focus on improving systems of care for pre-conception and pregnancy care and social supports for young women and families county-wide and will also focus key attention on

central Fresno neighborhoods with high rates of adverse birth outcomes. A key component of the initiative is community engagement through the formation of ***mothers' councils*** in deeply impacted communities and countywide. The initiative is also exploring ***centering pregnancy models***. There may be opportunities for First 5 Fresno County to enrich and extend the community engagement component of PTBi and to partner in the development of centering pregnancy models.

Fresno Community Health Improvement Partnership (FCHIP)—Pre-to-3 Working Group: In order to focus and accelerate efforts to improve population health in Fresno, the Fresno DPH and over 200 participants from diverse Fresno organizations and communities have been developing a county-wide health improvement plan. The Pre-to-3 workgroup with over 20 regular participants is also seeking to improve health and well-being outcomes for mothers and infants, including reduction in adverse birth outcomes. Although the working group and the overall FCHIP has not determined its specific priority objectives and activities, there has been considerable focus on the development of a ***Best Babies Zone*** (see: http://www.bestbabieszone.org/MCH-updates) initiative in a rural town, such as Sanger. In this model, a group of women who are at risk for-, or have experienced adverse birth outcomes, work together in their neighborhood to create new life and health opportunities for their peers. First 5 Fresno County could support community engagement and program development in this context.

Strengthening WIC: As in prior research, this study found that WIC participation was associated with less risk for adverse birth outcomes. It is not clear how the nutritional assistance and educational components of WIC contribute to this outcome and more research is needed. In the short run, First 5 Fresno County can build on existing relationships and programs to promote WIC enrollments and to strengthen the capacity of existing WIC educational services to connect women with needed health care and other supports.

African American Infant Mortality in Fresno County

PROJECT BACKGROUND

Concerned with evidence that Fresno County was experiencing an increased rate of infant mortality, particularly among African American families, First 5 Fresno County released a request for qualifications to investigate the disturbing trend. After reviewing applications, First 5 Fresno County contracted with the Central Valley Health Policy Institute (CVHPI) to conduct an assessment of the social determinants of infant mortality. The aim of this study was to better understand the issues and to make policy, research, and practice recommendations. At the onset of the project representatives from First 5 Fresno County grantee service providers, organizations providing public health education, representatives from the 93706 community center, OBGYN, Neonatal nurses, and other individuals serving communities significantly impacted by infant mortality were invited to participate to inform the project process. A mixed methods research study was conducted between May 2014 and July 2015. Quantitative secondary data from county and state sources were analyzed, including issues of health care access, pollution burden and relevant socio-economic factors. Qualitative data collection from expectant mothers, in the form of focus groups, including a Photo Voice project, was conducted in addition to in-depth individual interviews with local health care and social support providers. Preliminary recommendations emerging from this work were shared with the First 5 Fresno County Commission. At the request of the Commission, preliminary recommendations were further defined and prioritized at a community forum attended by over 100 residents at Gaston Middle School in South West Fresno in August 2015.

INTRODUCTION

Although infant mortality in the United States decreased among all races between 1980 and 2000, the overall black/white gap for infant mortality has continued to widen. Recent linked data (2008-2010) provided by the Kaiser Family Foundation show that the national median infant mortality rate of 6.4 per 1,000 live births is nearly half than the average rate of Non-Hispanic Blacks, 12.2 per 1,000 live births.[1] A 2013 Centers for Disease Control and Prevention analysis of infant mortality rates revealed that while rates have decreased slightly, 5.96 per 1,000 live births, the black / white gap persists. This trend is repeated in the state of California; infants born to Non-Hispanic White mothers are half as likely to die within their first year of life versus an infant born to Non-Hispanic Black mother (4.64 and 10.98 per 1,000 live births). [1]

A growing field of research shows that stress caused by discrimination and racism is a significant contributor to the pervasively high rates of infant deaths among African Americans is growing.[2] Health experts acknowledged the connection between racially-induced stress and poor birth outcomes. Experts speculate that such stress can restrict blood flow to the placenta and trigger pre-term births.[3,4] Other social and environmental risk factors that may disproportionately influence African Americans, such as proximity to traffic, exposure to air pollution, neighborhood segregation and other social determinants of health have been linked to birth outcomes.[5,6] Furthermore, while infant mortality is one stark indicator of how we are doing in ensuring positive outcomes for women and children, it needs to be viewed in the broader context of maternal and infant health status before infant mortality occurs. Preconception health and pregnancy experiences shape not just infant mortality but a broad range of maternal and child outcomes including pre-term birth, labor and delivery outcomes, mental health of mother and child and the health of future pregnancies and children.

QUANTITATIVE FINDINGS

Many personal and environmental factors contribute to a mother's and infant's risk of experiencing poor health outcomes, including mortality. These factors are depicted in Figure 2, the Social Ecological Model, which describes the multiple factors that interact and result in an individual's health outcomes. The data presented in this section reflects the importance of identifying which factors need increased attention in order to improve health opportunities for women and children in Fresno County.

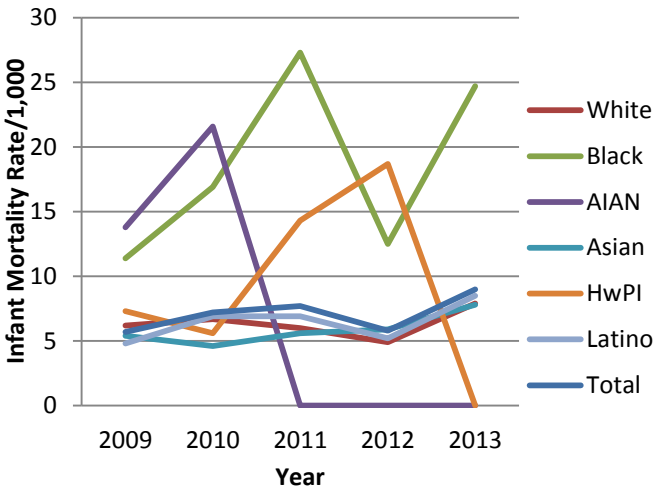
Figure 2: Social Ecological Model*

*http://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html

Infant Mortality

Race/ethnicity is a strong predictor of infant mortality. African-American women experience infant mortality at three times the rate when compared to white women in Fresno County, as shown in Figure 3 and Table 4. As compared to the proportion of African American births (5.3%), these families are experiencing infant mortality in excess of 176% (Table 4). Though not dramatically disproportionate, it's important to note the substantial proportion of infant mortality cases experienced by Hispanic families, nearly 60% of all cases in Fresno County, indicated in Table 4.

