Incorporating Life Course Theory into the Fetal & Infant Mortality Review:  
Report of Strategies from local FIMR programs

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Mary A. Balluff, MS RD, LMNT; Rebecca Shoemaker, B.S., CHES, IMH-E, Dallas County FIMR; Carol Isaac, RN, BSN, MA, Douglas County Health Department; Michelle Reese, Trecia Matthews Hosein, MPH, Healthy Mothers, Healthy Babies Coalition of Broward County, Inc.; Anne Pedrick, MS, Delaware FIMR: Child Death, Near Death and Stillbirth Commission; Cathy L. Costa, MSW, MPH, Rebecca Dineen, MS, Baltimore City FIMR; Suzzette Celeste Johnson, MSW, MPA, Contra Costa County FIMR; Rosemary Fournier, RN, BSN, Former State FIMR Coordinator, Michigan Department of Community Health; Kelly VanBuskirk, Tulsa FIMR; Emmanuel M. Ngui, DrPH, Zilber School of Public Health; Karen Michalski, MA, MSW, City of Milwaukee Health Department

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Baltimore City
   Cathy L. Costa, MSW, MPH, Program Manager; Rebecca Dineen, MS Assistant Commissioner, MCH

Broward County
   Michelle Reese, Executive Director; Trecia M. Hosein, MPH, Director of Program Services

Contra Costa County
   Suzette Celeste Johnson, MSW, MPA, Public Health Program Manager

Dallas, Texas
   Rebecca Shoemaker, B.S., CHES, IMH-E®, Assistant Program Coordinator

Delaware
   Anne Pedrick, MS, Executive Director

Douglas County
   Carol Isaac, RN, BSN, MA, FIMR/CRT Coordinator, Health Promotion

Michigan
   Rosemary Fournier, RN, BSN, Former State FIMR Coordinator

Milwaukee, Wisconsin
   Emmanuel M. Ngui, DrPH, Karen Michalski, MA, MSW, FIMR and Vital Statistics

Tulsa, Oklahoma
   Kelly VanBuskirk, Health Data and Evaluation Division Manager

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What are some of the community specific plans and strategies that you have accomplished to incorporate LCT into the local community FIMR?

Which of your FIMR actions are related to social justice/reducing health disparities?

How has the FIMR/LCT process changed or informed data abstraction and the maternal interview?

How has your case review team (CRT) included LCT in its reviews and recommendations? Has it changed or expanded the review process?

How has your community action team incorporated LCT into their action agenda? Has this process diffused or strengthened the FIMR team focus?

What is your FIMR program mission statement and has that changed since implementing LCT? If yes, please explain?

Thinking back on your experience, what would be the most important advice that you would give a FIMR program about incorporating LCT into FIMR?

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Introduction

Fetal and Infant Mortality Review (FIMR) is a strategy to examine systems of care and identify gaps. Life course theory (LCT) concepts are a natural complement to the work being done in FIMR case reviews and an outgrowth of local FIMR advocacy for underserved families in the community.

It is well documented that FIMR is an effective, evidence-based perinatal systems intervention that has been shown to significantly improve a community’s performance of public health functions. FIMR programs also enhance the existing perinatal care systems’ goals, components, and communication mechanisms. LCT provides a perspective on health disparities that can inform the FIMR process in local communities.

LCT is a conceptual framework that helps explain health and disease patterns—particularly health disparities—across populations and over time. Instead of focusing on differences in health patterns one disease or condition at a time, LCT points to broad social, economic, and environmental factors as underlying causes of persistent inequalities in health for a wide range of diseases and conditions across population groups. LCT is population focused, and firmly rooted in social determinants and social equity models. Though not often explicitly stated, LCT is also community (or “place”) focused, since social, economic, and environmental patterns are closely linked to community and neighborhood settings. While LCT has developed in large part from efforts to better understand and address disparities in health and disease patterns, it is also applied more universally to understand factors that can help everyone attain optimal health and developmental trajectories over a lifetime and across generations.

The seventh national FIMR conference in June 2012 acknowledged and built upon concepts of health equity and LCT principles. To continue that work, National Fetal and Infant Mortality Review (NFIMR) had a one-time opportunity to award one-year small grants through a request for application process to seven projects to develop successful model FIMR/LCT programs. FIMR projects were required to develop successful, sustainable model FIMR/LCT programs that other FIMR programs may wish to emulate and be available to discuss their work with interested FIMR projects.

This report presents summaries of the nine FIMR programs and general recommendations for incorporating LCT into local FIMR programs. Additional details on these nine FIMR programs are available online at www.NFIMR.org. The nine FIMR sites funded to develop model FIMR/LCT programs are listed in Table 1.

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Background on FIMR programs and LCT activities

Baltimore City, Maryland

The mortality rate for Baltimore babies is among the worst in the nation\(^4\). Up until 2009, the year in which the city launched “B’more Healthy Babies” (BHB) to reduce infant mortality, the city had the fourth-highest infant mortality rate in the United States. Although the rate fell 28 percent from 2009 to 2012, there remain alarming disparities in birth outcomes. Black infants in Baltimore die at a rate nearly four times that of White infants, and Black mothers experience more than twice the rate of fetal deaths experienced by White mothers.

Baltimore City (BC) FIMR and BHB are piloting the Neighborhood Action Team (NAT) process to reach Baltimore neighborhoods with the greatest disparities in maternal and infant health. NATs take action at the neighborhood level to reduce chronic stress and improve services and resources for women, infants, and families. Since late 2011, NATs have developed creative interventions to improve services and resources to families based on BC FIMR recommendations. For example, “Barber Baby Days” targeted men at local barber shops and focused on health messages such as safe sleep. Opportunities for community education were identified by FIMR, and a town hall meeting showing Unnatural Causes, an acclaimed documentary series broadcasted by PBS that reports on findings that link social circumstances at birth and socioeconomic and racial inequities in health, was held. The showing provided the opportunity to educate the community about disparities in infant mortality and strategies to address the issues. Health-promoting literature that is distributed at NAT meetings can also be seen hanging up in local agencies and businesses.

Broward County, Florida

In an effort to engage the community in understanding LCT, in November 2012 Broward County held training that offered a broad perspective on LCT and allowed participants to use the life course board game. The life course game, developed by CityMatCH, is an interactive experience that illustrates key concepts of the life course framework. Participants receive a birth certificate at the start of the game and work their way through the game board. A roll of the dice determines risk or protective factors as life progresses as a healthy or shortened life span. The training provides a framework for the Life Course Symposium held in June 2013. Symposium speakers addressed the urgency of addressing health disparity, and provided a local perspective on the health status of minority woman and their children and its correlation with the demographic, socioeconomic, environmental, and psychosocial profiles of their communities.

In addition, HMHB of Broward County and community partners conducted three focus groups of bereaved parents of varied ethnic backgrounds to discuss questions about how to have a healthy pregnancy, why some babies are born prematurely or die, ways to get resources and information to the community, and the types of resources that would be helpful to grieving families. Subsequent work focused on discussing solutions for moving forward and summarizing the solutions into an action plan to improve outcomes.

Contra Costa County, California

The FIMR program in Contra Costa County used multiple approaches to incorporate LCT into their review process. These activities included discussions with local staff, families, and the community in general.

The FIMR program and the Comprehensive Perinatal Services Programs (CPSP) sponsored an “Increase Resilience and Paternal Involvement” workshop on June 7, 2013. The purpose of the day was to promote health equity and change organizational practices to close the black-white gap in birth outcomes. LCT, history of racism, poverty, and social determinants of health and trauma were outlined and dialogue was encouraged. Resource sharing, group dialogue, and providers created interactive “Theory to Practice Strategies” to increase paternal involvement. Personal commitment statements were developed, submitted, and returned to participants.

The FIMR program was also an essential partner in the East County African American Community Baby Shower, an annual one-day event held in 2011, 2012, and 2013. It focused on ways to encourage breastfeeding and promote health equity among African American families. More than 300 participants, including pregnant women and expectant fathers, attended. Breakout groups were held for teens, grandmothers, women, and men.

The African American Health Empowerment Collaborative (AAHEC) is a community-based collaboration designed to inform, educate, and promote individual and community health of African American residents in East Contra Costa County. Starting in 2012, the FIMR program participated on the AAHEC East County collaborative to promote interventions for fetal and infant mortality from a life course perspective (LCP). In September 2013, FIMR LTC worked with AAHEC to hold the “African American Health Empowerment Expo: A Call to Action!” This free expo had weight-control presentations, information about the Affordable Care Act, healthy cooking demonstrations, educational and fitness workshops, exercise sessions, free lunch, and entertainment. More than 50 community resources and information booths were available to participants who attended the expo.

Other FIMR actions that specifically address health disparities include collaboration between the Contra Costa SIDS Program and Contra Costa Black Infant Health Program; a Contra Costa crisis center that provides grief and bereavement support for FIMR parents; coordination with two of the largest delivery hospitals in the area, including one that serves low-income women; and FIMR LTC trainings on racism, socioeconomic status, and paternal involvement.

Dallas, Texas

Through the guidance of the social ecological model, the Dallas County Case Review Team was able to identify multiple trends and sentinel events that affected FIMR mothers. Increasing care coordination for at-risk and high-risk pregnant women was chosen for its frequency of occurrence, along with its association with PPOR recommendations, to focus towards maternal health and prematurity. To fully understand this concept, recognition of pregnant women who present as at-risk or high-risk was the first step.

The FIMR case review process has revealed that the necessary areas of service and intervention to address high risk factors among women in Dallas County are functioning within their own domain, but are operating in silos and not coordinated to address the needs of the pregnant woman as a whole. Cases reviewed in the pilot period demonstrate that these care coordination gaps are present for the majority of FIMR mothers and most likely, many other mothers in Dallas County.
The recommendations developed in the inaugural year of the FIMR program will be disseminated through traditional and non-traditional means to reach community organizations, key stakeholders, and individuals throughout the community. The primary responsibility will be placed on the Dallas Healthy Start Community Action Network (CAN) to produce a plan of action for the entire community to ensure that planned interventions work from the individual, systems and policy level. Special care was taken to partner with the State of Texas in order to collaborate with established programs and initiate the process of policy change. The Dallas Healthy Start CAN and key stakeholders plan to implement interventions that address the recommendations produced through case review. These interventions will work with existing systems. Possible interventions for the Dallas County community consist of a county-wide re-launch of Text4Baby and engagement of priority populations to promote and increase the visibility of the Healthy Texas Babies “Someday Starts Now” campaign, with special consideration regarding creative exploration and education of the life course theory.

Delaware

The infant mortality rate in Delaware is declining but remained above the national average at 8.3 deaths per 1,000 live births for the period 2005–2009\(^5\). During that period, the infant mortality rate was substantially higher for Black infants, as was the perinatal mortality rate for Black women.

Due to the state’s small size, there are two FIMR case review teams (CRTs), served by one FIMR coordinator and one FIMR social worker. This structure enables FIMR to efficiently take a statewide approach to the case-review process. The CRTs are able to obtain a larger picture of the needs and issues affecting the maternal-child population, which fosters state ownership of the identified issues. Having one coordinator and one social worker facilitates a cohesive team approach to the day-to-day workings of FIMR in the state, and enables timely and streamlined communication between the CRTs.

In September 2012, FIMR staff introduced LCT theory to the CRTs and presented the new maternal interview (MI) summary checklist and case discussion guide forms to team members. For the June and July 2013 CRT meetings, FIMR cases were grouped and prioritized by geographic areas identified as high-risk zones for poor maternal and child health outcomes. The purpose was to help CRTs consider community-level factors that may be contributing to fetal or infant death and/or mothers’ experiences. The MI summary checklist was used to identify risk and protective factors affecting maternal and child health and document suggestions from the team. As more cases using the new MI tools are reviewed with the LCT format, this in-depth, multifactorial approach will provide additional data to analyze and track trends over time among Black and White mothers.

Douglas County

While the overall fetal/infant mortality rate decreased from 10.7 in 1993–1996 to 7.7 in 2008–2011, Black and Hispanic mothers continued to experience higher fetal and infant death rates than their White counterparts\(^6\). The data further show that prematurity-related complications, sudden infant death syndrome/sudden unexpected infant death (SIDS/SUID), and very low birth weight (VLBW) regularly lead all other single causes of the county’s fetal/infant mortality and have been prioritized for further attention.


These social justice/health disparity issues are addressed in Douglas County’s community-wide action plan. The overall goal is to reduce preterm labor by educating the community. One objective is to reach vulnerable communities in the county. Action steps include identifying target communities, with a focus on those groups with the highest preterm labor rates; collecting information about the most effective education strategies from community members and stakeholders; and defining and implementing the strategies.

A second objective is to develop and implement appropriate social marketing avenues targeting vulnerable communities in the county. Action steps include engaging community members and stakeholders in the development of the social marketing campaign, developing an evaluation plan, and implementing the plan.

**Michigan**

In Michigan, a statewide network of FIMR coordinators meets monthly to review cases, share data, and serve as a sounding board for Michigan Department of Community Health (MDCH) infant mortality initiatives. These meetings are also used for in-services and continuing education for FIMR coordinators, and serve to connect the coordinators to other perinatal initiatives in the state. The monthly FIMR network meetings start with an equity exercise that helps raise awareness of unjust differences in health and wellness.

One of the counties with an active FIMR program is looking to invest significant resources into building a larger jail. FIMR data highly correlates involvement with the criminal justice system with poor birth outcomes. The FIMR coordinator and Maternal Child Health (MCH) supervisor have both received training on conducting health impact assessments (HIAs). The FIMR coordinator submitted a proposal to the health officer to request that the public health department dedicate resources to conduct a HIA on the new jail. The plan during the assessment and recommendations calls for a profile of existing conditions, evaluation of potential health impacts, and creation of evidence-based recommendations to mitigate negative health impacts. The FIMR coordinator and the MCH supervisor recognized that the data-gathering stage is critical to the assessment. The data being gathered includes issues such as infant mortality, racial inequities and disparities with incarceration rates, education, poverty, stress, suicide rates, child abuse, staff health, disease transmission, and environmental factors.

FIMR reviews in another Michigan community revealed that mothers delay entry to prenatal care because they feel they were treated poorly in the past when seeking medical care, and believe the poor treatment was due to their race and socioeconomic status. This community’s FIMR obtained a three-year grant from MDCH via the Kellogg-funded ‘Practices to Reduce Infant Mortality through Equity’ (PRIME) project that enabled them to hold a community event aimed at raising awareness among medical professionals and community leaders about the issue of health disparities. Attendees engaged in rich discussion about the role of racism in poor health outcomes for African American mothers.

In 2010, the infant mortality rate for Native American infants in Michigan was 10.5 per 1,000 live births, compared to 7.1 overall for the state. The Intertribal Council in Michigan uses FIMR data for Domain 3 of their federal Healthy Start grant, ‘Accurate Tracking and Analysis of American Indian Data.’ FIMR aids the project by implementing the comprehensive collection of health data for minority populations to accurately assess and monitor health status and health disparities.

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Milwaukee, Wisconsin

Milwaukee FIMR’s first aim was to establish a common understanding of LCT among team members by holding a training session on key LCT concepts and the use of LCT in review and community action work. The second aim was to educate FIMR team members and partners on paternal involvement and engagement (PIE) in LCT and efforts to improve birth outcomes in Milwaukee. This was accomplished by holding two focus groups in the inner city. Themes that emerged from these discussions included the importance of paternal perspectives in birth outcomes discussions, the importance of engaging fathers early in prenatal care and delivery, addressing barriers to early and sustained father involvement, and fathers’ desire to leave a legacy of their existence by having a child.

Milwaukee FIMR’s third aim was to develop adopt LCT and PIE measures to be incorporated and tracked through the FIMR review process. The goal is to use the information from the focus groups and a brief survey to inform the review process and help identify strategies that can be adopted in the maternal interviews and case review process.

Tulsa, Oklahoma

Tulsa County FIMR project’s “Partnership to Improve Newborn Health and Beyond” incorporated LCT principles into an assessment tool that evaluated women’s current health and the impact of contributing social, economic and environmental factors. The purpose of the project was to help women prepare for better birth outcomes and to identify socioeconomic, environmental, and health patterns that could affect them for the rest of their lives, as well as provide empowerment to live healthier lives in the future. The project consisted of distributing surveys that assessed maternal health on multiple determinant levels.

An initial survey was conducted with a follow-up survey at three months. Participants were recruited through three different sources: women who participated in the FIMR home interview process; women whose children were in the NICU at Hillcrest Medical Center; and women enrolled in the Supplemental Nutrition for Women, Infants, and Children (WIC) program at THD. Every recruit at Hillcrest was given the following incentive bag. Participants recruited through the home interview process or the WIC program were give one upon completion of the initial survey. The informational incentive bags included the following:
- Interconceptual health information, keepsake calendar and preemie stickers,
- A bottle of folic acid,
- A travel toothbrush/toothpaste kit,
- Foaming hand sanitizer,
- Fever scan thermometer, and
- An invitation to participate in an online interconceptual well-being assessment

The initial and three month follow-up surveys were collected and inputted into an online survey tool, SurveyMonkey.com. Each data set was then analyzed using IBM’s SPSS (Version 22.0) software program. Results from these analyses are shown in the following report. An independent t-test was conducted to compare the participants calculated body mass index (BMI) category based from the height and weight that was listed in the survey to the self-assessed BMI category they chose in a later survey question. The results depict a community where the majority of the participant population falls under the category of “at risk” based on certain determinants of health.
Recommendations for Incorporating LCT into FIMR

Most of nine funded communities were not initially knowledgeable about LCT and education was provided. These trainings provided the opportunity for CRTs and community action team (CAT) members to rethink their perspective on a family’s situation and consider system issues beyond the period of pregnancy and birth. The seven overall recommendations listed here are based on the experiences reported by these FIMR/LCT programs as they incorporate LCT into their work.

