

## Two Organizations Working to Reduce Low Birth Weight: Different Methods, Comparable Results



### Introduction

Birth weight is the first weight of a baby, taken just after birth. Eight percent of babies born in the United States weigh less than 5.5 pounds. Approximately 67 percent of these low birth weight babies are born too early, before 37 weeks.<sup>1</sup> Infants born below normal weight and especially at very low birth weight (less than 3 lbs. 4 oz., or 1,500 grams) and extremely low birth weight (less than 2 lbs. 3 oz., or 1,000 grams) are less likely to survive the first year of life and are more likely to suffer physical and developmental conditions that have a lifetime impact.<sup>2</sup>

This white paper discusses the successful efforts of the Highmark Foundation in assisting two western Pennsylvania organizations with building capacity to improve opportunities to address low birth weight babies with grants totaling more than \$500,000.

### Low Birth Weight Defined:

**< 5 lbs. 8 oz.**

Low Birth Weight

**< 3 lbs. 4 oz.**

Very Low Birth Weight

**Born before 37 weeks**  
Prematurity

*Low birth weight (less than 5 lbs. 8 oz., or 2,500 grams) is the single most important factor affecting neonatal mortality.*

# Why Birth Weight Matters and Who Is at Risk

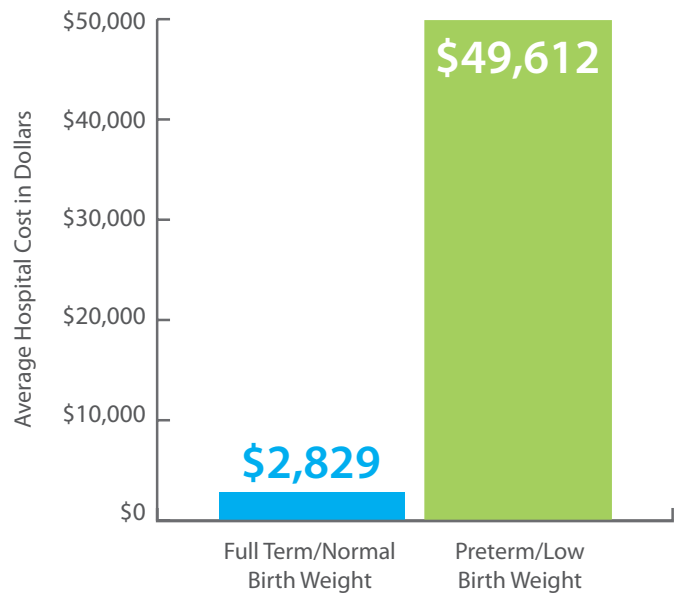
## The Cost of Low Birth Weight

Low birth weight infants are also more likely to incur higher medical costs and suffer from chronic health issues. The societal cost of low birth weight is estimated at over \$26 billion annually nationwide.<sup>3</sup> As a result, the increased rate of low birth weight is an important public health issue. The March of Dimes reports that prematurity/low birth weight is the second most expensive condition for inpatient hospital care, with an average hospital stay of 26 days.

The average cost of Medicaid services for the first four years of a very low birth weight (2.2 to 3.3 lbs.) baby's life is \$61,902, compared with \$7,260 for a baby born with a normal weight, according to the Wisconsin Department of Health Services. Medicaid covers 40 percent of all births in the United States and states pay millions of dollars for the medical care of low birth weight babies.<sup>4</sup> Figure 1 shows the average hospital costs for normal weight and low birth weight babies which is almost 25 times higher than the average cost for full term or normal weight births.