Figure 3: Infant Mortality by race/Ethnicity in Fresno County, 2009-2013



Central Valley Health Policy Institute analysis of California Death and Birth Statistical Master Files, 2009-2013.

Table 4: Excess Infant Mortality

Excess Infant Mortality in Fresno County, 2013

Race/Ethnicity	# of Infant Deaths	Rate of Infant Death^	# of Live Births	% of Live Births	Expected # Infant Deaths	Excess Deaths	% of Excess Infant Deaths
White	25	8.1	3069	19.7%	28.0	-3.0	-10.70%
Black	21	25.3	831	5.3%	7.6	13.4*	176%
Hispanic	82	9.0	9155	58.9%	83.6	-1.6	-1.91%
Asian	14	7.8	1786	11.5%	16.3	-2.3	-12.50%
Other	0	0.0	710	4.6%	--	--	--
Total	142	9.1	15551				

Notes: *Chi square significant <.001. ^Rate is per 1,000 live births.

Central Valley Health Policy Institute analysis of California Death and Birth Statistical Master Files, 2009-2013.

Statistical analysis shows that in comparison to their white counterparts, Latino infants face mortality rates that are 20% higher. Most alarming is that the African-American population experiences 60% higher risk than the white population. The analysis also revealed that women 35 years or older face over experience twice the risk of infant mortality.

Major causes of infant death are listed in Figure 4, and further explained in Table 5. The regional distribution of infant mortality is depicted at the Fresno County and city level in Figure 4, demonstrating distinct clustering in lower income areas in the City of Fresno and smaller cities, including Firebaugh in the west and Parlier in the southeast.

Figure 4: Major Causes of Infant Mortality

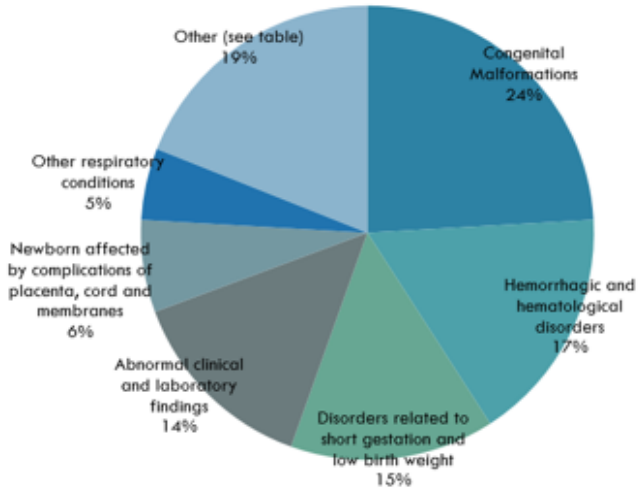
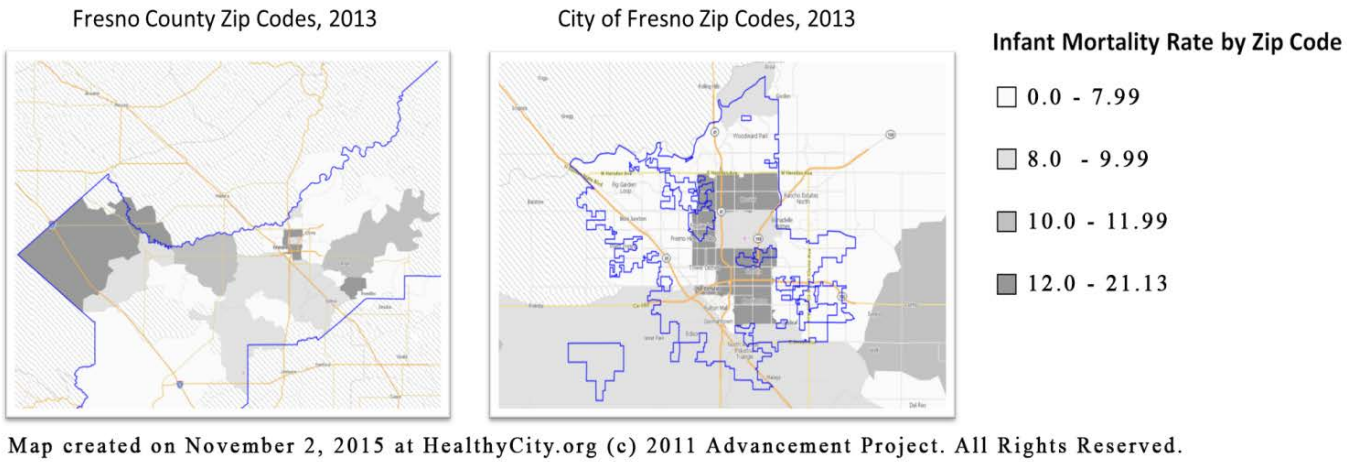


Table 5: Defining "Other"

"Other" Causes of death	N	%
Influenza and pneumonia	5	3.6
Intrauterine hypoxia and birth asphyxia	5	3.6
Maternal complications of pregnancy	4	2.9
Certain Infectious and Parasitic	2	1.5
Diseases of the circulatory system	2	1.5
Infections specific to the perinatal period	2	1.5
Viral Disease	2	1.5
Blood and blood-forming organs/immune mechanism	1	0.7
Diseases of the nervous system	1	0.7
Endocrine, nutritional and metabolic diseases	1	0.7
Maternal factors and by complications of pregnancy, labor and delivery	1	0.7

Figure 5: Infant Mortality Rates per 1,000 Live Births Across Fresno County Neighborhoods



Chronic Conditions and Access to Health Care

Certain health care factors also influence the infant mortality rate of Fresno County residents. When examining health care coverage as a predictor of Infant Mortality, persons enrolled in Medi-Cal benefits see their risks increase nearly 50% above privately insured members. Limited access to health care services also place individuals at an increased risk for having multiple chronic conditions (co-morbidity) in need of treatment or management care. Hypertension in women of childbearing age triples the risk of infant mortality. Results are similarly alarming among mothers who have developed gestational hypertension, gestational diabetes, pre-pregnancy diabetes or eclampsia hypertension are at greatest risk for experiencing PTB, particularly between weeks 33-37 of gestation compared to women who deliver after 37 weeks (CDPH Vital Statistics, 2011).

