

# Using Pay for Success Financing to Improve Outcomes for South Carolina's Children:

Results of a Feasibility Study

September 2013



INSTITUTE *for* CHILD SUCCESS

The Institute for Child Success, with funding from The Duke Endowment and South Carolina's Department of Health and Human Services, studied the feasibility of using Pay for Success, an innovative new financing mechanism, to improve outcomes for South Carolina's youth. The study found that it is feasible for the state to use this mechanism to scale up proven early childhood programs such as the Nurse-Family Partnership, a home visiting program for low-income first-time mothers. Pay for Success could improve the health and prospects of the state's youth and use public-private partnerships to make government more accountable and efficient.

## (introduction and background)

The Institute for Child Success is a research and policy organization dedicated to ensuring that South Carolina's youngest children—from the prenatal stage through age five—succeed. By fostering public and private partnerships, ICS aligns and improves resources for young children, working toward its overall goal of a culture that enables all children to thrive.

The need is great. A child born in poverty in South Carolina faces a challenging future; the state ranks 45th in the country in child well-being, according to the Annie E. Casey Foundation's analysis of data on health, education, economic well-being, and family and community.<sup>1</sup>

There are proven methods to improve such outcomes. Home visiting programs are one example: trained professionals provide services and support to pregnant women and families with young children, primarily during visits to families' homes. Research shows that these programs yield many benefits to the health and development of both mothers and children.

South Carolina has implemented many of these effective programs, but not at a scale sufficient to make a big impact for the state. The Nurse-Family Partnership (NFP), for example, only serves about 568 of 11,500 eligible high-risk mothers each year.

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<sup>1</sup> KIDS COUNT Databook, 2013. This and all other citations can be found in the more detailed PowerPoint presentation that this narrative summarizes.

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(led by)  
Megan Golden

(with assistance from)  
Joe Waters  
Kevin Seok-Hyun Mun

Here's the problem: Government in South Carolina—like governments in the rest of the country—is stretched thin remediating the problems of low-birth-weight babies, maltreatment of children, learning disabilities, and crime. The state simply does not have funds available to scale up the early childhood programs that can help prevent those crises in the first place. What's more, the costs of implementing programs that help on a large scale are immediate, while the benefits are longer term and diffuse, so both the financial and the political payback are delayed.

Pay for Success financing (PFS) is a new approach that addresses both issues: the need to scale up proven programs that have a positive social impact and the scarcity of government funds to pay the up-front costs of expansion. (We use Pay for Success instead of the original name for this mechanism, Social Impact Bonds, because it better conveys how the process works.)

PFS is a partnership in which philanthropic funders and private “impact investors”—not governments—provide the initial capital to scale these programs. Nonprofits deliver the actual program services. The government pays only for the outcomes (which produce net long-term savings), but only if an impartial evaluator determines that the program has achieved agreed-upon measures of success. An intermediary organization typically manages the PFS project, through contracts with the government (which pays for the outcomes), the investors (who provide the capital), and the service providers (which implement the program).

In other words, PFS overcomes a major obstacle in expanding successful programs—government's lack of financial resources—by securing capital from nongovernmental investors. If successful, a PFS-expanded program eventually produces cost savings for government, which can be used to repay investors, in addition to its benefits to society. It also increases accountability for government spending and uses public-private partnerships to achieve the state's goals—two priorities of the current governor's administration.

For these reasons, PFS financing seemed tailored to South Carolina's challenge of scaling effective early childhood programs. Accordingly, with support from The Duke Endowment and South Carolina's Department of Health and Human Services, the Institute for Child

“It is feasible to use Pay for Success financing to scale up early childhood programs such as the Nurse-Family Partnership in South Carolina.”

Success undertook a feasibility study to determine whether South Carolina could use PFS financing to improve outcomes for the state's youth. Led by Megan Golden, a fellow at New York University's Wagner Graduate School of Public Service, the feasibility study focused on the Nurse-Family Partnership, a voluntary nurse home visiting program for first-time, low-income mothers that has been thoroughly evaluated and shown to improve newborn and child health and produce several other positive outcomes for children and their mothers.

This document summarizes the key findings of the feasibility study, which are detailed in the accompanying slides. We hope our analysis will be helpful to others interested in scaling effective early childhood interventions or in pursuing Pay for Success financing.

### (key findings)

After six months of consulting with stakeholders, reviewing research, observing programs, and analyzing data, the study concluded that **it is feasible to use Pay for Success financing to scale up early childhood programs such as the Nurse-Family Partnership in South Carolina.**

The feasibility analysis found that using Pay for Success financing to fund a dramatic expansion of the Nurse-Family Partnership in South Carolina is feasible because

- **The program model has an evidence base indicating that it is highly likely to produce positive outcomes, that those outcomes produce net savings to government, and that net benefits to the state far exceed the costs.**
- **Only a small fraction of the population in need is currently being served and the program has the capacity to expand substantially with fidelity to its proven model.**
- **It is possible to come up with a viable financing model with reasonable time frames and returns for a mix of commercial and philanthropic investors.**

Although the focus of this study was on NFP, we also believe that similar, in-depth analyses would show that PFS financing is appropriate for some other early childhood interventions.

Thus, the Institute for Child Success concludes that South Carolina should pursue Pay for Success financing to improve outcomes for the state's children.

### *The Evidence Base for the Nurse-Family Partnership*

The Nurse-Family Partnership has been evaluated in five randomized controlled trials in a variety of jurisdictions around the country. This type of evaluation uses the most rigorous design and is typically used to assess medical treatments. NFP has also been the subject of numerous other credible evaluations by impartial researchers using established social science research techniques, such as quasi-experimental designs. Although there is variation in the results of these studies, overall NFP has been shown to produce

- **Fewer preterm births**
- **Fewer injury-related visits to the emergency room**
- **Reductions in child maltreatment**
- **Children more ready for kindergarten**
- **Fewer closely spaced second births and fewer preterm second births**
- **More economically independent mothers**
- **Less youth crime**

In addition, at least three cost-benefit analyses have indicated that the net societal benefits of NFP far exceed its costs. In addition, a new study by economist Timothy Bartik shows different benefits—in this case, to economic development—that were not included in these analyses. Further, though little work has been done to document government savings (in the form of remedial services avoided) resulting from NFP and similar interventions, one thorough analysis indicates that government (rather than societal) savings from NFP's outcomes exceed the cost of program in South Carolina.

### *The Unmet Need for NFP's Services and Its Capacity to Scale*

The Nurse-Family Partnership provides services to low-income women who are pregnant with their first child. Each year, approximately 11,500 Medicaid-eligible women give birth to their first child; however, in 2012, NFP was able to serve only 568 new families in South Carolina. Thus, there are many families in need who are not getting NFP's services; expanding NFP to

serve a greater portion of the eligible population would improve outcomes for many high-risk children.

However, an unmet need is not enough to justify use of the Pay for Success model. A program must also have the operational capacity to expand while maintaining fidelity to the evidence-based program model, as well as the capacity to track relevant data. The Nurse-Family Partnership meets those criteria: it has the infrastructure, through its National Service Office, to support implementation with fidelity, evaluation, and data tracking. It has decades of experience in these areas.