1) **Talk with a broad-based, representative sample of community members to gain their perspectives on factors that increase the risk for poor maternal and infant health outcomes and use this information to prepare for incorporating LCT into your FIMR program processes.**

Baltimore City (BC) used information from Neighborhood Action Team (NAT) focus groups to prepare for LCT implementation. Representative cases based on neighborhood-level profiles were discussed. The community identified their major issues as related to FIMR recommendations. BC FIMR plans to use findings from these NAT focus groups and from CAT focus groups to strengthen systems to more effectively address infant mortality disparities in the city.

Broward County conducted three focus groups with bereaved parents of varied ethnic groups using a specifically tailored questionnaire. Maternal and child health organizations were contacted to refer bereaved families, and a total of 13 individuals participated. Discussion focused on questions about what pregnant women must have or do to have a healthy pregnancy, why some babies are born prematurely or die more often than others, what government/corporate practices can do to better ensure healthy spaces for everyone, how to increase infant mortality awareness, how to get resources and information to the community, and resources helpful to grieving families.

The Milwaukee FIMR team conducted two focus groups aimed at educating team members and partners on the importance of PIE in LCT and ongoing efforts to improve birth outcomes. Participating fathers indicated that they want to be more involved but certain policies and social conditions make it difficult to be as engaged as they would like to be. They identified a number of barriers to involvement in prenatal care, and discussed dimensions of involvement not frequently addressed, such as adapting to new roles and tasks that come with pregnancy. Milwaukee FIMR plans to use this information to identify strategies that can be adopted in the maternal interview and case review processes.

2) **The depth of the review is expanded when it includes information about the mother’s and family’s life experiences. This expansion of the maternal interview process provides a better understanding of the mother’s and father’s life history and current circumstances that may impact maternal and child health outcomes.**

In Delaware, the maternal interview now includes components of LCT. As per protocol in Delaware, the mother and father’s history from Child Protective Service and criminal records are obtained. Mothers discuss their life experiences before and after the pregnancy.

Broward County’s maternal interview tool was revised to reflect the LCP and capture social protective and risk factors in each mother’s life. These questions range from early childhood dietary practices, health practices and education throughout the lifespan, stressors, childhood poverty, sexuality, racism, and support systems present or absent throughout their lives.

Douglas County FIMR focused its work on LCT protective factors in infant mortality. The team convened a stakeholder group that did a literature search to identify protective factors. The group
determined how many of the protective factors were being addressed by existing MI questions, and then added new questions to capture any protective factors not already addressed.

Milwaukee FIMR has begun reviewing and revising their MI to identify existing life course measures and adapt or add new measures. Examples of these new measures include questions about the pregnancy outcomes of the maternal grandmother, as well as the conditions of the neighborhood where the mother grew up and whether she stills lives in this neighborhood. In addition, the mother is asked to rate environmental elements of her current neighborhood. Questions about paternal involvement and engagement have also been added to the revised questionnaire.

In Michigan, maternal interviewers are now more in tune with probing the childhood experiences of mothers and fathers, including their childhood environment and any encounters with systems of care where they felt they may have been treated differently based on their race or socioeconomic status.

3) **Incorporate LCT into the case review process to account for social, economic, and environmental factors across the life span that may underlie persistent inequalities in health.**

**Modify the CRT forms to address the protective and risk factors that affect maternal and infant outcomes.**

Because Milwaukee’s FIMR team has become more informed about LCT, data abstraction and case review are becoming more inclusive of LCT including paternal involvement and engagement issues. Ensuring that available information regarding family history, education, life stressors, and support is included in the review of a case has become an essential part of data abstraction to inform the case review process and recommendations. Case review deliberations now include attention to maternal health, the family’s social situation, their neighborhood, crime statistics for that area, economic and personal stressors, paternal involvement, and other factors that play a part in the life and death of the infant. Team members are more comfortable with the LCT concepts and their ability to discuss these concepts with colleagues on the CRT. The process has also pointed to areas where the team needs to identify and collect additional LCT data elements.

Michigan FIMR CRTs have begun to incorporate information about past events in the mother’s and her extended family’s life through medical, social, and child welfare history. One Michigan FIMR director has started to use LCT concepts in their community’s annual FIMR report. This same Michigan team is also using the Life Course 12-Point Plan to frame its recommendations and the actions taken by the CAT.

Baltimore City’s FIMR program has implemented a new case form that enables it to better present the abstracted data that relates to LCT. This form is now standard for BC FIMR case reviews. BC FIMR is also using the BASINET (Baby Abstracting System and Information NETwork) database to track whether the CRT determined that life course factors played a role in the mother’s health and fetal or infant death. BC FIMR will aggregate that data over time to inform their recommendations and report to the community on trends impacting fetal and infant mortality. Finally, BC FIMR has changed its case selection criteria to highlight cases that present significant psychosocial/systems issues in areas such as mental health, substance abuse, history of abuse, and poverty.

Tulsa FIMR’s assessment tool was used to determine the identified mother’s current interconceptual health status and risk factors. Depending on the risk factors identified the mother was provided health specific information and a referral to a local community resource that is skilled in working with families to turn that specific risk factor into a protective factor. Three or more reported risk factors resulted in an automatic
referral to Healthy Start, Tulsa Health Department’s MCH Initiative Outreach Worker or another community agency able to provide more intensive case management for the family.

4) During case reviews, consider the issue of life course from the perspectives of fairness and equity.

Through its FIMR reviews one Michigan community identified that mothers delay entry to prenatal care because they feel they have been treated poorly in the past when seeking medical care due to their race and socioeconomic status. This county ranks fifth-worst in the state for African American infant mortality. A three-year grant from MDCH via the Kellogg-funded PRIME project enabled them to hold a community event aimed at raising awareness among medical professionals and community leaders about the issue of health disparities and the role of racism in poor health outcomes for African American mothers.

Milwaukee FIMR has also been looking at life course issues through the lenses of fairness and equity. Its review process now includes additional discussions at the end of each case that examine team members’ perceptions about whether the mother was treated fairly or unfairly. As a result, team members plan to integrate more resilience and protective factors into the review and are in the process of developing a list of protective factors for the CRT to consider. These factors will be presented at all meetings, for all cases.

Broward County’s FIMR process has incorporated the concept of social justice into the review process to identify factors such as barriers to service and institutional racism that affect health outcomes. The goal is to ensure that the CRT recognizes these elements during review to move forward action through the Broward County Children’s Strategic Plan under its Black Infant Health Practice Initiative and identified priorities around the reduction of racial and health disparities.

The Douglas County Health Department’s work toward improving the community’s health has had a strong health equity focus. Its efforts have led to meaningful impact in such areas as increasing healthy and affordable food options in neighborhood stores; mapping routes for families to walk or ride a bike to school, the libraries, and community centers; and establishing thriving community and school gardens.

5) Expand membership in CRTs and CATs to include non-traditional service system members such as mental health professionals, faith-based groups, and criminal justice systems personnel. These members can add new perspectives on social factors that may affect maternal and infant health outcomes and offer additional resources and services to promote positive health outcomes.

The Broward County FIMR CRT reviews its membership to ensure that appropriate stakeholders are involved and engaged to help identify gaps in services and develop a plan to enhance the service delivery process as local trends change. The FIMR CRT was a majority of health professionals and identified a need for a cross section of members. They recruited a mental health professional, Broward Sheriff’s Office Child Protective Team staff, a substance-abuse counselor, and a faith-based member who provided a broad range of representatives that provide services and resources for the women, children, and families they serve.

Contra Costa believes it is necessary for FIMR programs to align with traditional and non-traditional partners. Historically, many non-traditional partners such as the coroner’s office and school districts do not envision fetal and infant mortality upstream interventions related to their own work. However, through presentations about FIMR LCT, a number of opportunities to work with non-traditional partners have emerged. One such partnership is an alignment of prenatal care and early childhood development
providers. The FIMR program has been asked to collaborate about the issues of racism that infuses the provision and quality of care. In addition, the FIMR program has an opportunity to deepen its work in the faith-based and paternal involvement communities through resource and program development and by linking these institutions with traditional perinatal partners.

Baltimore City FIMR has taken steps to revitalize its team membership. The CRT analyzed gaps in membership and added new team members, including faith-based community leaders, a consumer voice, and health equity leaders.

6) **Educate communities about the role of fathers in maternal and child health outcomes and the importance of paternal involvement in prenatal, birth, and post-delivery care.** Work with mothers and fathers to identify and address barriers to father involvement. Include information about the father’s life course and needs in parent interviews and case reviews to gain a better understanding of maternal risk and protective factors and level of support to mother.

In Contra Costa, its FIMR program and the CPSP sponsored the “Increase Resilience and Paternal Involvement” workshop on June 7, 2013. While the primary aim was to promote health equity and change organizational practices to close the black/white gap in birth outcomes, the issue of paternal involvement also was highlighted. A panel of diverse fathers presented the opportunities and challenges of men and identified successful interventions. Providers developed interactive “theory to practice strategies” to increase paternal involvement, and participants created personal commitment statements. As part of this work, a goal is to expand paternal involvement by augmenting existing “new pregnant client” assessment tools, individualized care plans, educational interventions, and referrals to resources. In addition, FIMR LCT’s content has been integrated into the local perinatal systems of care. Providers are aware of the FIMR program, know how to refer clients, and understand FIMR’s process of linking clients with grief and bereavement services. The perinatal providers are now capturing paternal involvement through assessment questions, distributing “father-friendly” brochures, and encouraging fathers to attend prenatal care visits. Public health nurses are also integrating paternal involvement into their work.

Through its bereavement support services and working one on one with bereaved fathers, Broward County FIMR learned that fathers often feel they are left out and their grief is overlooked. Fathers said they want to be acknowledged and treated equally when something this tragic occurs. A new paternal interview tool was created to engage the fathers in the interview process. FIMR has also added relevant LCT questions to its maternal/paternal interview tool, and is pursuing new ways to improve the maternal/paternal interview rate, including conducting home visits to those who cannot be reached by telephone.

As part of its work to incorporate LCT into its maternal interview process, Milwaukee FIMR has added questions on paternal involvement and engagement to the revised questionnaire. Mothers are asked how satisfied they are with the financial and emotional support they received from the father both during and after pregnancy, and are invited to describe the level of involvement of their child’s father before and after the baby was born. Case review is also becoming more inclusive of the LCT and paternal involvement and engagement issues. FIMR has added more life course and paternal involvement questions and deliberations to the review process and to its recommendation. They are also having more conversations about how fathers are involved or could be involved in the family. As a result of incorporating LCT into the review process and recommendations, some of the providers have become more aware of the importance of including fathers during prenatal visits or labor and delivery.
7) Drawing on LCT principles, work to improve women’s health and quality of care across the lifespan, not just during the prenatal period.

Milwaukee’s most recent set of FIMR recommendations asks for improvement in women’s health and the quality of care across the lifespan, not just during the prenatal period. Another recommendation places emphasis on improving reproductive health services in the city, beginning with girls and boys. This recommendation recognizes the importance of intendedness, preconception care, contraception, and quality inter-conceptual care.

In Broward County, LCT strengthens the FIMR process by allowing for the collection of more qualitative data that documents the individual’s protective and risk factors, not just at the time of a fetal/infant death but throughout the mother and father’s life. CRT members who have volunteered their time to review and deliberate on the cases abstracted are becoming more sensitive to the individual’s life issues as a whole that may have contributed to the loss.

A Michigan FIMR has addressed LCT concepts in the community’s annual FIMR report. An excerpt from the report states:

The Life Course Perspective (LCP) looks at the bigger picture and not the narrow view of nine months of pregnancy. The LCP involves expanding our focus to look at a person’s life as a continuum, with each stage affecting the next. Throughout a person’s life, he or she is exposed to risk factors (e.g., tobacco, alcohol, drugs, lack of education, no transportation, poor nutrition, poverty, domestic violence and stress) and to protective factors (e.g., education, social support, access to care, food, transportation). Some people have more risk factors than protective factors, while others have more protective factors than risk factors. The more protective factors a person is exposed to across his or her life span, the better his or her health and well-being, while the opposite is true for those exposed to more risk factors across their life span. We need to build on the protective factors and lessen the effects of the risk factors for all women, children and families if we are truly to see any changes in infant mortality and especially a decrease in the disparities in infant mortality.

Summary

In summary, the nine FIMR programs successfully incorporated LCT into their processes. Generally, the first step was educating their colleagues and community members about LCT. Many programs held community meetings to obtain suggestions for incorporating LCT into the existing FIMR program. These discussions resulted in expansion of the CRT to include non-traditional members. As a result of broadening the perspective of the FIMR members, they had an in-depth appreciation of the parents’ situation and possible improvements in the care delivery system. Discussion with colleagues and community members also revealed that father’s involvement is one component of maternal protective factors. Finally, the view of health services across the life span was identified as an ultimate goal for mothers and fathers.
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**Table 1**

**FIMR Program Listing**
Appendix 1 - Background on FIMR Projects

Baltimore FIMR

Baltimore City (BC) is the largest city in Maryland and is located in the central area of the state. With approximately 620,000 residents, Baltimore’s population has decreased by one third since its peak in 1950. Previously a major manufacturing center and still a major seaport, Baltimore has shifted to a service-oriented economy, and more than one-fifth of residents have incomes below the federal poverty line. There are approximately 9,000 births each year in BC, and about 60 percent of these births are to women receiving Medicaid.

According to the 2010 U.S. Census, 64% of Baltimore’s population is Black, 30% is White, 4% is Latino, 2% is Asian, and 0.4% is American Indian and Alaska Native; the Black percentage is substantially higher than it is in the United States as a whole (12.1%). Historically, Black people and other people of color have lived in racially segregated communities with poor schools, limited employment opportunities, and deteriorating housing conditions. The Upton/Druid Heights neighborhood is the most segregated in the city, with approximately 99% of its residents Black, and the Patterson Park North & East neighborhood is the most diverse in the city, with a growing population of Latino, Nepali, and other immigrants in addition to long-time Black and White residents1.

The Baltimore City Health Department (BCHD), the lead agency for BC FIMR, provides services to all Baltimore residents regardless of race, gender, age, sex, or ethnicity. Implementation plans for different programs and populations are based largely on data drawn from the neighborhood health profiles, a comprehensive series of reports detailing the health and wellness of each of Baltimore’s 55 community statistical areas. These profiles allow BCHD to plan strategically for different communities and collaborate meaningfully with partners doing complementary work in these areas. In 2009, BCHD formed a collaboration with the Family League of Baltimore City, Inc. to launch “B’more Healthy Babies,” the city’s 10-year plan for reducing infant mortality. BHB has attracted more than $5 million in funding from private and public sources, implemented several mass media campaigns, and built coalitions with more than 100 partners that have launched interventions around safe sleep, home visiting, preventing substance-exposed pregnancies, teen pregnancy prevention, obesity, health literacy, equity, and trauma-informed care.

Baltimore, with its poverty, high crime, and poor schools, still has several assets. Baltimore is a city of more than 100 neighborhoods, some with rich history and strong neighborhood associations, such as Little Italy and Greektown, and old cultural districts in Upton/Druid Heights and Mount Vernon. Baltimore is home to several universities and two world-renowned medical teaching facilities, Johns Hopkins Hospital and the University of Maryland Medical Center, as well as five additional birthing hospitals, including two Level III hospitals. Baltimore also houses 10 federal-qualified health centers and several sliding-fee clinics that provide good medical care. The city’s two major sports franchises, the Ravens and Orioles, are unifying forces in the city. Community farms and farmer’s markets are now popping up in the city and complement the historic markets on the West and East Sides that sell produce from horse-drawn carts.

Why Baltimore?

Baltimore babies die at a rate that is among the worst in the nation. Up until 2009, the year in which the city launched BHB in order to reduce infant mortality, it had the fourth-highest infant mortality rate in the United States. Although the rate has since fallen by 28%—from 13.5 deaths per 1,000 live births in 2009 to 9.7 in 2012—there remain alarming disparities in birth outcomes. Black infants in
Baltimore die at a rate close to four times that of White infants, and Black mothers experience more than twice the rate of fetal deaths experienced by White mothers.ii

While congenital anomalies are the leading cause of infant mortality in the United States, preterm birth and low birth weight are the leading cause in Baltimore. Black women in Baltimore during 2010–2011 gave birth to nearly twice the percentage of babies born preterm and with low birth weight than did White women: 12.1% of all births were preterm, with 14.1% for Black women and 8.5% for White women, and 11.6% of all births were low birth weight, with 14.1% for Black women, and 6.9% for White women. Black women had a higher prevalence of obesity, diabetes, and hypertension; only smoking was more prevalent among White women. A higher percentage of Black women entered prenatal care late (>24 weeks) or did not enter prenatal care at all, a major risk factor for poor birth outcomes. Close to half of all Black women—compared with less than a third of White women—had experienced a previous loss (an infant or fetal death or spontaneous or therapeutic abortion), which is indicative of poorer maternal health and potentially higher rates of unintended pregnancy.