Pre-Term Birth

The current focus on Pre-Term Birth (PTB) by health care professionals and researchers is due to the strong relationship linking PTB with infant mortality risk. The high correlation between these two phenomena has prompted much ongoing attention to Pre-Natal Care (PNC) efforts. Yet 2011 data show women experiencing PTB prior to 37 weeks are accessing PNC equally as women delivering beyond 37 weeks indicating that there are different, possibly social and environmental forces at play. For the purposes of this study, PTB was a factor that was so highly predictive and correlated with infant mortality that additional analysis with PTB was needed.

Further investigation of factors associated with infant mortality and PTB in Fresno County indicates there are greater social and environmental issues at work, indicated in Table 6. The associated risk and protective factors are outlined, highlighting the similar pathways between these two outcomes. Infant mortality sample size is notably smaller than that of the PTB population, possibly limiting the associations that could be assessed.

Table 6: Factors Associated with Infant Mortality and Pre-term Birth (Regression Analysis)

Outcome	*Risk*	*Protective*
Infant Mortality	Pre-term Birth African American Maternal Age Older than 35 Inter-pregnancy Period <33 Months	Receiving WIC College Degree for Women Older than 22 (*p*-value= .07)
Pre-term Birth	Previous Pre-term Birth African American Asian Maternal Age Older than 35 Hypertension During Pregnancy Medi-Cal Recipient Inter-pregnancy Period <33 Months	Increased Economic Opportunity Receiving WIC Foreign Born College Degree for Women Older than 22
Note: All factors significant at *p*-value =<.05, unless otherwise indicated. Data was collected from the Fresno County Department of Public Health as well as Birth and Death Statistical Master Files from the California Department of Public Health (2013).		

QUALITATIVE FINDINGS

Two focus group discussions were conducted to engage women of child bearing age living in Fresno County's most distressed neighborhoods in a dialogue about the social determinants of reproductive and infant health. The first focus group was introduced to Photo Voice, a qualitative research method in which participants photographed images of their communities that influence their health. The second focus group watched an 8 minute segment from the Unnatural Causes series: "*Is Inequality Making Us Sick*?" (Available at: http://www.pbs.org/unnaturalcauses/hour_02.htm). Additional qualitative data was gathered from interviews with maternal and child social service and health care providers. Table 7 highlights themes from the focus groups and the provider interviews.

Table 7: Summary of Qualitative Themes

African American Women Focus Groups	Health and Human Service Professional Interviews
• Day-to day practical challenges (lack of transportation, flexible jobs, education opportunities, unsafe neighborhoods, etc.) • Little to no social support, community is a source of judgement • Substantial maternal stress • Lack of information about preventing poor birth outcomes • Socio-economic differences in quality of care and experiences at clinics • Extensive experience with pre-term birth • Neighborhood can be violent, lacks social resources and healthy food outlets	• Economic uncertainty • Lack of transportation • Poor preconception health status • Lack of emotional support • Barriers to providing services (lack of staff, long wait lists, long wait time at appointment, issues coordinating care) • Cultural barriers (staff does not reflect population, misconceptions circulate in community) • Lack of information about preconception health • Reduced funding for the Fresno County Department of Public Health, Black Infant Health Program

African American Women--Focus Group Themes

Overview: African American women who participated in the focus groups described several inter-related economic, social, neighborhood, and health system factors that may be linked to poor birth outcomes. As described by participants, the persistence of unequal opportunities traps and discriminatory treatment often traps African American women in economic uncertainty, poor housing, inadequate transportation, inadequate education, and unsafe neighborhoods. These factors are exacerbated by the absence of material resources as well as the waning social and relational resources that have traditionally mitigated the feelings of powerlessness, loneliness, and hopelessness historically associated with poverty and segregation. From participants' experiences, these multiple overlapping challenges created severe stress during pregnancy.

As summarized in Table 7, some of the key themes highlighted by participants in the focus groups included that many of the women were the sole breadwinners in their families. There was an overall consensus that African American men are discriminated against in hiring practices, face barriers to obtaining job training, and are singled out by the justice system for penalties, such as having their driver's licenses revoked, and thus experience unemployment or underemployment as a result. Without a source of stable support from a partner and with many of their family members and peers experiencing multiple life challenges, most of the participating mothers reported a high level of social isolation and stress as well as largely unaddressed health and mental health concerns. When seeking health care, expectant mothers often experienced a profound lack of accessible and culturally appropriate health care services. In addition, African American women lacked access to preventive care and health information, particularly during the preconception period. Almost all women conveyed lack of knowledge about the relationship between preconception health and birth outcomes.

Maternal Stress Resulting from Weakened or Absent Social Support

Participants disclosed there exists little support and an overwhelming amount of judgment directed at young mothers. Mother's revealed sources of judgement included family networks, the community, religious institutions, employers, and at times healthcare professionals; contributing to a sense of social isolation. A discussion thread that opened up during a focus group exercise revealed tension present among black women that lessens the support system mothers can access. One participant stated,

- *"I would approach or even simply greet a man before a woman because of I wouldn't know what to expect and it could possibly turn into a negative interaction."*

Examples of isolation is further emphasized by another participant whom described the difficulty of being called to duty in the United States Army shortly after giving birth, with her mother as her only source of support, *"If it wasn't for my mom I wouldn't be able to do it"*. These passages signal the gravity of lack of support and stress common to many women can contribute to immense psychological repercussions for young mothers.

