Nurse–Family Partnership: Using Nurse Home Visits to Improve Maternal and Infant Health Outcomes in Birmingham

OVERVIEW

Program Basics
- Nurse–Family Partnership is an evidence-based community health program that provides home visits by registered nurses to first-time mothers experiencing poverty.
- Home visits begin during pregnancy and continue through the child’s second birthday, providing first-time mothers with personalized, professional support for 1,000 days.
- Over the course of the program, nurses provide mothers with expert medical advice and personal guidance as they transition to parenthood, including regular one-on-one visits that last between 60–90 minutes.
- A national nonprofit organization oversees program administration and replication, providing support and specialized training to partners that implement the program at the community level while ensuring program fidelity and impact.
- Backed by the Jefferson County Department of Health and philanthropic donors, Nurse–Family Partnership of Central Alabama (NFPCA) launched in Birmingham in 2017 and is administered by the University of Alabama at Birmingham School of Nursing.

How Does the Nurse–Family Partnership Improve Economic Mobility?
- Nurse–Family Partnership improves a range of child development outcomes, increasing the chances that children enter kindergarten ready to learn. Children who enter kindergarten ready to learn experience significantly better academic and economic outcomes throughout their lives.
- Nurse–Family Partnership increases stable employment among new mothers. Research demonstrates that income stability is a critical foundation to longer-term upward economic mobility.
- Nurse–Family Partnership reduces arrests and convictions of both mothers and their children by the time they turn 15. This better positions individuals to earn a steady income, complete education or workforce training programs, and access good jobs.
- Nurse–Family Partnership works to improve mental health for new mothers and child development. Maternal depression can weaken child development and increase the likelihood of their future poverty.

EVIDENCE LEVEL: PROVEN (HIGHEST TIER)

Ranked as having the highest level of evidence by the California Evidence-Based Clearinghouse for Child Welfare, County Health Rankings and Roadmaps, Blueprints for Healthy Youth Development, Social Programs That Work, the Substance Abuse and Mental Health Services Administration, the National Institute of Justice

<table>
<thead>
<tr>
<th>Target population</th>
<th>Program cost</th>
<th>Implementation locations</th>
<th>Dates active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents with children under the age of 5</td>
<td>Variable; ranges from $6,000–$10,000 per family</td>
<td>Nationwide</td>
<td>Early 1970s–present</td>
</tr>
</tbody>
</table>
**OUTCOMES & IMPACT**

Outcomes observed in at least one of the trials of the program:
- 48% reduction in child abuse and neglect
- 56% fewer emergency room visits for accidents and poisonings
- 50% lower rate of delay in language development in children age 21 months
- 67% fewer behavioral/intellectual problems at age 6
- 79% reduction of preterm deliveries by women who smoke
- 32% fewer subsequent pregnancies
- 82% increase in months employed

**NURSE–FAMILY PARTNERSHIP IMPLEMENTATION**

**The Challenge**
- Longstanding challenges in infant and maternal health: For decades, low-income mothers and infants in the Birmingham region experienced some of the worst health outcomes in the country. In 2013, 11% of babies in Jefferson County suffered from low birth weights and 12% were born preterm, compared to national averages of 8% and 11% respectively.\(^1\) \(^2\)
- Large racial disparities in infant health outcomes: In 2013, the infant mortality rate for Black babies in Jefferson County was nearly triple the national average: 17.8 infant deaths per 1,000 births, compared to 5.96 per 1,000 for all children across the US.\(^2\)
- Deep disadvantage among many first-time mothers: Many first-time mothers in Birmingham experienced poverty, housing instability, and complex medical needs beyond maternal care, such as mental health issues.
- Widespread institutional distrust: A long history of mistreatment of low-income families of color in health settings had created a sense of distrust in local medical institutions among many individuals.\(^4\)
- Few programs and supports for populations in need: While some local clinics addressed prenatal and neonatal health, no programs in the Birmingham region were designed to support first-time, low-income mothers with the intensive support of a specially trained nurse.