History of FIMR in Baltimore

BC FIMR is one of 25 FIMR projects in Maryland and began in 1993. In the mid-2000s, responsibility for BC FIMR shifted to BCHD, where it operated as a single-tiered system (CRT only) until the 2009 launch of BHB. Its BHB is to ensure that babies are born full term, at a healthy weight, and ready to thrive in healthy families. BHB’s steering committee, which is anchored in the Baltimore City mayor’s office and its core implementation team, is operated through BCHD and the Family League of Baltimore City, Inc., and now serves as BC FIMR’s CAT. BHB takes action at the policy, service, community, and family levels to effect change in the city. Examples of multi-level actions include: 1) launching a “sleep safe” media campaign, instituting hospital policies for safe sleep education, and training more than 3,400 providers on safe sleeping practices; 2) launching the “U Choose” teen pregnancy prevention media campaign combined with aggressive strategies to change reimbursement policies for long-acting reversible contraceptives and to train providers on insertion; and 3) developing a system for single point of entry to home visiting to ensure that the highest risk women receive services.

BC FIMR and BHB are piloting the NAT process to reach Baltimore neighborhoods with the greatest disparities in maternal and infant health. NATs take action at the community level to reduce chronic stress and improve services and resources for women, infants, and families. Since late 2011, the NATs have developed creative interventions to improve services and resources to families based on BC FIMR recommendations.

Broward County FIMR

Broward County is located along the southeastern coastline of Florida, the second-largest county in the state and the 16th-largest in the United States. Encompassing 1,209 square miles and 31 municipalities, Broward County is home to 1.748 million people, or 10 percent of Florida’s population. In 2009, Broward was the third most racially/ethnically diverse Florida County with 31.8% of Broward residents foreign-born, compared with 19% for the state.iii Sixty-three percent of residents are white, 26.7% Black or African American, 3.2% Asian, and 25.1% Hispanic or Latino (of any race) (U.S. Census 2010). Children make up almost 25% of the county’s population with 433,734 children ages birth to 19, and 21,075 babies born in 2011.iv
Poverty impacts many families in Broward County, where the cost of living is the third-highest in the state. The U.S. Census American Fact Finder (2008–2010) indicates that 13.4% of Broward families with related children less than 18 years old lived in poverty, rising to 27.2% if they had a female head of the household and to 29.1% if they had any children under the age of five. The continuing U.S. economic recession disproportionately impacted Florida. Broward’s June 2012 unemployment rate was 7.3%, up from May. In May 2012, there were 3,249 Broward families receiving Temporary Assistance to Needy Families (TANF), 226,001 Medicaid clients, and 154,411 households receiving food stamps. Broward County’s high school graduation rate is 76.5%, but only 57.4% for Black males. HIV/AIDS poses a particular danger to mothers and newborns. In May 2012, there were 16,491 people in Broward living with HIV, including 4,815 females. In 2008 the Broward Sheriff’s Office Child Protective Unit received 15,000 child abuse reports, a 17% increase from 2007. Child maltreatment is rampant in Broward County, where verified child abuse/neglect cases increased from 2,875 in 2009 to 3,206 in 2011 (Broward Sheriff’s Office).

Broward County has a wealth of assets in public and private health care services with clinics, Medicaid physicians and eight delivering hospitals, yet a shrinking pool of obstetricians. There are hundreds of social service/human service organizations and government programs targeting low-income, culturally diverse families, but the system can be daunting for those most in need. Another asset is the county-wide coordination of the system of care for children and families by the Children’s Services Council of Broward, Broward Healthy Start Coalition, Broward County Community Partnership Division and a wide-range of expert providers.

Why Broward County?

Broward County, Florida continues to struggle with racial/ethnic disparities in health and social outcomes in maternal and infant health. The Florida Department of Health (DOH) indicates that Black babies in Broward County are still twice as likely to die before their first birthday as White babies. From 2008–2010, Black infants and other non-whites died at a rate of 8.5 per 1,000 live births versus 4.4 deaths for white infants. In 2012 provisional data alone, 7.5 babies died before their first birthday per 1,000 live births and Black infants died at a rate of 11.9 per 1,000 live births, a continuing unacceptable disparity. Over nine percent of Broward babies were born at a low birth weight (under 5 pounds) with 13.3% born prematurely (<37 weeks gestation), both serious health risks for newborns.

The disparity worsens for SIDS with the rate for Black infants at 39.0 per 100,000 live births versus 11.3 for White infants. Sudden Unexplained Infant Deaths (SUIDs) also have an unacceptable disparity at the rate of 95.7 per 100,000 births for Blacks and 36.6 for Whites. The 2012 Broward FIMR reported 14 infant sleep-related deaths, down from 17 in 2011. Of those, 86% were not in an infant bed, 79% were not sleeping on their back, 50% were bed-sharing, and 43% did not have a crib in the home. The report also shows 27 Black fetal/infant deaths in high-risk zip codes. There is a great need to help families and providers learn about the risks of SUID and safe sleep practices, and provide safe sleeping environments to save the lives of babies.

7.4% of Black mothers had no prenatal care. The 2012 Broward FIMR report indicates 33% of mothers whose babies died had multiple psychosocial stressors, risks that can lead to depression and poor family functioning.

History of FIMR in Broward County
Broward County has a long history implementing FIMR. In 1993, HMHB of Broward was selected by NFIRM/ACOG and the Robert Wood Johnson Foundation to institute FIMR as a national site. The Florida Department of Health selected Broward County as a FIMR project in 1994. For the past 19 years, Broward FIMR has successfully utilized the two-tiered system of review and action with HMHB of Broward carrying out the abstractions and data collection/summary and case review, and partnering with the Broward Healthy Start Coalition to implement community actions. The FIMR CRT is a subcommittee of the Broward County Medical Association’s public health committee, currently including a perinatologist, obstetrician, pediatrician, medical examiner, nurses, mental health counselor, and social workers. In 2012 FIMR CRT reviewed 57 abstracted cases, an increase from 45 cases reviewed in 2011 based on the perinatal periods of risk framework.

The CRT’s recommendations for change are implemented by the community action group (CAG) at Broward Healthy Start. Since inception, HMHB of Broward, maternal/child health providers, social service agencies, and community advocates—together and individually—have implemented 32 community actions, including public awareness campaigns on nutrition/obesity, early prenatal care, preterm labor, stress reduction, SIDS/Safe Infant Sleep, and professional education on maternal infections and Group B Strep. Actions specifically addressing health disparities have included a public forum on Black infant mortality, participating in the state Black Infant Health Practice Initiative led by Broward Healthy Start, the Pediatric Autopsy Project (2003–2007), the Fatherhood Mentorship Program targeting Black fathers, “Bee Safe”-Safe Sleep Summit, and recent training to fire/police first responders on safe sleep.

Each has contributed to reducing the county’s overall rate of infant mortality from 10.1 in 1993 to 6.1 in 2011. The provisional 2012 infant mortality data suggest an increase in infant mortality at 7.5. For the past three years, Broward FIMR has focused on the efforts of reducing infant sleep related deaths in the county. SUID are deaths that are sudden and unexpected and whose manner and cause are not immediately obvious prior to investigation. These include deaths from suffocation, strangulation, and entrapment. There were a total of 14 infant deaths in 2012, a decrease from 17 deaths in 2011, in which the primary cause of death was sleep related, or the child was in an unsafe sleep environment or sleep position at the time of death. Broward FIMR has worked closely with the medical examiner to ensure consistent and thorough scene investigations by recommending that all Broward County investigators and first responders adopt a scene investigation tool such as the Sudden Unexplained Infant Death Initiative Reporting Form.

HMHB of Broward has extensive experience in planning and implementing the FIMR process in diverse settings, including: 1) having a Florida FIMR technical assistance contractor provide training/support to 17 sites, including two state-wide conferences; 2) helping to adapt the FIMR process for the Florida maternal mortality review; 3) utilizing the FIMR process for the pediatric autopsy project, a county collaborative; and 4) implementing FIMR-HIV for one year. FIMR partners, Broward Healthy Start Coalition, the Florida Department of Health, and the Broward County Medical Association have expressed support and interest in using FIMR to improve outcomes for Broward’s mothers and babies.

Dallas FIMR

Fetal and infant mortality rates in Dallas County vary considerably by race and ethnicity, with Black non-Hispanic mortality rates almost uniformly higher. Health disparities (unequal health outcomes often due to the unequal access to and receipt of quality health care) exist and in many fields of health care. According to the 2010 U.S. Census Bureau estimates, Dallas County has a population of 2,368,139, and the per-capita income was $23,920. The Hispanic population is increasingly the fastest, growing from
29.9% of the population in 2000 to 39.1% in 2008. The Black non-Hispanic population remained steady at 20% over this same time period. Approximately half of the population of Dallas County has a household income of between $25,000 and $75,000, while 22.8% of households earn less than $25,000, and 17.0% of individuals live below the poverty line.

Why Dallas?

The Dallas County infant mortality rate appears to be trending upward. In 2006, the infant mortality rate in Dallas County was 7.6 deaths per 1,000 live births which exceeded that for both Texas and the U.S. The birth rate in Dallas County is also high at 87.5 births per 1,000 (women 15-44 years) which exceeds the rate for Texas and the U.S. Of the live births, 1.7% were considered very low birth weight which translates to approximately 745 very low birth weight (VLBW) babies born in Dallas County in 2006. Black, non-Hispanic women are three times more likely to contribute to VLBW births than non-Hispanic white or Hispanic women. PPOR Phase 2 analysis sought to identify contributing factors in VLBW births as VLBW is one of the strongest predictors of infant mortality. Factors associated with VLBW are inextricably linked to the health of the mother prior to conception.

Key findings from the PPOR Phase 2 Analysis for Dallas County included the following:

1. Eighty six percent (86%) of the excess infant mortality in Dallas County is due to the proportion of births that are very low birth weight.
2. Significant predictors of very low birth-weight in Dallas County include black maternal race/ethnicity, prenatal care (both inadequate and adequate +), previous preterm birth, previous infant death and the presence of maternal chronic health conditions.
3. Focused initiatives on preconception health of the mother could have the greatest impact on reducing excess mortality in Dallas County

History of FIMR in Dallas

The Dallas Healthy Start Program of the Parkland Health and Hospital System has been engaging a coalition of health care providers and community members in a multiple year endeavor to implement the Perinatal Periods of Risk (PPOR) and Fetal Infant Mortality Review (since Dec. 2011) approach to further its understanding of the social determinants of poor pregnancy outcomes and to facilitate the development and implementation of interventions to improve perinatal health in Dallas County.

As a new initiative, the Dallas County FIMR program finds itself at a great advantage to incorporate innovative LCT principles into its local FIMR methodology. Dallas County FIMR firmly believes that a combination of utilizing current MCHB LCT framework and learning from the past and present experiences of other programs will serve as a valuable guide for theory implementation in the
Douglas County FIMR

Douglas County is Nebraska’s most populous county, home to over one fourth of the state’s residents. In 2012, the county’s population was 531,265, with Whites making up 71.5% of the population, Blacks 11.7%, Asians 3.0%, American Indian and Alaska Native 1.2%, and Native Hawaiian and other Pacific Islander 0.1%. In addition, persons of Hispanic or Latino origin represented 11.6% of the population. In Douglas County, the fetal/infant mortality rate decreased from 10.7 in 1996 to 7.7 in 2008–2011. That same period, Black mothers continued to experience higher death rates than White mothers, especially in maternal and infant health period, at a rate of 13.5 compared with 6.7 respectively, nearly a twofold difference. Population-based data showed that cases where mothers had experienced fetal or infant death from prematurity-related complications, specifically those with a VLBW of 1,500 grams or less, and/or SIDS/SUIDs, led all other single causes of the county’s fetal/infant mortality and were therefore prioritized for further review.
The majority of FIMR referrals take place in Omaha, Nebraska’s largest city. Four health care systems are located in Omaha, including two teaching hospitals/medical schools located in diverse, lower income areas. Omaha is fortunate to have a surplus of physicians, and many of their hospital-affiliated physician clinics have implemented a medical home concept into their clinic settings. In addition, 2013 County Health Rankings and Roadmaps data lists Douglas County as eighth in the areas of clinical care and physical environment out of 79 counties in Nebraska.

Omaha is also rich in public-private partnerships, many of them aimed at improving the overall health of the Omaha community. One such organization is Live Well Omaha (LWO), a community health collaborative comprised of over 45 public and private organizations with a goal of making Omaha one of the healthiest cities in the nation. Collaborative health efforts facilitated by LWO include 1) Douglas County Putting Prevention to Work, a community-wide initiative that focuses on obesity prevention by creating an environment that supports people in eating healthy foods and being physically active; 2) Activate Omaha, a community effort that empowers people to incorporate activity into daily living; 3) Live Well Omaha Kids, a coalition of organizations whose focus is to systematically address the childhood obesity epidemic; and, 4) Pioneering Healthy Communities, a YMCA initiative aimed at raising the visibility of lifestyle health issues.

The Douglas County Health Department has also been a primary player in improving the community’s health. This effort has been supported by both the CDC (Communities Putting Prevention to Work, Community Transformation Grant) and the Robert Wood Johnson Foundation (Active Living by Design, Healthy Kids Healthy Communities). This work has a strong health equity focus and has led to meaningful impact in areas ranging from:
• Increasing healthy (and affordable) food options in neighborhood stores
• Mapping routes for families to walk or ride a bike to school, the libraries, and community centers
• Establishing thriving community and school gardens
• Ensuring after school programs include physical activity and eliminate sugar-sweetened beverages

In addition, the Douglas County Health Department was one of only six organizations to receive training and funding from the CDC to conduct HIAs, which help decision-makers in areas such as transportation, housing, land use, and parks better understand how their choices are likely to impact health as well as environmental justice. HIAs are a tool for bringing both the scientific research and community perspective into the dialogue around decisions to achieve better health outcomes.

**Why Douglas County?**

Data on 2011 maternal and infant health indicators in Douglas County include the following:
1. Preterm births (<37 weeks): 9.5% in Douglas County compared with 9.1% in Nebraska
2. VLBW births (<1,500 g.): 1.1% in Douglas County and 1.5% nationally
3. Mothers who received inadequate prenatal care (adequate prenatal care defined as beginning prenatal care by the end of the first trimester and having at least 13 visits for a full-term pregnancy): 5.3% in Douglas County compared with 6.4% nationally
4. Infant mortality: 5.3% in Douglas County compared with 6.4% nationally \(^vi\)
5. Mothers who received early prenatal care in first trimester: 76.3% in Douglas County compared with 75.1% nationally

2011 data that reveals health disparities in the community include the following (Deaths per 1,000 Live Births):
1. Infant mortality rate by race/ethnicity: Hispanic (4.5), Black, Non-Hispanic (14.9), White, Non-Hispanic (4.5).
2. Babies with low birth weight by race/ethnicity: Hispanic (8), Black, Non-Hispanic (12.6), White, Non-Hispanic (6.3).
3. Mothers who received inadequate prenatal care by race/ethnicity: Hispanic (21.5), Black, Non-Hispanic (20.5), White, Non-Hispanic (7.1).
4. Preterm births by race/ethnicity: Hispanic (9.1), Black, Non-Hispanic (14.2), White, Non-Hispanic (9.4).

**History of FIMR in Douglas County**

In 1999, national statistics showed that Nebraska had the seventh-highest infant mortality rate in the nation. A small group of stakeholders, including the Douglas County Health Department (DCHD), Omaha Healthy Start (OHS), and CityMatCH, developed an action plan to address the high infant mortality rate and corresponding health disparities. Over time, this stakeholder group grew into a 40-member agency collaboration known as the Baby Blossoms Collaborative (BBC) with oversight provided by DCHD. In 2006, OHS partnered with DCHD to implement the FIMR process in Douglas County. FIMR was strategically implemented with both the maternal interview and medical record extraction incorporated as part of the data collection process. A 25-member CRT was convened, that, with the assistance of program staff, developed a case review process. Currently, the CRT meets 10 times per year with a goal of reviewing 40 cases per year. CRT recommendations are presented to the CAT every two years. The CAT then prioritizes the recommendations and crafts an extensive two-year community action plan. Community action and systems changes that have resulted from FIMR in our community include:
1) Culturally competent, preconception health flipbook entitled *Now and Beyond–Good Health and then a Healthy Baby* aimed at increasing the interconception period between pregnancies
2) Community resource guide for smoking cessation for pregnancy women
3) Community resource guide for preterm labor signs and symptoms
4) Safe sleep initiative entitled *Nothing but Baby*, which provides education and training sessions for health care professionals, child care providers, and the community at large

The BBC also brought the six healthcare systems together to develop an infant safe sleep policy template, which continues to be used today. FIMR is currently addressing health disparities in our community via record review (26% of record reviews are completed on Black infants, with the Black population representing 11.7% of the total population in Douglas County). In addition, three new CRT members representing either the Nebraska Office of Health Disparities & Health Equity or the
Contra Costa County is located in the San Francisco Bay Area of Northern California. The county covers 806 square miles and includes 19 incorporated cities and numerous unincorporated areas.\textsuperscript{vii} Contra Costa County had a population of 1,049,025\textsuperscript{vii} in 2010, a growth of 10.6\% since 2000.\textsuperscript{x} The county’s population is increasingly racially and ethnically diverse. Between 2000 and 2010, the percentage of White residents fell from 58.2\% to 47.8\%\textsuperscript{,x} while the percentage of other racial/ethnic groups grew, i.e. Hispanics 17.8\% to 24.5\%, Asians/Pacific Islanders 11.5\% to 15.1\%, and African Americans 8.4\% to 8.8\%. Of residents five years and older, 66.9\% reported speaking only English at home. Of the 33.1\% of residents who spoke a language other than English at home, 53\% spoke Spanish at home. In addition, 23.6\% of residents were born outside of the United States.