- *"I want to share this photo because you never know how strong you are until being strong is the only choice you have. Leaving my son at 6 weeks was the hardest thing I've done my whole life."*

Maternal Mental Health and Isolation

Women, especially those living in lower socioeconomic areas, are exposed to risk factors, increasing their susceptibility to mental health problems. Some of these factors include poor socioeconomic status, less valued social roles and status, unintended pregnancy and gender-based violence (Prince M et al, 2007). Several participants admitted to experiencing depression while pregnant but did not recognize the effect it may have had on their health or the health of their child. They further attributed these experiences to gender stereotypes of what motherhood should include,

- *"I thought these feelings were part of being pregnant… hormones"*

Many of the participants relied on internal stress relief, retreating to find solace within their private residences. Relief was sought through multiple avenues, even if only temporary the women savored the sense of control that was briefly attained and sought outlets to bring a sense of calm into their lives. The following excerpts reveal at what lengths and costs mothers with limited social ties and support undergo:

- *"I drank alcohol often since the birth of my baby to escape stress"*
- *"I felt so "angry" the whole time I was pregnant and even after"*

Lack of Knowledge about Preconception Health and Pre-Term Birth

Many participants said that they had a poor diet, smoked cigarettes and/or marijuana, and drank alcohol prior to and during pregnancy. Consensus determined not enough information about the importance of maternal health and impacts on pregnancy, preterm birth and infant mortality is available. Further, it was apparent that the loss of a child through miscarriage was normalized within their family and community. One participant, who lost twins at 22 weeks said,

- "*This is when my mom said this is common and informed me that she lost babies as well and that I needed to get on with it (life) like everyone else, to snap back.*"

Clinical Experiences and Access to Resources

In the clinical environment, long wait times and negative attitudes from office staff and/or healthcare professionals can make seeking out prenatal care "*difficult*" at best and "*traumatic*" at worst. The nurses were described as "*snobby*" and took hours to give pain medication while patients perceived staff to have capacity and time to do so. Participants also agreed that in West Fresno there were few clinical or social resources and support available, that they are aware of, for reproductive health. At best their knowledge did not exceed, "*hearing about a certain program in passing*". Many of the participants also had negative hospital experiences during their deliveries. A participant recollects the following,

- "*Nurses would not let me change my child's diaper …my baby cried when nurses did it which upset me*"

Neighborhood Safety and Resources

Responses on how participants felt about their neighborhoods varied. Positive discussion surrounded an enjoyment of the neighborhood, but concerns of physical safety yielded negative emotions. Many expressed reservations about allowing children to play outside unattended.

- *"There are good places for my children to play but we need more than playgrounds to improve our health."*

Almost all participants expressed a concern in regard to neighborhood violence. The following quotes depict the fear and concern for their young siblings and children's safety,

- "*When cars drove by too quickly, or the police drove as if they were in pursuit of someone I would make sure my younger siblings went inside the house"*
- *"You need a gun to go to the park in West Fresno"*
- "*I don't let my Kids play outside alone in West Fresno, I tell my 14 old to check in with me every 15 minutes"*

While respondents reported that there is access to grocery stores in West Fresno, many mentioned a preference for grocery stores in North Fresno, "*the prices and options in these north Fresno grocery stores are much better.*" Respondents also mentioned stores in West Fresno are sometimes unsafe,

- "*There is often shouting or conflict outside of stores that is difficult to deal with*"

Social Services and Clinical Interview Themes

We interviewed a total of nine providers from the Perinatal Early Intervention program, Valley Children's Hospital, the Neonatal Intensive Care Unit (NICU) at Saint Agnes Medical Center, Fresno Women's Medical Group, Comprehensive Perinatal Services Program (CPSP), Fresno Economic Opportunities

Commission Women, Infants and Children program (EOC WIC), and Spirit of Women. Key themes are summarized in Table 7 on page 6.

Preconception Status and Barriers to Health

Providers feel that preconception health is a "*constant struggle".* One clinician reports, "*Depression, anxiety, suicide attempts, dental hazards, malnutrition, stress, and physical and emotional needs… these are very common*". Among issues to be addressed for preconception health are: *"pregnancy spacing, birth control options, and family planning*". Barriers to healthy pregnancy were access to care, poor nutrition, and lack of family planning services.

This theme was particularly emphasized by hospital-based professional interview respondents. Health conditions included diabetes, obesity, chronic hypertension and pre-eclampsia, history of preterm birth labor, specifically among African American women, history of postpartum depression, and late care. The state of the mother's health and outcome of the child's well-being before birth are common concerns for pregnant and expecting mothers seen at NICU and the hospital. Common barriers to preconception health and the overall health of pregnant and expecting mothers are due to a lack of transportation, high gas prices, poverty, lack of affordable childcare, a lack of knowledge or support, cultural differences, language barriers, and billing code errors. Other self-imposed barriers mentioned were mothers who were too busy to take care of themselves and had a lack of involvement of the father (specifically for African American women).

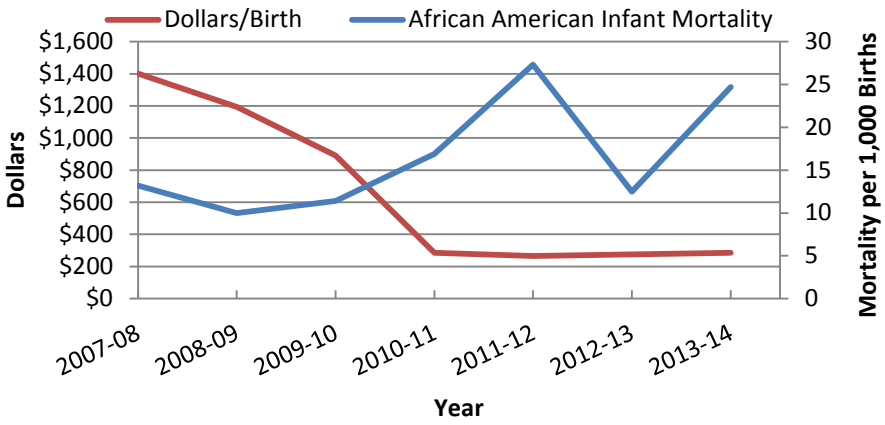
Cultural Relevance

When asked if the services provided were culturally relevant for African-American women, providers felt that even though there were efforts made to provide culturally relevant care, there remain many issues that need addressing. Support for African-American moms struggling with breastfeeding was identified as a major cultural barrier. Providers indicated that complicated historical family and individual level influences impacted a woman's ability to breastfeed successfully and culturally relevant care possibly by peers, was desperately needed.

Reduced Funding for the Black Infant Health Program

Health and human service professionals were unable to identify major changes in the health and human services available to support positive outcomes for pregnant women and new mothers in Fresno, with one dramatic exception. The Fresno County Department of Public Health has offered the Black Infant Health (BIH) Program since 1991, one of 17 California counties that offer this nationally acclaimed intervention with proven efficacy in improving birth outcomes for African American women. BIH engages pregnant women and new moms in ongoing medical care, positive nutrition and breast feeding support, and avoidance of behaviors that pose a risk for mother and child. As the California struggled with the consequences of the 2007-2009 recession, there have been large reductions in funding in BIH and other programs to support mothers and babies at elevated risk for adverse outcomes. As shown in Figure 6, increasing rates of African American infant mortality, particularly since 2008, appears to correlate with the spending on public health programming. Although Figure 5 suggests a strong association between funding reductions for preventive services and infant mortality, it would not be appropriate to attribute causality. For the health and human service professionals participating in the interviews, however, there had been a marked reduction in the number of African American and other high risk women engaged in prevention-oriented, culturally tailored support programs. Many believed that the reduction in support had been particularly notable for African American women.