**The Solution**
- Medical care and guidance delivered to families in their homes: Nurse–Family Partnership (NFP) provides first-time, low-income mothers with expert medical care and personal guidance during visits to patients' homes. Regular, scheduled visits begin during pregnancy and continue until the child's second birthday.
- Support built on a foundation of long-term, trusting relationships: NFP’s success is rooted in the long-term relationships that develop between first-time mothers and a nurse. In developing strong connections with their clients, nurses are able to tailor their support and resources to each individual.
- The UAB School of Nursing delivers NFP model: The UAB School of Nursing was chosen to administer the program, providing nurses, managing all program operations, collecting data, and leading recruitment and communications efforts.
Major Accomplishments

- Widespread improvements in maternal and infant health outcomes: In its four years of operation, relative to all Jefferson County mothers who gave birth within the last six years, NFP Central Alabama has helped decrease the frequency of preterm births for its participants (8.5% vs. 11.9%), increased mothers’ employment rates after birth (77.6% vs. 65.1%), increased breastfeeding rates (83% vs. 78%), and improved mental health outcomes among its participants. ²
- Doubling the number of families served in four years: Since 2017, NFP Central Alabama has nearly doubled in size, growing from 93 families to 150. To serve the growing client base, the program has tripled the number of nurses on staff (from 2 to 6). ²
- Strong buy-in from the public sector: NFP Central Alabama developed a strong relationship with the Jefferson County Department of Health, which has become the program’s largest funder with total support of $2.8 million to date. Mayor Randall Woodfin has also become a vocal supporter of the program, having participated in a home visit in 2019. ²
- Growing support for statewide expansion: NFP’s strong results in Birmingham, Montgomery, and Tuscaloosa have led to support from local and state leaders for a future statewide expansion.

Keys to Success

- An aligned vision among philanthropic and university leaders: The Goodrich Foundation, led by Carol Butler, and the UAB School of Nursing, under the leadership of Associate Dean Dr. Cynthia Selleck, served as the initial champions of bringing NFP to Birmingham. Working together, they built a strong case for the program and generated widespread civic support for its implementation.
- A vocal champion in the County Health Department: Dr. Mark A. Wilson played a critical convening role in building support for NFP Central Alabama among potential funders and civic leaders. His support also led to significant funding for the program from the County Health Department.
- Data and evidence drive consensus on adapting the NFP model: In addition to strong advocacy efforts from leaders of the County Health Department, the Goodrich Foundation, and the UAB School of Nursing, NFP’s 40-year track record, three randomized controlled trials and 14 follow up studies demonstrating positive results, and meticulous data collection standards helped convince skeptical groups of the program’s ability to produce positive outcomes.
- A high-capacity, well-placed organization to administer the program: The UAB School of Nursing was a natural fit to administer the NFP model, with a direct pipeline of skilled nurses, data collection and evaluation capacity, program management capability, and dedicated staff for communications and fundraising.
- Deliberate community engagement leads to strong recruitment outcomes: Close collaboration with local health clinics, schools, housing agencies, and other community-based service organizations has created a strong recruitment pipeline and client referral network.

Biggest Challenges

- Demand outpacing supply: Demand for services far outpaced nurse capacity from program launch, forcing the program to turn away some high-need clients.
- Overcoming skepticism as an “outsider”: With several local providers already seeking to address maternal health outcomes, NFP Central Alabama needed to overcome perceptions of being redundant “outside competition,” but differentiated itself by serving only first-time mothers.
- Adapting to COVID-19: The COVID-19 pandemic brought the need for a rapid change in care delivery to a telehealth model, with the addition of supply drop-offs to client’s homes.
**TIMELINE**

**NURSE–FAMILY PARTNERSHIP LAUNCHES**

Early 1970s
Dr. David Olds launches a nurse home visitation program for first-time mothers and their children in Elmira, New York. Over the next 25 years, the program administers three successful randomized control trials with diverse populations in New York, Tennessee, and Colorado.