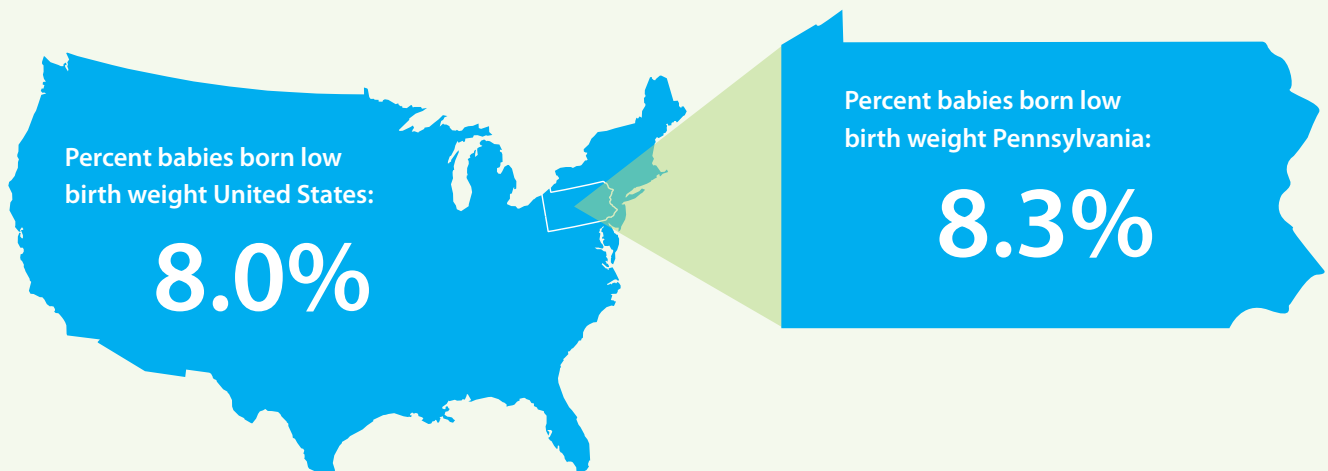
States have expanded access to prenatal care to mitigate factors that increase the risk of having a low birth weight baby, such as a mother's tobacco, alcohol or drug use and chronic health issues. States are utilizing programs including intensive case management, mental health counseling, assigning mothers a medical home, home visits, and guidance from the Centers for Medicare and Medicaid Services' Neonatal Outcomes Improvement Project.<sup>5</sup>

Figure 1: Average Hospital Costs for Normal Weight and Low Birth Weight Babies<sup>6</sup>



Note: Costs are for the entire hospital stay and are not specific to a diagnosis or procedure.

Figure 2: Low Birth Weight in Pennsylvania Compared to the United States<sup>7</sup>



## Low Birth Weight Can Be Prevented

Because of the tremendous advances in care of sick and premature babies, more and more infants are surviving despite being born early and being born very small. However, prevention of preterm births is one of the best ways to prevent very low birth weight. Proper prenatal care is a key factor in preventing preterm births and very low birth weight babies, as well as in reducing the risk for SIDS (sudden infant death syndrome). At prenatal visits, the health of both mother and fetus should be examined. Maternal nutrition and weight gain are linked with fetal weight gain and birth weight; therefore, eating a healthy diet and gaining the appropriate amount of weight during pregnancy are essential. Mothers should also avoid alcohol, cigarettes and illicit drugs, which can contribute to poor fetal growth and other complications.

## Low Birth Weight in Allegheny and Butler Counties

As seen in Figure 3 below, the rate of low birth weight among African American babies in Allegheny County is double that

of white babies, indicating a significant difference in low birth weight between the races.<sup>8</sup> Figure 4 highlights low birth weight for Butler County.<sup>9</sup> Although race/ethnicity was not available, data shows there is no consistent reduction in low birth weight across the county for the years reported. The data illustrates that programs to reduce low birth weight are needed and should be accessible for mothers and babies most at risk.

## The Hope for Every Newborn

The Highmark Foundation provided grants to Every Child Inc. and Butler Memorial Hospital, two nonprofit organizations in western Pennsylvania. The grants supported programs focused on clients most at risk that address low birth weight and work to improve infant and maternal health outcomes. These leading-edge programs offered opportunities that these mothers and babies would not otherwise have had access to. The hope is for every newborn to have all the advantages to grow and develop into a healthy child.