Figure 6: Spending and Infant Mortality



SUMMARY of RESEARCH FINDINGS

Solutions to the high infant death rates among black families have puzzled medical, health policy, and research communities for decades. African-American women continue to face a disproportionately high risk for delivering premature and low birthweight newborns, many of whom die within the first year of life. There is consensus among research findings that is grounded in social determinants of health theory; women and their children must be viewed not only as individuals, but as belonging to families, communities, and larger systems.

In this study, most mothers reported a high level of stress that they attributed to enduring unequal socio-economic and cultural opportunities and discrimination. For most participants, these experiences and related challenges were intimately linked with health concerns, such as hypertension, diabetes, obesity, hospitalization, preterm birth and the loss of a child. When seeking health care, these expectant mothers often experienced a profound lack of accessible and culturally responsive health care services. In addition, these women lacked the appropriate knowledge of preconception health and resources. Health and social service professionals also noted that hospitals and other providers often lacked the resources to match African American pregnant women with clinicians of the same racial/ethnic heritage, while African American women tended to emphasize the roles of administrative and paraprofessional staff in creating their experience of disrespectful care. Providers also pointed to the importance of educating women on seeking primary care to help prevent future preterm and poor birth outcomes. Both providers and women themselves believed that better communication efforts between health care providers, supportive organizations and African American women need to be set in place. Providers also highlighted the reduction in funding and associated reduction in participation in the Black Infant Health Program offered by the Fresno County Department of Public Health.

Development of Recommendations and Community Review

The purpose of this project was to conduct an assessment of the social determinants of infant mortality among African Americans in Fresno County. The aim of the assessment was to better understand the issues around high infant mortality among African American families and to make practical recommendations. Results of this assessment revealed a broad range of problems and potential actions steps identified by expectants mothers and providers. The Maternal and Child Health Expert Advisory Panel reviewed these suggestions and their discussions led to insightful and valuable recommendations for changes in policies and practices that have the potential to address African American infant mortality and other adverse birth outcome challenges facing Fresno County residents. Over 30 practical recommendations that Panel members believed had the potential to be implemented in the next few years were identified and these are summarized in Table 8.

Table 8: Recommendations to Improve Maternal and Infant Health in Fresno County

Identified Barrier	Possible Action
Outreach and research occurring in silos	• Coordinate and collaborate with other regional Maternal and Child Health efforts including: • Fresno County Health Improvement Plan (FCHIP)- Pre-3 workgroup • UCSF Pre-Term Birth Initiative
Cultural Relevance	• Educate providers on accessing Black Infant Health programs • Find culturally responsive ways to discuss and teach about functions of the body and personal health • Train providers to understand and learn from biases • Share models of care that are culturally sensitive
Stress and Emotional Support	• Support costs/coordination of a visit to a therapist or a psychologist for all expecting mothers • Develop centering pregnancy program for expecting and new moms to develop relationships with women in similar stages
Access to Health Care	• Provide transportation and childcare • Educate and financially support expansion of nurses and home visitation workforce • Incentivize insurers to engage young women in accessing primary care
Chronic Disease	• Develop training model for preconception planning for diabetics and other women with chronic diseases • Increase access to maternal diabetes specialists • Develop preconception weight loss programs for women at high-risk of poor pregnancy and birth outcomes
Coordination between Services	• Explore coordination opportunities between organizations that work towards similar outcomes • Increase awareness of resources that are currently available to the community • Improve and increase communication between doctors and other social service providers • Include insurance providers and Medi-Cal (case management services) in developing new models for coordinating care
Education and Outreach	• Subsidize diabetes education classes, offer incentives for attendance • Subsidize preconception education on early prenatal care and annual visits, offer incentives for attendance • Encourage resource sharing on referrals among agencies and physicians • Create a resource guide specifically for young women, with social, economic and health care access points • Support faith-based support groups and community mentoring programs • Target High School outreach including: parenting and life skills, health education, prenatal health education, and preconception health • Design and promote parenting classes for fathers • Enroll clients in WIC before pregnancy to ensure health education and nutrition services
Tracking	• Conduct full mortality chart-reviews of all infant mortality cases to more accurately identify systemic and individual causes • Map infant mortality to see distribution by street, neighborhood to find clusters • Conduct hospital chart reviews of poor birth outcomes to identify systemic and individual causes • Formal system for reporting inter-county infant deaths (when patients are transferred out of Fresno County for medical treatment)
Regional Context	• Focus groups among a variety of social and racial groups • Rural focus groups in rural settings: Firebaugh, Kerman, Mendota, Coalinga, etc. • Engage young women in self-management of health concerns with local efforts

Several recommendations appeared most actionable by First 5 Fresno County while others would require First 5 Fresno County to outreach and engage policy or program change from other institutions. Integrating these recommendations, CVHPI identified actions that First 5 Fresno County might take directly, as well as recommendations that First 5 Fresno County might take to the community. The following preliminary recommendations were presented to the First 5 Fresno County Commission on July 15, 2015. The recommendations include actions that First 5 Fresno County might implement directly, as well as recommendations that First 5 Fresno County might call on other Fresno County institutions to implement. First 5 Fresno County should consider the following initiatives:

- Pilot a Centering Pregnancy program for African American women to encourage social support, coordination of services and dissemination of accurate, timely health information prior to and following pregnancy. The pilot could select an initial geographic focus with residents of low educational attainment and economic opportunity.
- Engage African American mothers at high risk for future poor birth outcomes in health and social services. First 5 Fresno County promotes initiatives with the early childhood services network to design and implement a coordinated support system to improve the physical and mental health of this population and prevent future unhealthy pregnancies. The pilot could select an initial geographic focus on residents of neighborhoods with low education attainment, inadequate economic opportunity and environmental challenges.
- Form a blue ribbon panel of health care, education and community leaders to improve the cultural appropriateness of health care for African American women and families.