**U.S. DOJ FUNDS NATIONAL NFP EXPANSION AND REPLICA**

1996
The U.S Department of Justice’s Office of Juvenile Justice and Delinquency Prevention funds six new NFP sites across the country. With increased national visibility and data-backed results, the program grows to serve 342,766 families in 758 counties across the country over the next 25 years.5 6

**NFP ESTABLISHES NATIONAL REPLICATION PROGRAM**

2003
Seeking to provide local partners across the country with information, support, and specialized training to replicate successful results, NFP’s National Service Office is established to support national replication.

**JEFFERSON COUNTY APPOINTS NEW HEALTH COMMISSIONER**

2011
Dr. Mark A. Wilson takes over the Jefferson County Department of Health and identifies maternal and infant health as a top priority; he regularly convenes civic and health leaders in pursuit of solutions.

**NFP MONTGOMERY SUCCESS SPARKS INTEREST IN BIRMINGHAM**

2014
Carol Butler, Executive Director of the Goodrich Foundation, a family foundation based in Birmingham, meets with local government and civic leaders to discuss NFP’s promising results from the Montgomery site, which launched in 2008; Dr. Cynthia Selleck, the UAB School of Nursing’s Associate Dean, discusses with Butler how to start the program in Birmingham.

**JEFFERSON COUNTY, LOCAL FOUNDATIONS COMMIT MORE THAN $1.6 MILLION TO NFP PROGRAM ADMINISTERED BY UAB SCHOOL OF NURSING**

2016
With assistance from the UAB School of Nursing’s Office of Development and Alumni Relations, NFP Central Alabama raises more than $1.1 million from Jefferson County and $500,000 from local philanthropic foundations. Staff at the UAB School of Nursing submit an extensive proposal to NFP’s national office, demonstrating the extreme need for an intervention and highlighting their ability to meet the program’s funding and staffing requirements to ensure fidelity.

**NFP LAUNCHES IN BIRMINGHAM**

2017
Backed by the Jefferson County Department of Health and operated by the UAB School of Nursing, NFP Central Alabama quickly reaches its capacity of 50 clients for its two nurses.

**NEW FEDERAL FUNDING HELPS PROGRAM EXPAND TO WALKER COUNTY**

2018
The Alabama State Department of Early Childhood Education provides NFP Central Alabama with $130,000 per year for three years to expand to neighboring Walker County. The funding comes from the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program of the U.S. Department of Health and Human Services.

**NFP CENTRAL ALABAMA EXPANDS SERVICES AND PROGRAM CAPACITY**

2019
With program demand growing rapidly, NFP Central Alabama, led by Candace Knight, hires four new nurses (raising the total to six), while also bringing on a lactation consultant and mental health administrator. By the end of 2019, the program serves roughly 170 clients per month.
**ALABAMA GRANTS NFP $280,000 TO EXPAND TO FAYETTE COUNTY**
2019
Encouraged by recent success in Birmingham, the Alabama Department of Early Childhood Education, with funding from the Alabama Department of Human Resources and Governor Kay Ivey’s Infant Mortality Reduction Initiative, provides grant dollars to the three NFP programs in Birmingham, Montgomery, and Tuscaloosa to expand the program to all Alabama counties without home visiting services. Planning processes are underway for further statewide expansion of NFP services using funding from Alabama Medicaid.

**PEDIATRICS PUBLISHES 18-YEAR FOLLOW-UP STUDIES OF NFP**
December 2019
In a long-term follow-up study on families in NFP’s Memphis trial, which primarily enrolled low-income women of color, the leading peer-reviewed journal shows that NFP saved the government $17,310 per family in public benefit costs, dramatically increased math and language outcomes for children, and improved economic self-sufficiency outcomes for mothers.