Figure 3: Percent Low Birth Weight: Allegheny County 1990-2012

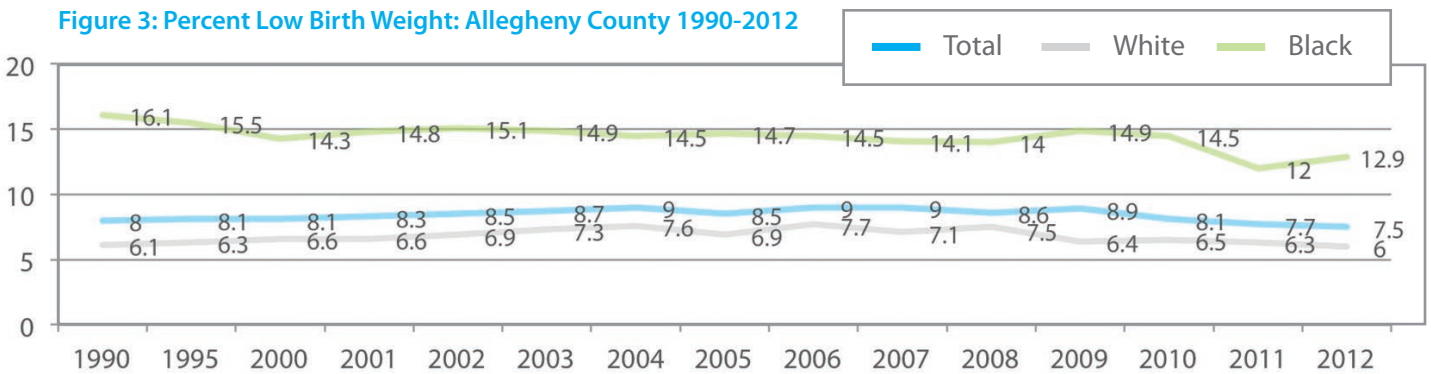
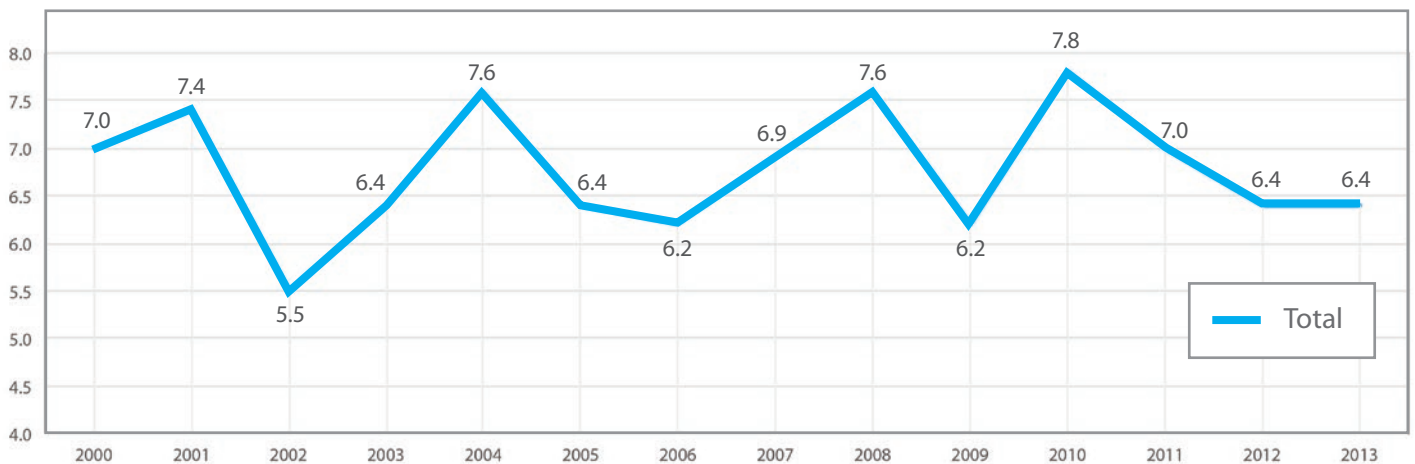


Figure 4: Percent Low Birth Weight Butler County 2000-2013



## Every Child Inc.

Every Child Inc., a human services agency located in Pittsburgh, PA, provides services to meet the holistic needs of predominantly low-income urban minority children and families. The agency provides family support, wellness services and education services, as well as clinical and nonclinical interventions. The Doula Pregnancy and Parenting Support Program (Doula Program) focuses on enhancing maternal and infant health for the long-term benefit of both mother and child through the use of trained doulas.

The program was created in 2007 to provide non-clinical support to ensure that children receive the best possible start through pregnancy, child birth and the first weeks of life. Participants are 64 percent African-American, 59 percent are between the ages of 15 and 19 years old, and 95 percent receive Medicaid.