Additionally, First 5 Fresno County can play a significant role in advocating for funding support and policies mandating the following*:*

- Increased funding for Fresno County Department of Public Health's Black Infant Health Program.
- Coordination and expansion of Infant Mortality and Poor Birth Outcomes chart/documentation review to create a timely, multi-level assessment of each event.
- Develop initiatives to address living conditions and life opportunities for young African American women and families by focusing on jobs, transportation, housing, neighborhood resources, and education.

After presentation of the preliminary recommendations, there were a number of community and stakeholder representatives who spoke with notable clarity and passion about the need for the First 5 Fresno County Commission to act on several of the recommendations. Cognizant of the need for greater broader debate and ongoing public engagement around African American infant mortality, Commission Chair, Supervisor Henry Perea called for a public meeting in South West Fresno to further explore how the Commission might best respond to the infant mortality challenge and these recommendations. This meeting was held, August 11, 2015 at Gaston Middle School. The purpose of the meeting was to introduce finding from the "*Determinants of African American Infant Mortality in Fresno County"* study and initiate a dialogue among community members to reflect on and refine the six action items that were recommended by the members of the community and the study group. The meeting included a summary of the research findings, discussions by key Fresno health and human service professionals about the recommendations, and facilitated small group discussions Figure 7 provides the event agenda.

Figure 7: Agenda- Community and Stakeholder Meeting: African American Infant Mortality

I. Introduction
   a) Emilia Reyes, Executive Director- First 5 Fresno County
   b) Francine Oputa, Ed. D, Fresno State Women's Center

II. Research Findings
   a) President Joseph Castro, Fresno State University
   b) Dr. Lauren Lessard, Research Scientist- Central Valley Health Policy Institute- Fresno State
   c) Dr. Ken Bird, Medical Officer- Fresno County Department of Public Health

III. Panel Discussion on Recommendations: Facilitated by Dr. John Capitman, Executive Director Central Valley Health Policy Institute- Fresno State University
   a) Centering Pregnancy Demonstration- Dr. Gail Newel, Associate Faculty- UCSF
   b) Facilitate support of current mothers among First 5 partners- Jessica Shadrick, Services Director- Central Valley Children's Services Network, Yolanda Randles, West Fresno Family Resource Center
   c) Blue-ribbon panel to promote culturally appropriate service and African American representation in health and human services – Dr. Venise Curry, Executive Director- Communities for a New California
   d) Funding increase for Black Infant Health Program- Rosemary Garrone and Erica Alexander, Maternal and Child Health Programs- Fresno County Department of Public Health
   e) Infant mortality and Poor Birth Outcomes Chart Review- Dr. Aimee Abu Shamsieh, Assistant Clinical Professor-UCSF Fresno Department of Pediatrics
   f) Improve living conditions and life opportunities for young African American women- Sandra Celedon- Castro, Hub Manger- The California Endowment, Building Health Communities

IV. Small Group Discussions

V. Event Conclusion
   a) Supervisor Henry Perea, First 5 Fresno County Chairman

Community and Stakeholders Meeting Analysis:

First 5 Fresno County and CVHPI launched the community dialogue by asking community members to review and respond to the proposed recommendations in light of effectiveness and feasibility. Participants were also asked to offer other suggestions to reduce the burden of African American infant mortality and poor birth outcomes in Fresno County. Specifically, the following questions were asked for each recommendation: 1) Will this recommendation help reduce African-American Infant Mortality; 2) Is this a feasible recommendation; 3) What can we do to help; 4) What else would help reduce African American Infant Mortality in Fresno. We drew on data from 105 community members, stakeholders, and representatives from community based and health and human service organizations. There were 8 facilitated groups with 8-12 participants. Each group was asked to select the recommendations that they thought were most important and then to discuss these recommendations in detail. Each group had a recorder who worked along with the facilitator to co-create further articulation of the recommendations. CVHPI collected 20 pages of field notes. All notes were transcribed and reviewed several times by the researchers to identify themes and trends in discussion.

Community and stakeholder participants offered strong endorsements of all six recommendations. Overall, one central theme emerged: participants focused on the challenges to health and well-being

faced by African American women in Fresno and called for the development of culturally relevant and responsive initiatives to improve their living conditions, life prospects, and health care experiences. Participants saw this goal as the central element of all six recommendations. Three of the preliminary recommendations were viewed as the highest priorities by participants, with the greatest attention devoted to issues and prospects for improving the cultural responsiveness of health care settings experienced by African American women in Fresno:

1. Form a blue ribbon panel of health care, education and community leaders to improve the cultural appropriateness of health care for African American women and families.
2. Pilot a Centering Pregnancy program for African American women to encourage social support, coordination of services and dissemination of accurate, timely health information prior to and following pregnancy.
3. Develop initiatives to address living conditions and life supporting for young African American women and families by focusing on jobs, transportation, housing, neighborhood resources, and education.

These three recommendations were viewed as most essential in terms of feasibility and reducing African American infant mortality. In addition, one or more groups focused on the potential value of the remaining recommendations, particularly the call to coordinate and expand the Infant Mortality and Poor Birth Outcomes chart/documentation review to create a timely, multi-level assessment of each event. Participants offered perspectives on how to move forward with these recommendations.

Recommendation 1: Form a blue ribbon panel of health care, education and community leaders to improve the cultural appropriateness of health care for African American women and families.
In order to ensure the blue ribbon have the best chance of success, community members agreed that true representation, cultural humility, educational pipeline, trust and annual health fairs are crucial elements.

True Representation: overwhelmingly (40) participants agreed that African American health professionals, South West Fresno community leaders and community members should compose the blue ribbon panel. Community members that should be considered part of the panel are mothers that have been part of the Black Infant Health Program and health consumers. Participants insisted that community member leaders must be appointed by the community, and health professionals should be chosen to reflect the whole community.

Cultural Humility/Competency Training: Substantial attention has been paid in recent years to the possibility that unconscious (implicit) bias among health care professionals (e.g., physicians, nurses, front-office staff) contributes to health disparities. At least one half of the participants (40) agreed that health care practitioners and staff should receive cultural humility training. Members feel that practitioners and staff should be more culturally sensitive when interacting with patients of African American background. Some proposed annual cultural humility training specifically for medical providers. Other participants highlighted the need for changes in staff composition, particularly among front-line and non-physician roles. Quality of care was also brought up in relation to the way staff and practitioners make patients feel welcome and respected while in the office A participant recalled two different experiences in the quality of care with the same physician while receiving prenatal treatment one with MediCal and private pay " *with MediCal I waited much longer and was treated poorly by the front office staff, while during my second pregnancy I had private insurance and the same office staff and physician treated me with respect and were much more friendly*" .

