

# **The Strategy to Improve Birth Outcomes in Baltimore City**

**April 2009**



The Family League of Baltimore City, Inc.

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## I. EXECUTIVE SUMMARY

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African-American infants in Baltimore are dying at an alarming rate, with little progress made over the last decade. Building on the foundation of past and current efforts, this document sets out a citywide strategy for improving Baltimore's birth outcomes over the next three years and for creating a platform for lasting change.

The *Strategy to Improve Birth Outcomes in Baltimore City* starts with the understanding that many factors contribute to the three leading causes of excess infant death in the city: pre-term birth, low birthweight, and unsafe sleep. These factors include the health of the mother and father before conception, medical and social support during pregnancy, and access to critical information and services after birth.

To address these factors, the strategy identifies eleven evidence-based, high-impact services that must be available, of high quality, and connected with those at high risk. These service areas are:

- Primary Health Care in Medical Home
- Obstetric Care
- Home Visiting
- Drug and Alcohol Treatment
- Intervention for Domestic Violence
- Mental Health Care
- Smoking Cessation
- Family Planning
- Nutrition Support
- Breastfeeding Promotion
- Safe Sleep Education

The strategy identifies 12 of the city's 55 community statistical areas for initial targeting. Reducing the number of infant deaths in these areas to the state average would reduce the city's total number of excess infant deaths by about 60%. The strategy proposes that a community-based program in each of these areas takes responsibility for community birth outcomes. Backed by a citywide media campaign, these programs will generate demand and utilization for each of the high-impact service areas through intensive outreach and education. Simultaneously, the strategy envisions that local health agencies and the Department of Health and Mental Hygiene will work to expand the scale and capacity of the high impact services and to promote quality improvement in services for city residents.

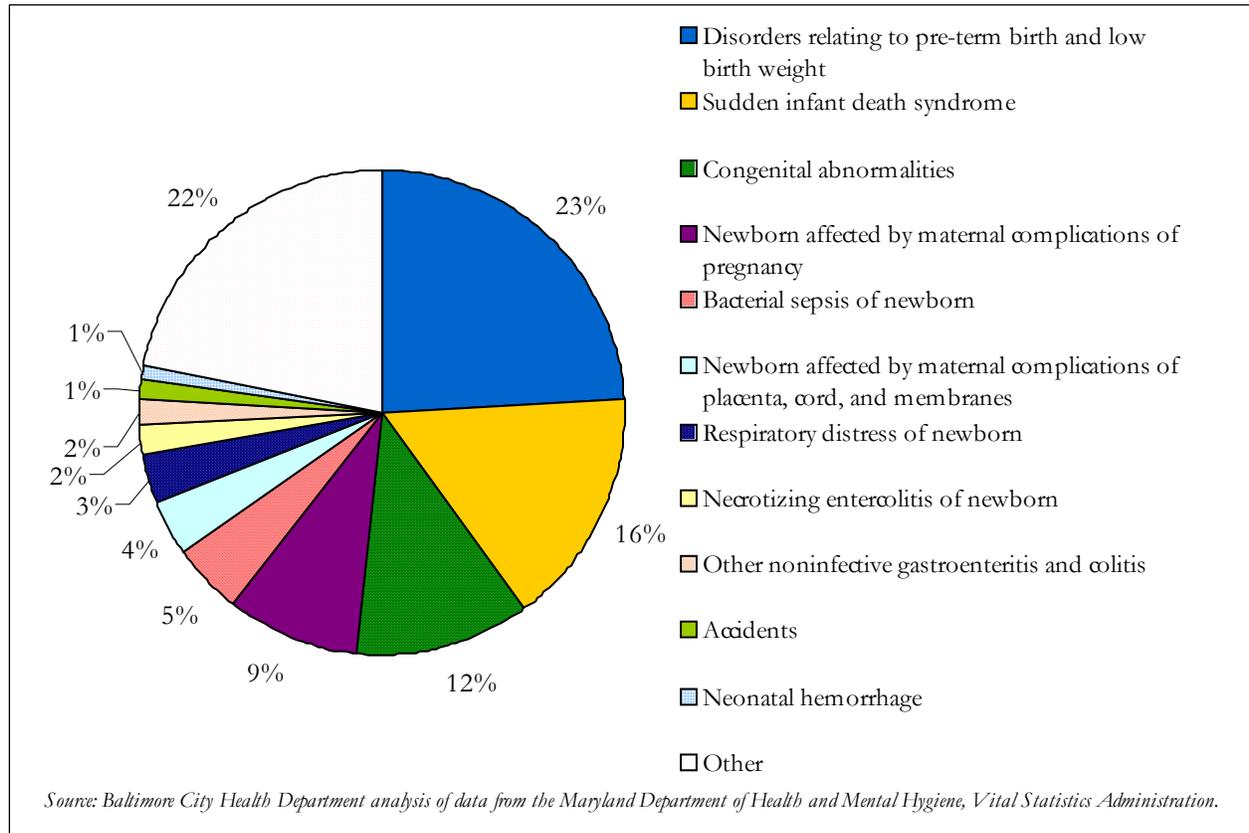
The plan's success will be measured by rates of pre-term birth, low birthweight, and deaths from unsafe sleep in select communities and in Baltimore as a whole over the next three years. The goals are a 10% decline in prematurity, representing 283 fewer preterm babies, a 10% decline in low birthweight, representing 259 fewer low birthweight babies, and a 30% decline in deaths from unsafe sleep, representing 12 fewer sleep-related tragedies. The success of community programs in linking residents to the high-impact services will also be closely tracked, and local agencies will be accountable for efforts on capacity and quality.

## II. POOR BIRTH OUTCOMES CONSTITUTE A PUBLIC HEALTH CRISIS IN BALTIMORE

In 2007, 112 babies from Baltimore City died before their first birthday. Of these, 106 were born to African-American mothers.<sup>1</sup>

The rate of infant death in Baltimore was 11.3 per 1,000 live births in 2007,<sup>2</sup> the second highest of Maryland jurisdictions, and higher than the rates of some developing countries.<sup>3,4</sup> The city's rate of infant mortality among African-Americans was 15.5 per 1,000 live births, reflecting deep health disparities. The cost of poor birth outcomes can be measured in medical expenses, lost productivity, and social injustice.

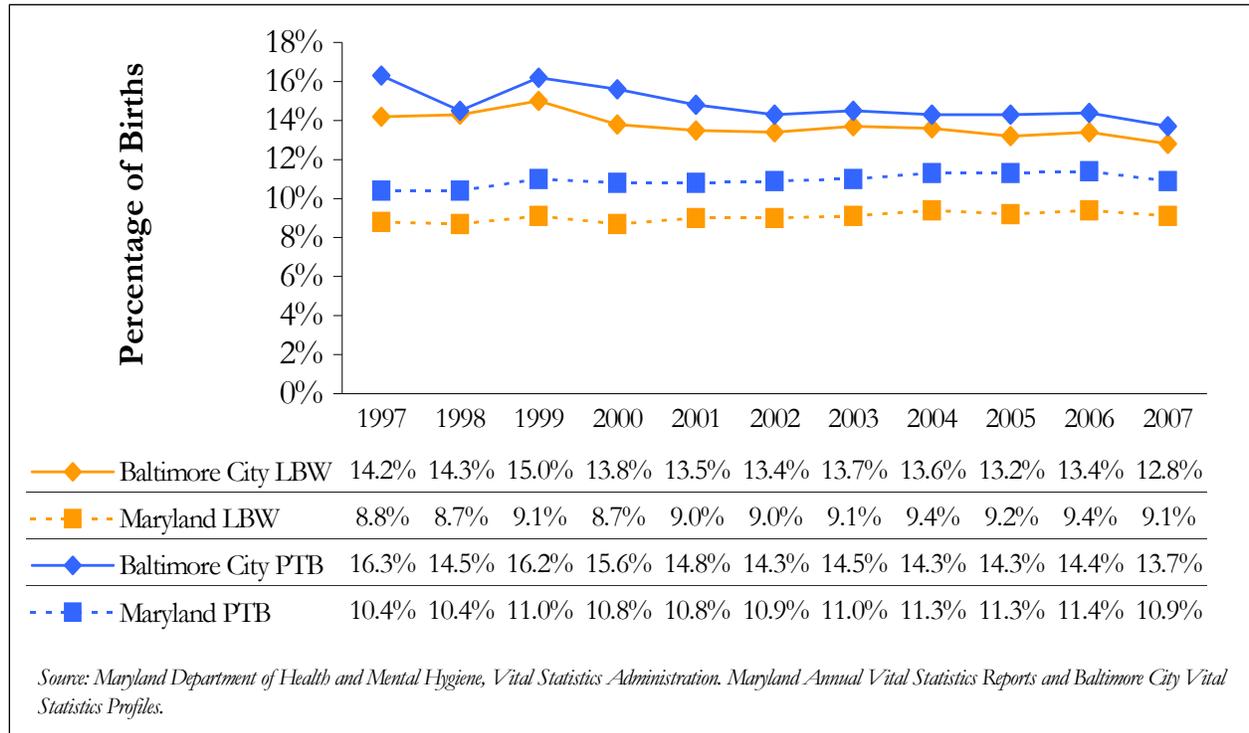
**Figure 1. Leading Causes of Infant Mortality, Baltimore City, 2005-2007**



