



# StartStrong

Transforming the System of  
Care to Reduce Infant Mortality

**bi3 Learning Series**  
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## bi3 Learning Series

bi3, Bethesda Inc.'s grantmaking initiative to transform health, takes informed risks and challenges providers and community-based organizations to think differently about health and health care. Through its investment in the collaborative program "StartStrong," bi3 sparked systems change and improvements in maternal and infant health...and it's just getting started.

### SUMMARY

StartStrong employed a systematic approach—engaging the community, health systems and physicians—to transform the current system of care and dramatically reverse a deeply embedded record of premature births within a high-risk population. Bethesda Inc.'s role as an independent grantmaker was key to creating and fostering unprecedented collaboration among StartStrong's partners and enabling the program's success.

### PROBLEM:

#### Too Many Babies are Dying before Their First Birthday

Hamilton County, Ohio (Cincinnati) ranks among the bottom 10 percent of counties across the nation for infant mortality. Many of Hamilton County's low-income neighborhoods have infant mortality rates more than twice the national average.

Preterm birth remains a leading cause of infant death in Hamilton County. In fact, 56.3% of all infant deaths in the past five years were babies who were born extremely preterm (before 28 weeks gestation)<sup>1</sup>. This is true, even though some of the highest-incidence communities are literally in the shadows of nationally ranked hospitals, obstetrics and pediatric care providers.

"Many of our greatest challenges as a community can be linked to our preterm birth problem. It reflects underlying societal failures and drives the perpetuation of those failures. If we want education, poverty and disparity to improve, we have to start by reducing preterm birth."

– James M. Greenberg, MD, Director, Division of Neonatology, Cincinnati Children's Hospital Medical Center

In addition to significant human costs, extreme premature births carry a heavy economic burden compared with full-term births, including costs for specialized education for children with developmental disabilities, the loss of potential future earnings, and for medical care.

Medical care for premature infants is 10 to 15 times as costly as the care for full-term babies. Annual costs related to preterm birth in Hamilton County total \$402 million. Extending pregnancy by just one week for each preterm birth in Hamilton County would reduce annual initial hospital costs by over \$25 million.<sup>2</sup>

## SOLUTION: Disrupt the Current System of Care

“We credit bi3 with having the foresight to understand that significant change is required and that important change rarely takes place without disruption. One of the most significant outcomes of this work came from bi3’s understanding and willingness to support the concept that what happens to a family within a community has important relevance to health and well-being.”

– Judith Van Ginkel, PhD, President, Every Child Succeeds

bi3 recognized the need to spur innovation and pilot new approaches in order to spark breakthrough change in maternal and infant health. In 2013, it challenged the Cincinnati community to think differently.

A team of clinicians and nonprofit leaders responded to the call. They proposed designing a new, scalable model of care to reduce preterm birth and improve maternal and infant health outcomes. This team would begin in their own backyard by developing and piloting new approaches in Avondale—a low-income neighborhood in Hamilton County with an infant mortality rate more than twice the national average. Ultimately, the goal was to spread successful prototypes to other urban neighborhoods.

This effort became known as “StartStrong” and included innovative leaders from the two hospitals that delivered 70% of the babies in Avondale, the children’s hospital that cares for all preterm babies, and a community-based home visitation program for first-time mothers.

bi3 took the risk and provided \$3.2 million to launch the three-year initiative. This investment leveraged significant monetary and in-kind contributions from all partner hospitals.

### StartStrong Partners:

- TriHealth Good Samaritan Hospital
- Cincinnati Children’s Hospital Medical Center
- Every Child Succeeds
- University of Cincinnati Medical Center

Throughout the life of the grant, Bethesda Inc. supported the StartStrong team by...

- Encouraging diverse partners, in some cases, competitors, to work together to tackle a community health issue
- Placing great value on learning and continuous process improvement
- Acting as a thought partner to assist the team in planning, implementation and problem solving
- Providing flexibility in the grant budget to adapt to changes and learnings along the way
- Instilling confidence when the team faced challenges
- Being an advocate and champion for the project in the broader community.