Contra Costa County is home to one county-run hospital with seven satellite health centers, as well as several privately-run hospitals. There are five delivery hospitals within the county and one in neighboring Alameda County that handles a large number of deliveries to women living in Contra Costa. There are 13 CPSP providers in Contra Costa. CPSP provides comprehensive (medical, psychosocial, nutrition, health education) prenatal/post-partum services to low-income women and their families.

More than half of all births in Contra Costa (60\%) were to women of color, with 35.2\% to Hispanics, 15.5\% to Asians/Pacific Islanders, and 9.0\% to African Americans.\textsuperscript{xii} Children under the age of 5 comprise 6.4\% of the population, children ages 5–14 comprise 14\%, and youth ages 15–19 comprise 7\%.

In addition to FIMR, assets in Contra Costa that address perinatal outcomes include (but are not limited to): Black Infant Health Program, Children’s Oral Health Program, Comprehensive Perinatal Services Program, Lift Every Voice, Prenatal Care Guidance Program, Sudden Infant Death Syndrome (SIDS) Program, School Based Health Clinics, WIC, Building Blocks for Kids, Early Childhood Mental Health, Perinatal Depression to Wellness Network, Child Health and Disability Prevention, Nurse-Family Partnership, Public Health Nursing, Child Death Review Team, and many other agencies, organizations and collaborations.

Contra Costa has 18 school districts, seven community colleges, several large corporations including Shell, Chevron, Safeway, and Kmart, and many small businesses. In addition, there are more than 20 parks, more than 30 libraries, and countless teacher, youth, sports, retired persons associations, and faith-based organizations.

Why Contra Costa?

Between 2008 and 2010, there were a total of 12,352 live births in Contra Costa; the crude birth rate was 11.8 births per 1,000 residents. Hispanic teen births accounted for 57.9\% of all teen births.\textsuperscript{xii} African American mothers were most likely to have a low birth weight baby and were more than twice as likely to have fetal and/or infant deaths compared to White women and higher rates than other ethnicities. For African Americans the fetal mortality rate was 5.7, while the overall infant mortality rate was 4.3 per 1,000 live births.

In 2010, 10,497 babies born in Contra Costa hospitals were breastfed, formula fed, or some combination of the two before being discharged from the hospital. Of these babies, 95\% were breastfed at least once, and 74.3\% were breastfed exclusively until they left the hospital. African
American babies were least likely to be breastfed in the hospital. In the Bay Area, low-income mothers were less likely to breastfeed than higher-income mothers. 

Greater wealth equated to better health and longer life in Contra Costa. African Americans had a shorter life expectancy than other ethnicities in the county. African American and Hispanic residents earned less and had higher rates of poverty. In the United States, 49% of poor African American children lived in single-mother families with little or no father involvement. FIMR case review data identified several factors associated with risk of experiencing poor birth outcomes, including being African American, marital status, isolation, unintended pregnancy, and partner abuse.

**History of FIMR in Contra Costa**

The FIMR program has been operating in Contra Costa since the inception of FIMR in California in 1991. In 1998, the California Department of Health Services integrated FIMR programs as core programs under local public health departments. Therefore, the responsibility for conducting a local FIMR in Contra Costa was transitioned to family, maternal, and child health programs of Contra Costa Health Services.

FIMR works with many community agencies and programs to translate case review recommendations into action. FIMR has identified and addressed issues including access to care, medical records completion, grief and bereavement services, SIDS risk reduction, and the educational needs of families and providers regarding folic acid, preterm labor, and danger signs during pregnancy.

FIMR has initiated interventions to improve systems of care and community resources based on CRT recommendations. These include the following: a prenatal health card, folic acid community campaign, grief and bereavement guidelines, an annual teleconference on grief awareness, Day of Remembrance, support groups, Prematurity & Danger Signs of Pregnancy Awareness Project, Back to Sleep campaigns, mercury thermometer exchange, FIMR Steps-To-Take manual, and African American community baby showers.

FIMR actions that specifically address health disparities include: 1) collaboration between the Contra Costa SIDS program and Contra Costa Black Infant Health program; 2) An active CRT; 3) a Contra Costa crisis center, which provides grief and bereavement support for FIMR parents; 4) access to care activities; 5) coordination with two of the largest delivery hospitals within and near the county (Contra Costa Regional Medical Center and Alta Bates Summit Medical Center, which serves low-income women) and with 13 CPSP providers; 6) FIMR LCT trainings on racism, socioeconomic status, and paternal involvement; and 7) fostering coalitions and networks with providers and communities to develop the African American community baby showers held in 2011, 2012, and 2013.

**Delaware FIMR**

Located along the Mid-Atlantic corridor, Delaware is the second-smallest state geographically in the United States. However, it has consistently demonstrated one of the highest infant mortality rates. In 2011, its population was 907,135 residents. The composition is 71.7% White, 21.9% Black, and 8.4% Hispanic or Latino. The state is divided into three counties: New Castle, Kent, and Sussex. Sixty percent of the state’s population resides in New Castle County. Sussex County is the largest county in area and accounts for 22% of the population, followed by Kent County with 18%. Kent and Sussex counties are predominantly rural, whereas New Castle County is more urban and is home to Delaware’s largest city, Wilmington.

Based upon the 2010 State of Delaware Maternal Child Health (MCH) needs assessment, the strongest capacities for Delaware include:
• the ability to mobilize community partnerships between policymakers, healthcare providers, families, the general public, and others to identify and solve MCH problems;

• the ability to evaluate the effectiveness, accessibility, and quality of personal health and population–based MCH services; and

• the ability to support research and demonstrations to gain new insights and innovative solutions to MCH-related concerns.\textsuperscript{xv}

Covering a small but diverse area, Delaware’s FIMR exemplifies several unique attributes and opportunities. First, there are only two FIMR CRTs: one for New Castle County and a combined Kent-Sussex team. We are able to efficiently take a statewide approach to the case review process. This allows the CRTs to get a larger picture of the needs and issues affecting the maternal-child population of the entire state, which fosters statewide ownership of the issues identified. Second, the small size of the state enables one FIMR coordinator and one FIMR social worker to service both CRTs. This method facilitates an efficient and cohesive team approach to the day-to-day workings of the FIMR program in Delaware. Having one coordinator for the state also enables the communication between the CRTs to be streamlined and timely.

Another asset of the Delaware FIMR program is its collaborative relationship between the Division of Public Health (DPH) and the Delaware Healthy Mother and Infant Consortium (DHMIC). A large comprehensive coalition, the DHMIC is a key stakeholder within Delaware and its subcommittees function as the CATs for the FIMR program. DPH is considered the lead agency for population-based MCH issues. DPH staff is responsible for staffing roles within the DHMIC, ensuring streamlined decision making and decisive action. The strong working relationships between FIMR, DPH, and DHMIC provide the support and resources needed to implement recommendations that originate from the FIMR CRTs.

Why Delaware?

Delaware has approximately 11,000 births per year. The infant mortality rate in Delaware is declining but remains above the national average at 8.3 deaths per 1,000 live births for the period 2005–2009 (Delaware Health Statistics Center, 2011). During that time period, the infant mortality rate was substantially higher for Black infants at 15.4/1,000. Likewise, the perinatal mortality rate (PMR) for Black women is substantially higher than the PMR for White women across all counties. In Kent County, the PMR for Black women is four times higher than that of White women. Preterm birth rates are also highest for Black women at 17.5% of live births versus 11% for White women.\textsuperscript{xvi}

In 2009, there were 66 reported fetal deaths in Delaware. Fetal mortality rates for Black women were consistently higher than rates for White women. The leading causes of infant mortality for 2009 were prematurity and low birth weight (24.8%), congenital anomalies (12.7%), newborns affected by maternal complications of pregnancy (9.8%), SIDS (8%), and newborns affected by complications of placenta, cord, or membranes (4.5%).\textsuperscript{xvii}

Socioeconomic disparities exist as well. For the period 2006–2010, 11% of Delawareans lived at or below the poverty level. However, the poverty rate is markedly higher among Blacks (15.8%) compared to Whites (9.1%). The percentage of women without health insurance is 12.5% among Whites and 14.7% among Blacks. For the period 2004–2008, 15.1% of Black mothers were unmarried compared to 8.7% of Whites. For the same cohort, 15% of Black mothers and 8.5% of White mothers had less than 12 years of education. Disparities exist for birth spacing as well. For the interval since last live birth less than 18 months, the rate was 16.9% for Blacks and 6.9% for Whites.\textsuperscript{xviii}
History of Delaware FIMR

In Fiscal Year (FY) 2005, the Child Death, Near Death and Stillbirth Commission (CDNDSC) worked in collaboration with the DPH to implement a FIMR pilot project under the leadership of the governor’s Infant Mortality Task Force. This pilot included the review of 50 infant deaths occurring in 2003 using commission case information and maternal interviews conducted by DPH social workers. In FY 2006, FIMR’s budgetary positions were placed with the CDNDSC with the statutory authority to review infant deaths and fetal death occurring after 20 weeks gestation. All mothers who have suffered an infant or fetal loss are invited to participate in a maternal interview conducted by the FIMR senior medical social worker. All cases with a MI are reviewed by CRTs, and all other cases are randomized by date of death for FIMR deliberation; even dates are selected for one half of the year, and odd dates are selected for the other half. Medical records are requested from private obstetric offices, clinics, hospitals and other pertinent treating providers via a subpoena process. Cases are abstracted and deliberated using the online BASINET system.

Michigan FIMR

The FIMR community: There are currently 13 active FIMR sites in Michigan, establishing a FIMR presence in the communities which account for approximately 75% of the state’s infant mortality and nearly 95% of the state’s Black infant mortality. In addition, a 21-county “regional” FIMR is under development in northern Michigan, an area that is largely rural and has delivery system and access to care issues.

Through its contract and affiliation with the Michigan Public Health Institute (MPHI), the MDCH has developed and maintained the FIMR State Support Program. Services include monthly statewide network meetings for coordinators and FIMR staff and individual local communities’ trainings on advance issues related to infant death. Staff members attend local review meetings assisting teams with organization, hands-on skills for abstracting, interviewing, and conducting team meetings; moving recommendations to action; and providing resources on best practices in prevention and links with other child health, safety, and protection sources. In addition, the department provides the protective authority to local teams to conduct FIMR activities.

Annually, local teams abstract and review between 250–300 fetal and infant deaths. The current FIMR projects in Michigan include: Detroit (City), Oakland County, Saginaw County, Jackson County, Muskegon County, Genesee County, Berrien County, Calhoun County, Kent County, Kalamazoo County, Macomb County, Allegan County, and the Intertribal Council of Michigan (Native American FIMR Project). Most review teams meet on a monthly basis, and all Michigan FIMRs utilize the two-tiered structure of multidisciplinary CRTs and locally owned CATs. The Michigan CRTs and CATs strive to be culturally diverse and include members who represent the racial and ethnic make-up of the community they serve. While each community is unique in its assets and capacity, what all Michigan FIMR programs have in common is a truly dedicated group of members, both staff and volunteers, who come together around a common table to work at improving the care and services of women, infants, children, and families.
MDCH has made it a priority to integrate LCT into its maternal child health programs. Michigan was selected to join six other states in a W. K. Kellogg Foundation-funded project to develop the life course metrics. Michigan’s project, PRIME, is a three-year, Kellogg-funded project to enhance the capacity of the MDCH Bureau of Family, Maternal & Child Health to reduce racial disparities in infant mortality between Blacks and Whites and between American Indians and Whites in Michigan. PRIME’s goals are directly aligned with the 12-Point Plan to close the Black/White gap in birth outcomes using the life course approach, specifically addressing social and economic inequities. Lastly, the FIMR community in Michigan was an integral part of the Kellogg-funded Partnerships to Eliminate Disparities in Infant Mortality (PEDIM) through Action Learning Collaborative (ALC), with the state FIMR coordinator participating on the travel team.

**Why Michigan FIMR?**

In 2010, the last year for which the state of Michigan has published vital records information, 817 infants under the age of one year died, resulting in an infant mortality (IM) rate of 7.1 per 1,000 live births. The disparity between Black and White infant mortality rates poses a significant challenge in Michigan. Disparities also exist between the Native American infants and infants of Hispanic and Arab ethnicities in Michigan. In 2010, the IM rate for Native American infants was 10.5 for every 1000 births, with a three-year average (2008–2010) of 9.1, while the 2010 Hispanic IM rate was 7, with a three-year average of 8.1.

Michigan is persistently above the national infant mortality rate in both overall IM and Black IM. The provisional 2010 IM rate for the United States is 6.1, compared to the Michigan rate of 7.1. The provisional United States white IM rate is 5.2, and the Black IM rate is 11.6, creating a ratio of Black to White IM of 2.2/1. Michigan’s 2010 White rate of 5.5 and Black IM rate of 14.2 are significantly higher than the U.S. overall rates, with black infants dying at a ratio of 2.6 times higher than white infants. Michigan currently ranks 39th among states for overall infant mortality and 47th among states for black infant mortality.

Michigan infant mortality rates by poverty census tract further illustrate the need to understand the influences of place, race, and class both to reduce infant deaths and to improve maternal-preconception health. The lowest infant death rates occur in the wealthiest census tracts, and as the percent of people living in poverty climbs, so does the mortality rate. Between 2007 and 2009, the infant mortality rate in the wealthiest tracts was 5.4 deaths per 1,000 live births while in the poorest tracts the rate was 13 deaths per 1,000 live births.

**History of FIMR in Michigan**

Michigan’s FIMR began in 1991, when the communities of Saginaw and Battle Creek were awarded three-year grants to develop a local community process. A state FIMR coordinator was brought on board in 1998 when Michigan was awarded a three-year federal grant to provide support and technical assistance to local FIMRs. Five new FIMR sites were funded from 1999–2000 with a direct appropriation in the DCH budget. Many of the sites were able to institutionalize FIMR activities and are still in operation today using a variety of local, state, and federal resources. Michigan has piloted both the FIMR/FAS and FIMR HIV prevention methodology projects. The 13 currently active FIMR sites in Michigan have already had a variety of successful initiatives, driven by FIMR findings that have been specifically aimed at reducing disparities in infant mortality. In response to the unacceptable ratio of Black to White infant mortality in their community, Saginaw County started a local health equity movement and held round table discussions with more than 40 community members in January 2013. This work is continuing as a vital part of their community health improvement plan. The PEDIM-ALC created a toolkit for use by communities that includes videos,
PowerPoint, and exercises to start dialogue around racism, privilege, and equity. Another toolkit targets health care providers with an overview of health disparities, patient rights, and local and national resources. Five-hundred kits have already been distributed and a toolkit for consumers is being developed.

**Milwaukee FIMR**

**The FIMR Community**

Milwaukee is the largest and most racially/ethnically diverse city in Wisconsin with a population of about 600,000 residents. According to the U.S. census, although city residents account for about 63% of the Milwaukee county population, they make up 88% of the county’s minority population, including 96% and 81% of Milwaukee County’s African-American and Hispanic populations, respectively. The population of Milwaukee is 37% White non-Hispanic, 40% African-American, 17.3% Hispanic, and 3.5% Laotian/Hmong. The median age in the city is about 31 years. Children make up about 8.8% of the population, with African American children accounting for 9.9% of that population. Like several other cities, the population of Milwaukee has declined since the 1990s, but there has been an increase in the population of racial/ethnic minorities, making it currently a majority-minority city. The city experienced the largest decline of any city in the United States in white population, with white population declining from 61% in 1990 to 40% in 2008. These demographic changes have contributed to the city’s ranking over several years as the first or second most segregated city in the country.