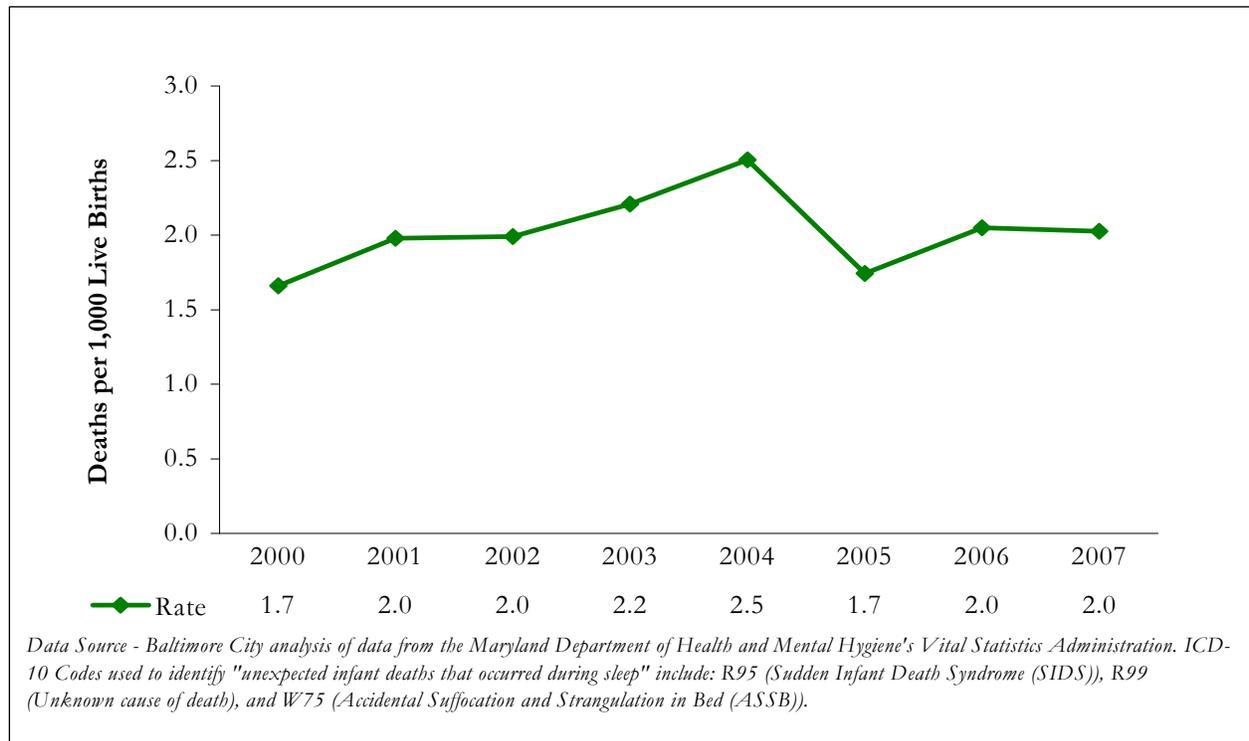
The leading causes of infant death in Baltimore are pre-term birth, low birthweight, and unexplained death related to unsafe sleeping arrangements (Figure 1). Such adverse birth outcomes represent a stubborn public health challenge in Baltimore, with little progress made over the last decade. (Figures 2 and 3).

Fortunately, the foundation for progress on birth outcomes in Baltimore is strong. Neighborhood-based efforts, including the federal Healthy Start Initiative, started in the early 1990s and now have deep roots in specific communities across the city. Starting in 2000, Baltimore's Success By 6 Initiative strengthened the infrastructure of home visiting supports for pregnant and parenting women in selected high-risk communities. The Fetal and Infant

**Figure 2. Poor Birth Outcomes: Low Birth Weight (LBW) and Pre-term Births (PTB), Baltimore City and Maryland, 1997-2007**



**Figure 3. Poor Birth Outcomes: Unexpected Infant Deaths that Occurred During Sleep: Baltimore City, 2000-2007**



Mortality Review and Child Fatality Review processes, started several years ago, identified the challenge of sleep-related deaths. Representatives from over twenty organizations across Baltimore City, meeting from October 2006 to January 2008 through the Babies Born Healthy Leadership in Action Program, worked together to develop principles to improve birth outcomes.

The approaches and services put into place over the past two decades provide a platform on which a renewed focus and comprehensive strategy for improving birth outcomes can be launched.

This document is based on planning by the Baltimore City Health Department, in coordination with the Family League, the Maryland State Department of Health and Mental Hygiene, and a wide range of community-based agencies and local experts. It incorporates the latest evidence for reducing infant mortality and will integrate new research as it becomes available. It sets forth a comprehensive, three-year approach to improving birth outcomes by supporting health before conception, during pregnancy, and after birth. Efforts over the next three years will build a foundation for lasting change.

The strategy assigns responsibility for specific tasks to existing agencies and includes a measurable plan to accomplish three key objectives: (1) increasing demand for and utilization of high-impact services by engaging city communities; (2) expanding capacity of high-impact services; and (3) improving the quality of these services.

### **III. A SUCCESSFUL APPROACH TO IMPROVING BIRTH OUTCOMES MUST ADDRESS MANY FACTORS**

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Poor birth outcomes reflect the health of our communities. Many social and medical factors interact before conception, during pregnancy, and after delivery (Table 1).<sup>5</sup>

The health of a mother long before conception can critically affect the health of her baby.<sup>6,7</sup> Research demonstrates that stress, chronic illness, substance abuse, and poor nutrition are all associated with poor birth outcomes. The risks are especially high with early, unplanned pregnancies. In Baltimore, nearly 20% of high school students are obese, 12% of teenagers smoke, and 18% of babies are born to teen parents.<sup>8</sup> Poverty, violence, and racial discrimination are among the underlying elements that contribute to high stress levels.<sup>9</sup> Unsafe and unstable housing is also a significant source of stress.<sup>10</sup>

In light of the statistic that more than 50% of pregnancies in the United States are unplanned, there is no meaningful distinction between routine primary care for reproductive age women and preconception health. All clinicians caring for women in the reproductive years are providing pre-pregnancy, or pre-conception, care.<sup>11,12</sup>

During pregnancy, women and their partners need support from their communities and the medical system. Key risk factors include late entry into medical care that may be poor quality, exposure to domestic violence, and inadequate understanding of nutrition, exercise, and the warning signs of complications. In Baltimore, about one in four women initiate prenatal care

after the first trimester.<sup>13</sup> As many as one in five women are victims of domestic violence during pregnancy.<sup>14</sup>

**Table 1. Determinants of Poor Birth Outcomes and Interventions Specific to Life Stages**

Stage	Pre-Pregnancy	Pregnancy	Post-Pregnancy
Care	Preconception	Prenatal & Obstetric	Postpartum & Neonatal
<b>Modifiable Determinants of Adverse Outcomes</b>	Smoking Substance Abuse Poor Nutrition/Obesity Psychosocial Stress Domestic Violence Infection/Sexually Transmitted Infections Underlying Chronic Illness Lack of Health Insurance Coverage		
<b>Underlying Determinants of Poor Reproductive Health</b>	Poverty Environmental Exposures Poor Housing Racism Genetic Factors		
<b>Interventions Specific to Stages</b>	<ul style="list-style-type: none"> <li>• Planned pregnancies:                             <ul style="list-style-type: none"> <li>○ Wanted &amp; timed</li> <li>○ Spaced</li> </ul> </li> <li>• Good nutrition                             <ul style="list-style-type: none"> <li>○ Adequate folate</li> </ul> </li> <li>• High quality primary care</li> <li>• STD treatment</li> </ul>	<ul style="list-style-type: none"> <li>• High quality prenatal care</li> <li>• Access to high-risk obstetrics</li> <li>• Home visiting for high-risk pregnancies</li> </ul>	<ul style="list-style-type: none"> <li>• Breastfeeding</li> <li>• Safe sleep</li> <li>• Adequate nutrition</li> <li>• Immunizations</li> </ul>

The post-partum period brings unique challenges. Unsafe sleep practices put babies at risk of dying at home.<sup>15</sup> From 2002 to 2006, the deaths of eighty-one infants in Baltimore were associated with newborns in unsafe sleep environments – for example, not sleeping alone, on their back, and in a crib.<sup>16</sup> Having another baby too quickly also raises the chance of an adverse outcome, with the ideal interval being at least eighteen months between pregnancies.<sup>17</sup> Mothers whose babies have suffered complications or death are often at high-risk for repeat adverse outcomes.<sup>18,19</sup>

***ELEVEN HIGH-IMPACT SERVICE AREAS***

The wide range of factors contributing to poor birth outcomes means that there is no single solution to the problem. No community has discovered a quick fix for adverse birth outcomes. Yet several have found success using specific strategies.