### *A Viable Financing Model*

The feasibility study also aimed to determine whether one or more viable financial structures for the PFS project could be developed. Despite the strength of the NFP intervention and its suitability for PFS financing, because this financing mechanism is so new, there is still significant risk to the investors. Government is unlikely to pay returns commensurate with that risk. Therefore, philanthropic capital would be needed to mitigate the risk in the early transactions.

Fortunately, there are multiple ways the financing could be structured using a combination of commercial and philanthropic capital. To this end, the author shared a set of assumptions regarding a PFS contract for NFP with two organizations devoted to Pay for Success financing: Social Finance U.S. and Third Sector Capital Partners. The two organizations proposed a total of three financial models with viable terms, investment and payment schedules, and returns. Finance expert Professor Steven Mann of the University of South Carolina's Darla Moore School of Business reviewed one of the illustrative models, agreed that it was viable, and suggested that still other financing models were possible.

### *The Challenge of Multiple Outcomes and Government Systems*

Pay for Success for the Nurse-Family Partnership also faces an additional challenge, one that the original PFS deals did not have to address. The first-ever Pay for Success financing deal, in the United Kingdom, and the first such deal in the United States both finance services that reduce recidivism among people leaving incarceration. While decreasing recidivism has many human and societal benefits, those programs focus on one main outcome: preventing reconviction (for the UK program) or reincarceration (in New York). The vast majority of cost savings from that outcome accrue to one system—the prison or jail system—which is funded by one level of government. (Reducing recidivism does require police, prosecutors, courts, and probation offices to handle fewer cases, but the savings from those reductions are minimal.)

“This is where NFP, like other home visiting programs, is different: It produces multiple outcomes that produce savings in multiple systems funded by multiple levels of government.”

This is where NFP, like other home visiting programs, is different: It produces multiple outcomes that produce savings in multiple systems funded by multiple levels of government (federal, state, and local):

- **Health/Medicaid**
- **Food Stamps**
- **Child Welfare**
- **Special Education**
- **Criminal Justice**



With NFP, no single outcome would produce enough savings to cover the cost of the entire program. But the design of a PFS financing mechanism must include a specific, clear metric of success on which to hinge payment. It is possible to base payment on more than one outcome, but the fewer the better, since investors need predictability, simplicity, and clarity. Thus, the study determined that it was not feasible to condition payment on achievement of all of NFP's outcomes.

Instead, the study considered whether a subset of the program's outcomes could determine payment. The authors chose health outcomes, for several reasons. First, the South Carolina government is especially interested in improving early childhood health. In addition, although NFP has multiple outcomes, several of them produce savings within the health system,



specifically for Medicaid. In fact, almost two-thirds of the savings NFP generates in South Carolina come from Medicaid, a program for which the state is eager to reduce expenses. Another plus: health outcomes can be measured easily, using data already collected by the state, in a relatively short time.

The state has a particular interest in improving birth outcomes. Thus, the feasibility study analyzed preterm birth rates as a potential payment term,

showing the baseline rates in proposed expansion sites and expected reductions, based on research, if NFP is implemented at scale. This outcome has the advantage of occurring quickly—three to six months after program enrollment—and enabling an evaluation of a large number of participants in a timeframe that is attractive to investors

This single outcome—a reduction in preterm birth rates—would not be enough to cover the cost of the program. Yet despite this challenge, it still makes sense to move forward with Pay for Success financing to expand NFP. According to a consensus report of the federal Institute of Medicine, preterm birth is a predictor of several longer-term outcomes, including medical problems, learning disabilities, behavioral problems, and academic performance.<sup>2</sup> Thus, it can be considered a fair bellwether of a wider range of longer-term outcomes.

In other words, if a particular outcome is important enough to the government, it may select that outcome as a payment term, even if that outcome alone will not cover the full cost of the program. (This was not the case with the New York City PFS deal, which required that the outcome on which payment was based cover all program costs). The case for using a particular outcome to determine payment is strengthened if that outcome is a good predictor of longer-term benefits. So far, this seems to be the case with birth/early childhood health outcomes in South Carolina. Of course, even if it used only birth outcomes as a payment term, the state could also measure other, longer-term outcomes to test their viability for future PFS contracts.

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<sup>2</sup> Institute of Medicine, *Preterm Birth: Causes, Consequences, and Prevention*, July 2006, p 313, 346-347.

There are other potential solutions to the challenge of NFP's multiple outcomes with savings in multiple systems. For instance, one option would be to have a longer-term PFS contract that pays for several outcomes that are sufficient to cover program cost. The state could also seek federal contributions to outcome payments.

### *How a Pay for Success Deal Could Work with the Nurse-Family Partnership*

Through examining current NFP locations and capacity, reviewing data on the number of first-time Medicaid-eligible mothers by county, and consulting with multiple stakeholders, we determined that an expanded NFP could serve 2,750 new families over three years by expanding existing program sites in the state's three main population centers and adding one or two new program sites in underserved areas. (Details of possible expansion sites and projections of number of new families per site are in the attached slides.) The program would add half of its new capacity in the first year and serve the full number of new families in the second and third years. The state could choose one or two health outcomes and pay for improvements in those outcomes. The contract could be four or six years long, depending on the outcome or outcomes chosen.

Such an expansion would require a \$24 million investment from a combination of commercial and philanthropic investors. This amount covers the cost of providing up to two and a half years of nurse home visiting services for each family plus the cost of an intermediary and an evaluator. (Details on the cost calculation can be found in the presentation that follows.) Outcomes would be determined through existing state databases with experimental or quasi-experimental research design. If the government would pay out up to \$30 million for the agreed-upon outcomes, South Carolina could structure a deal that has acceptable terms for all parties.

#### POSSIBLE PAY FOR SUCCESS CONTRACT STRUCTURE

- 2,750 new families, phased in over 3 years
- Government pays for percentage reductions in 1 or 2 outcomes
- Outcomes measured compared to a control group or matched comparison group
- 4- or 6-year contract term

### *(steps needed to implement a Pay for Success program)*

Preparing to implement a Pay for Success transaction would involve these key tasks

- **Finalize the outcomes and target population for the PFS project**
- **Educate and secure support from the legislature and other officials and pass any required legislation**
- **Identify the process and sources for government to pay for outcomes (in several years); take steps necessary to commit future funding**
- **Identify commercial and philanthropic investors**
- **Identify an intermediary, service providers, and evaluator through appropriate procurement processes**

- **Construct detailed budgets for services, intermediation, and evaluation and implementation plans for expansion sites**
- **Finalize outcomes, payment terms, and financing structure for PFS contract**
- **Negotiate contracts among government, investors, intermediary, service providers and evaluator.**

## **(conclusion)**

**Pay for Success could benefit South Carolina's children.** This study shows that Pay for Success is a feasible and promising way to improve outcomes for South Carolina's youth. The analysis demonstrates that South Carolina could readily use PFS to scale up the Nurse-Family Partnership. PFS also may be appropriate for other early childhood interventions.