Educational Pipeline: Thirty participants agreed that the development of an educational pipeline specific for African American children will potentially increase the cultural appropriateness of health

care in the future. As discussed by participants, the current state of low academic achievement among a large majority of African American students is complex. While the U.S. has long professed that a world-class education is the right of every child, there are still major inequities in the education system that leave African American children with fewer opportunities to receive a quality education throughout the educational pipeline (elementary, secondary, and postsecondary). Participants identified several points throughout the education pipeline where African American students are lost. Knowing these points of loss presents an opportunity to be strategic and deliberate with our investments in African American children and youth. Within that context, participants felt that a strategic partnership between African American communities and schools is crucial to the development of a successful educational pipeline for African American. A mother stated "*Parents need to be part of the process*". Another participant stated *"Families and kids should know what resources are needed and available to them"*

Trust: Trust was viewed by event participants as a necessary component of the relationship between the community and the blue ribbon panel. At least 16 out of eighty participants agreed that the blue ribbon panel should establish a trusting relationship with Southwest Fresno community. Members argued that *"organizations should get "buy-in" from the African American community*". In addition they proposed that *"success stories of mothers participating in the Black Infant Health Program should be included in order to establish trust".* Participants noted that if community members trust the speaker the message is more likely to be received and implemented. Many of the participants stated clearly that the blue ribbon panel's credibility will rely on the trust that they stablish with the community. Participants also disclosed that "*trust is built over time, based on sustained interactions*". In the absence of prior interaction they assert that *"the reliance on commonalities of race, gender, age, religion, or upbringing.*" For these participants "*the blue ribbon panel should reflect the values and perception of Southwest Fresno community*".

Annual Health Fair: A good number (16) of the participants agreed that an annual health fair should be held for the African American and other communities South West Fresno. Participants noted that there should be mobile clinics providing free screenings and health education for pregnant women. The concept was inspired by the "Back to School" event where children receive free screenings and health education.

Recommendation 2: Pilot a Centering Pregnancy program for African American women to encourage social support, coordination of services and dissemination of accurate, timely health information prior to and following pregnancy. Among participants, there is an obvious widespread recognition of the need for innovative models of prenatal care to address our failure to increase and improve prenatal care use and reduce the longstanding racial/ethnic disparities in pregnancy outcomes. The Centering Pregnancy Program is model of group care that integrates the three major components of care: health assessment, education, and support, into a unified program within a group setting. Community members gave full support to this model and felt that location of this program is an essential component for its success. They also viewed this as an opportunity to create a "parent network" to engage in all aspects of prenatal health care including social, psychological and physical

Location: An important consideration for the Centering Pregnancy was its location, according to event participants. Participants (16) concurred that the Centering Pregnancy Program should be located in a central area of South West Fresno. Members felt that close proximity of Centering Pregnancy Program will increase the likelihood of mothers seeking health care. Further, close proximity will encourage and enable mothers who don't have transportation to seek care. For example a participant notes "*a mother is more likely to seek the help of the pilot program if located*

in South West Fresno rather than in Saint Agnes Medical Center for which mothers without a vehicle must take more than one bus."

Parent Network: About twenty four participants viewed the Centering Pregnancy Program as an opportunity to create a "*parent network*" setting where other parents with the same questions and concerns can meet. The program could enable supportive relationships to be built between mothers and families which can progress and continue outside the program setting. These relationships could foster a stronger community where mutual assistance and support exist when struggling with other issues that affect their pregnancy and child development.

Recommendation 3: Develop initiatives to address living conditions and life supporting for young African American women and families by focusing on jobs, transportation, housing, neighborhood resources, and education. While most participants acknowledged that initiatives to improve living conditions and life opportunities for African American women and families would produce improvements in birth outcomes and infant health over an extended time frame, they nonetheless expressed a deep concern and enduring enthusiasm for initiatives with this goal.

Focus on the social determinants of health: Participants responded to the research findings and presentation of policy options by highlighting those multiple factors, from limited employment opportunities and employer legal responsibilities around pregnancy leave to local control of school budgets and land –use decisions and broader environmental concerns that may be associated with adverse birth outcomes. For participants, issues around employment opportunities for both African American women and men in Fresno received the greatest attention, along with concerns around access to workable transportation and the accessibility of basic amenities in South West Fresno and other areas.

Faith-based churches partnership: Sixteen participants agreed that partnerships with faith-based churches should be built. For these members faith-based churches are potential resources through which information could be disseminated to a large number of Southwest Fresno residents.

Businesses partnership: Sixteen participants agreed that partnership with businesses should be built. For these members the participation of businesses could bring more resources to Southwest Fresno.

While community and stakeholder event participants expressed support for other recommendations, there was less attention to these. There was considerable support expressed for reinvigoration of the Black Infant Health Program and new attention to increasing skills for identification of at-risk mothers through home-based and informal child care settings. Among the remaining recommendations, the most enthusiasm was expressed for (Recommendation 5) coordination and expansion of Infant Mortality and Poor Birth Outcomes chart/documentation review to create a timely, multi-level assessment of each event. Both community representatives and stakeholder focused on the potential value in creating systems for better tracking of birth outcomes and more systematic in-depth discovery around the factors associated with adverse outcomes. Subsequent to the August 11 meeting, there has also been an outpouring of maternal and child health feedback on the event and the recommendations, focusing on this recommendation. Also highlighted in ongoing stakeholder response to the event is the need to carefully track the budget for the Black Infant Health Program of the Fresno County Department of Public Health to see if recent supplements to its budgets and increased staffing are adequate to meet the community need.

Recommendations for Addressing African American Infant Mortality

Based on this research, reactions from the First 5 Fresno County Commission and results of the community and stakeholder meeting, four primary recommendations are offered to the First 5 Fresno County Commission for consideration and action.