Data from research and experiences around the world indicate that eleven high-impact services are most likely to improve outcomes:

1. **Primary health care in a medical home.** High-quality primary care in a medical home can improve the health of the mother and father long before conception.<sup>20,21,22</sup> Improving preconception health is now recognized as one of the key determinants of

infant and child health and was a key impact area of the Babies Born Healthy Leadership in Action Program.<sup>23</sup>

2. **Obstetric care.** Thorough prenatal and obstetric care can help avoid or appropriately manage obstetric complications, including infections, hemorrhage, and eclampsia.<sup>24</sup> It can also help chronically ill women manage pregnancy successfully.
3. **Home visiting.** Effective home visiting interventions have been associated with reductions in low birthweight and increases in the intervals between pregnancies.<sup>25,26</sup>
4. **Drug and alcohol treatment.** Substance abuse treatment improves both the health of the mother and the fetus.<sup>27</sup>
5. **Intervention for domestic violence.** Homicide is the second most common cause of injury-related death among pregnant women and new mothers.<sup>28,29,30</sup> Violence during pregnancy has been linked with poor birth outcomes, including low birthweight and preterm births, as well as maternal morbidity.<sup>31</sup>
6. **Mental health care.** Untreated depression and anxiety lead to increased rates of pre-term birth and more low birthweight infants.<sup>32</sup> Addressing mental health and substance abuse is a key goal of the Babies Born Healthy Leadership in Action Program.
7. **Smoking cessation.** Smoking by the mother during pregnancy, combined with second-hand smoke from caregivers after delivery, negatively affects the infant's health before birth and after delivery. Smoking cessation programs for pregnant women are effective and can improve birth outcomes.<sup>33,34</sup>
8. **Family planning.** Appropriate spacing between pregnancies and planning pregnancies are associated with better birth outcomes.<sup>35,36,37</sup> Reducing unintended pregnancy is a key impact area proposed by the Babies Born Healthy Leadership in Action Program.
9. **Nutrition support.** Folate supplementation is an established intervention that reduces the rate of neural tube defects in unborn infants.<sup>38</sup> Improved nutrition through Women, Infants, and Children has had a positive effect on birth outcomes.<sup>39</sup> The negative effects of obesity contribute to poor health of the mother and poor birth outcomes.<sup>40</sup>
10. **Breastfeeding promotion.** Breastfeeding strengthens the immune defenses of a newborn and can improve the chances of an infant's survival.<sup>41</sup> It also enhances mother/ baby bonding.
11. **Safe sleep education.** Changing the sleeping arrangements for newborns can dramatically reduce mortality after birth.<sup>42</sup> Reducing sleep-related infant deaths is a key impact area proposed by the Babies Born Healthy Leadership in Action Program.

Of these eleven high-impact services, the medical home can play a central, organizing role. High-quality care before conception can ensure access to a range of critical services, such as reproductive health care and nutritional supplementation with folic acid. A medical home can help manage chronic health conditions, such as hypertension, diabetes, and obesity; these health conditions can have a profound effect on the health of a mother and her unborn infant. This primary health care model offers multiple opportunities for screening and referral to mental health, substance abuse, smoking cessation, and domestic violence services.

#### ***UNDERLYING FACTORS OF POOR BIRTH OUTCOMES NEED ATTENTION***

To improve poor birth outcomes in Baltimore City, this strategy will target the eleven high-impact health service areas. We cannot ignore, however, the underlying factors of poor birth outcomes, including poverty, inadequate and unstable housing, racism, unemployment, environmental exposures, genetic factors, and low levels of education<sup>43,44,45</sup> While the strategy will not directly fund efforts in these areas, it will be aligned with citywide efforts addressing these issues and will provide a mechanism for coordination and advocacy on social issues.

For example, if community-based programs engaged in this strategy identify a housing policy that is detrimental to health, the network of partners supporting the plan can make this information available and advocate for change. Conversely, as new programs are developed, such as for housing or job training, information can be disseminated through the community programs.

Because birth outcomes reflect deep social and health disparities, a resolution of the birth outcomes crisis in Baltimore will be intertwined with improvements in the social and economic conditions of the city. Better organized and coordinated public health services are important elements in a holistic approach to achieving improvements in the health and wellbeing of all city residents.

#### **IV. CURRENT EFFORTS TO IMPROVE BIRTH OUTCOMES IN BALTIMORE LEAVE MANY GAPS**

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Many programs in the city seek to improve the health of women, support pregnancies, and reduce avoidable infant deaths at home. These efforts, however, are underfunded and poorly coordinated, leaving many critical gaps in capacity, quality, and demand.

##### ***BEFORE PREGNANCY***

Supporting the health of young women and men before pregnancy is essential for improved birth outcomes. Examples of resources in Baltimore that support health before pregnancy include:

- 3 clinics specifically for adolescents
- 17 school-based health centers
- 7 Federally Qualified Health Center systems<sup>46</sup>

- Several reproductive health clinics serving 15,500 family planning clients annually in the pre and post pregnancy periods<sup>47</sup>
- Pregnancy testing services offered by both Planned Parenthood and the city's Reproductive Health Clinics and others
- 7 programs for smoking cessation
- More than 100 substance abuse treatment programs, 12 of which can accommodate women and their children<sup>48</sup>
- 46 recreation centers and 6,000 acres of parks for exercise<sup>49</sup>
- Several small, community-based efforts targeted at improving the health of young women<sup>50</sup>
- Faith-based institutions' health ministries
- 106 schools with school based mental health services<sup>51</sup>
- A network of predominately private, non-profit providers that deliver mental health services through a fee-for service model to over 30,000 individuals who are Medicaid or Medicare recipients or are uninsured<sup>52</sup>
- A 24/7 mental health crisis response line with the capacity for mobile crisis response services<sup>53</sup>
- 1 mental health ministry project<sup>54</sup>

Despite these resources, there are serious gaps in capacity, quality, and community demand for high-impact services. Critical capacity gaps include: (1) lack of health insurance, with an estimated 14% of women in Maryland being uninsured;<sup>55</sup> (2) an inadequate number of primary care and reproductive health appointments; (3) insufficient programs for exercise in many areas; and (4) poor access to nutritious food.

A recent report by the RAND Corporation found very high rates of preventable hospitalization in Baltimore. The authors estimated that the city is experiencing an ambulatory care gap of 150,000 visits per year or more.<sup>56</sup>

Critical quality gaps include the lack of a minimum standard of care for young women and men in the city. For example, some adolescent care providers may offer reproductive health care, substance abuse assessment and referral, and comprehensive medical care; others merely provide school physicals.

There is little coordinated community mobilization to increase demand for pre-pregnancy health services in Baltimore. Funding generally supports discrete programs responsible for youth served, not for community outcomes. As a result, there are few coordinated efforts to ensure that as many young people as possible receive high-impact services.