Pioneering Pay for Success financing for proven early childhood interventions such as the Nurse-Family Partnership in South Carolina could result in

- **Improved outcomes for South Carolina's youth**
- **A positive impact on the state's economy**
- **New public-private partnerships to advance South Carolina's policy goals**
- **An innovative way to increase government accountability and efficiency that can be applied in other areas.**

The Institute for Child Success thus recommends that South Carolina pursue Pay for Success financing. With government, the private sector, foundations, and nonprofits mobilized to help the next generation succeed, the future will be bright.

*Megan Golden is a consultant to the Institute for Child Success and a Fellow in the Wagner Graduate School of Public Service at New York University.*

*Joe Waters is the Vice President of Policy and Communications at the Institute for Child Success.*

*Kevin Seok-Hyun Mun is a student in the Stern School of Business at New York University.*

## Acknowledgments

*Christian Soura, Office of Governor Nikki Haley*     *Megan Branham, The Children's Trust*  
*Tony Keck, Dept. of Health and Human Services*     *Prof. Steven Mann, USC Moore School of Business*  
*John Supra, Dept. of Health and Human Services*     *Ann Robinson, CertusBank*  
*Susan DeVenny, First Steps*     *Rhett Mabry, The Duke Endowment*  
*Dan Wuori, First Steps*     *Tracy Palandjian, Social Finance US*  
*Brenda Martin, Dept. of Health and Environmental Control*     *Nirav Shah, Social Finance US*  
*Sara Beth King, Dept. of Health and Environmental Control*     *Ted Miller, Pacific Inst. for Research and Evaluation*  
*Michael Smith, Dept. of Health and Environmental Control*     *Melissa VanDyke, UNC-Chapel Hill*  
*Amy Picklesimer, Greenville Health System*     *Amanda Wuenscher, Mike Daniel & Associates*  
*Derek Lewis, Greenville First Steps*     *Wanda Crotwell, Mike Daniel & Associates*  
*Tom Jenkins, Nurse-Family Partnership*     *George Overholser, Third Sector Capital Partners*  
*Tamar Bauer, Nurse-Family Partnership*     *Rick Edwards, Third Sector Capital Partners*  
*Chris Bishop, Nurse-Family Partnership*     *Rob Dugger, ReadyNation*  
*Sue Williams, The Children's Trust*  
*Eric Bellamy, The Children's Trust*



INSTITUTE *for* CHILD SUCCESS

105 Edinburgh Court Greenville, SC 29607  
1201 Main Street, Suite 1980 Columbia, SC 29201  
w: [instituteforchildsuccess.org](http://instituteforchildsuccess.org) | p: 864.382.3329

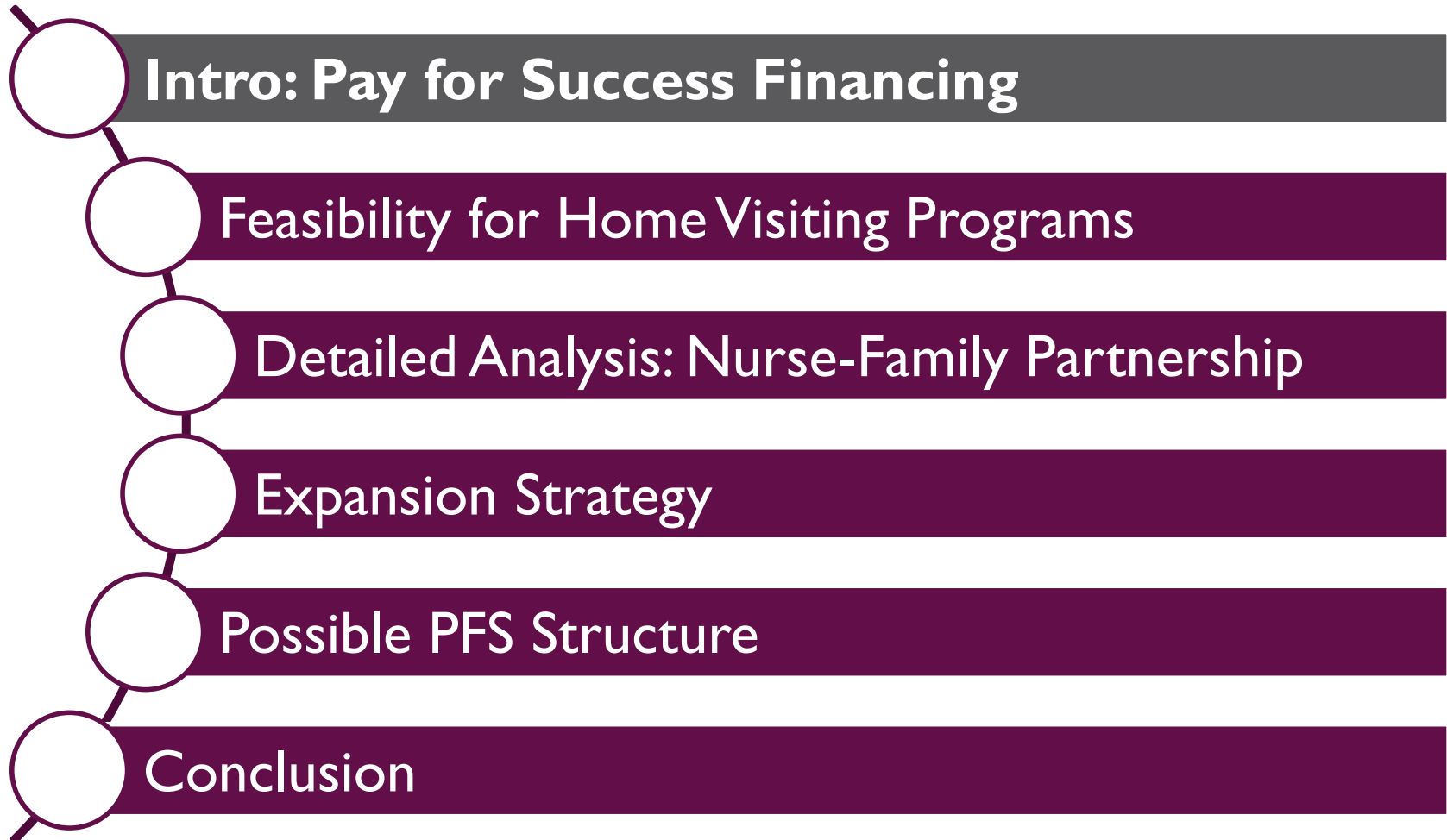
POWERED BY



The Institute for Child Success is a non-profit, non-partisan research and policy organization that fosters public and private partnerships to align and improve resources for the success of young children in South Carolina. A partnership of the Children's Hospital of the Greenville Health System and the United Way of Greenville County, ICS supports service providers, policy makers, and advocates focused on early childhood development, healthcare, and education to build a sustainable system that ensures the success of all children, pre-natal through age five.