1. **Blue Ribbon Panel to Improve Care for African Americans:** First 5 Fresno County should take the lead role in the formation and staffing of an inclusive Blue Ribbon Panel of health care, education and community leaders to improve the cultural appropriateness of health care for African American women and families. The new Blue Ribbon Panel should explore the barriers to inclusion of African Americans in key health care front line and patient support role, how to create an effective pipeline from education to professional engagement for African Americans in Fresno, and how to combine cultural competence/humility training and structural changes in health settings to prioritize culturally respectful care. The Blue Ribbon Panel should include elected community representatives and diverse health and human professionals. The First 5 Fresno County Commission should insist on broad institutional support for the Blue Ribbon Panel and for measurable initiatives and outcomes for which health and social services across the county will be held responsible.
2. **Develop and Pilot a Centering Pregnancy program for African American women**. Although the BIH program can make important improvements in African American women's use of appropriate prenatal and postnatal health services, First 5 Fresno County can encourage and provide specific financial backing for the development of a Centering Pregnancy program and/or a Fresno-specific adaptation of this program. The intention of group-visit and wraparound services for women throughout the perinatal period (pre-conception to child age 3) is to ensure access to peer and professional social support, coordination of services and dissemination of accurate, timely health information prior to and following pregnancy. This model has been shown efficacious and cost-effective in other communities. The First 5 Fresno County role can be around supporting the development, siting, and staffing of the program and supporting policy initiatives to ensure adequate reimbursement through public and private insurance. The new program should be sited in a location that is easily accessed and culturally responsive to South West Fresno residents and other Fresno African American communities, recognizing that overcoming transportation and setting barriers is paramount to program success.
3. **Develop initiatives to address living conditions and life supporting for young African American women and families by focusing on jobs, transportation, housing, neighborhood resources, and education**. This recommendation highlights the need for the First 5 Fresno County to become a key participant in addressing the social determinants of health inequalities in Fresno. Multiple community advocacy initiatives, such as the California Endowment-supported Building Healthy Communities and Habitat for Humanity, and multiple public initiatives, such as the development of the South West Fresno community-specific development plan, are focused on improving living conditions and life prospects for African Americans and other low-income people of color in Fresno. First 5 Fresno County can function as a supporter of these initiatives by encouraging the child and family services networks to become involved and by outreaching to families with young children to increase their knowledge and engagement around these programs. The First 5 Fresno County Commission can build upon these existing programs by focusing new attention on the living conditions and life prospects for African American families and others, supporting specific efforts to improve career preparation and human resource policies responsiveness to the needs of young African American families. The Commission can also spearhead efforts to improve the responsiveness of educational setting and new business development efforts to the needs of young African American women and their families.

4. **Support, Promote, and Enhance Public Health Services.** In addition to these efforts, the First 5 Fresno County Commission should consider ongoing monitoring and outreach/enrollment processes of the current expansion of the Fresno County Department of Health Black Infant Health and high-risk pregnancy programming. The Commission should determine on an ongoing basis the extent to which these programs are sufficiently funded to meet community needs. At the same time, the First 5 Fresno County Commission can play a central role in promoting the adoption by Fresno County Department of Public Health of a more robust and inclusive effort to review all cases of adverse birth outcomes and to build a system of feedback and support to maternal and child health providers and others about best practices for improving African American birth outcomes.

Emerging Opportunities to Address Adverse Birth Outcomes in Fresno

Several new initiatives in Fresno, spurred and supported by the First 5 Fresno County attention to African American infant mortality, are bringing together organizations, systems and resources to promote better health and wellbeing outcomes for Fresno mothers and their families. There may be opportunities for First 5 Fresno County to leverage investments in reducing adverse birth outcomes for African Americans by coordinating efforts with these initiatives:

Fresno Preterm Birth Initiative: With support from UCSF Preterm Birth Initiative-California (PTBi-CA), an innovative multi-year research initiative to better understand chronic stressors and protective factors in mothers and babies, particularly among low-income African Americans and Latinas, Fresno has formed a collective impact initiative to cut the rate of preterm birth by one-half over the next 10 years. The Fresno PTBi and UCSF will focus on improving systems of care for pre-conception and pregnancy care and social supports for young women and families county-wide and will also focus key attention on central Fresno neighborhoods with high rates of adverse birth outcomes. A key component of the initiative is community engagement through the formation of mothers' councils in deeply impacted communities and countywide. The initiative is also exploring centering pregnancy models. There may be opportunities for First 5 Fresno County to enrich and extend the community engagement component of PTBi and to partner in the development of centering pregnancy models.

Fresno Community Health Improvement Partnership (FCHIP)—Pre-to-3 Working Group: In order to focus and accelerate efforts to improve population health in Fresno, the Fresno DPH and over 200 participants from diverse Fresno organizations and communities have been developing a county-wide health improvement plan. The Pre-to-3 workgroup with over 20 regular participants is also seeking to improve health and well-being outcomes for mothers and infants, including reduction in adverse birth outcomes. Although the working group and the overall FCHIP has not determined its specific priority objectives and activities, there has been considerable focus on the development of a Best Babies Zone (see: http://www.bestbabieszone.org/MCH-updates) initiative in a rural town, such as Sanger. In this model, a group of women who are at risk for-, or have experienced adverse birth outcomes, work together in their neighborhood to create new life and health opportunities for their peers. First 5 Fresno County could support community engagement and program development in this context.

Strengthening WIC: As in prior research, this study found that WIC participation was associated with less risk for adverse birth outcomes. It is not clear how the nutritional assistance and educational components of WIC contribute to this outcome and more research is needed. In the short run, First 5

Fresno County can build on existing relationships and programs to promote WIC enrollments and to strengthen the capacity of existing WIC educational services to connect women with needed health care and other supports.

CITATIONS

1. Infant Mortality Rate (Deaths per 1,000 Live Births) by Race/Ethnicity. In: Statistics NCfH, ed.2015.
2. Dula A. Racism and Health Care. A Companion to African-American Philosophy:349-59.
3. Austin MP, Leader L. Maternal stress and obstetric and infant outcomes: epidemiological findings and neuroendocrine mechanisms. Australian and New Zealand journal of obstetrics and gynaecology 2000;40:331-7.
4. Hobel CJ. Stress and preterm birth. Clinical obstetrics and gynecology 2004;47:856-80.
5. Roberts EM. Neighborhood social environments and the distribution of low birthweight in Chicago. American journal of public health 1997;87:597-603.
6. Woodruff TJ, Parker JD, Schoendorf KC. Fine particulate matter (PM 2.5) air pollution and selected causes of postneonatal infant mortality in California. Environmental Health Perspectives 2006:786-90.