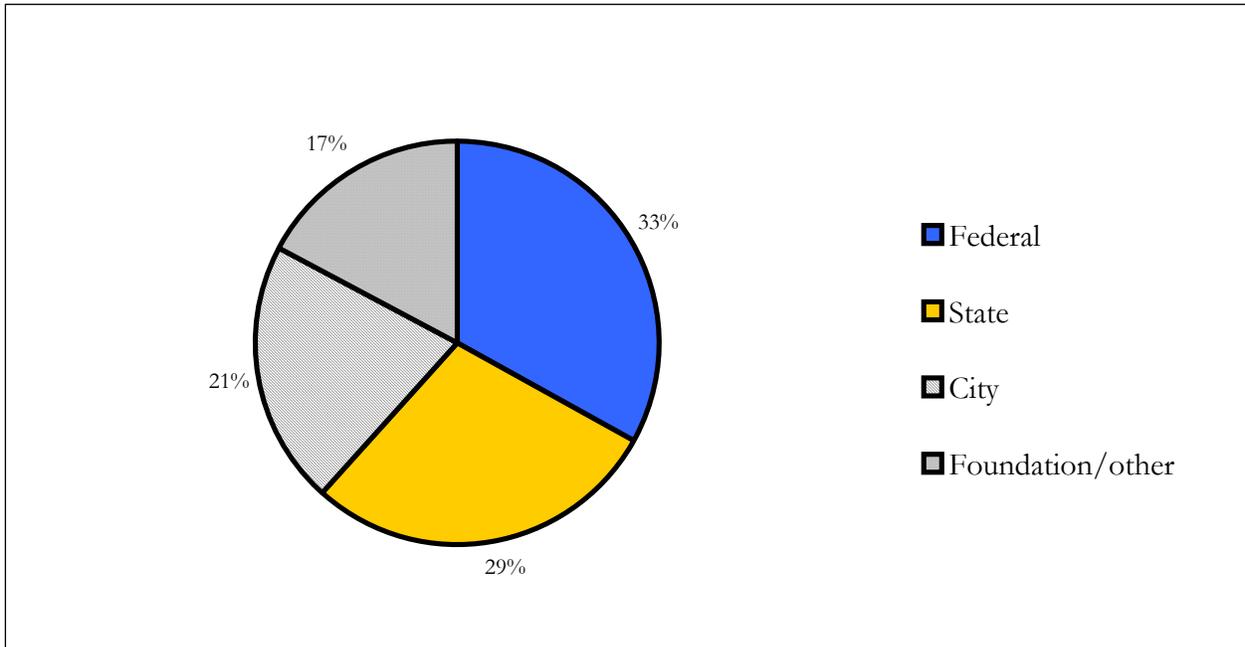
### ***PREGNANCY***

Early identification of pregnancies and referral to appropriate care and support are essential for avoiding infant loss. Examples of resources to support pregnancies in Baltimore include:

- 7 outreach workers, 2 social workers, and 2 nurses at Baltimore HealthCare Access who work to refer women to care through the Medicaid program

- 8 home visiting programs for pregnant and post-partum women, with a combined annual budget of approximately \$7 million<sup>57</sup> (Figure 4)
- 8 birthing hospitals<sup>58</sup>
- Approximately 200 providers of obstetric services to Medicaid clients
- A 16-bed mental health transitional program available in lieu of incarceration for pregnant women identified through the criminal justice system

**Figure 4. Sources of Funding for Home Visiting Programs in Baltimore: Fiscal Year 2008**

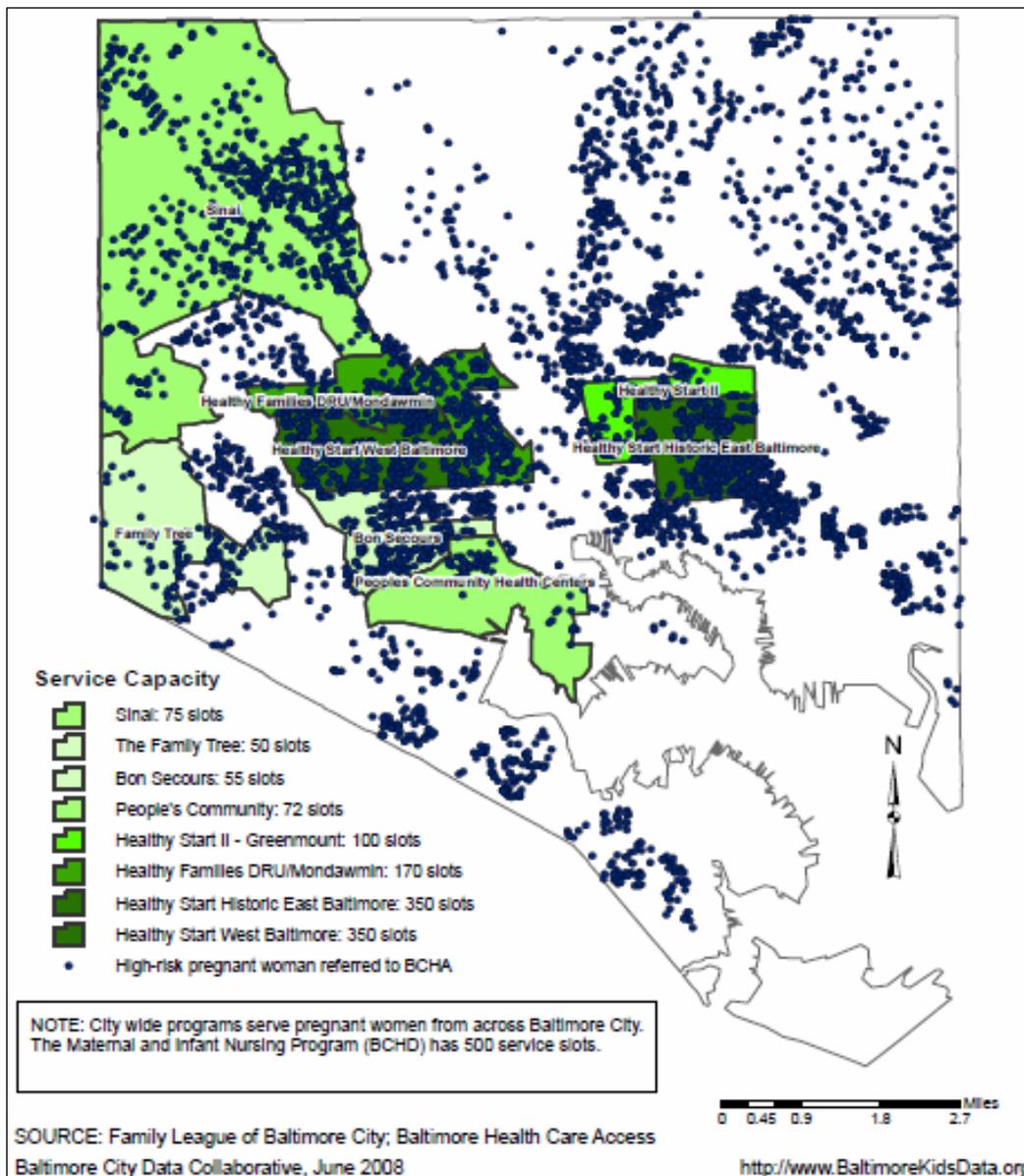


Despite these resources, there are large gaps in capacity. Approximately 6,000 of the city’s 10,000 births are classified as high-risk because of poverty, previous adverse outcome, or severe form of a medical condition such as obesity or hypertension.<sup>59</sup> Five thousand of these 6,000 are referred to Baltimore HealthCare Access. Only 3,500, or approximately 75%, are contacted by outreach workers. Of these, only 1,500 women receive ongoing support from a home visiting program.<sup>60</sup> Home visiting programs lack the capacity to serve high-risk pregnancies in many areas of the city (Figure 5). In addition, uninsured pregnant women often have difficulty accessing prenatal care.

Existing home visiting programs in Baltimore use different models, standards of care, and goals.<sup>61</sup> Independent evaluations of several of these programs have recommended that more attention be paid to service quality and outcomes.<sup>62,63,64</sup>

Baltimore’s home visiting programs generally target high-risk women and track the outcomes of these enrollees. Many of these women cannot be reached, however, and some decline to be enrolled. The result is that even when the program succeeds for enrollees, some women at very high-risk may receive less support, and community health measures may fail to improve.

Figure 5. Community-Based Home Visiting Programs and Program Service Capacity Slots Overlaid by ~5,000 High-Risk Pregnancy Referrals to BHCA; May 2007 – May 2008



### POST-PREGNANCY

The period after pregnancy is a critical time to ensure social support, identification and treatment of postpartum depression, appropriate family planning, and safe sleeping habits for the infant. Examples of services in Baltimore include:

- Approximately 200 obstetric providers for Medicaid clients
- 3 city-affiliated reproductive health clinics
- A pilot program that reaches out to women with an infant loss

- 6 Family Support Centers that provide center-based services, including job preparation; and GED and parenting support<sup>65</sup>
- 2 social workers and 2 nurses at Baltimore HealthCare Access who handle high-risk cases and respond to mothers who have suffered an infant loss;
- A Safe Sleep program that educates healthcare providers and distributes educational onesies to all newborns in the city; and
- A free crib program that distributes 1,100 free cribs per year.

A crucial gap in capacity occurs after delivery, when mothers need, but often fail to get, prompt access to reproductive health care and family planning. In addition, many women who have experienced a loss fail to receive special outreach that refers/directs them to mental health services and reproductive health care.

Gaps in quality of care after birth include the failure of some hospital and clinic staff to provide routine high-quality counseling and assessment of safe sleep practices.

Community engagement on safe sleep is lacking in Baltimore. Existing efforts on safe sleep focus on improving the education and training provided to families through the medical system. Many women hearing the right message in the hospital, however, may be counseled differently by parents, grandparents, and siblings. In addition, many agencies serving women and men of reproductive age, such as Baltimore Substance Abuse Systems, Baltimore City Correctional Centers, and Baltimore City Department of Social Services do not have a standardized approach to sharing infant safe sleep messages with their high-risk clients.