Doula services were offered to pregnant women and teens for nine months (from the start of the second trimester through three months post-partum). Participants self-referred into the program or were referred by another agency. Doulas provided non-clinical support and encouragement to participants. Mothers-to-be meet in the home or community with a doula that provides emotional, technical and informational support throughout the mother’s pregnancy. The doulas help provide a link to various medical and support services, including education and skill-building.

### Doula Defined:

**Doo’-la: a woman experienced in childbirth who provides continuous physical, emotional and informational support to the mother before, during and just after childbirth. DONA International certification sets the bar for doula education and professional development. It indicates to families that a doula has achieved a high level of training and professionalism.<sup>10</sup>**

## Program Outcomes: Prenatal Care and Support Are Keys to Positive Outcomes

When risk factors associated with low birth weight are addressed and mothers have access to and take full advantage of support systems and services, low birth weight decreases as demonstrated in Table 1.

The program has been effective as it successfully addressed an unmet need in the community and met and/or exceeded defined outcomes. The pregnant and parenting women that participated in the program experienced positive outcomes. The women served have a series of risk factors that would easily place them at or below national average for healthy postpartum outcomes, including low incomes, mental health diagnoses, low educational attainment and belonging to a racial minority group.

**Table 1: Every Child Program Outcomes — October 2011 to November 2013**

Objective/ Measure	Prior ECI Outcomes (Percent)	National Averages (Percent)	2-Year Outcomes (Percent)	Percentage Point Change
Full Term Births	85	88	100	15
Gestational Weight > 5 lbs. 8 oz.	90	91.8	95.5	5.5
Regular Prenatal Visits	90	70.8 receive early care 70.5 receive adequate care	100	10
Babies Breastfed by Moms	36	75.5	59	23
Children up to Date on Immunizations	96	Unavailable	100	4
Regular Well Baby Visits	95	86.7	100	5

Doula Program clients achieved several outcomes that exceeded the agency’s goals, as well as national averages. These include a rate of 100 percent full term births, 95 percent of births at a healthy weight, 100 percent of infants up-to-date with immunizations and well-child appointments at the close of services. Every Child learned that in order to deliver the intensive, tailored services appropriately and produce successful client results and outcomes, it is important to keep the number of program enrollees low.

## Butler Memorial Hospital

Butler Memorial Hospital located in Butler, PA, serves a largely rural area outside of metropolitan Pittsburgh. The Maternal Services Program (MSP), created in 1991, is an antepartum, outpatient unit offering care to child, adolescent and adult women in Butler County and surrounding counties. These women require regular prenatal care, receive Medicaid or are uninsured and meet the program's financial guidelines. There are currently 147 patients enrolled in the program. During fiscal year 2014, 274 patients received services from the MSP, and there were a total of 2,310 patient visits.

Care is provided to patients during pregnancy preparing for either a vaginal or cesarean birth and continues through eight weeks postpartum. By facilitating access to quality obstetrical care, MSP intended to lessen the likelihood of premature births, low birth weight babies and other risks associated with the lack of prenatal care through three components:

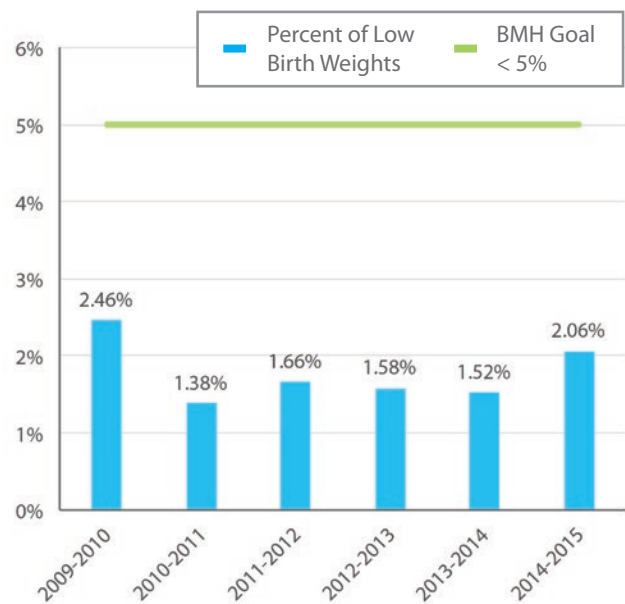
1. Medical Care — Prenatal physician visits and customized care plan.
2. Maternal Education — Lamaze classes, breastfeeding, parenting and smoking cessation services.
3. Maternal Resources — Nutritional and psychosocial support. In addition, referrals to outside community agencies are facilitated based on individual patient needs.