**FIRST COHORT OF NFP CENTRAL ALABAMA MOTHERS AND BABIES GRADUATES**
2020
The first cohort of NFP Central Alabama participants celebrate their completion of the program at a community-wide picnic, where nurses share gifts, toddlers play together, and funders and other program stakeholders meet program participants. “I’ve never had someone who believes in me before,” one participant told her nurse in a speech at the ceremony.
THE PROCESS

Confronting the Problem

- A maternal health crisis: For decades, health outcomes for low-income mothers of color and their babies in Birmingham were among the worst in the nation.
- Collaboration between local civic and health leaders: Carol Butler, Executive Director of the Goodrich Foundation, and Dr. Cynthia Selleck, Associate Director of the UAB School of Nursing, connect and begin advocating for NFP's expansion to Birmingham. They soon begin working with Dr. Mark A. Wilson, head to the Jefferson County Health Department, to build support for bringing NFP to Birmingham.
- A public health priority: Dr. Wilson, who had made maternal and infant health a focus since taking office in 2011, becomes a champion for the program's implementation in Birmingham, advocating for its importance at the regularly-convened Maternal Health Roundtable and encouraging civic leaders help fund the initiative.
- Pipeline of program administrators and nurses: As civic leaders begin to envision how NFP might be implemented in Birmingham, the UAB School of Nursing makes the case that it is uniquely positioned to administer and staff the program, given its pipeline of skilled nurses and fundraising infrastructure.

Designing the Strategy

- Decades of results: For more than 40 years at sites across the country, NFP has provided at-risk, first-time mothers with one-on-one support from nurses from pregnancy through the child's second birthday.
- An evidence-based approach: The approach has been honed and refined through frequent data-driven evaluations and has served more than 340,000 families since it began formal replications in 1996.
- Personalized, in-home support: Mothers receive regular home visits from registered nurses, who provide medical guidance and emotional support; nurses are also encouraged to serve as a "bridge" to other crucial social services, such as housing and academic support.
- Small caseloads: NFP's model keeps each nurse's caseload between 25-30 clients, allowing for strong one-on-one relationship building.
- A long-term growth plan: The UAB School of Nursing team develops a 50-page implementation plan and long-term strategy to implement and sustainably grow the program.
## Allocating the Funding

- **$1.6 million in startup funding**: As part of the application for NFP’s expansion to Birmingham, the Jefferson County Health Department and several foundations, pledged to fund the initial $1.6 million over three years required to launch the program. Public funding from the Health Department came largely from earmarked tax revenues that were administered via the county’s donor-advised fund.
- **Public health support**: As the program expanded, total annual funding grew from roughly $924,000 in 2017 to more than $1.7 million for 2020. Jefferson County’s Health Department continues to fund the majority of the Jefferson County program via its donor-advised fund, providing $2.8 million in total support between program launch and today.
- **Contributions from the Birmingham community**: Local foundations, including the Community Foundation of Greater Birmingham, the Goodrich Foundation, the Daniel Foundation of Alabama, Walker Area Community Foundation, the Caring Foundation of Blue Cross and Blue Shield of Alabama, and The Overton Project, collectively gave more than $2.2 million from 2017–2020.
- **MIECHV funding for expansion**: The State of Alabama provides ongoing supplemental funds to boost NFP’s capacity, especially hiring more nurses to reach new counties. The program has received $130,000 per year since 2018 in MIECHV funding through the Alabama Department of Early Childhood Education to expand to Walker County, and $140,000 per year since 2019 from Alabama’s Department of Human Resources to expand services to Fayette County.