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# Key Features of Pay for Success Financing



Investors front capital to implement proven, cost-effective programs on a large scale



Government contracts to pay only for agreed-on, measurable RESULTS; payments repay investors



An impartial evaluator assesses whether results are achieved. An intermediary may contract with the government & investors, then subcontract with providers

# Who Benefits?

## Communities & Individuals

- More effective services
- Better results

## Nonprofits

- Up-front funding to scale programs

## Government

- More cost-effective services
- Better results

## Investors

- Modest returns
- Ability to make a positive impact

# Criteria for Pay for Success Projects



Evidence that program produces positive outcomes for the state




Program produces net benefits to society and net savings to government



Significant unmet need



Program has capacity to expand with fidelity to its proven model



Financing model can be developed that is acceptable to investors, government, and providers

# Pay for Success Transactions Completed

U.S.



U.K.



Australia

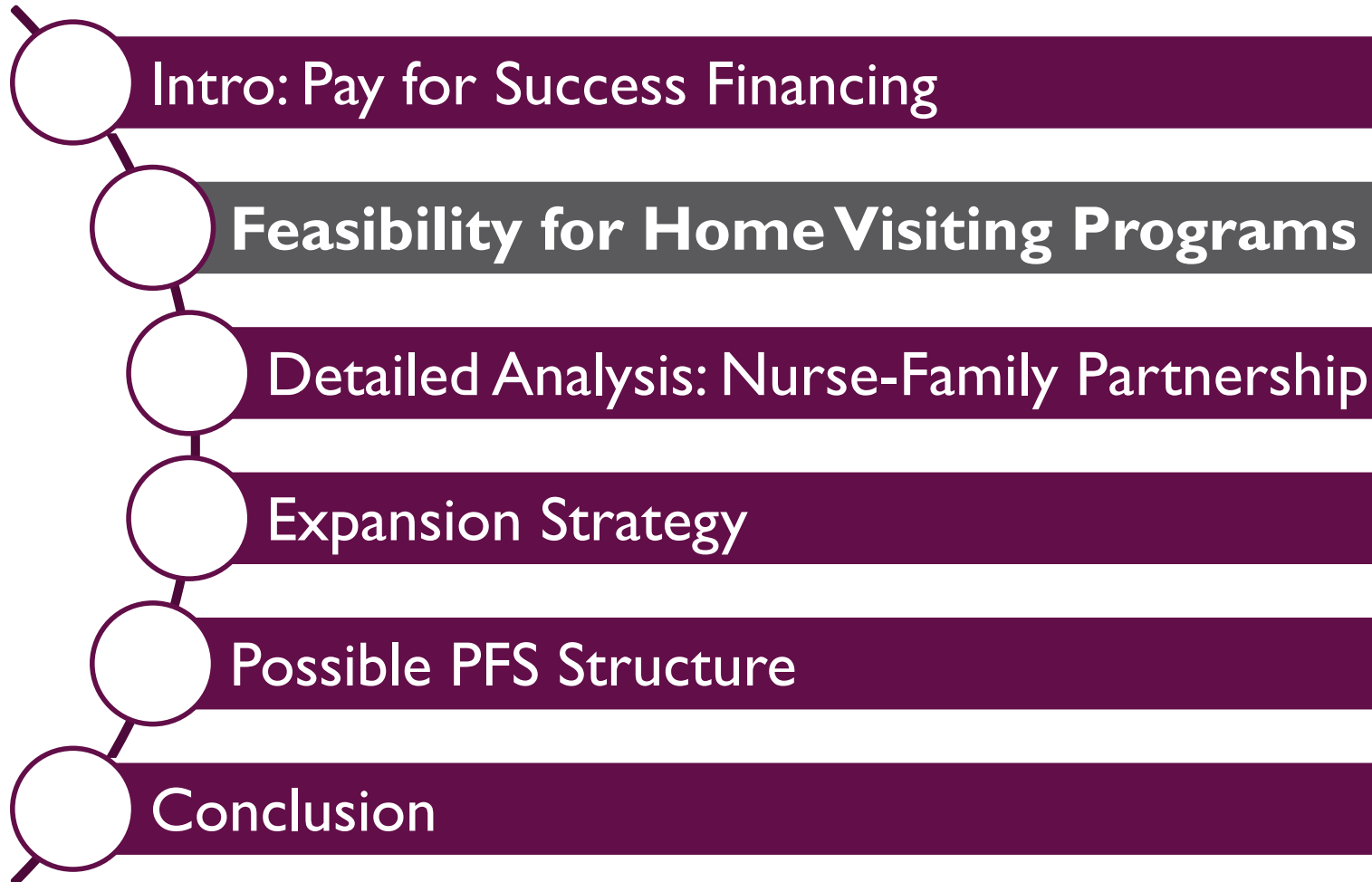


- 1 US - New York City  
Recidivism Reduction
- 2 US – Salt Lake City, Utah  
Early Childhood Education
- 3 UK – Peterborough  
Recidivism Reduction
- 4 UK – West Midlands  
Workforce Development
- 5 UK – Manchester  
Workforce Development
- 6 UK – London  
Homelessness
- 7 Australia - New South Wales  
Child Maltreatment/Foster Care Prevention

& 30+ Projects in Development



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# Outcomes for South Carolina Youth

SC ranked **45<sup>th</sup>** in  
overall child well-being

## Economic Well-Being

- Children in poverty
- Children with a high housing cost burden
- Children with parents lacking secure employment
- Teens not in school and not working

## Health

- Low-birth-weight babies
- Child and teen deaths/100,000
- Children without health insurance
- Teens who abuse alcohol or drugs

## Education

- Children not attending preschool
- Eighth graders not proficient in math
- Fourth graders not proficient in reading
- High school students not graduating on time

## Family & Community

- Children in single-parent families
- Children living in high-poverty areas
- Children in families where the household head lacks a high school diploma
- Teen births per 1,000

### Overall Rank

- 1 New Hampshire
- 2 Vermont
- 3 Massachusetts
- 4 Minnesota
- 5 New Jersey
- 6 North Dakota
- 7 Iowa
- 8 Nebraska
- 9 Connecticut
- 10 Maryland
- 11 Virginia
- 12 Wisconsin
- 13 Maine
- 14 Utah
- 15 Wyoming

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- 43 Georgia
- 44 Alabama
- 45 South Carolina
- 46 Louisiana
- 47 Arizona
- 48 Nevada
- 49 Mississippi
- 50 New Mexico