According to U.S. census estimates, almost 1 in 5 (19.7%) Milwaukee residents 25 years or older did not graduate from high school. As shown in the zip code Socioeconomic Status (SES) map (Figure 1) and the neighborhood (census tract) deprivation map (Figure 2) developed by proposed project PI, most of the socioeconomic deprivation is concentrated in a few central city zip codes and tracts. During 2006–2010 about 26.3% of the population lived below the poverty level compared to 11.6% in the state, respectively. In 2009, Milwaukee was ranked the fourth-most impoverished big city in the United States, with a poverty rate of 27%. This translates to an estimated 158,245 Milwaukee residents and nearly 4 in 10 children (62,432) living in poverty in 2009.

The demographic diversity of the region, its location, and contributions of the city to the state economy are major assets. The city has some of the largest companies, banking institutions, and manufacturing institutions in the state. Milwaukee also has a number of major hospitals and four federally qualified health centers, which provide primary care services to patients regardless of their ability to pay. Moreover, the city has over 50 non-profit and city-run safety net clinics that provide health care for free or on a sliding scale. Another major boost and asset to the city and the state is the establishment of the new Joseph J. Zilber School of Public Health in 2011 at the University of Wisconsin-Milwaukee. This school was intentionally and strategically established and located in downtown Milwaukee, away from the main campus, to support and enhance collaboration with the
City of Milwaukee Health Department (MHD) and serve communities in greatest need. The school will have permanent office and collaboration space for several staff and adjunct faculty from the health department.

Why Milwaukee?

In 2010, the infant mortality rate for the city was 9.5/1,000 births. This overall rate, however, masks one of the largest racial disparities in infant mortality in the nation, with the rate for African Americans (14.8/1,000) over three times that of Whites (4.7/1,000) and the Hispanic rate at 5.7. These disparities have remained relatively unchanged over the past several decades, and appear to be increasing. Preliminary data shows that the overall IM rate increased from 9.5 in 2010 to 9.7 in 2011. According to the 2007 Big Cities Health Inventory, the City of Milwaukee ranks seventh worst for infant mortality among the 53 largest cities in the United States, and the disparity between Milwaukee’s infant mortality rates for African Americans and Whites is one of the worst in the nation.

FIMR data show that around half (56%) of Milwaukee’s infant deaths (Figure 3) are due to prematurity, 20% to congenital abnormalities, 16% to SIDS, overlay/accidental suffocations, 0.9% to infections, 2% to homicide, and 3% to other causes. In 2010, the rates of premature births are highest for African American (18.2%), and American Indians (14.6%) compared to Whites (11%). Over 14% of African American births were low birth weight (<2,500g). Although only about 5% of the mothers in the city had late or no prenatal care, the rates for African American mothers (6.7%) were about two times higher than White mothers (3.6%).

The burden of infant mortality in Milwaukee and Wisconsin is not randomly distributed, but is highly concentrated in the central Milwaukee city zip codes. The decline of teen birth rates in Wisconsin and Milwaukee over the past few years is a remarkable achievement. The state rate dropped by 16% from 31.2 births per 1,000 girls 15 to 19 years in 2007 to 26.2 births/1,000 in 2010. Milwaukee’s rate of teen births dropped by 13.6% between 2009 and 2010. These declines were significantly greater than the national average of 9% per 1,000 teens.

In a recent analysis of maternal morbidity in Wisconsin, we found a disproportionate burden of morbidity during pregnancy among racial/ethnic minority women, particularly African American, Hispanic, and Native Americans. Most of the burden of these conditions occur in the southeastern region, primarily Milwaukee. These findings are consistent with findings from the FIMR reviews and
highlight the continued unmet health care and prevention needs in minority communities. The findings also highlight the need for LCT intervention approaches over women’s life span.

History of FIMR in Milwaukee

Milwaukee’s FIMR project was started in the early 1990s by a group of committed families, social service providers, and healthcare providers. It remains the longest standing FIMR review team in the state, consisting of about 40 professional and community members and representing over 22 agencies, Health Maintenance Organizations, and community organizations. Milwaukee’s FIMR process has been the driving force behind a much-needed focus on healthy birth outcomes by the state of Wisconsin, the city of Milwaukee, and several institutions. FIMR’s unique evidence-based, quality improvement process yields prevention guidelines and has also played a significant role in building community partnerships, understanding community issues associated with health disparities, and developing culturally sensitive actions to address disparities. The FIMR model brings together a CRT of health care professionals, agency representatives, community advocates, and consumers to analyze all fetal and infant deaths. FIMR data collectors gather information from local hospitals, physician offices, social service agencies, and the medical examiner, and do medical record reviews of both the mother and baby’s records. Whenever possible, FIMR interviews the mother to gain her perspective on her prenatal care, life circumstances, healthcare provider, and relationship to her baby. A narrative, or a life story, is then brought before a multidisciplinary CRT for review. These stories allow the CRT to identify a wide range of factors associated with each life and death.

FIMR shares its recommendations with many coalitions, consortiums and community groups, and has close ties with all area hospitals, the Wisconsin Infant Death Center, the Zilber School of Public Health, the University of Wisconsin School of Medicine and Public Health, the Medical College of Wisconsin, the Bureau of Milwaukee Child Welfare, Center for Urban Population Health, many community agencies, and the State of Wisconsin Department of Health and Family Services. FIMR has helped establish and supports public health partnerships among agencies interested in improving maternal and infant health. These collaborations and partnerships act as a CAT and have advanced community-level intervention in several ways, including a safe sleep advertising campaign, establishment of in-hospital co-sleeping policies, a hospital collaborative, legislative initiatives, and connections with many other public health programs that serve at-risk populations.

FIMR has been instrumental in the development and initiation of professional and community education regarding birth outcomes and related disparities including three infant mortality summits sponsored by MHD. The first summit focused on safe-sleep, the second on prematurity, and third on social determinants of health. The FIMR team has been actively involved in related social marketing campaigns on infant mortality including the Strong Baby and safe-sleep campaigns. The FIMR coordinator has conducted multiple training sessions targeted at different audiences to increase awareness of the disparities in birth outcomes and the need for concerted efforts to eliminate disparities in birth outcomes.

Tulsa FIMR (TFIMR)

The Tulsa area is diverse in terms of race, socioeconomic status, language and religious beliefs. In the most recent years, Tulsa has seen a dramatic increase in their Hispanic population and it is the fasting growing community. Caucasians make up approximately 70% of the population and the area’s African American population has a rich and deep history observably preserved by the Historic Greenwood District. In terms of socioeconomic status, the median income in the area is $45,000 and a little over 10% of the population has utilized food stamps in the past year.xxiv.
This population is not only diverse by demographics, but geographic landscape as well. Two of the
counties, Creek and Rogers, are rural communities that benefit from their close proximity to Tulsa
County, a metropolitan community.

History of FIMR

In 1998 - 1999, The Family Health Coalition was successful in collaborating with the Tulsa City-County
Health Department and the Oklahoma State Department of Health to create the Tulsa Fetal and Infant
Mortality Review project. Contrary to what the name implies, TFIMR serves more communities than
just the Tulsa community. TFIMR is currently active in the total Tulsa metropolitan statistical area
serving a combined population of over 1,021,000 individuals in eight counties.

TFIMR has existed for over 13 years and continues to grow and become more successful as each year
passes through the sustained support of the Oklahoma Maternal and Child Health Title V Program. This
has allowed successful campaigns such as the ‘Ask Me!’ Campaign, the ‘Did You Write the Script
Campaign’ and the ‘Help Us Wake Tulsa – Safe Sleep Campaign’. Recent efforts of TFIMR include
facilitating a discussion between the Medical Examiner’s Office and local area detectives to improve
communication between the two agencies. This collaboration led to the District Attorney extending an
invitation to the Medical Examiner’s Office so they would be included in case review of all child deaths.
Prior to this partnership, it was common for the Medical Examiner to assign a cause of death without
having access to vital information including 911 transcripts or even the death scene investigation.

In addition, the Medical Examiner has begun using the Centers for Disease Control and Prevention
(CDC) approved Sudden Unexplained Infant Death Investigation Reporting Form to evaluate all infant
sleep related deaths. During the CRT process it was found that there was no system in place to alert
medical providers when a family experiences a fetal or infant loss, including if the mother was seen in
the emergency room. CAT collaborates with the new MyHealth Informational Exchange program to
discuss the necessity of alerting needs. It was agreed upon to include infant and fetal losses in
automated email alerts, notifying providers when their patients have been seen in the emergency room or
have been admitted to the hospital.

Another system change facilitated by CAT was responding to a family’s ability to receive accurate and
consistent information while their babies were in the NICU. A local hospital developed a new protocol
which identifies one primary physician who is in charge of their child’s care so the family can have
access to accurate and important health care information.

Just as much as TFIMR is committed to improving our community, the community is committed to
ensuring TFIMR succeeds. Private institutions as well as community agencies are well represented on
both the CRT and CAT. Due to the dedication of TFIMR members, there has been approximately a 24%
increase in the number of cases reviewed each year; ten cases are reviewed monthly at CRT. In addition,
TFIMR has recently reviewed mothers who have previously experienced a loss and been through the
FIMR process.

Why Tulsa?

Fetal and infant mortality continues to be a primary concern for Oklahoma, who in 2011 ranked 41st
nationally for infant mortality. While Tulsa County’s rates of 7.4 infant deaths per 1,000 births are
below the state’s average of 8.1 infant deaths per 1,000 births, it remains higher than the national
average of 6.7 infant deaths per 1,000 births. While infant deaths remain high in Tulsa County,
TFIMR has worked hard to address the needs and factors that impact infant deaths and has managed to lower the rate of infant deaths from 2007 when the rate was 9.4 infant deaths per 1,000 births\textsuperscript{xvi}.

The demographics of the mothers who account for TFIMR cases are as follows: the age range of these mothers covers women of childbearing age, in which over half fall within the age group of 20-29 years, with 30.2% being between the ages of 20-24 years old. One-fourth (25.2%) of these mothers never graduated high school, while 35.7% of this group have less than an 8\textsuperscript{th} education. Out of this subset of mothers 37.4% are employed (total hours per week unknown) while 33.8% of these mothers are unemployed. TFIMR mothers’ main source of insurance comes from Medicaid with 54.3%; 29.1% use private insurance; and, 7.2% are using a combination of both.

TFIMR seeks to change behavioral factors of the mothers including but not limited to weight gain, tobacco usage, and prenatal care. Mothers with a Body Mass Index (BMI) \textgreater 29 account for 28.1%, but when the mothers were asked if they had excessive weight gain, only 2.5% said yes. In addition, 30.5% of our mothers smoked during pregnancy. Of the 30.5%, 10.6% smoked 20 or more cigarettes a day.

Statistics also show developing a sustainable referral process is an important step within this project. Only 61.9% of our mothers were given referrals. Of those referred, only 41.7% were given a prenatal care referral, 1.8% were given a hospital referral, and 0.4% were given a postpartum counseling referral.

Appendix 2 – Interviews with Project Directors

What are some of the community-specific plans and strategies that you have accomplished to incorporate LCT into the local community FIMR?

Baltimore City

BC FIMR conducted analysis of vital statistics; past FIMR data; and data on neighborhood factors including home ownership, violent crime, and food insecurity to identify neighborhoods of high risk and trends citywide.

CRT Focus Group and Preparation to Implement LCT

\textit{a. CRT focus groups.} To strengthen the team’s ability to address life course factors and generally improve our capacity for case review, the Wilder Collaboration Factors Inventory was administered to identify areas in which team functioning could be improved. Two brainstorming sessions on the top two needs identified (b and c below) were held.

\textit{b. Membership revitalization.} The team analyzed gaps in membership and added new team members for each team including faith-based community leaders, a consumer voice, and health equity leaders.

\textit{c. Leader in the community.} Baltimore City FIMR is taking several steps to establish FIMR as a leader on life course issues through the NATs such as by publishing an annual report and holding roundtables.

NAT Focus Groups and Preparation to Implement LCT

The FIMR coordinator attended four NAT meetings each in Upton/Druid Heights and Patterson Park North & East and presented a case at each meeting that typified the community based on neighborhood level profiles. The NATs identified major issues in their communities and how they related to FIMR recommendations.

CAT Focus Group and Preparation to Implement LCT
Due to reconfiguration of the CAT and lack of meetings during the grant period, focus groups will be accomplished in Quarter 2 of FY 2014.

Strengthening CRT, CAT, and NAT Systems

a. Logic model. The team developed a logic model with outcomes for each part of the system that lead to overall outcomes. The logic model guides functioning for the system and supports evaluation.

b. Focus group results. Major recommendations resulting from the CRT and NAT focus groups on strengthening the system were as follows:

1. Diversity. Membership across all teams needs to be more diverse both in terms of reflecting the city’s demographics and in type of member (e.g., health professional, community advocate).

2. Communication. All teams need to have a closer connection to the interventions and community work being done so that they know that their work matters and is making a difference. The CAT and NATs should report regularly at CRT meetings.

3. Goals. All of the team members need to have and know the same high-level goals (e.g., reduce infant mortality by specified percentage) and know how our activities help us meet the collective goals.

4. Influence. The CRT and NATs do not typically have the power to implement interventions that would affect mothers’ life course and factors such as food insecurity or housing instability. BC FIMR needs to be clear when making recommendations who the decision-makers are and how to use the power of FIMR to influence those who do to understand the connection between life course and infant mortality (e.g., all of the recommendations made regarding food insecurity being presented to the Food Task Force). The CAT must be revitalized so that the influence of high-level members can be leveraged to obtain audiences with people in power.

5. Community leadership. All teams need to raise the profile of BC FIMR in order to have a bigger impact and more opportunities to influence decision makers. Members need to issue reports and position statements, publish in academic journals, make presentations to community organizations and hospitals, and make publicly clear the direct link of the work of BC FIMR to B’more for Healthy Babies initiatives.

6. Relevance. All teams should continue to present cases to NAT and CAT members in order to make the FIMR recommendations real and relevant. Members need to present data in very creative ways to keep the community engaged and for people to understand why their communities are experiencing a disproportionate burden of infant mortality.

7. Resources. BC FIMR needs more funding in order to realize its full potential. Much work is done in-kind. Partners should seek funds jointly to support our work.

Expansion of the CRT, CAT, NAT System

a. Recommendations. Final recommendations are pending until results of CAT focus groups.

b. Data. Use neighborhood-level profiles and CAT understanding of neighborhood readiness to target communities for expansion.

c. Packaging NATs. To expand to additional neighborhoods, BHB should document and “package” the NAT process and activities for community organizations with the capacity to take on work around health equity and infant mortality.

Broward County

In an effort to engage the community in understanding the LCT, training was held on November 28, 2012 at the Broward County Department of Health. The training was facilitated by Carol Brady, executive director of the Northeast Florida Healthy Start Coalition. Over 15 CRT and CAG members participated. The training offered a broad perspective of LCT and it allowed the audience to use the life
course board game and discuss what was learned. The training provided the framework for the Life Course Symposium held on June 21, 2013.

HMHB of Broward worked collaboratively with Broward County Children’s Services Council as well as the Broward Healthy Start Coalition to host the Life Course Symposium at the African American Research and Cultural Library. Over 80 CRT, CAG, and community members were present. The keynote speaker, Ms. Estrellita “Lo” Berry, president/CEO of REACHUP, discussed a sense of urgency, mutual definition of disparity, and shared strategies in addressing health disparity. Dr. Maxine James-Francis, administrator of the Avenue Family Health Center, provided a local perspective on the health status of minority women and their children and its correlation with the demographic, socioeconomic, environmental, and psychosocial profiles of their communities. Participants of the symposium broke out into sessions to play the life course board game. They provided feedback that the game opened their eyes to the reality that one does not have to be poor to experience setbacks in life.

Three focus groups of bereaved parents of varied ethnic groups were conducted with a specifically tailored questionnaire. Several maternal child health organizations were contacted to refer bereaved families. These focus groups were conducted at various times, locations, and incentives were offered to increase participation. Thirteen individuals participated. Discussion included key questions about what pregnant women must have or do to have a healthy pregnancy, why some babies are born premature or die more often than others, what government/corporate practices can better ensure healthy spaces for everyone, how to increase infant mortality awareness, what strategies can be used to get resources and information to the community, and what type of resources would be helpful to families during the grieving process.

Trecia Matthews-Hosein, director of program services, provided an overview of the focus group findings of bereaved families. The major findings of the focus groups include the following: Families want to have access to healthier foods in their community; they want to be educated by their OB/GYN providers about infant mortality and learn how to keep it from happening to them; there need to be more support services for fathers; and the faith-based community needs to be more involved in offering support to bereaved families. Four key questions were asked: 1) What service system enhancements can we make to improve results? 2) What policies do we need to implement or change to improve results? 3) What changes in our community, service system, or programs would further develop natural supports? 4) What can I/my organization do to help? The responses to these questions were summarized into an action plan that could potentially take the lead in moving the recommendations/action steps forward along with HMHB of Broward.

Delaware

FIMR staff introduced LCT to the CRTs with a presentation in September 2012. The new MI summary checklist and the case discussion guide forms were presented and reviewed with the CRT members at this time too. This meeting was followed up with the CRTs playing the life course game at the October 2012 meeting. There was an opportunity to debrief after the game and summarize key messages about the LCP. The CRTs began using the new LCP forms to deliberate cases with an MI in September 2012.