## RESULTS:

**StartStrong met the challenge of premature birth in Avondale. The community's infant mortality rate is now lower than Hamilton County as a whole; a striking accomplishment for what previously was one of the highest rates in the county, more than 2.5 times current figures. Along the way, bi3 provided the spark and fostered collaboration in new ways—breaking through institutional and traditional barriers in a common effort to solve one of the community's most pressing health issues.**

Specifically, the StartStrong program created dramatic change at many levels—ultimately delivering on Triple Aim goals of better care, better outcomes and lower costs. It has:

- Improved health outcomes through an unprecedented reduction in the number of extreme pre-term births in its pilot community
- Resulted in first-time collaborations and promoted systems change
- Enhanced patient engagement by bringing pregnant patients into the planning mix at the very beginning of the process
- Reduced costs by lowering non-urgent emergency department visits for infants, and
- Helped attract additional funding from Ohio Medicaid to fund more community health workers.

StartStrong has also challenged bi3 to think differently about its own future work. This includes the importance of a multi-dimensional approach to create systemic change in long-term community health issues. The components, which follow, range from fostering collaboration to challenging conventional systems of care.

Here's how these elements evolved and led to the results in this report.

### Fostering Collaboration

Participating hospital systems had never worked closely together at the clinical level to address a deeply ingrained, societally based health issue.

Early in the program, the systems realized that no one partner worked across the continuum of prenatal, pediatric and maternal care essential to truly change the outcome. It would take an unprecedented collaboration by the health systems for efforts to be successful. New partnerships across health care providers and community organizations were necessary to meet complex needs – including building trust with moms and their families.

Given the complexity of the problem, it was critical for StartStrong partners to align on goals and how to capture learning along the way. Shared vision and a system for learning together were developed at the very start. This work was led by Cincinnati Children's nationally recognized James M. Anderson Center for Health System Excellence using quality improvement methods. Clear outcome and process measures and a theory of change were agreed on by all. Small-scale interventions were tested and only scaled-up if successful. Partners agreed to share their data and discuss both successes and failures. This approach built trust and facilitated collaboration across organizations who were traditional competitors.

Strong leadership and good communication were critically important. The StartStrong team worked to ensure full buy-in from health system senior executives, including a commitment to dedicate staff resources. Timely engagement of hospital senior leaders was key to move through bigger barriers to improvement. Leaders were willing to have hard conversations and to address challenges when they arose.

## Increased Patient and Community Engagement

The StartStrong team began its field work by listening. They actively held conversations with women, families and the Avondale community to understand the barriers that prevent women from getting prenatal care and becoming connected to the social supports they need.

They learned that including the community in the design and removing social barriers was a basis for building trust and that a willingness to do more for families would be required if StartStrong were to be successful.

Through community engagement strategies such as hosting community meals for healthcare providers and families, and working with churches to deliver messages about the importance of early prenatal care, providers built rapport with expectant moms. Centering the work on the needs women shared helped build trust and ensure the redesign of the care system led to new solutions they valued.

This intentional step led to innovation.

“So much has to do with changing human behavior. This doesn’t happen in isolation and is far more complicated than it appears. It’s so important to understand what a woman is comfortable doing, at what point in her pregnancy she should receive care, and where she’s comfortable receiving it. The community has to play a role in providing support, understanding her issues and how we can truly help her.”

– Judith van Ginkel, PhD, President, Every Child Succeeds

## Improved System of Care

Patients, if and when they sought care, often fell through the cracks of healthcare systems because many patients did not have a regular medical home and handoffs between providers and/or community services were inconsistent at best. The traditional healthcare model was less a system and more a collection of unconnected services.

“Health systems are typically focused on medical delivery. We’ve not been as oriented toward specific community or social needs until recent years. With infant mortality, a link between social and medical became profoundly apparent. The drive to innovate was made possible through a third-party—Bethesda Inc. One of the most powerful ideas in StartStrong was that health care systems and community agencies came together”

– Elizabeth Kelly, MD, Vice Chair, Department of OB/GYN, UC Health

A comprehensive systems view was essential for StartStrong’s success. Each partner had to understand they were part of the larger system that needed to be optimized. Strategies and interventions were revised regularly based on weekly testing and learning. The result: a single strategy that places mothers at the center and surrounds them with individualized care and social supports to address barriers that deter healthy pregnancies and births.