## **V. A COORDINATED, COMPREHENSIVE STRATEGY CAN IMPROVE BIRTH OUTCOMES**

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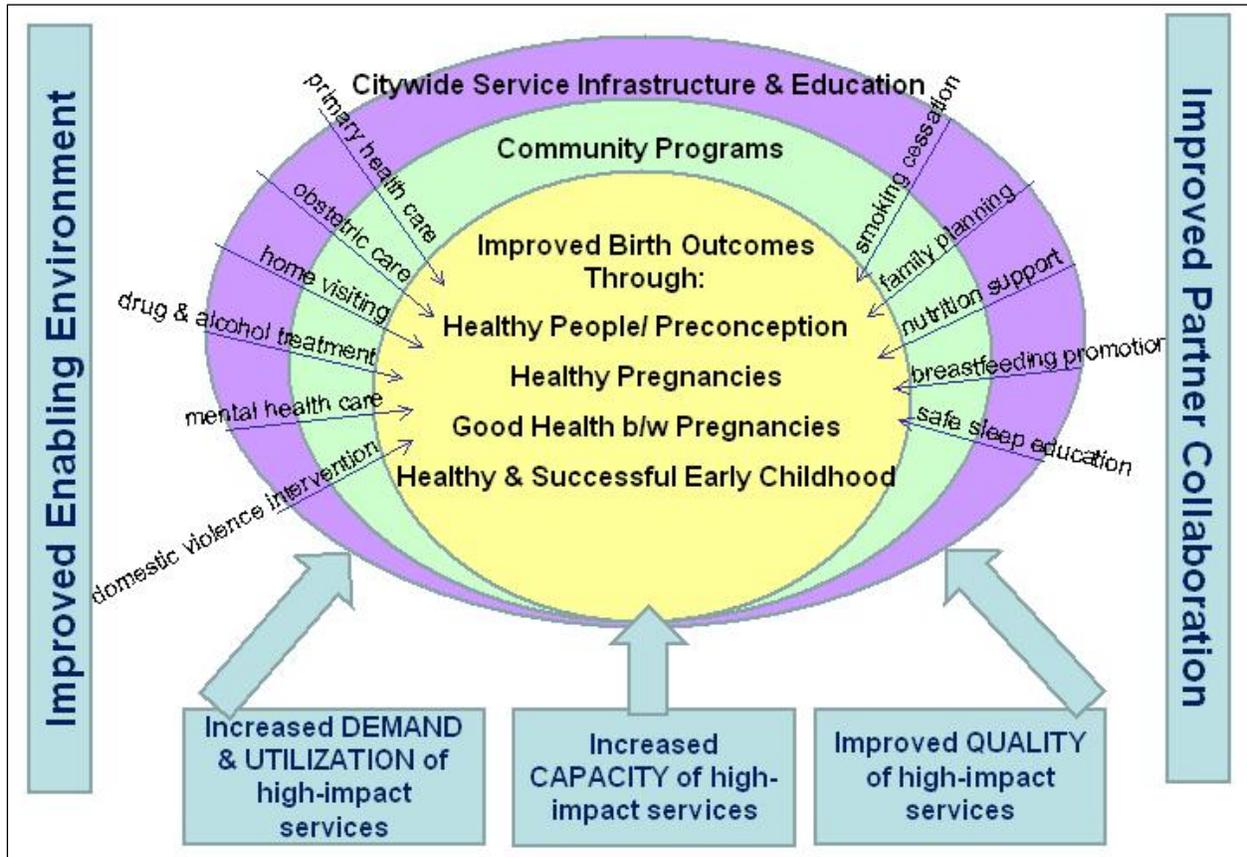
A comprehensive strategy is needed to engage city communities to improve birth outcomes, to expand the capacity for needed services, and to ensure services offered are high-quality. This strategy begins with the understanding that to change poor birth outcomes, women and men of reproductive age must have healthy lifestyles prior to conception, during pregnancy, and between pregnancies. The effort will require a reorganization of services and funding in the city.

Infant mortality reflects a complex interplay of social, biologic, and health care factors, only some of which can be impacted by this strategy. As a result, while reducing infant mortality is the ultimate goal of this effort, this statistic is not the best measure of success over a three-year period. Instead the strategy has three primary outcome measures that relate to the most common preventable causes of excess infant death. Below are the goals and cumulative targets for the end of the three-year period.<sup>66</sup>

1. **Preterm birth.** Reducing the rate of preterm birth (less than 37 weeks gestational age) by at least 10% over the next three years, representing 283 fewer newborns born preterm over three years.
2. **Low birthweight.** Reducing the rate of low birthweight (less than 2500 grams) infants by at least 10% over the next three years, representing 259 fewer infants born at low birthweight over three years.

3. **Unsafe sleep.** Reducing the number of deaths from unsafe sleep by at least 30% over the next three years, representing 12 fewer infants dying from unsafe sleep over three years.

Figure 6. Constellation of Services for Improved Birth Outcomes in Baltimore



### A THREE-PART APPROACH

The comprehensiveness of the strategy and its critical components are illustrated in Figure 6. At the base of the figure is a tripartite approach that includes increasing demand and utilization for the eleven high-impact service areas, expanding the capacity of these services to meet demand, and improving service quality. The strategy is framed on one side by an improved enabling environment, defined as a policy and practice environment that allows for the successful implementation of the plan, rigorous monitoring and evaluation, and accountability evidenced by better results. On the other side, the strategy is framed by improved partner collaboration. Within the frame, the outer circle shows citywide efforts aimed at all community members, agencies, and health providers. In the first inner circle, we show targeted, community-based programs in very high-risk communities. Finally, Baltimore citizens in each phase of the life cycle are at the core and innermost circle of the strategy, illustrating the central significance of individuals and the community. The eleven high-impact service areas are directed toward, and thus support, individual health and healthy behavior.

Each part of the strategy is described below in greater detail.

## **Part 1: Increasing Demand and Utilization through Citywide Education and Community-Based Programs**

At the heart of the strategy is a citywide and community targeted effort that will mobilize city residents to utilize the eleven high-impact service areas. The Family League will oversee this part of the Strategy.

### Citywide Campaign

A citywide education and communications campaign will disseminate key messages to inspire city residents to find a medical home, seek drug treatment when needed, quit smoking, and engage in the other high-impact service areas. The agency will work with technical experts in the city to use existing messages or, where they do not exist, craft messages designed to communicate effectively and motivate different targeted audiences. The campaign will permit participation and reinforcement by agency staff, health providers, hospitals, and other organizations. The strategy and related materials will be available through a web-based portal with public access.

### Community-Based Programs in Targeted Neighborhoods

Backed by the citywide media campaign, community-based programs in at-risk areas will generate demand for and utilization of each of the high-impact service areas through intensive outreach, education, and referral.