For the June and July 2013 CRT meetings, FIMR cases were grouped and prioritized by geographical areas in the state identified as high-risk zones for poor maternal child health outcomes by the Division of Public Health’s Maternal, Infant, and Early Childhood Home Visiting Program needs assessment. The intent for grouping cases by high-risk zone—a geographic area comprising several zip codes—was to help CRTs consider community-level factors that may be contributing to the fetal or infant death
and/or mothers’ experiences. Each CRT meeting in these months began with a brief presentation of the key demographic and health indicators from the targeted zone(s). In June, the New Castle County CRT reviewed cases from Center City Wilmington, and in July all cases reviewed in New Castle County hailed from Western Wilmington. In July, the Kent/Sussex CRT reviewed cases from two high-risk zones: southern Kent/northern Sussex and western Sussex. 36% of CRT members responding to the feedback survey indicated that they would like to have more experience with the targeted, high-risk zone approach to grouping cases in order to decide on the utility of this approach; 23% of respondents said they like the zone-based approach “very much”; and 18% had no opinion on the matter. FIMR staff will continue to group cases by high-risk zone whenever possible beginning in January 2014.

Use of the MI summary checklist captures risk and protective factors that complement and enhance the strengths, contributing factors, and suggestions from the team. Delaware FIMR would like to report out the findings from the MI summary checklist in the annual report. As an example of the way life course factors could be summarized, findings from the 26 mothers with infant/fetal losses (comprising 28 cases reviewed with the LCP method) are summarized. Over time, as more cases used with the new MI tools are reviewed using the LCP format, the numbers of cases with this in-depth, multifactorial review will present more data to analyze and track trends over time among Black and White mothers.

Contra Costa

A year of FIMR LCT dialogue and presentations to key stakeholders, providers, and funders initiated an FIMR LCT educational foundation, attentiveness, and change in organizational practices concerning racism, socioeconomic status, and paternal involvement to address fetal and infant mortality. During this time, the FIMR model and significance of grief and bereavement support were also emphasized. New partnerships were formed to intentionally promote FIMR LCT. The following represent FIMR LCT presentations conducted throughout Contra Costa:

- Building Blocks for Kids and West County African American Community Baby Shower Collaborative
- Los Medanos Community Healthcare District Board
- First Baptist Head Start Health Service and Nutrition Advisory Committee
- FIMR LCT and African American Community Baby Shower Collaborative participation in AAHEC
- Planned Parenthood Shasta Pacific
- Mind, Body & Soul African American Wellness Group Black History Month Program
- East County African American Community Baby Shower Collaborative
- FIMR LCT Provider Workshop

FIMR LCT work will also expand paternal involvement by augmenting existing “new pregnant client” assessment tools, individualized care plans, educational interventions, and referrals to resources.

- FIMR referrals have increased. More providers throughout the county are aware of FIMR as a result of the continued FIMR LCT dialogue and trainings and are making client referrals for grief and bereavement counseling and support.
- Perinatal Public Health Nursing SIDS Training on September 4, 2013 (scheduled during the NFIMR LCT grant period). Dynamic dialogue on fetal and infant loss; review of pregnancy loss or infant death protocols pending; identified interest in paternal involvement expansion and protocol development.
- Include paternal involvement to county FIMR referral form
- Organized a paternal involvement expansion working group
• FIMR, WIC, CPSP provider, a local faith-based organization, and a funder have initiated dialogue to develop programming and resources to implement a paternal involvement component to link community and health services for expectant and parenting mothers and fathers.

Michigan

A half-day symposium on LCT was held on April 29, 2013 for all the FIMR personnel in the 13 existing sites. Many of the sites have had exposure to the LCT, but have not had formal training and an in-depth understanding the model. The speaker/facilitator for the interactive symposium was Magda Peck, professor and founding dean of the University of Wisconsin-Milwaukee, Joseph J. Zilber School of Public Health. Dr. Peck facilitated the plenary workshop on “Adapting FIMR to Address Life Course” at the recent seventh national FIMR conference, held in August 2012. Thirty-five attendees were able to participate in the symposium, which focused on helping FIMR CRT and CAT members to explore how differential exposures to risk factors and protective factors over the life course affect developmental trajectories and contribute to disparities in birth outcomes. During a pre-conference working breakfast, five attendees were trained by Dr. Peck to be facilitators for the life course game. Two complete kits of three life course games were purchased from City MatCH. These are available to FIMR teams to ”check out” like a lending library and use in their communities to increase awareness around inequities. During the symposium, small group sessions brainstormed on three questions:

1. How can data collection/abstraction be strengthened to incorporate life course principals?
2. What aspects of the maternal interview can contribute to our understanding of timeline, timing, environment, and health equity?
3. How can FIMR communities increase capacity for obtaining maternal interviews?

The evaluations from the symposium were overwhelmingly positive. Recognizing the importance of the maternal interview to help teams understand individual and community factors that significantly affect health disparities, ten of the existing FIMR sites in Michigan were offered additional money through their comprehensive budgets to be used to purchase incentive gift cards to distribute to moms who consented to a maternal interview. Anecdotally, sites are reporting that mothers are more willing to participate in the interview when offered a small token of appreciation for their time. The maternal interviewers have also reported that the incentives have helped reduce the time spent in finding and tracking families to participate in maternal interviews.

Milwaukee

The first aim was to educate and establish a common understanding or language of LCT among the Milwaukee FIMR team. The FIMR team accomplished this by organizing a life course training that was held at the Zilber School of Public Health and facilitated by Dr. Peck, who focused on integrating the key LCT concepts and sharing how LCT can be used in the review and community action work.

The second aim was to educate the FIMR team and partners on PIE in LCT and ongoing efforts to improve birth outcomes in Milwaukee. To address this aim, two focus groups were conducted. The first focus group was held at the Neighborhood House and the second at the Next Door Foundation, two strong and historical agencies in inner city Milwaukee. Although the analyses are ongoing, some of the preliminary themes emerging from these focus groups include: 1) the importance of including paternal perspectives in birth outcomes discussions; 2) the importance of engaging fathers early during prenatal care and delivery; and 3) addressing barriers to early and sustained paternal involvement and
engagement. Fathers want to be more involved; however, some of the policies and social conditions they live in make it hard to be as engaged as they would have liked to be. Most fathers observed that they are usually more involved than they get credit for. Most of them cited involvement in dimensions not frequently discussed such as adapting to the changing roles that come with pregnancy, including assuming tasks and roles that they have not traditionally assumed. Other fathers cited involvement and engagement in terms of just being present, and dealing with the shifting mood swings, self-image issues, and insecurities that women face during pregnancy. Most of the men observed that these mood swings and insecurities can be very stressful to men, who may not know how to deal with them. Another issue raised by fathers relates to the way they are treated by health care providers. Most of the fathers indicated that although they made effort to attend clinics with their partner, they were often invisible to the health care providers. They reported that they attended the clinics, but health care providers mostly ignore them and do not talk to them or involve them in any way, leaving the fathers feeling isolated and useless even though they would like to assist. A number of fathers indicated that this was one reason they stopped attending clinics with their partners. Some expressed frustration with the demeaning way some providers speak to their partners during clinical care. Most of the participants also indicated that health care providers usually talk to the women and give the women much information at a time when they are stressed or under the influence of medication. The fathers felt that health providers could direct some of this information or include them in these discussions. Overall, the preliminary findings suggest that fathers’ perspective is important and may be different from that of women in terms of how they perceive their involvement and engagement over the course of pregnancy and delivery.

Another interesting theme that relates to the fathers’ own life course was their perception of the importance of leaving a legacy or some evidence of their existence in the world. The fathers indicated that their lives have been shaped by the loss of many family members at a young age, and, often as black males in the United States, their life expectancy is very short. This theme was related to the historical and continuing legacy of racism and discrimination and the realization that they can die at a very young age. The fathers indicated that this reality can influence their decision to have a child early and other fertility decisions. One father observed that men may want a child, preferably a son, who can at least carry their name forward if the father dies. The preference for a son is because, unlike girls who can get married and adopt their husband’s name, sons keep the father’s name, thereby ensuring that a legacy of the father’s existence is left in the world. The implications of this theme are important in terms of understanding fertility trends and risks associated with early childbearing in marginalized minority communities.

The third aim was to develop and adopt LCT and PIE measures to be incorporated and tracked through the FIMR review process. The goal is to use the information from the focus groups and brief survey to inform the review process and help identify strategies that can be adopted in the maternal interviews and case review process.

**Tulsa**

The project consisted of distributing surveys that assessed maternal health on multiple determinant levels. An initial survey was conducted with a follow-up survey at three months. Participants were recruited through three different sources: women who participated in the FIMR home interview process; women whose children were in the NICU at Hillcrest Medical Center; and women enrolled in the Supplemental Nutrition for Women, Infants, and Children (WIC) program at THD. Participants were able to fill out the surveys either online or a paper copy was made available to them.

The assessment tool was used to determine the identified mother’s current interconceptual health status and risk factors. Depending on the risk factors identified the mother was provided health specific information and
a referral to a local community resource that is skilled in working with families to turn that specific risk factor into a protective factor. Three or more reported risk factors resulted in an automatic referral to Healthy Start, Tulsa Health Department’s Maternal and Child Health Initiative Outreach Worker or another community agency able to provide more intensive case management for the family.

Which of your FIMR actions are related to social justice/reducing health disparities?

Broward

We have incorporated the concept of social justice into the review process. This ensures that whether the issue is access to service or institutional racism, those elements will be recognized and identified during review to further move forward action in the Broward County Children’s Strategic Plan.

Contra Costa

FIMR LCT and CPSP sponsored the “Increase Resilience and Paternal Involvement” workshop on June 7, 2013. The purpose of the day was to promote health equity and change organizational practices to close the black-white gap in birth outcomes. The speakers and panelists outlined a day that painted a picture of resilience and trauma. Fetal and infant loss data and FIMR and CPSP program and systems interventions were presented and discussed. The LCT, history of racism, poverty, and social determinants of health and trauma were outlined and dialogue was encouraged. A panel of diverse fathers presented the opportunities and challenges of men and described successful interventions. Along with resource sharing and group dialogue, providers created interactive “theory to practice strategies” to increase paternal involvement and personal commitment statements were developed and submitted.

More than 71 CPSP providers, Nurse-Family Partnership, Prenatal Care Guidance, public health nurses, physicians, community-based organizations, WIC, African American health conductors, and others attended. Participants explored how the involvement of fathers and their families can be addressed through strengthening individual knowledge and skills, educating providers, changing organizational practices, fostering coalitions and networks, and developing policy across the life course.

As follow up, the personal commitment statements were returned to all who completed one. Essential components of the theory to practice strategies collectively developed were summarized and sent back to the providers who attended. In addition, each participant was asked to complete a Survey Monkey regarding perinatal system of care paternal involvement next steps. Finally, a couple of small grants were written to support increasing Contra Costa’s paternal involvement effort.

East County African American Community Baby Shower–FIMR LCT was an essential participant in assuring collaborative leadership and innovation, addressing health inequities and raising more than $20,000 for this first successful event in Pittsburg, CA. The event, held on August 3, 2013, focused on ways to encourage breastfeeding and promote health equity in adverse birth outcomes among African American families in Contra Costa. Invited participants were pregnant African Americans and expectant fathers. It was a collaboration with a prominent African American faith-based organization, WIC, public health nursing, breastfeeding advocates, and many community-based organizations that met from May through August to ensure implementation. More than 300 participants attended, including at least 70 expectant mothers, more than 30 men in the paternal involvement group, 28 participating resource
tables, and 5 breastfeeding peer counselors. The break-out groups were the Teen’s Group, Grandma’s Group, Women’s Group, and Men’s Group.

“African American Health Empowerment Expo: A Call to Action!” was held on September 21, 2013. FIMR LCT participated in the AAHEC East County collaborative to promote interventions regarding fetal and infant mortality from a life course perspective. This collaboration started in 2009–2010. FIMR LCT was not an active participant during its inception, though members of family, maternal, and child health programs actively participated. FIMR LCT began actively participating in October 2012 to promote a fetal and infant mortality LCT agenda.

AAHEC is a community-based collaboration including local and neighboring businesses, community-based and health care organizations committed to working with residents, community leaders, faith-based organizations, and local businesses to inform, educate, and promote individual and community health of African American residents in East Contra Costa County. The health issue interventions included high blood pressure, diabetes, obesity, and nutrition. The free expo had demonstrations about weight control, information about the Affordable Care Act, cooking demonstrations, educational and fitness workshops, exercise sessions, free lunch, and entertainment. More than 50 community resources and information tables were available to participants who attended the expo. It has been a challenge to create buy-in that reproductive-age African Americans are essential to shifting health inequities in the East County African American Community.

**Delaware**

Recommendations from the 2012 DE FIMR annual report:

- A perinatal self-risk assessment form should be developed that can be presented to each patient at the first prenatal visit. The intent is that the patient will complete the form at the first visit and the obstetrical healthcare provider will review the assessment with the mother and sign the assessment acknowledging the mother’s history.

  - Action: recommendation sent to the DHMIC for consideration and action planning.

- FIMR recommends that the DHMIC develop a standardized assessment tool for use by all obstetrical healthcare providers in the state of Delaware to initiate a plan of care early in the pregnancy.

  - Action: recommendation sent to the DHMIC for consideration and action planning.

- FIMR recommends that the DHMIC develop a mechanism for mothers who have had no established prenatal care and present to the hospital for delivery; the obstetrical hospital personnel will refer the mother to an obstetrical clinic or other comparable perinatal care provider and make an appointment for her postpartum care. If she fails to keep the appointment, the obstetrical clinic or other comparable perinatal care provider will call the mother to follow up on the missed appointment.

  - Action: recommendations sent to the DHMIC for consideration and action planning.

Recommendations made in 2013:

- CDNDSC recommends that physicians be made aware, FIMR has found in statistics from 2006 to present and specific cases reviewed, that pregnant women receiving obstetrical care are not given the option to request only one or two doctors for their care in multiple provider practices.

  - Action: recommendation sent to the DHMIC for response
• CDNDSC recommends prenatal care and education as soon as a pregnancy is identified, particularly for women with previous poor outcomes or first pregnancies.
  
  o Action: recommendation sent to the DHMIC for response, response pending.

**Douglas County**

Overall, in Douglas County the fetal/infant mortality rate has decreased from 10.7 in 1993–1996 to 7.7 in 2008–2011.

• In 2008–2011, Black mothers continued to experience higher fetal/infant death rates than White mothers, especially in maternal and infant health periods, at a rate of 13.5 compared to 6.7 respectively.
• Population-based data show that cases where mothers have experienced fetal/infant deaths from prematurity-related complications or SIDS/SUIDS, or delivered infants that are VLBW, regularly lead all other single causes of the county’s fetal/infant mortality and were therefore prioritized for further review.
• Hispanic fetal/infant mortality rates are now available and, in 2008–2011, the rate of 7.5 for the Hispanic population reflects an increase over the 2007–2010 rate of 6.8 and now places the Hispanic population at a higher fetal/infant mortality rate than their White counterparts.

These social justice/health disparity issues are addressed in the community-wide action plan as follows:

The goal was to reduce preterm labor by educating the community. The objective was to identify best practice(s) to reach various vulnerable communities in Douglas County by July 31st, 2012. The following action steps were taken:

Action Step 1.1: Identify the different “target” communities with a focus on those groups with the highest preterm labor rates.

Action Step 2.1: Collate information gained from community members and stakeholders (providers, community, case managers, VNA, child care) regarding most effective communication strategies.

Action Step 3.1: Define strategy for each “target” community.

Action Step 4.1: Implement strategy.

Objective 2: By July 31, 2013 develop and implement appropriate social marketing avenues targeted at vulnerable communities in Douglas County.

Action Step 1.1: Engage community members and stakeholders in development of social marketing campaign (who, what, when, why, and how).

Action Step 2.2: Develop evaluation plan in partnership with the community.

Action Step 3.2: Implement plan.

**Michigan**

A state network of FIMR coordinators began meeting monthly in 1998 with the major goal of sharing experiences around developing a review team, identifying cases, and gathering data. Since that time the network meetings continue to offer shared experiences and motivation for new and existing teams. The network now acts as a sounding board for MDCH infant mortality initiatives and as a resource for local opinion and feedback about new projects and questions. In addition, network meetings are utilized for in-services and continuing education for FIMR coordinators. These meetings also connect local coordinators to the other perinatal initiatives in the state, such as the Healthy Start Network, the State
Infant Mortality Initiative, the Birth Defects Registry Project and Michigan’s Healthy Mothers/Healthy Babies Coalition. FIMR network meetings now start with an equity exercise each month to help raise awareness for differences in health and wellness that are unfair and unjust.

One of the counties with an active FIMR program is looking to invest significant resources into building a larger jail. FIMR data highly correlates involvement with the criminal justice system with poor birth outcomes. The FIMR coordinator and MCH supervisor have both received training on conducting HIAs. The FIMR coordinator submitted a proposal to the health officer to request that the public health department dedicate resources to conduct a HIA on the new jail.