## StartStrong's Bundle of Care



### OB Clinical Care

Early, sustained, valued, place-based prenatal care for every mom



### Community-Based Care

Early, valued, coordinated, place-based care in the community



### Activated Mothers With Supportive Communities

Engaged parents, families and communities meeting pregnant mom and infant needs



### Reduced Hardships

Timely social services addressing issues that undermine health

“Start Strong has pushed our busiest obstetric practice in TriHealth, from simply a clinic for low-income patients to a site for an innovative care model backed by QI [quality improvement] science. This has already improved the outcomes for patients in Avondale and created a template for improving the obstetric care in other neighborhoods. This work led to a partnership with Cradle Cincinnati and created the conditions for the State of Ohio to provide funding for the increased deployment of community health workers.”

– David Dhanraj, MD, Director, Division of Gynecology, Department of Obstetrics and Gynecology and Medical Director of Faculty Medical Centers, TriHealth

The clinicians and their institutions have acknowledged that working jointly has produced better outcomes than working alone.

This is evidenced by the partners continuing to improve the system of care for patients, even after the original grant ended. For example, Cincinnati Children’s Hospital is designing the “ideal” system of care to address family and infant needs during first 30 days of life. The path begins with customized newborn visits based on individual patient characteristics, such as choosing to breastfeed or using formula, and being a first-time mom vs. an experienced mom.

## Formation of Cradle Cincinnati Learning Collaborative

To speed physician and community engagement with this new bundle of care, StartStrong partnered with Cradle Cincinnati—a relatively new collective impact initiative focused on ending infant mortality in Hamilton County—to form a Learning Collaborative. The Collaborative became the forum in which project findings were disseminated in a highly practical and efficient way, with common data collected to measure ongoing impact.

“Health systems in the past have often made change because leadership said that’s how something should be, and then staff is expected to do it – not necessarily using quality improvement methodology. StartStrong is about innovators gaining knowledge of best practices, and then operationalizing that knowledge. The Learning Collaborative spreads it to every system, including all the practices working with Medicaid patients”

– Michael Marcotte, MD, Director for Quality in Maternity Services, TriHealth

Shared data drove improvement. Partners reviewed their key data inputs weekly and shared these monthly across participating organizations. Today, over 95% of providers to Hamilton County Medicaid moms participate in the Learning Collaborative. bi3 is providing additional funding to sustain this work through 2017.

## Improved Health Outcomes, Reduced Costs

Just three years after the launch of StartStrong, unprecedented clinical results have been achieved:

**Lower mortality rates.** Avondale's infant mortality rate (8.6 per 1,000 births for 2012-2016) is now lower than Hamilton County as a whole, a striking accomplishment for what previously was one of the highest rates in the county (21.0 per 1,000 births from 2007-2011).

**Fewer preterm births.** The rate of extreme preterm births in Avondale has decreased from 1.79% to 0% during the period. No infants have been born in Avondale at a gestation of less than 28 weeks in over two years. TriHealth Good Samaritan Hospital had a span of 329 days between premature births for pregnant Avondale women (prior to StartStrong, the longest span was 26 days).

**Better care.** The percent of Avondale infants completing their first pediatric visit within the first nine days of life increased from 69% at baseline to 92% over the course of the project.

**Lower costs.** NICU and emergency department costs related to prematurity have been reduced —the net cost difference over four years (2013–2016) totaled \$1.341 million, annualized savings of \$335,250.