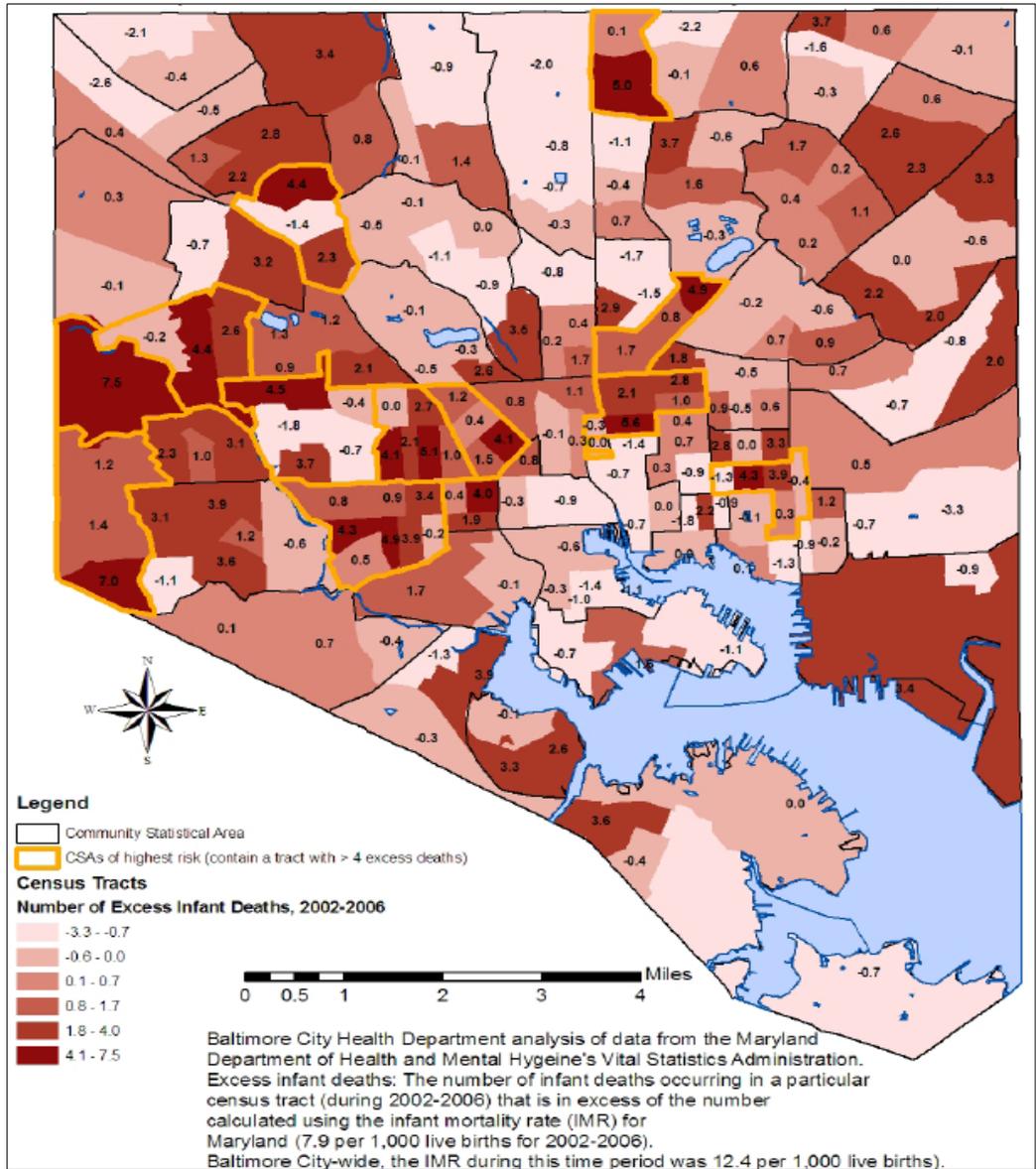
The initial goal is for the Family League to engage community programs in 12 of the city's 55 community statistical area by the end of three years (Figure 7).<sup>67</sup> These 12 areas were selected because each contains a census tract with at least four excess infant deaths from 2002 to 2006. Combined, reducing the infant mortality rate in these areas to the state average will reduce the total number of excess infant deaths in the city by approximately 60%.<sup>68</sup>

**Interventions.** The Support Continuum for Birth Outcomes in Figure 8 shows the core interventions that will be offered by each of the community programs. Interventions will aim to engage persons between the ages of 11 and 49 in each community statistical area prior to, during, and between pregnancies. More intensive services will be offered during pregnancy and through an infant's first year, depending on need.

At the top of the continuum, professional home and/or community-based case management will be offered to the highest risk women in the pregnancy and post-partum periods; these include victims of domestic violence, women with poor birth outcomes in a previous pregnancy, those with HIV/AIDS or syphilis, and women with chronic hypertension and diabetes. At the next level of the continuum, programs will offer paraprofessional care management. Minimally, all women in the targeted geographic areas will receive one home visit upon discharge from the hospital following delivery. In

some cases, the post partum visit will be the only home visit the woman receives. On the third level of the continuum, programs will offer targeted outreach, health education, and support services, such as transportation. The largest role of the community programs will be mobilization, advocacy, and resource development as represented on the fourth level of the continuum.

**Figure 7. Excess Number of Infant Deaths by Census Tract, Baltimore City, 2002-2006**

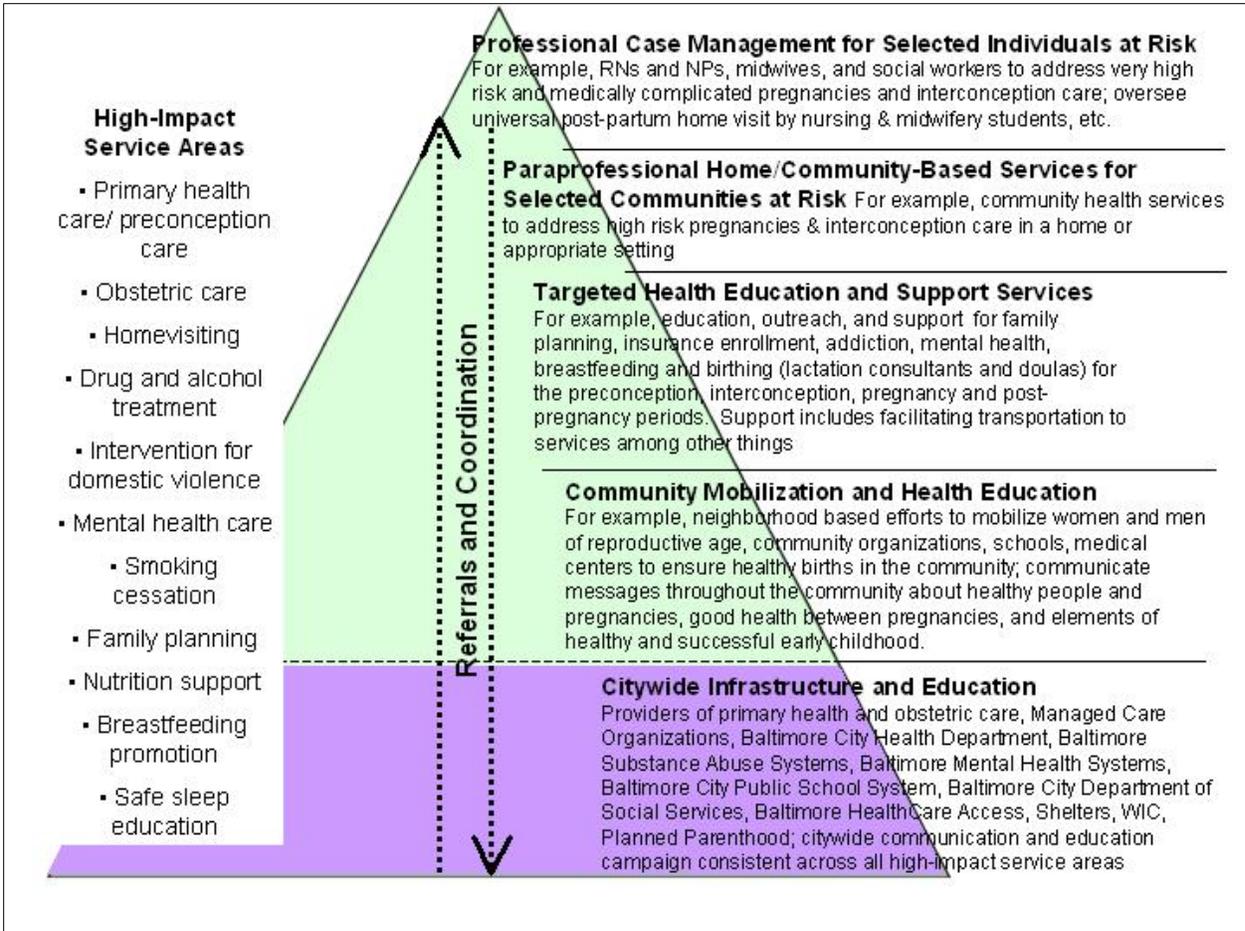


Community programs will have access to a web-based toolkit that will include best practice interventions and materials, including messages for each of the high-impact areas developed in the citywide campaign.

The Health Department's Maternal and Infant Care Program will also introduce an evidence-based curriculum for its nurse and social worker home visitors. The effort will

supplement the community program toolkit and will focus on the needs of Baltimore City’s highest risk pregnant and post partum women.

**Figure 8. Supportive Continuum for Improved Birth Outcomes**



**Staffing and Technical Assistance.** Staffing for the community efforts will include community health educators, outreach workers, community mobilizers, and recruiters. Many will be recruited from the neighborhoods they will serve.

Oversight of the community programs will be the responsibility of the Family League. The Family League will engage a team of experts in the eleven high-impact service areas, behavior change and communications sector, and community mobilization efforts to provide technical assistance to the community programs. Expertise will be drawn from Baltimore City’s rich array of academic, medical, social, community and faith-based organizations and home visiting programs. The technical assistance team will assist the Family League in compiling the web-based toolkit and will train community program staff in its use. The technical assistance team will be available for supportive coaching, mentoring, and refresher training activities throughout the three-year program.

**Resource Network.** The Family League will enter into Memoranda of Understanding with city agencies, institutions, managed care organizations, and providers to ensure that the community programs have an active referral network. Key services for coordination include access to health insurance through the Baltimore City Department of Social Services and Baltimore Healthcare Access, Inc., access to the Women Infants and Children Program through the Baltimore City Health Department, smoking cessation through the state quitline, and domestic violence referral services.