The plan during the assessment and recommendations calls for a profile of existing conditions, evaluation of potential health impacts, and creation of evidence-based recommendations to mitigate negative health impacts. The FIMR coordinator and the MCH supervisor recognized that the data-gathering stage is critical to the assessment. The data being gathered includes issues such as infant mortality, racial inequities and disparities with incarceration rates, education, poverty, stress, suicide rates, child abuse, staff health, disease transmission, and environmental factors.

Through its FIMR reviews, another Michigan community identified that mothers delay entry to prenatal care because they feel they have been treated poorly in the past when seeking medical care due to their race and socioeconomic status. This county ranks fifth worst in the state for African American infant mortality, with a rate of 16 deaths per 1,000 live births for African American mothers. They obtained a three-year grant from MDCH via the Kellogg-funded PRIME project that enabled them to hold a community event aimed at raising awareness amongst medical professionals and community leaders about the issue of health disparities in the United States and in their county. Dr. James Collins was the featured speaker, and he facilitated rich discussion around the role of racism and poor health outcomes for African American mothers.

The Intertribal Council uses their FIMR data for Domain 3 of their federal Healthy Start grant, Accurate Tracking and Analysis of American Indian Data. In their project, FIMR aids in implementation of comprehensive health data collection for minority populations to accurately assess and monitor health status and health disparities.

**How has the FIMR/LCT process changed or informed data abstraction and the maternal interview?**

**Baltimore City**

In addition to medical records and vital statistics, BC FIMR is now abstracting data from the Baltimore City Public School System; Department of Social Services (including Child Protective Services [CPS] and maltreatment history); WIC; Medicaid records from Baltimore’s Administrative Care Coordination Unit including the Prenatal Risk Assessment, Prenatal Questionnaire, and Interconception Assessment; the Maryland Judiciary Case Record system; and Healthy Families America home visiting programs. These records provide substantially more information about the mother’s childhood, economic circumstances, and other life course factors.

BC FIMR has also put greater emphasis on obtaining maternal interviews, as this is the best strategy for learning how life course factors are influencing birth outcomes. We have completely revised the interview request process, implementing two sets of sympathy cards with different timing to request the interview. We have also added key questions about life course factors to the interview (i.e., interviewer briefly explains LCT and asks mothers about life events that could have impacted them during childhood such as abuse, homelessness, etc.).
Broward County

Broward County’s FIMR has changed in that LCT has been incorporated into the case abstraction process; there are relevant LCT questions added to the maternal/paternal interview tool; and the FIMR CRT has been encouraged to discuss the protective and risk factors as they deliberate on abstracted cases. Under the guidelines of the FIMR contract, cases are selected using Perinatal Periods of Risk (PPOR) methodology. The PPOR is both a community approach and an analytic framework for investigating and addressing high infant mortality rates in urban settings. Before incorporating LCT into the FIMR processes, cases were selected at least six months after the death occurred. Currently, cases are selected within two to three months after a death occurred in an effort to make contact earlier and increase the chances of the parents agreeing to maternal/paternal interview. New interventions have been pursued in order to improve the maternal/paternal interview rate, including utilizing a trained, bereaved mother to conduct the interview, and conducting home visit attempts to families whose cases were selected for review but who could not be contacted by phone. With feedback from the bereaved maternal interviewer, the Advanced Registered Nurse Case Abstractor, and the CRT, the maternal interview tool was revised to reflect the life course perspective and capture social protective and risk factors in each mother’s life. These questions address such issues as childhood dietary practice, health practices and education throughout the lifespan, stressors, childhood poverty, sexuality, racism, and support systems present or absent throughout their lives. Through bereavement support services and working one on one with bereaved fathers, we learned that fathers often feel left out and that their grief is overlooked. Fathers want to be acknowledged and treated equally when something this tragic occurs. A paternal interview tool was created to engage them in the interview process.

Contra Costa

The data abstraction is conducted by FIMR staff and a FIMR nurse practitioner consultant. All FIMR staff has been trained on LCT and LCT advocacy. Maternal interview focus has been on African American women who have experienced a fetal and/or infant loss, with paternal involvement also assessed in the interview and abstraction. All FIMR cases received are referred to Contra Costa Crisis Center (CCCC) for grief and bereavement counseling and support regardless of ethnicity and/or socioeconomic status. More recently, newly referred women who received their prenatal care within Contra Costa’s CPSP receive enhanced support from the CCC and CPSP psychosocial staff. In addition, paternal involvement responsiveness has been incorporated into the FIMR referral form and during the data abstraction process.

Dallas

Maternal health and prematurity has been at the forefront of MCH issues in Dallas County since the completion of the PPOR, Phase I report. This county-wide issue has supported the need to address a mother’s health before she gets pregnant, further supporting the need to incorporate the life course theory into every day practice regarding FIMR data abstraction and the maternal interview. Special consideration was taken to further engage maternal interview candidates by incorporating interview questions that extended beyond the prenatal period, to address both pre-conception and inter-conception lifestyle and choices. The DCFIMR Maternal Interviewer spent additional time with each mother, inquiring as to her health prior to her pregnancy, her considerations and approach to pro-active family planning, and how she engaged her partner in those decisions, especially following the loss of her baby.
Delaware

The FIMR social worker has made some changes to the MI process as a result of her training and understanding of LCP theory. As per protocol in Delaware, the social worker finds it is helpful and important to get the mother and father’s history from Child Protective Service and criminal records, if any, prior to going into the maternal interview. These topics contribute to describing the LCP of the parents and give the FIMR social worker some awareness of the family situation she will be encountering. In the maternal interview, the FIMR social worker takes more time to introduce questions that were already part of the interview and ask about the mother’s childhood experiences and family environment. Giving a brief explanation of LCP to mothers helps give them some context for why questions about their early experiences are being asked. This portion of the interview is in the latter half of the social worker’s time together with the mother, because it is helpful to have built up rapport with the mother before talking about her childhood and family experiences. The FIMR social worker has found that some women are very forthcoming to discuss their experiences. The social worker is also asking a few more follow up questions if the mother seems willing to talk.

Upon completion of the interview, the FIMR social worker completes the MI summary checklist. The MI summary checklist captures risk and protective factors associated with the following categories: issues during childhood, employment history, housing, environment and community, transportation, social support, social stressors, cultural, violence/abuse, financial assistance prior to and during pregnancy, and referrals during and after pregnancy. The FIMR social worker presents the MI checklist to the CRTs as part of the case summary. The data in the MI summary checklist is also transcribed to a corresponding Excel spreadsheet to allow for easier reporting and tracking of the factors covered. In the medical record data abstraction process, training and discussion of LCP has heightened the FIMR abstractor’s awareness of capturing any information referencing the mother’s social and family history. The FIMR abstractor is more attuned to these details, whenever available in the medical record, particularly noting any mention of such topics as depression screening and domestic violence screening. In general, there is more information from prenatal records originating in hospital-based clinic settings than private providers’ offices.

Douglas County

A key focus of our grant was the LCT protective factors. As we searched the literature, we discovered that an extensive literature review focused on protective factors found in infant mortality had never been completed. One of our first steps was to convene a stakeholder group, which did a literature review on protective factors in infant mortality (220 total abstracts). The group identified a total of 35 protective factors, which were further vetted by the stakeholder group and honed to 19 protective factors. Our CRT then vetted the list and reduced the number to 18. This became our “working list” of protective factors. We then reviewed our current maternal interview questions to determine how many questions, if any, addressed the identified protective factors. We found that a number of the protective factors were already addressed in our interview, and added additional questions to capture the protective factors that were not already covered. We also extracted identified protective factors from the medical record when present. All identified protective factors were then included in the case summaries, which were reviewed by our CRT.

Michigan

FIMR abstractors have made a conscious effort to capture significant life course events for the case summary when these are available. Participation in the Life Course Symposium has led us to revise the tools we use for team deliberation and discussion. Michigan teams use an Issue Summary sheet to capture significant factors in each case that might warrant community action. Informed by the Life Course Symposium, teams made revisions to the sheet to incorporate preconception care and access to
health services before pregnancy and early in a young woman’s life, not just during the 9 month course of her pregnancy. Another change in data abstraction and interview questions brought about by life course is that we now gather information on the child welfare history of the mother, not just the children in her care. In other words, was this mother abused or neglected as a child, not just were there open CPS complaints involving this child or the case under review.

Maternal interviewers are now more in tune to probing the experiences of the mother and father of the infant as children themselves, their environment, and any encounters with systems of care where they felt they may have been treated differently based on their race or socioeconomic status. The Michigan FIMR CRTs across the state are now digging deeper into housing, exposure to secondhand smoke, breastfeeding, and sleep environment. Teams have come up with standard definitions for many factors, such as “unsafe neighborhood” (a neighborhood in which the mother resided during pregnancy and while the infant was alive and for which the mother or family discloses there is general fear for safety, or the neighborhood is known to local law enforcement or public health agencies to have a high incidence of violence, crime and neglect). Teams are now looking more closely at issues such as substandard housing, where housing does not meet local housing codes (i.e., there is evidence of unreliable heat, poor water quality, infestations, structural insufficiencies, and/or overcrowding).

Milwaukee

The FIMR/LCT process has informed our maternal interviews, abstraction, and review process in several important ways. First, we have begun reviewing and revising our maternal interview questionnaire to identify existing life course measures and add/adapt new measures. Examples of these new measures include questions that seek to gather information surrounding the pregnancy outcomes of the maternal grandmother, as well as the conditions of the neighborhood where the mother grew up. The mother is asked if she stills lives in this neighborhood and to rate environmental elements of her current neighborhood. We have also added questions on paternal involvement and engagement into our revised questionnaire. Mothers are asked how satisfied they are with the financial and emotional support they received from the father both during and after pregnancy. They are also given the chance to describe the level of involvement of their child’s father before and after the baby was born. Second, the LCT process has informed our abstraction process. Knowledge of the LCT has given our data abstractors a more critical eye in reviewing records and ultimately piecing together the “story” of a mother’s pregnancy, including her interconception, prenatal, and postpartum care. Ensuring that whatever available information regarding family history, education, life stressors, and support is included in the review of a case has become an essential part our of data abstraction process. Our team of abstractors is now more aware of the importance of including more life course information related to women in their abstractions. A maternal interview is certainly key to our understanding of these issues and strengthens our abstracted data. The information we receive through interviews, especially which is gained through the new life course-focused measures described above, ends up being very helpful during our review process. The LCT process has also informed our case review process and recommendations. The review team has become more informed of LCT since the LCT training led by Dr. Peck, Dean of the Zilber school of Public Health. In addition, the review process is becoming more inclusive of the LCT and paternal involvement and engagement issues. We are adding more life course and paternal involvement questions and deliberations to the review and addressing key factors in the recommendations we make. Maternal health, the family’s social situation, the neighborhood they live in, the crime statistics for that area, their economic and personal stressors—all of these factors play a part in the life and death of the infant. Finally, our team members are more comfortable with the LCT concepts and their ability to discuss these concepts with colleagues in their work and on the CRT. The process has also shown us areas where we need to identify and collect additional LCT data elements.
How has your CRT included LCT in its reviews and recommendations? Has it changed or expanded the review process?

**Baltimore City**

BC FIMR has implemented a new case form that enables us to better present the data we have abstracted that relates to LCT. This form is now standard for BC FIMR case reviews. BC FIMR also decided to implement the BASINET database for FIMR case analysis. We are using BASINET to record whether the CRT determined at the close of case review that the presence of life course factors was a concern or contributing factor in the mother’s health and fetal or infant death. BC FIMR will aggregate that data over time in order to inform our recommendations and report to the community on trends impacting fetal and infant mortality.

In addition, after having incorporated LCT into reviews during FY 2013, BC FIMR changed its case selection criteria for FY 2014. Once cases are selected for abstraction based on vital statistics data, we have decided to present to the CRT the cases that present significant psychosocial/systems issues—mental health, substance abuse, history of abuse, profound poverty—identified through data abstraction in order to further explore LCT through FIMR.

**Broward County**

Broward County’s CRT meets monthly and is composed of healthcare professionals and representatives of community agencies who volunteer their time. The team deliberates on the cause of death and asks the question, “Could this death have been prevented?” Based on the LCT, we strive to not only optimize the health arena but also to attend to the educational, economic, family, community, and physical environment. The FIMR CRT reviews its membership to ensure that as local trends change the appropriate members/stakeholders are involved and engaged to help identify gaps in services and develop a plan or make recommendations to enhance the service delivery process. The FIMR CRT was heavy on health professionals and needed a better cross-section of members. As such, HMHB of Broward recruited a mental health professional, Broward Sheriff’s Office Child Protective Team staff, substance abuse counselor, and a faith-based member to allow a broad range of representatives that provide services and resources for the women, children, and families we serve.

The FIMR CRT conducts a technical process utilizing a coding tool to identify strengths and contributing factors for each case reviewed. To enhance this process and ensure important information is discussed, a synopsis of the maternal interview is completed and the maternal interviewer provides an overview of the maternal/paternal interview. The team is able to ask questions regarding the parent(s) behavior, engagement level, and affect during the interview process. During the deliberation process the FIMR program manager asks probing questions to foster discussion, rather than just calling off numbers, to ensure an effective review process. In addition, the FIMR CRT has incorporated the summary of findings of the maternal interview tool in the review process to assist in identifying all areas of concern. The case abstractor also uses unconventional means to gather background information regarding each case when available.

**Contra Costa**

Contra Costa FIMR’s CRT has included LCT into the reviews by facilitating dialogue and focus around racism, socioeconomic status, and paternal involvement. As a team, there is profound recognition that many of the cases reviewed indicated client experiences of indigence, homelessness, and severe trauma.
Thus, with the increased recognition of trauma and mental health issues the CRT has become a collaborative leader in developing and/or participating in upstream coalitions and community campaigns.

Since LCT has been incorporated, the review process has changed. Questions are more in-depth and follow-up may be required to obtain more information in order to provide better service. Questions have shifted to be more strength-based, rather than deficit-focused. CRT expansion has moved to incorporate providers within the system of care as the “eyes and ears” of the clients who reside in Contra Costa County. Furthermore, three of our CPSP providers have initiated the incorporation of LCT into their weekly case review process.

Dallas

In order to streamline the case review process and provide a definitive guideline for recommendation development, Dallas County FIMR case review utilized the social ecological model as a theoretical foundation. Incorporation of the social ecological theory offers a theoretical framework and compliments the FIMR process by engaging thought and consideration for the cultural aspects of the individual, institutions and environment they interact with. The social ecological theory also works hand-in-hand with Lu, et al. 2010, Life Course Approach to addressing the black and white gaps regarding birth outcomes. Issues associated with each individual case have been identified using a tertiary level social ecological model developed by Jerry Roberson, DrPH, MPH, specifically for FIMR Case Review that identifies the interaction between individuals, service systems and the policy that drives the community. It is through this model that Dallas County FIMR has effectively identified gaps and tracked trends in community resources in order to make appropriate recommendations based upon policy change and systems improvement.

Delaware

In the course of case review, FIMR staff use the case discussion guide to better incorporate LCP information and facilitate discussion after going through the BASINET deliberation values for a case. The case discussion guide originally included four questions:

1. What were the key factors—either risk factors and/or protective factors—over the mother’s lifespan that had a significant impact on her health and well-being? Did these key factors vary during critical periods in the mother’s life?

2. What in the mother’s environment and community improved or diminished her health?

3. What does the team think was the cumulative effect—the balance of risk and protective factors—on the mother’s sense of well-being?

4. Does this case highlight or suggest equity issues (disparities) that affected the mother’s health or pregnancy outcome?

The community action teams of the Delaware FIMR consist of the DHMIC and its subcommittees. The statewide consortium has included discussion and training on the LCP as part of its regular meetings, annual summit, and action agenda. FIMR’s efforts to incorporate the LCP, thus, is very much in keeping with statewide approaches and serves to further build upon the common language and discussion of a multifactorial approach to improving maternal and child health and pregnancy outcomes and promoting health equity.

Douglas County
Once we’ve identified all risk factors for a case, the CRT as a group looks at the protective factor list and identifies all protective factors found in the case. These protective factors are then tracked in an Excel file. The top seven protective factors identified during case review from January–August 2013 are as follows:

- access to primary care and other health services;
- no prenatal tobacco use;
- strong and positive relationships;
- no exposure to chemical toxicants;
- a safe neighborhood;
- economic security; and
- having a reproductive life plan

We have also been correlating our “top five findings” from our case summary reviews with the appropriate social determinant of health (social, economic, or environmental factors). Each top five finding (with its corresponding factor) is then matched with the appropriate CRT recommendation. If the finding is “not covered” by a recommendation, then a new recommendation is developed or a current recommendation is revised to incorporate the finding.