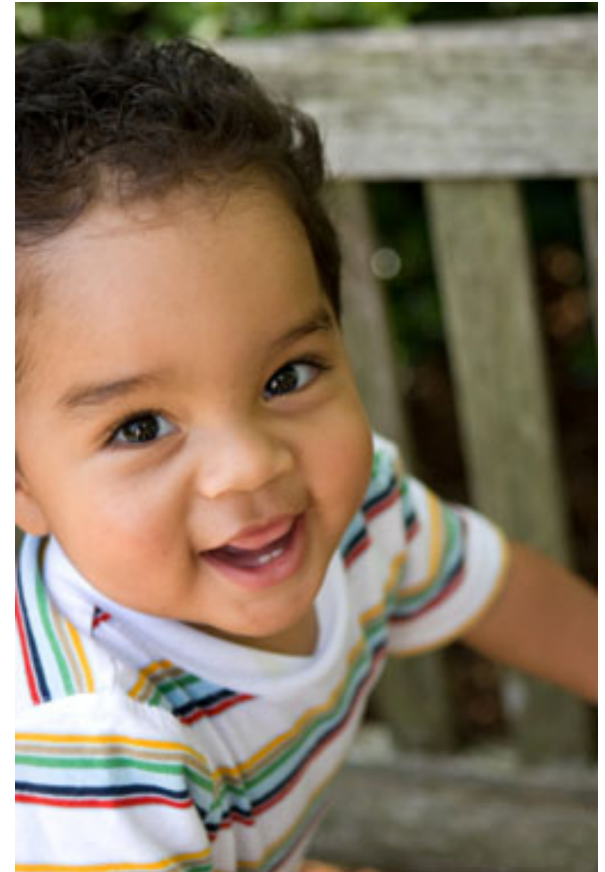
# Early Childhood Home Visiting Programs

- Trained professionals provide services and support to pregnant women and families with young children, primarily during visits to families' homes
- Address maternal and child health, parenting practices, education, and economic self sufficiency

# Home Visiting Programs Improve Outcomes

## Home Visiting Programs Have Been Shown to

- 1) Improve birth outcomes
- 2) Improve child health and development
- 3) Reduce child maltreatment
- 4) Improve maternal self-sufficiency



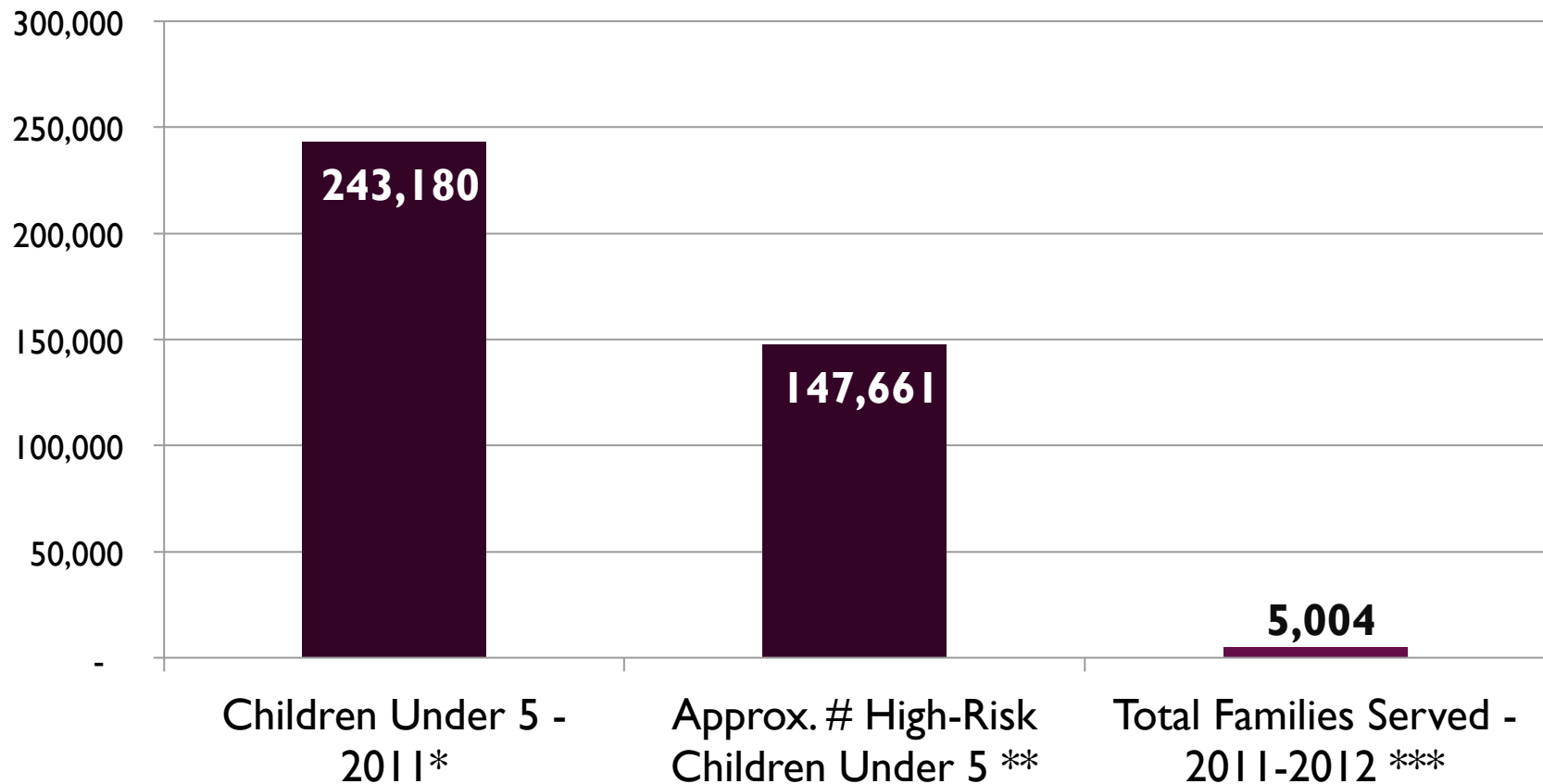
# Home Visiting Programs in SC

- Nurse-Family Partnership
- Healthy Families America
- Parent Child Home Program
- Parents as Teachers
- Early Head Start
- Early Steps to School Success
- Healthy Start
- Healthy Steps
- Family Check-Up





# Current SC Home Visiting Programs Do Not Meet Need



Source: \* 2011 Data; DHEC Population Database

\*\* 2007-2011 Data - # of Medicaid births; DHEC SCAN Database

\*\*\* 2011-2012 Data; Children's Trust (Including EarlyHS, ESSS, HFA, NFP, PCHP, H.Steps, and PAT)