## Butler Memorial Hospital Outcome Highlights

In addition to mean "no show" rates for postpartum visits decreasing from 28 percent to 10 percent; Figure 5 shows the MSP program was successful in reducing the rate of low birth weight during the grant period. Data indicates that the incidence of low birth weight decreased at the end of the grant period. The program realized a 16% relative reduction in low birth weight from fiscal year 2010 through fiscal year to date 2015.

Butler Memorial Hospital regards MSP to be effective in helping mothers to achieve healthy birth outcomes. The program continues to provide a coordinated network of medical, nutritional, psychosocial and follow-up care for mothers. The Maternal Services Program at Butler Memorial Hospital hopes to lessen the likelihood of premature births, low birth weight babies, and other risks associated with the lack of prenatal care by continuing to facilitate access to quality obstetrical care.

**Figure 5: Maternal Services Program — Low Birth Weight Infants**



## Conclusion

Although the services varied throughout both programs, both used supportive services to achieve successful results. The goals of the two programs were similar: to reduce the incidence of low birth weight, provide support to pregnant women and teens, and improve health outcomes. Services provided through these programs were at no cost to the participants, and both programs successfully achieved their goals.

As a result of the Butler Memorial Hospital and Every Child Inc. programs, participating mothers experienced healthy birthing experiences, and the incidence of low birth weight and other significant precursors of risk have improved. The Foundation's interest in confronting low birth weight and other risk factors for a healthy start to life has grown out of its commitment to healthy families and communities.



## Lessons Learned Motivate Next Steps

In January 2015, the Highmark Foundation convened a forum of community leaders to discuss the incidence of low birth weight and highlight the successes of the Butler Memorial Hospital and Every Child Inc., programs. Attendees represented hospitals, local human service organizations, foundations and health care providers. All shared an interest in the best possible outcomes for mothers and their newborns. Attendees rated the presenters and overall quality of the forum as excellent. A total of 100 percent stated that they would recommend the forum to other professionals. Reasons stated were that the forum was informative and provided great information, collaboration and networking opportunities.

Conclusions reached among those attending, along with the lessons learned through program implementation, included the need for the following:

- Improved collaboration and coordination with related service providers and hospitals not only to widen access to additional support programs, but to identify women at risk for low birth weight deliveries, educate them about the need for appropriate prenatal care, and refer them to services.
- Partnerships that help cut costs, including linking into existing grant awardees, e.g., school grants, smoking cessation and county-wide or state-wide grants such as Project Launch that address young children's needs, and others aimed at improving family or community health.
- Further data collection to better understand the extent of the problem as well as cost effectiveness and cost savings of interventions such as those applied by Butler Memorial Hospital and Every Child Inc., and to predict costs for sustaining similar programs and taking them to scale.
- Conversations with Medicaid providers to explore the feasibility of covering preventive care measures to save health care costs associated with low birth weight both in the near and long term.
- As a result of lessons learned, Butler Memorial Hospital and Every Child Inc. have integrated these programs into their organizations.

*“Through this funding initiative, we now have a better understanding of who is at risk for low birth weight deliveries and how those risks can be alleviated. However, funders cannot do it alone. Opportunities to reduce low birth weight and improve health outcomes for mothers and their children also require the coordination of quality health care resources as well as involvement from communities and families.”*

— Yvonne Cook  
President  
Highmark Foundation

*“The low birth weight babies forum was a wonderful session, focused on such a needed topic. Every Child Inc. and Butler Memorial Hospital demonstrated how much impact each of these programs can make. The ultimate goal would be to have all our organizations work toward a unified effort and plan for the region.”*

— Deborah Linhart  
Vice President of Women's Health Initiatives  
Allegheny Health Network

## About the Highmark Foundation

The Highmark Foundation is a private 501(c)(3) tax-exempt, charitable organization of Highmark Inc. that supports initiatives and programs aimed at improving community health. The Foundation's mission is to improve the health, well-being and quality of life for individuals who reside in the communities served by Highmark Inc. The Foundation strives to support evidence-based programs that impact multiple counties and work collaboratively to leverage additional funding to achieve replicable models. For more information, visit [www.highmarkfoundation.org](http://www.highmarkfoundation.org).

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