**Grant Awards.** The Family League will issue a Request for Proposals in July 2009. A draft of the Request for Proposals will be issued in advance for feedback from stakeholders. Applicants will submit a letter of intent that the Family League uses to determine that all twelve community statistical areas have a proposed program. Applications will be made by an “anchor” agency that has the capacity and community standing to implement the proposal and can engage the necessary community partners. Funding will run in three-year cycles; however, programs may lose funds if they do not meet established targets. The community programs will be required to establish an advisory board made up of neighborhood residents. The board will act as a liaison between the program and the community.

Grant awards will be made according to the number of residents eligible for services within the eleven high impact areas that are between the ages of 11 and 49 in each eligible community and based on available funds. Where certain programs are funded externally for closely related work in communities, the Family League will seek to supplement these awards and arrange for participation in the effort. There will be no competitive bid in these areas.

Baltimore City Healthy Start, Inc. receives federal funding for community support and home visiting services in Baltimore. Because of its deep community roots and successful track record, Healthy Start will play several important roles in this effort. The organization will serve as a responsible community program in select communities across the city, will support the Family League’s efforts through technical assistance, and can directly support other community programs through informal and formal arrangements.

Baltimore City and the Health Department will sponsor activities to generate citywide awareness of the plan’s progress, such as an annual Improved Birth Outcomes event during Infant Mortality Awareness Month each September. This event will provide an opportunity to share data and lessons from various community programs. Community programs will be recognized for excellence in programming and communication, and input from affected communities and community members will be encouraged.

## **Part 2: Increasing Capacity Through Citywide Coordination and Aligned Action**

The strategy focuses on eleven high-impact service areas: (1) primary health care in a medical home, (2) obstetric care, (3) home visiting, (4) drug and alcohol treatment, (5) intervention for domestic violence, (6) mental health care, (7) smoking cessation, (8)

family planning, (9) nutrition support, (10) breastfeeding promotion, and (11) safe sleep education.

For each area, a lead agency will assess current services available in light of the need, and will develop a plan to increase capacity to close the gap. The Health Department is responsible for overseeing this part of the strategy.

#### Baltimore HealthCare Access, Inc.: High-Impact Service Areas 1 and 2

Baltimore Healthcare Access, Inc. is an insurance enrollment and health care outreach organization in the city. To address the first two service areas of primary health and obstetric care, Baltimore HealthCare Access, Inc. will map deficiencies in primary and obstetric care and work with community providers, hospitals, and the city and state health departments to address these gaps. The Commissioner of Health in Baltimore and the Secretary of Health for the State of Maryland are planning a public hearing on access to primary care for early spring of 2009.

In addressing gaps in access to care, the essential partners for Baltimore Healthcare Access, Inc. are the Medicaid program of the Department of Health and Mental Hygiene, the Medicaid program's managed care organizations, and the Baltimore City Department of Social Services. Managed care has become the principal mechanism for financing and delivering health care to Medicaid recipients, with about 75% of Medicaid eligible individuals in Maryland participating in managed care through HealthChoice.<sup>69</sup> Participating managed care organizations have the obligation to make needed care available to their enrollees. The Baltimore City Department of Social Services has a critical role assuring that pregnant women have rapid access to health insurance as part of their economic support programs.

Successful efforts to improve birth outcomes in Baltimore will require the development of a unique and unconventional public/private partnership between the Baltimore City Health Department, the Department of Health and Mental Hygiene, and managed care organizations serving Medicaid recipients. The shared goal will be to facilitate enrollment of eligible women in Medicaid through as many venues and mechanisms as possible.

#### The Family League of Baltimore City, Inc.: High-Impact Service Area 3

The Family League of Baltimore City, Inc. oversees many home visiting programs in the city. The Family League will initiate the development of a comprehensive, community-based strategy to include home visiting as a component.

#### Baltimore Substance Abuse Systems, Inc.: High-Impact Area 4

Baltimore Substance Abuse Systems, Inc. is the quasi-public health agency responsible for drug and alcohol treatment in the city. The organization will be responsible for the fourth service area and will report regularly on the capacity of drug and alcohol treatment

services for women in Baltimore. The organization will ensure that treatment services in the city are linked effectively to other programs targeting pregnant women to ensure efficient follow up. Baltimore HealthCare Access, Inc. will confirm that all callers to the substance abuse system have health insurance. Baltimore Substance Abuse Systems will also train all staff members in key messages related to positive behaviors in the pre-pregnancy, pregnancy, and post-pregnancy stages, such as infant safe sleep practices. Staff members working directly with families will be mandated to share the messages with all enrolled individuals in the 60 programs throughout the city.

#### The Baltimore City Health Department: High-Impact Service Area 5

The Baltimore City Health Department will assess the resources available to pregnant women victimized by domestic violence and address whether additional resources are needed. The Health Department will train its nurses in the Maternal and Infant Care program to conduct special outreach upon referral of a pregnant woman who screens positive for domestic violence. This outreach effort may be based on the Domestic Violence Enhanced Home Visitation Program model developed by the Johns Hopkins School of Nursing.

#### Baltimore Mental Health Systems: High-Impact Service Area 6

Baltimore Mental Health Systems is the quasi-public agency that will be responsible for the sixth high-impact service area of mental health care. This agency will facilitate access to mental health services. It will increase service utilization by providing education and technical assistance to home visiting and outreach programs on how to access Public Mental Health System services. Baltimore Mental Health Systems will also provide individual case consultation as needed. The agency will participate in a work group convened by the Family League's technical assistance team to promote mental health screening through outreach and home visiting programs. The Mental Health Association will provide public education messages to both the general public and targeted messaging to Public Mental Health System providers and other groups through various media; this will include Network of Care, an Internet-based service provider locator and resource currently being developed by Baltimore Mental Health Systems for mental health education.

#### The Baltimore City Health Department: High-Impact Service Areas 7 – 11

In addition to overseeing the fifth key service area, the Baltimore City Health Department will oversee the seventh through eleventh areas: expanding access to smoking cessation services--such as the voucher-based program successfully piloted at Bayview's Center for Addiction and Pregnancy--through funding provided by the Cigarette Restitution Funds; increasing opportunities for family planning in coordination with Planned Parenthood; supporting improved nutrition through the Food Policy Task Force and Fit Baltimore; expanding breast-feeding promotion through Women Infants and Children; and improving healthcare provider training on safe sleep education.

The Health Department will also oversee expansion of: (1) community efforts to reduce safe sleep deaths and (2) an effort to focus on women who have had adverse birth outcomes in the past. In the latter effort, Maternal and Infant Care professional staff will continue their current practice of providing specialized home visits to women who experience a pregnancy loss.

### **Part 3: Improving Quality of Key Services**

The strategy targets three areas for quality improvement: (1) health services for adolescents and young adults; (2) services specific to pregnant women, such as home visiting; and (3) services for mothers and infants after delivery.

Various teams within the city set standards for these services, educate providers, and implement methods of evaluation. The Health Department is responsible for overseeing this part of the strategy.

#### Health Services for Adolescents and Young Adults

Quality health services for adolescents and young adults should include family planning, nutrition counseling, mental health screening, substance use, smoking and domestic violence screening. The Health Department will work with experts in adolescent health care in Baltimore, including pediatricians, adolescent physicians, family practitioners, and nurse practitioners, to convene a summit that will establish a quality standard for all young people in the city. This will be summarized into a checklist consistent with Medicaid requirements for care that will cover each young person every year. School-based health centers may be one excellent venue to introduce these checklists. This portion of the plan will be addressed in the Strategy for Teenage Pregnancy and Sexual Behavior that is currently being formulated.

#### Services Specific to Women

As those who interact with patients in all phases of the life cycle, providers of primary health and obstetric care are essential to the success of the strategy. The Baltimore City Health Department will collaborate with faculty at the two major medical schools in the city and other clinical experts to create toolkits for clinicians based on a model that has been effectively utilized by the Baltimore Regional Perinatal Advisory Group. These toolkits will be provided to health care providers and will offer up-to-date information regarding evidence-based clinical practices. The toolkits will also include a directory of available social services and community resources relevant to each of the eleven high-impact service areas. Thus, providers can, at the point-of-care, help patients connect with and access these services. These resources can also be integrated with the risk assessment conducted through the state's Healthy Start program.

#### Services for Mother and Infant After Delivery

Quality pregnancy and post-partum services often require referrals to social and medical services. In coordination with the Baltimore Regional Perinatal Advisory Group, the Health Department will enlist the obstetric community to develop a healthy mother checklist for completion at the first prenatal visit, at delivery, and at the first post-partum visit. The checklists will include referrals to family planning, community resources, mental health screening, nutrition counseling, and other resources.