# Assessing Suitability for PFS

## Home visiting programs meet first criterion:

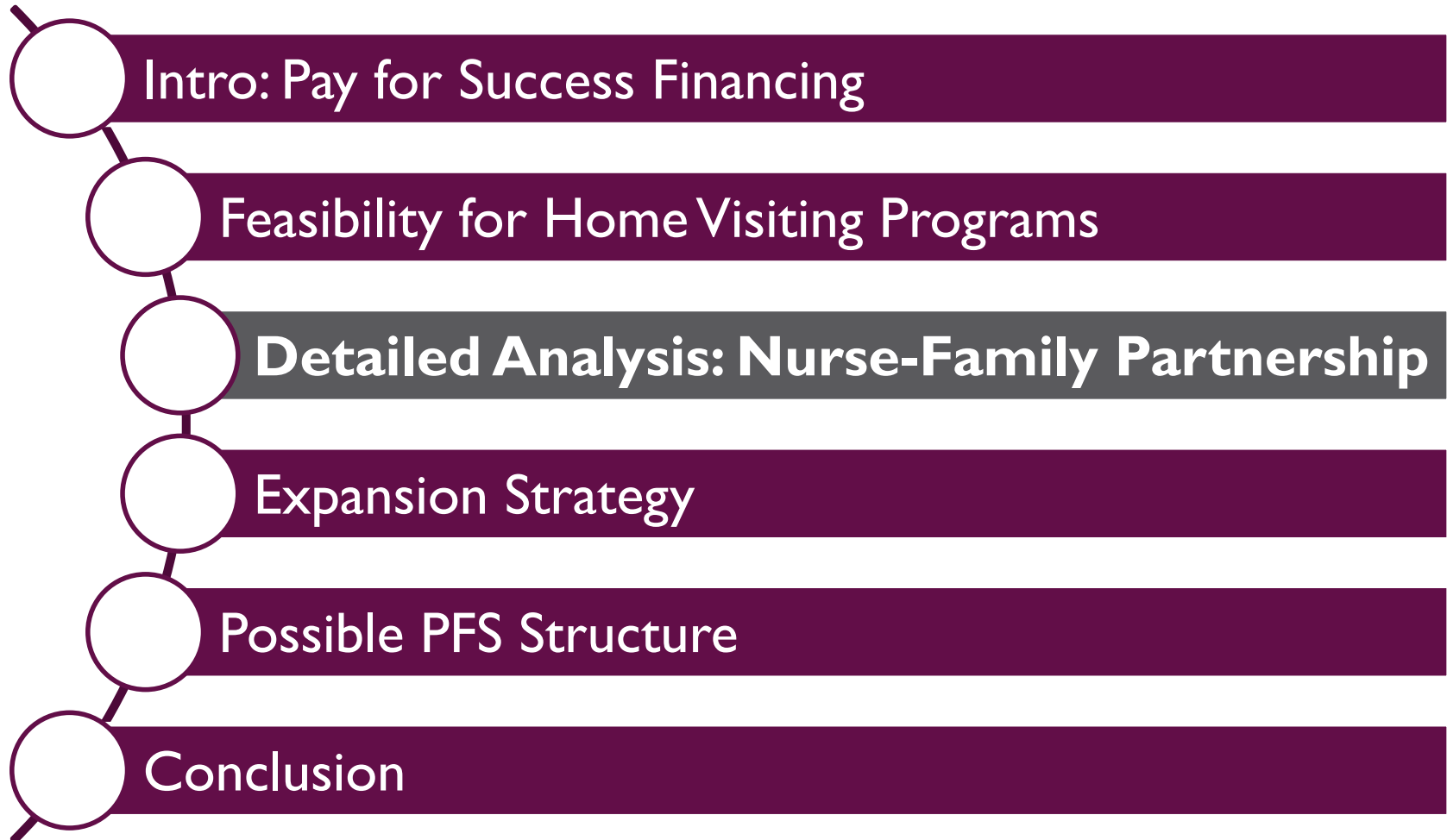
✓ Evidence that program produces positive outcomes for the state

## Additional criteria need to be assessed for each program model:

- ☐ Program produces net benefits to society and net savings to government
- ☐ Substantial unmet need
- ☐ Program has capacity to expand with fidelity to its proven model
- ☐ Financing model can be developed that is acceptable for investors, government, and providers

**This feasibility study focuses on the Nurse-Family Partnership**

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# Nurse-Family Partnership

- Targets high-risk (low-income) mothers' first pregnancies
- Home visitation by registered nurses from pregnancy through age 2
- Effectiveness proven in 5 randomized controlled trials plus > 20 other rigorous evaluations
- Cost-benefit analyses showing positive ROI
- NFP infrastructure supports expansion with fidelity to its service model



# Suitability for PFS: Conclusion

- NFP program model is well suited to PFS financing
- SC has unmet need and NFP can grow to meet it
- Savings and outcomes sufficient to attract private investment and government support



# Proven Benefits of Expanding NFP

- Fewer preterm births
- Fewer injury-related visits to the emergency room
- Reductions in child abuse and neglect
- Children more ready for kindergarten
- Fewer closely spaced 2nd births → lower risk
- More economically independent mothers
- Less youth crime

# NFP Benefits Far Exceed Costs

<b>RAND Corporation*</b>	<b>Pacific Institute for Research and Evaluation**</b>	<b>Washington State Institute for Public Policy***</b>
\$5.70 return for every dollar invested on high- risk families (current NFP target population); \$1.26 return for lower-risk families	Net return of \$44,510 per family; benefit-cost ratio of 6.2 to 1	Long-term net return of \$13,181 per person; \$2.37 return per dollar (does not include any health benefits or Medicaid savings)

Source: \* RAND Corporation, *Early Childhood Interventions: Proven Results Future Promise* (2005), p 109

\*\* Miller, *Cost Savings of Nurse-Family Partnership Home Visitation: Costs, Outcomes, and Return on Investment*, April 2013, Executive Summary, p 4

\*\*\* Washington St. Inst. For Public Policy, *Nurse-Family Partnership for Low-Income Families* (April 2012)

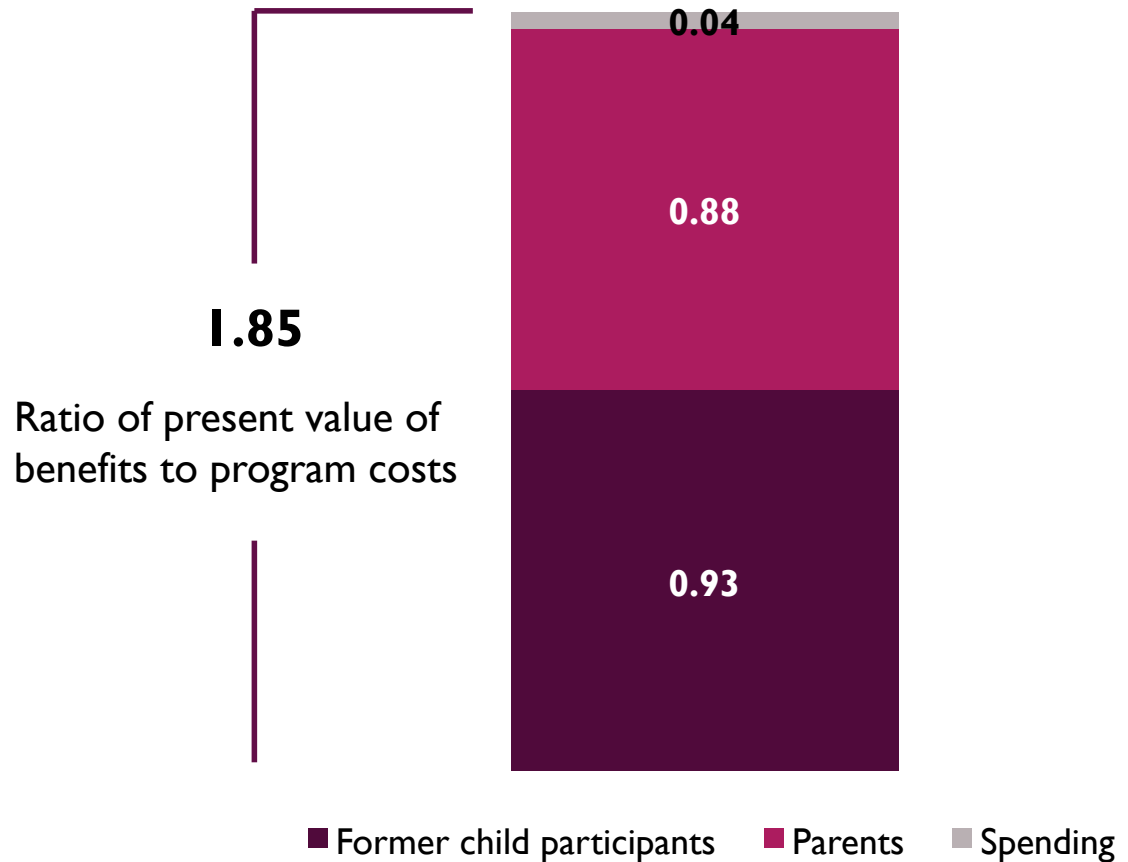
# Economic Development Benefits of NFP

Economic analysis shows expanding NFP would improve South Carolina's economy.