## Implementing the Plan

- **Cultivating local partnerships**: With funding, office space, and a pipeline of talented nurses in place, NFP Central Alabama prioritizes engagement with staff at prenatal clinics, housing agencies, court systems, schools, and other community-based organizations. These partners become a de facto referral network, and the program, with two nurses seeing 25–30 clients each, quickly fills to capacity.
- **Community advisory board**: NFP Central Alabama creates a community advisory board composed primarily of funders from organizations including the Goodrich Foundation, the Community Foundation of Greater Birmingham, the Daniel Foundation, and the Caring Foundation of Blue Cross Blue Shield Alabama; the board receives quarterly reports on the program’s progress.
- **A careful rollout**: By launching the program in a limited capacity (with two nurses, rather than four), NFP Central Alabama had the flexibility to address unforeseen costs and challenges, such as providing nurses with security for some home visits.
- **Public sector engagement**: As public health officials became vocal champions, local government and community leaders, such as Birmingham Mayor Randall Woodfin and city councilors, join nurses for home visits and graduation ceremonies, boosting the program’s local reputation.
A commitment to evidence: Since it began replicating its model across the county in 1996, NFP has required all sites to engage in rigorous data collection and analysis. Results from other, comparable sites are used in Birmingham to inform practices such as the cadence and length of nurse visits.

National organization support: The national organization provides significant training and support to build data collection and analysis capacity at each site, including an extensive manual detailing quantitative and qualitative approaches, to ensure high fidelity.

Ongoing internal evaluations: As part of its commitment to continuous quality improvement, leadership at NFP Central Alabama assess outcomes on an ongoing basis, refine nursing doses for individual clients, add wraparound services, and strengthen relationships with local and state service agencies as needed. Such additions included hiring a bilingual certified lactation consultant who also serves as a translator, thus increasing access to the program for Spanish-speaking mothers.

Supporting mental health outcomes: At NFP Central Alabama, program staff conducted an analysis of its clients, which revealed a high rate of trauma and mental health diagnoses. This, paired with qualitative reports from nurse home visits, led the program to hire a mental health counselor. Survey data shows that in the two years since the mental health counselor was hired, nearly all participants reported improved outcomes measuring anxiety and depression.
ENDNOTES
1. Nurse–Family Partnership: Proven Results: https://www.nursefamilypartnership.org/about/proven-results/1386-2/
2. Internal NFP Central Alabama program data provided by the UAB School of Nursing
6. NFP Program History: https://www.nursefamilypartnership.org/about/program-history/
8. Pediatrics: Prenatal and Infancy Nurse Home Visiting and 18-Year Outcomes of a Randomized Trial: https://pediatrics.aappublications.org/content/144/6/e20183876?ssop=1&sso_redirect_count=2&nfstatus=401&nftoken=00000000-0000-0000-0000-000000000000&nfstatusdescription=ERROR%3A%20No%20local%20token

RESOURCES
- Nurse–Family Partnership’s Research Trials and Outcomes Fact Sheet
- Nurse–Family Partnership Published Research
- UAB School of Nursing NFP Overview
- Journal of Professional Nursing NFP Implementation Manuscript
- Results for America: Improving the Health & Economic Well–Being of Families in Florida and Tennessee
- County Health Rankings and Roadmaps Evidence Overview of Nurse–Family Partnership
- RAND Corporation: Early Childhood Interventions

ACKNOWLEDGMENTS
Results for America would like to thank the following individuals for their help in completing this case study: Dr. Candace Knight, Dr. Cynthia Selleck, Afton Hornbuckle, Mary Catherine Moffett, and Teri Weathers of Nurse–Family Partnership, and Carol Butler of the Mike and Gillian Goodrich Foundation.

THE ECONOMIC MOBILITY CATALOG
This case study is part of Results for America’s Economic Mobility Catalog, a tool designed to help local government leaders identify and implement evidence–based strategies to improve economic mobility outcomes for their residents. The Economic Mobility Catalog is supported by a grant from the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the foundation.

RESULTS FOR AMERICA
Results for America helps decision–makers at all levels of government harness the power of evidence and data to solve our world’s greatest challenges. Our mission is to make investing in what works the “new normal,” so that when policymakers make decisions, they start by seeking the best evidence and data available, then use what they find to get better results.