## Sharing Learning to Benefit Others

“The good news is we are sharing our prematurity work nationally with some pretty awed audience reactions”

– Robert Kahn, MD, MPH, Physician Lead, Community and Population Health, James M. Anderson Center for Health System Excellence, Cincinnati Children's Hospital Medical Center

National groups and health leaders are taking notice. Dr. Don Berwick, formerly head of the Centers for Medicare and Medicaid Services (CMS), encouraged StartStrong to track what makes the program successful so it can be spread to other communities throughout the country. StartStrong has attracted nearly \$2 million in Medicaid funding to deploy more community health workers in Hamilton County.

A toolkit based on StartStrong learnings is being developed to provide guidance for other communities and/or organizations which recognize systems and relationships must change in order to improve maternal and infant health. Not all communities will have the benefit of grant funding to accelerate their work; nonetheless, the toolkit will allow others to move forward more quickly by applying the learnings, challenges and successes of StartStrong.

## Inspiring Ideas for Improvement

StartStrong has inspired bi3 to continue our work to change the outcomes for mothers and their infants. bi3 considers maternal and infant health as one of its three funding priorities through the year 2022. In addition to investing in new ideas, bi3 has developed a core set of principles that guide its work:

- **Fostering Change with Purpose.** We focus on making philanthropic investments that deliver the Triple Aim—better care, improved health and lower costs. We do this by funding transformational projects with the potential to change culture and systems.
- **Addressing Issues at Their Core.** We work toward health equity by focusing on the social determinants of health. We provide grantmaking resources to projects in various phases of development, from research and planning to scaling and sustainability.
- **Partnering for Success.** Our work intentionally aligns with community health goals. We know to meet these goals, it's essential to support collaborations and partnerships. We seek to spur innovation by developing leadership and supporting capacity building among our funded partners.
- **Sharing our Learning.** We support our partners in evaluation and continuous improvement efforts, while emphasizing learning and sharing those findings to benefit the entire community.

"I'll add my thanks for bi3's vision, leadership and tremendous resources, and for the encouragement and confidence that you have offered along the way!"

– Robert Kahn, MD, MPH, Physician Lead, Community and Population Health, James M. Anderson Center for Health System Excellence, Cincinnati Children's Hospital Medical Center

More information about **StartStrong**, **Cradle Cincinnati** and the **Learning Collaborative** can be found at [www.bi3.org](http://www.bi3.org) and [www.cradlecincinnati.org](http://www.cradlecincinnati.org) or by contacting:

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### About bi3

bi3 is **Bethesda Inc.'s** forward-looking grantmaking initiative to transform health in Greater Cincinnati. bi3 invests in innovative ideas that have the ability to spark and scale new approaches to improve community health and health care. Visit [bi3.org](http://bi3.org) to learn more.

<sup>1</sup> Ohio Vital Statistics, Infant and Mortality Review, 2017

<sup>2</sup> Cradle Cincinnati and the University of Cincinnati Economics Center, **The Cost of Preterm Birth**, 2017



# StartStrong Learnings Summary

To help other organizations break through the systems and cultural challenges in dealing with deeply ingrained community health issues such as infant mortality and prematurity, the StartStrong team identified key learnings critical to success in its transformational work.

These six learnings stand out in creating systems-level change by driving toward common goals:

- 1. Shared vision and a system for learning together were developed at the very start.** Given the complexity of the problem, it was critical to share a clear view of what would be achieved and how learning would be gained along the way.
- 2. Strong leadership and good communication were critically important.** Timely engagement of senior system leadership was key to tackle barriers to improvement. Challenges were addressed when they arose and system leaders were willing to have hard conversations.
- 3. Metrics were chosen that would require breaking down silos.** Collaboration was necessary to reach those goals, including lowering ED visits, the cost of care to the community and, most important, community-level prematurity and mortality rates.
- 4. Shared data was used to drive improvement.** Partners reviewed their own key data inputs weekly and shared these monthly across participating organizations.
- 5. A comprehensive systems view was essential for all partners.** Each participant had to understand they were part of the larger system that needed to be optimized. Strategies and interventions were revised regularly based on weekly testing and learning.
- 6. A willingness to do more for families was required.** New partnerships across health care providers and community organizations were necessary to meet complex needs. Removing social barriers became a high priority and a basis for building trust.