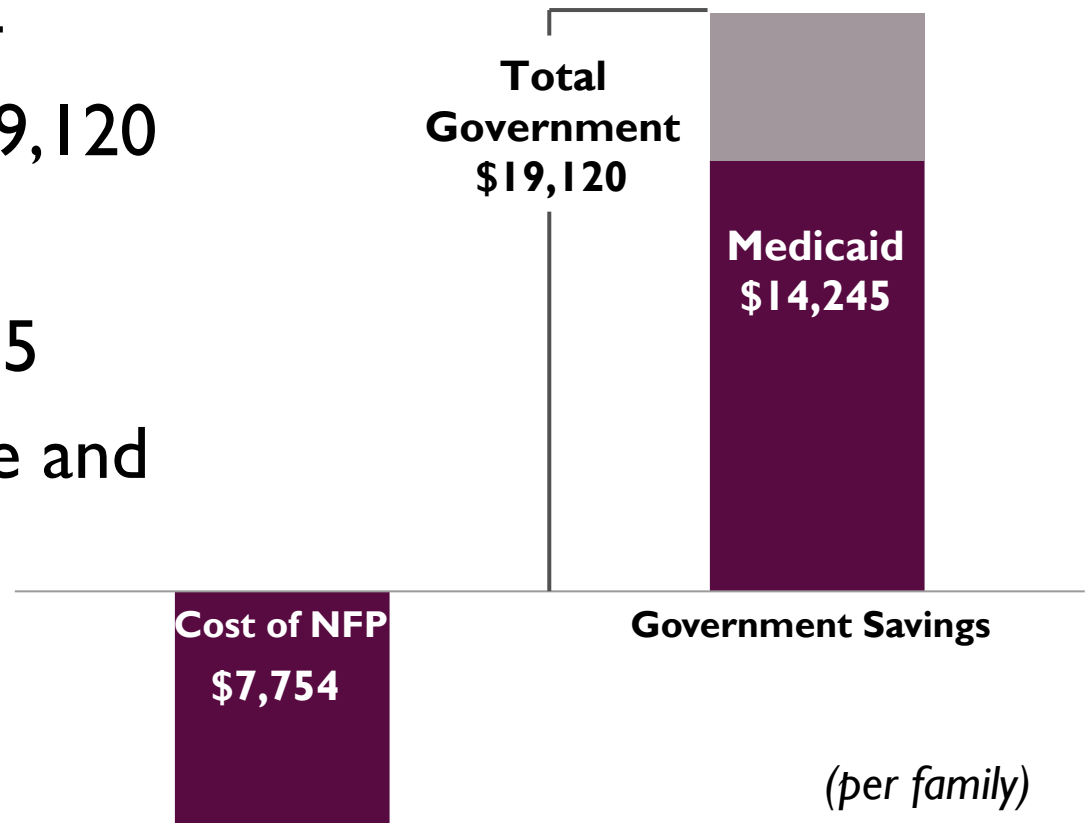
# Economic Development Benefits of NFP

Economic benefits  
alone produce an  
85% return on  
investment



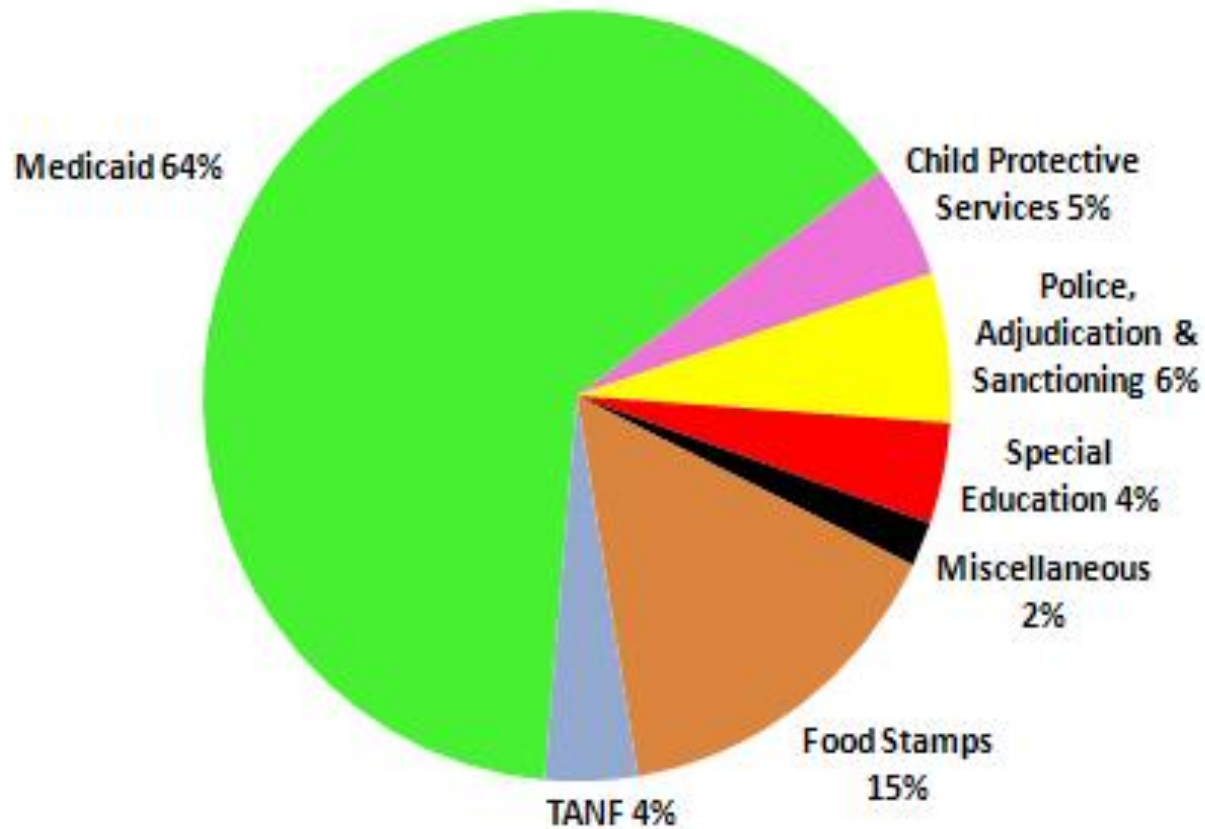
# Government Savings\* More Than Cover Cost