### ***ACCOUNTABILITY, OVERSIGHT, AND EVALUATION***

An executive committee based in the Baltimore City Health Department will oversee the Strategy to Improve Birth Outcomes. The Health Department, working with the Mayor's Office, will hold organizations and entities accountable for their roles in the strategy.

An independent evaluation will be conducted to identify the strengths and weaknesses of the components of the approach. The evaluation will be based on a logic model that will specify intended pathways to improve birth outcomes and clear benchmarks for measuring progress. The Health Department and The Family League will select an academic institution to conduct this evaluation.

In addition, the Health Department and Family League, drawing upon the experience of CitiStat, will develop a performance measurement system for each section of the strategy.

#### **Community Mobilization**

The Family League, supported by a performance accountability committee, will provide oversight for the community programs and develop a system to measure successful linkages to high-impact service areas and report these by community regularly.

#### **Capacity**

Each agency responsible for gaps in capacity for the high-impact service areas will develop a monitoring and reporting schedule for progress.

#### **Quality**

Each quality step will include implementation monitoring. The Health Department will be responsible for assessing use of key checklists developed to assure quality.

The ultimate accountability will be improved rates of positive birth outcomes in Baltimore. The Health Department will report annually on the overall progress of the plan and the three outcomes of pre-term birth, low birthweight, and sleep-related deaths for each of targeted geographic areas and for the city as a whole.

## VI. Endnotes

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  20. Good access to healthcare prior to pregnancy is associated with coordinated efforts to provide widespread and high quality care. In 2007, the Preconception Care Council was launched in California in response to the CDC's preconception health recommendations. The Council seeks to develop and promote comprehensive pre-pregnancy care stratified toward different age groups. Key elements include management of medical conditions, mental health problems, nutrition, and reproductive health/family planning. See *Healthy Women, Health Babies: An Issue Brief from Trust for America's Health.* This is available online at [www.healthyamericans.org](http://www.healthyamericans.org).
  21. In October 2006, the Centers for Disease Control funded CityMatCH, a national maternal and child health organization representing urban health departments, to help translate the CDC's national recommendations for preconception care into action at the local level. Los Angeles County was one of the three sites where City MatCH helped create and implement education and outreach tools for public health professionals and the community. See Thompson BK Peck, M, Brandert KT. *Integrating Preconception Health into Public Health Practice: a Tale of Three Cities.* Journal of Women's Health 2008; 17(5): 723-727.
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  24. Recently, Dane County, Wisconsin, has seen a dramatic decline in poor birth outcomes among African-Americans. Dr. Thomas Schlenker, Director of Public Health in Dane County, also notes an increase in prenatal visits among this population, and a decrease in obstetric complications, such as infections. (Interview with Dr. Thomas L. Schlenker, Director, Public Health - Madison & Dane County; September 2008.)
  25. Home visitation has been associated with improvements in key measures related to birth outcomes. For example, David Olds has developed a detailed nurse-home visitation model designed to help first-time, low income mothers improve their health and the health of their babies. In a randomized, controlled trial, these mothers had increased rates of smoking cessation, use of ancillary services, and increased intervals between pregnancies. (See Olds DL, Robinson J, O'Brien R et al. *Home Visiting by*

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  27. CHANCES is an intensive outpatient substance abuse treatment program in Philadelphia that offers a comprehensive set of services to pregnant women. These include job training, GED education, health care services, individual, group and family therapy. The women who received this coordinated care during their pregnancies had infants with higher birthweights and fewer preterm infants. (Tanney, M.R., & Lowenstein, V. *One-Stop shopping: Description of a Model Program to Provide Primary Care to Substance-Abusing Women and Their Children*. Journal of Pediatric Health Care 1997; 11: 20–25).
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47. Includes Baltimore City Health Department data from Maryland Department of Health and Mental Hygiene Reproductive Health Family Planning Visits Table 1A- Number of Clients and Visits. Reproductive Health Data Report Fiscal Year 2008 (Data from 7/1/2007 – 6/30/2008). Center for Maternal and Child Health Family Health Administration Maryland Department of Health and Mental Hygiene. September 19, 1998. Also includes 7,042 visits for Planned Parenthood in Baltimore City during this same time period per email from Maryland Department of Health and Mental Hygiene.
48. Maryland Alcohol and Drug Abuse Administration. Available online: <http://maryland-adaa.org/ka/index.cfm>.
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50. One promising effort is H.E.A.L Academy in Park Heights. The BET-designed curriculum targets young women between ten to twelve years to improve their self-esteem and help their fight against obesity.
51. Jane Plapinger, Baltimore Mental Health Systems, January 2009.
52. Ibid.
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57. The eight home visiting programs include: Baltimore City Health Start, Inc., Bon Secours Foundation of MD, The Family Tree, People's Community Health Ctrs., DRU-Mondawmin Healthy Families, Maternal and Infant Care-Baltimore City Health Department, Sinai Hospital, Johns Hopkins Urban Health Institute.
58. The eight birthing hospitals include: St Agnes, University of Maryland, Johns Hopkins Hospital, Hopkins Bayview, Mercy, Harbor, Maryland General, Sinai Hospital.
59. Baltimore Healthcare Access, Inc. Data based on analysis of prenatal assessment forms.
60. Interviews with Kathy Westcoat (Baltimore HealthCare Access, Inc.) and Michael Cenci (The Family League of Baltimore City, Inc.), August 2008.
61. At a minimum, home visiting programs are ensuring mothers are accessing prenatal care; dealing with emergency needs; providing referrals to support services such as drug and alcohol treatment; preparing mothers and fathers to be successful parents; reinforcing pre-selecting a pediatrician; preparing for sleep arrangements; and preparing parents for the role as child's first teacher.

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63. Moreno L, Devaney B, Chu D. *Effect of Healthy Start on Infant Mortality and Birth Outcomes*. Evaluation, July 2000.
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66. This strategy does not focus on behavioral interventions to reduce teen pregnancy, because a concurrent planning effort is underway. The two efforts will be coordinated as they move forward.
67. There are fifty-five Community Statistical Areas. Clusters of Baltimore neighborhoods were created along census tract boundaries to form fifty-five CSA's. This clustering was necessary for the creation of statistical areas since most of the 270+ neighborhoods in Baltimore City do not have boundaries that fall along census tracts. This clustering represents the work of the Baltimore City Planning Department and the Family League of Baltimore City.
68. From 2002-2006, the twelve target Community Statistical Areas accounted for 27% of the city's births. If we were able to reduce the infant mortality rate in each of these twelve areas to 7.9 per 1,000 births (the Maryland rate from 2002-2006) and the infant mortality rates in the remaining forty-three areas stayed at present levels, we would reduce the number of excess infant deaths in Baltimore City by 60%.

Community Statistical Areas were categorized according to the number of excess infant deaths in the census tracts that compose each area. The number of excess infant deaths is a measure that can be used to identify areas where infants have a higher risk of dying relative to a pre-determined reference rate. This measure takes into account both the infant mortality rate as well as the number of births in an area. As a result, excess infant deaths are highest in areas where infants have a relatively high risk of death as well as areas with relatively large total number of infant deaths. In this analysis we are using the Maryland 2002-06 infant mortality rate as the reference--7.9 deaths per 1,000 live births. (The 2006 infant mortality rate in the U.S. was 6.7 deaths per 1,000 live births and the Healthy People 2010 goal for infant mortality is 4.5 deaths per 1,000 live births). As a result, the number of excess infant deaths is the number of infant deaths occurring in a particular census tract over the years 2002-06 that are in excess of what would be expected if the infant mortality rate in that census tract were the same as the rate for Maryland for that time period. Using the Maryland rate, which is higher than the U.S. rate and the Healthy People 2010 goal, provides us with a relatively conservative measure of high-need areas in Baltimore City.

Census tracts with infant mortality rates that were lower than the Maryland rate had fewer deaths than expected and therefore contributed negatively to the total number of excess

deaths in Baltimore. There were eighty-three census tracts in this category. Tracts with infant mortality rates that were higher than the Maryland rate had more deaths than expected. There were 117 such census tracts, distributed among fifty-two CSAs. Twelve CSAs contained one or more census tracts with greater than four excess infant deaths from 2002-06. These Community Statistical Areas were determined to have the highest need and are the target areas, however, all areas with excess deaths need resources to decrease infant mortality.

Infant mortality rates by census tract were calculated using data from the Maryland Department of Health and Mental Hygiene's Vital Statistics Administration.

69. Maryland State Department of Health and Mental Hygiene online resource;  
<http://www.dhmf.state.md.us/mma/healthchoice/>