Michigan

FIMR CRTs have begun to incorporate looking at past events in the mother’s and her extended family’s life through medical, social, and child welfare history. One Michigan FIMR director has begun to use LCT concepts in their community’s annual FIMR report. An excerpt from the report states:

*The Life Course Perspective (LCP) looks at the bigger picture and not the narrow view of nine months of pregnancy. The LCP involves expanding our focus to look at a person’s life as a continuum, with each stage affecting the next. Throughout a person’s life, he or she is exposed to risk factors (e.g., tobacco, alcohol, drugs, lack of education, no transportation, poor nutrition, poverty, domestic violence and stress) and to protective factors (e.g., education, social support, access to care, food, transportation). Some people have more risk factors than protective factors, while others have more protective factors than risk factors. The more protective factors a person is exposed to across his or her life span, the better his or her health and well-being, while the opposite is true for those exposed to more risk factors across their life span. We need to build on the protective factors and lessen the effects of the risk factors for all women, children and families if we are truly to see any changes in infant mortality and especially a decrease in the disparities in infant mortality.*

This same Michigan team is also using the Life Course 12-point Plan to frame their recommendations and the actions taken by the CAT. xxix

Milwaukee

Our current review includes discussion of some of the factors in the woman’s life that may have contributed to the observed outcomes. We are also having more conversations in the review process on how fathers are involved or could be involved in the family. Some of the providers are becoming more cognizant of the importance of including fathers during prenatal visits or labor and delivery after having gained a better understanding from the review process of the life course issues the women and their partners go through. The LCT framework has provided richer discussion and analysis during our review process. The understanding that a mother’s health and wellbeing are a product of life experiences, health behaviors, trauma, and stress have led our CRT members to identify factors in the life course that may have contributed to poor health or pregnancy outcomes, and also to question additional factors or
circumstances that may have gone overlooked previously. By doing this, a more complete, realistic perspective is added to the review, which, in turn, leads to more relevant recommendations.

Several of our recommendations encompass the LCT. Our most recent set of recommendations asks for improvement in women’s health and the quality of care across the lifespan, not solely during the prenatal period. Coupled with this is a recommendation that calls for the support and promotion of men’s health and fatherhood issues across the lifespan. Another recommendation places emphasis on improving reproductive health services in our city, beginning with girls and boys. With this recommendation, we acknowledge the importance of intendedness, contraception, and quality interconceptual care before a pregnancy begins. Finally, with the foundation of the LCT framework, our FIMR team recommends work to understand and eliminate racism, as well as the social, economic, and environmental determinants that negatively impact health. This recommendation is shaped by LCT’s focus on the community and underlying causes of health inequities.

We have also been looking at the issue of life course through the lenses of fairness and equity. Our review process now includes additional discussions at the end of each case review that examine the team’s perceptions about whether the mother they reviewed was treated fairly or unfairly. We realize we have much more work to do. We would like integrate more resilience and protective factors. We are in the process of developing a list of protective factors for the CRT to consider. These factors will be presented at all meetings, for all cases.

**How has your community action team incorporated LCT into their action agenda? Has this process diffused or strengthened the FIMR team focus?**

**Baltimore City**

A major focus of this project was to determine how BC FIMR’s two BHB NATs in Upton/Druid Heights and Patterson Park North & East, a critical part of BC FIMR’s community action arm, could best include LCT in their action agenda. Through a series of focus groups with each team and case presentations that typified the community based on neighborhood level-profiles, the NATs identified major issues in their communities and how they related to BC FIMR recommendations. Major life course issues differed for each community, which points to the need not only to take action to address life course factors but also to do so in a place-based manner.

In Upton/Druid Heights, NATs identified very high levels of maternal stress, transgenerational housing instability, lifelong chaos and unpredictability of poverty, normalization of violence and trauma (childhood, community, and domestic), social isolation, serious mental health concerns from childhood, and high involvement with CPS as major contributing factors to poor maternal health, teenage pregnancy, and high gravidity. Examples of activities to address these concerns included coordinating an all-day event at a local school to improve girls’ coping skills and self-esteem, holding “Mom’s Night Out” events focused on social support and stress reduction, and holding free infant massage classes to reduce stress and break cycles of child maltreatment in the community.

In Patterson Park North & East, a community with a quickly growing Hispanic immigrant population, there was concern about high lead levels in the community impacting child development across generations, high rates of smoking that are resistant to intervention and likely related to high maternal stress, the traumas of immigration, and higher numbers of sleep-related infant deaths. The NAT noted, however, that many families did appear to have better levels of social support than in other areas of the city, which is a key strength on which to build FIMR actions. For example, Patterson Park North & East is working with community health workers to address smoking cessation through use of natural social
networks to promote stress reduction and education.

Including LCT in the NATs’ action agenda has broadened their range of activities. Each team recognizes how critical such a comprehensive approach is to achieving a long-term reduction of fetal and infant mortality in the community. There is, however, some concern about the level of effort and resources required for this kind of response. The key for the NATs will be to focus on specific targets for action and capitalize on activities already occurring in the community for sustainability.

**Broward**

Under the direction of Broward Healthy Start Coalition (BHSC), the FIMR CAG process has been revitalized. Co-chaired by a member of the BHSC Board and a community representative, and facilitated by consultants of the Ronik-Radlauer Group, the CAG reconvened in January 2013 and meets monthly. The CAG is comprised of a diverse group of community stakeholders and leaders who represent a variety of disciplines. The CAG is responsible for reviewing the CRT recommendations and implementing strategies and action steps improve the local delivery system. They are also responsible for assuring each major issue identified by CRT is being addressed by one of the committees within the Maternal Child Health System. CAG provides a forum for feedback and input regarding community-based initiatives and strategies. This process offers an opportunity for dialogue and sharing of ideas, reducing duplication of efforts, maximizing resources, and increasing economies of scale. CAG guides change efforts through the use of results-based accountability. The local process has been transforming over the past year to ensure that issues and challenges are being addressed at a systems level. FIMR issues are now being addressed by existing CATs or by specific community initiatives. If not, the CAG identifies a champion and assists in the development of a community-based committee structure.

**Contra Costa**

FIMR and partners have created initiatives and activities that focus on populations with the highest risk of health disparities. Thus, FIMR focus has been to partner with those agencies that regularly participate in community events. FIMR has continued to promote a FIMR LCT agenda in each activity and collaborative in which we participate. For example, each agenda contains the following: Contra Costa FIMR Program information; review of LCT; definitions of health, social determinants of health, and health equity; data and definitions on racism, socioeconomic status, and paternal involvement; and specific interventions that are trauma informed, strength, and resilience based.

Our current process has been strengthened because the content of FIMR LCT has been integrated into the Contra Costa perinatal system of care. Providers are aware of our program, know how to refer clients, and understand our process of linking clients with grief and bereavement services. In addition, our perinatal providers are capturing paternal involvement through assessment questions, distributing “father-friendly” brochures, and encouraging fathers to attend prenatal care visits. Other ways of integration include how public health nurses are integrating paternal involvement into their work and FIMR’s inclusion into the MCAH scope of work. Lastly, our FIMR LCT process has revitalized Contra Costa SIDS work.

**Douglas County**

Douglas County Health Department engages a range of community partners through the Baby Blossoms Collaborative to address the contributing factors and recommendations identified in the data and case review process. The year 2012 began a two-year cycle to ensure that the systems changes implemented by BBC are substantial and sustainable. Generally, two full years of data lead to CRT crafting recommendations. Due to the integration of LCT into CRT, no new recommendations will be submitted to the CAT. Instead, the current community action plan will be assessed based on the
preliminary data obtained from CRT. Protective and risk factors obtained from the analysis will be matched with the appropriate priority areas listed in the community action plan. Evidence based strategies will be identified and utilized within the community action plan to raise protective factors and lower risk factors.

**Michigan**

As part of the work plan for the NFIMR life course grant, the MDCH purchased two complete kits of the life course game created by City MatCH. Teams are encouraged to “borrow” the games for their community events and training opportunities. One Michigan team has used the game with their nurses and public health staff in their division, many of whom are members of the CAT. They have plans to expand use of the game to their incoming medical residents who provide prenatal care to a large segment of the underserved women in the community.

**Milwaukee**

The LCT paternal involvement and engagement process has definitely increased our awareness of the historical life changes faced by women, and particularly how racial/ethnic minority women grow up, live, work, and conceive. The life course theory shapes some of the outcomes we see in the FIMR review process. We are exploring ways of linking this knowledge and information into our action agenda. The process has not completely diffused in our community. One plan is to engage the area nursing schools in trainings on LCT using the life course game and integrate paternal involvement and engagement in the discussions. Nurses play a critical role in the delivery of services to pregnant women; as such, we think providing opportunities for additional training in this area may be a key way of influencing the delivery of services to women in our city.

This process has led to a reevaluation of our current FIMR process. Some of these changes are: 1) including more neighborhood contextual data and information (e.g., income, crime statistics, poverty rates, home purchases, average income, high school graduation rates, etc.) at the zip code level for each death reviewed; 2) planning a community asset map by zip code; and 3) planning a resiliency checklist for each death reviewed and ending each case review with the question, “Was this mother, this family treated fairly?”

**Tulsa**

TFIMR and its community partners strive to improve birth outcomes through a multitude of avenues for the residents in Tulsa MSA. The assessment tool created and piloted within this grant project has the capability of being applied not only to other FIMR programs but to other programs geared towards improving health outcomes in maternal and child health.

**What is your FIMR program mission statement and has that changed since implementing LCT? If yes, please explain.**

**Broward**

The goal of the FIMR is to prevent infant mortality through the review of fetal and infant deaths. FIMR allows communities a way to discover unmet needs and improve the wellbeing of women, infants and families. HMHB of Broward has drafted a mission statement to reduce fetal and infant deaths by educating families on infant mortality through the collection, analysis, and utilization of data and providing comprehensive bereavement support services. This mission statement will be presented to the CRT and CAG for approval. HMHB of Broward is working collaboratively with the
maternal and child health community to increase awareness on the problem of infant mortality and to educate the community on what can be done on an individual basis to decrease the rate of infant mortality.

Contra Costa

The mission of the Contra Costa FIMR program is one that is committed to a long-term partnership to improve the health and wellbeing of our women, infants, and families. Using the FIMR community-based, action-oriented process, we strive to improve systems of care and community resources through cooperative education, prevention, and interventions. Since implementation of LCT, our FIMR mission statement has changed where we have expanded our program’s goal. We have also increased the number of agencies we collaborate and work with. These new collaborative efforts allow new agencies to be our “eyes and ears.” We have institutionalized agreements with community partners to provide grief and bereavement services due to our diminished funding. Our perinatal system of care, which includes local delivery hospitals, assures that staff offer and make referrals to us. Another change involves moving upstream to promote health equity, including dialogue on social determinants of health, racism, socioeconomic status, trauma, resiliency, and more recently, paternal involvement.

Dallas

The primary and emerging goal of the Dallas County FIMR pilot period program was to directly align with the National FIMR Program process and replicate it in Dallas County as an evidence-based method to reduce infant mortality. Our mission statement has remained the same as it directly aligns with the State of Texas, Healthy Texas Mothers and Babies vision and mission, as well as our lead agency, Parkland Health and Hospital System.

Delaware

By Delaware statute, FIMR is tasked with alleviating “those practices or conditions which impact the mortality of children and pregnant women.”xxx. With the incorporation of the LCP into the FIMR data collection and case review process, the multiple sectors impacting women’s health and experiences—biological, behavioral, psychological, social, environmental, and community factors—are better articulated as part of the deliberation process. While no formal changes were made to the FIMR mission statement, the LCP complements and enhances the FIMR process by providing a theoretical framework to conceptualize risk and protective factors and consider interventions.

Douglas County

We have not changed our mission statement, as we feel it already compliments the LCT elements we have incorporated into our FIMR process. It talks about contributing factors, mentions the need to identify and eliminate health disparities, discusses strengthening community capacity, and finally, mentions the need to reduce the overall fetal/infant mortality rate.

Milwaukee

The City of Milwaukee’s FIMR seeks to identify each factor contributing directly or indirectly to the infant’s death, and to identify opportunities to improve our community’s systems of services for pregnant women, infants, and families with young children. The mission as written has not changed since implementation of the LCT project. However, we are planning to discuss the mission after the analyses of the current project and identify ways we can revise the mission to reflect the LC perspective.
Thinking back on your experience, what would be the most important advice that you would give a FIMR program about incorporating LCT into FIMR?

**Baltimore City**

The most important factor in incorporating LCT into FIMR is to ensure that team members are ready for the process. In the case of BC FIMR, that meant addressing both the team composition and education of team members about LCT. BC FIMR added members to the CRT to better reflect the makeup of the community (for example, a member of the faith-based community and a mother who has lost a baby and has knowledge of service systems).

**Broward County**

The LCT strengthens the FIMR process and allows for the data collected to be more qualitative and better reflect the individual’s protective and risk factors, not just at the time of a fetal/infant death, but throughout the individual’s life. CRT members who have volunteered their time year after year to review and deliberate on the cases abstracted are becoming more sensitive to the individual’s life issues as a whole that may have contributed to their loss.

**Contra Costa**

First, it takes time and patience to incorporate, integrate, and implement “new” theory into practice. What facilitated our process is that Contra Costa FMCH incorporated the LCT in 2005 through the leadership of the FMCH director. This was a comprehensive and often challenging process. Moreover, it was a catalyst for our current accomplishments. Providers are excited to have dialogue about LCT and how it impacts the clientele they serve. Moreover, Contra Costa FIMR incorporated LCT during 2010–2011 when we spent a year educating providers on LCT.

Second, educating providers and fostering coalitions and networks becomes a consistent and intentional component of FIMR LCT work. Necessary time is required for LCT dialogue about organizational change practices. In addition, direct services staff and management must become willing to buy-in and accept the LCT process through continued dialogue and practice. Dialogue and research regarding the issues and stressors of racism and its impact on health is still new, complex, and can be difficult to discuss in professional diverse settings.

Finally, it’s necessary to align with traditional and non-traditional partners. Many non-traditional partners such as the coroner’s office and unified school districts still cannot imagine fetal and infant mortality upstream interventions related to their own work. However, through presentations about FIMR LCT, a number of opportunities to work with non-traditional partners have emerged. One such partnership is an alignment of prenatal care and early childhood development providers. FIMR LCT has been asked to collaborate about the issues of racism that infuses the provision and quality of care. In addition, FIMR LCT has an opportunity to deepen our work in the faith-based and paternal involvement community through resource and program development, as well as linking these institutions with traditional perinatal partners.

**Dallas**

At Dallas County FIMR, we are firm believers in the Maternal Interview and how it drives our every approach, whether it is the development of recommendations or instituting change in the community through community action and intervention. Without the mother’s voice, a FIMR group can only begin
to speculate on how mother’s and families navigate service systems. Through the FIMR process here in Dallas, we quickly realized that even though several resources are existing, families still struggle to access the resources they need. Though there is still much work to be done, we have valuable insight from our consumers that drive the decisions that we make as providers, agencies and institutions.

Delaware

Some important lessons have been learned in the process of undertaking the changes to the FIMR process. First, it is helpful to have a training of all CRT members on the LCP. This can help ensure that all members have a common basis for understanding the LCP theory and the range of factors to consider. Second, we found that introducing a case discussion guide to help summarize salient risk and protective factors and health equity issues was important to return the conversation to the “big picture” to wrap up a case and consider it in its totality. Finally, we feel that ongoing feedback and refinement is crucial. In July 2013 a CRT member survey was conducted to get feedback on some of these review process changes. Fifty percent of the 22 CRT members who responded found the MI summary checklist “very helpful,” and 54% found the case discussion guide “very helpful.” Overall, 58% of respondents described the CRT deliberation process as “somewhat improved” by the addition of LCP changes, and 26% reported the process “improved.”

Based on CRT feedback and the observations of FIMR staff, changes were made to the case discussion guide to reduce redundancy and simplify the review process. The case discussion guide was shortened to just two questions: 1) What were the key factors—either risk factors and/or protective factors—over the mother’s lifespan that had a significant impact on her health and well-being? Did these key factors vary during critical periods in the mother’s life? and 2) Does this case highlight or suggest equity issues (disparities) that affected the mother’s health or pregnancy outcome?

Also, the MI summary checklist is now presented before the team’s discussion of the BASINET deliberation values, rather than afterwards, to help summarize the case and bring salient risk and protective factors forward prior to the case discussion. The FIMR staff plan on repeating the CRT member survey in the summer of 2014 after another nine months’ of experience with the LCP changes and enhanced deliberation process for cases with an MI.

Douglas County

Converting theory into practice is hard work! When changing FIMR processes, keep it simple. It’s difficult to interpret positive data when you’re working with negative outcomes. Training CRT members works best when there are multiple training options. FIMR referral works best when both parties (referral source and FIMR program) have something to offer. The complexities of integrating two models are best undertaken as a pilot project.

Michigan

Be very intentional in your team’s commitment to equity. Equity is not the same as equality. Equity recognizes and incorporates the concept that not everyone gets the same start in life.

Milwaukee

Develop a clear understanding of life course theory. Most of the indicators currently available and abstracted in the FIMR review process are not necessarily assessing life course issues and instead tend to be cross-sectional indicators of a single point in time of a woman’s life. Seek ways to capture indicators that assess a woman’s more complete life story. Second, there is the need to make sure the women’s life
course is integrated with a better understanding of fathers’ life course. The life course of women is somewhat influenced by the male partners in their life, as children, adolescents, young women, and older women. Finally, provide education on the LCT to the CRT so that everyone has this additional lens through which to review cases of fetal and infant death.


In the life course game, participants are led through an interactive experience, designed to illustrate key concepts of the life course framework.