- Cost of NFP = \$7,754
- Government saves \$19,120 over 18 years
- Medicaid saves \$14,245
- Savings shared by state and federal governments

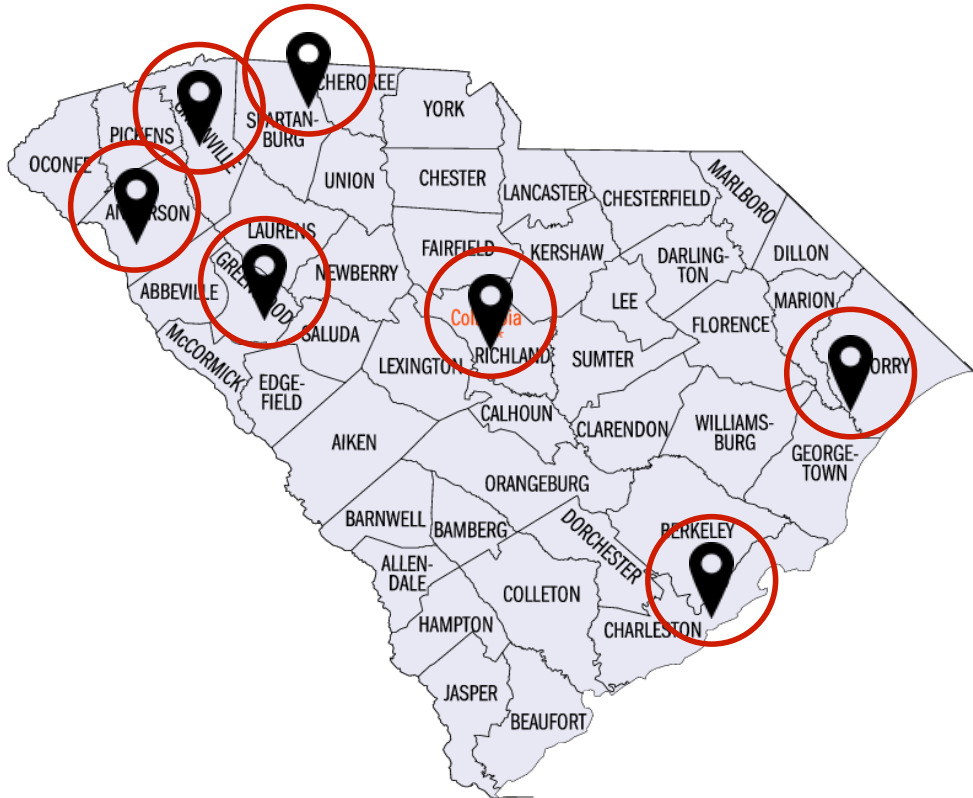




# Government Savings/Cost Avoidance from NFP

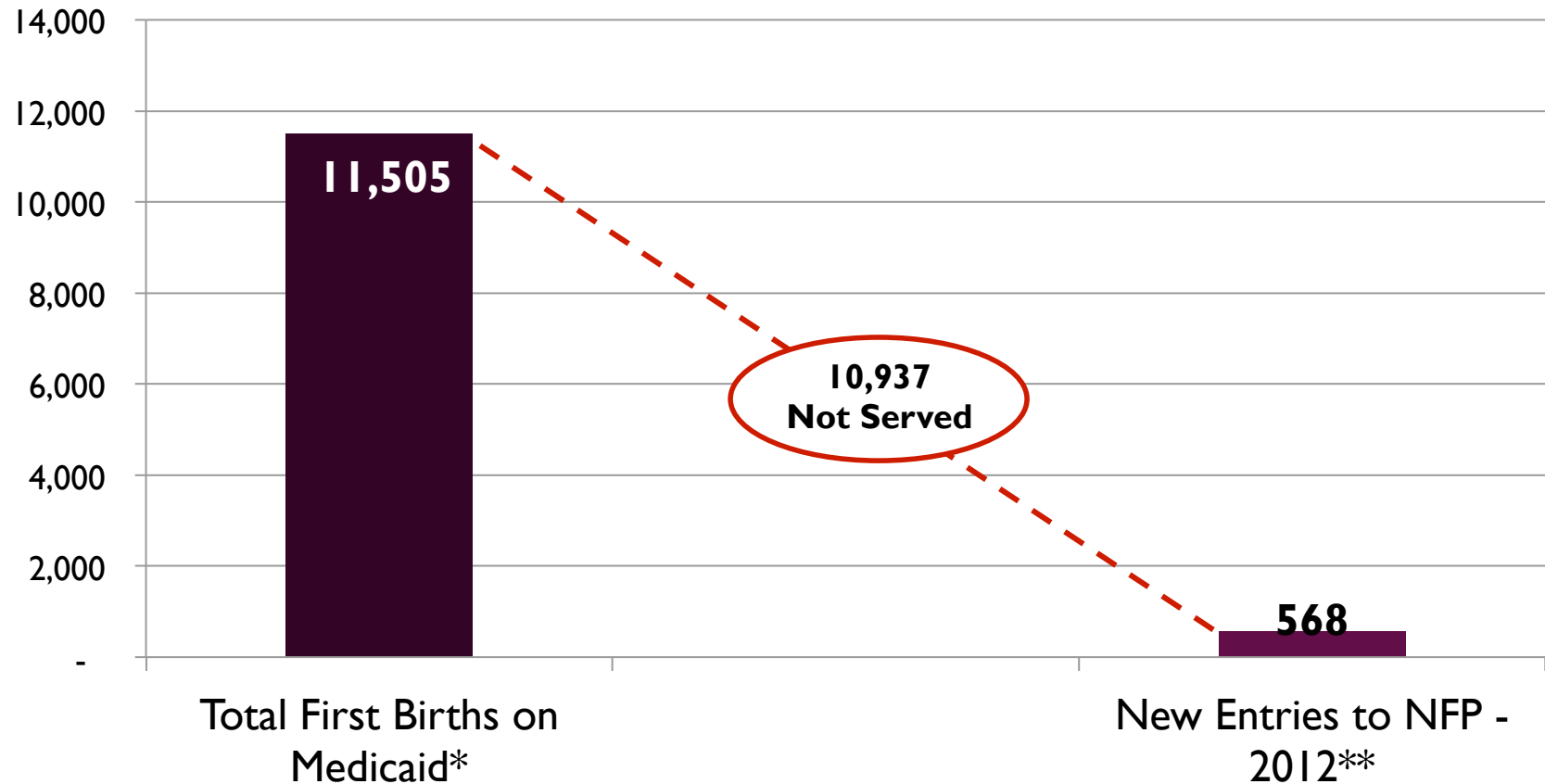


# Current NFP Sites



Region	# of Nurse Home Visitors
Anderson	4
Charleston	6
Greenwood	3
Horry	4
Richland	4
Greenville	7
Spartanburg	5
<b>Total</b>	<b>33</b>

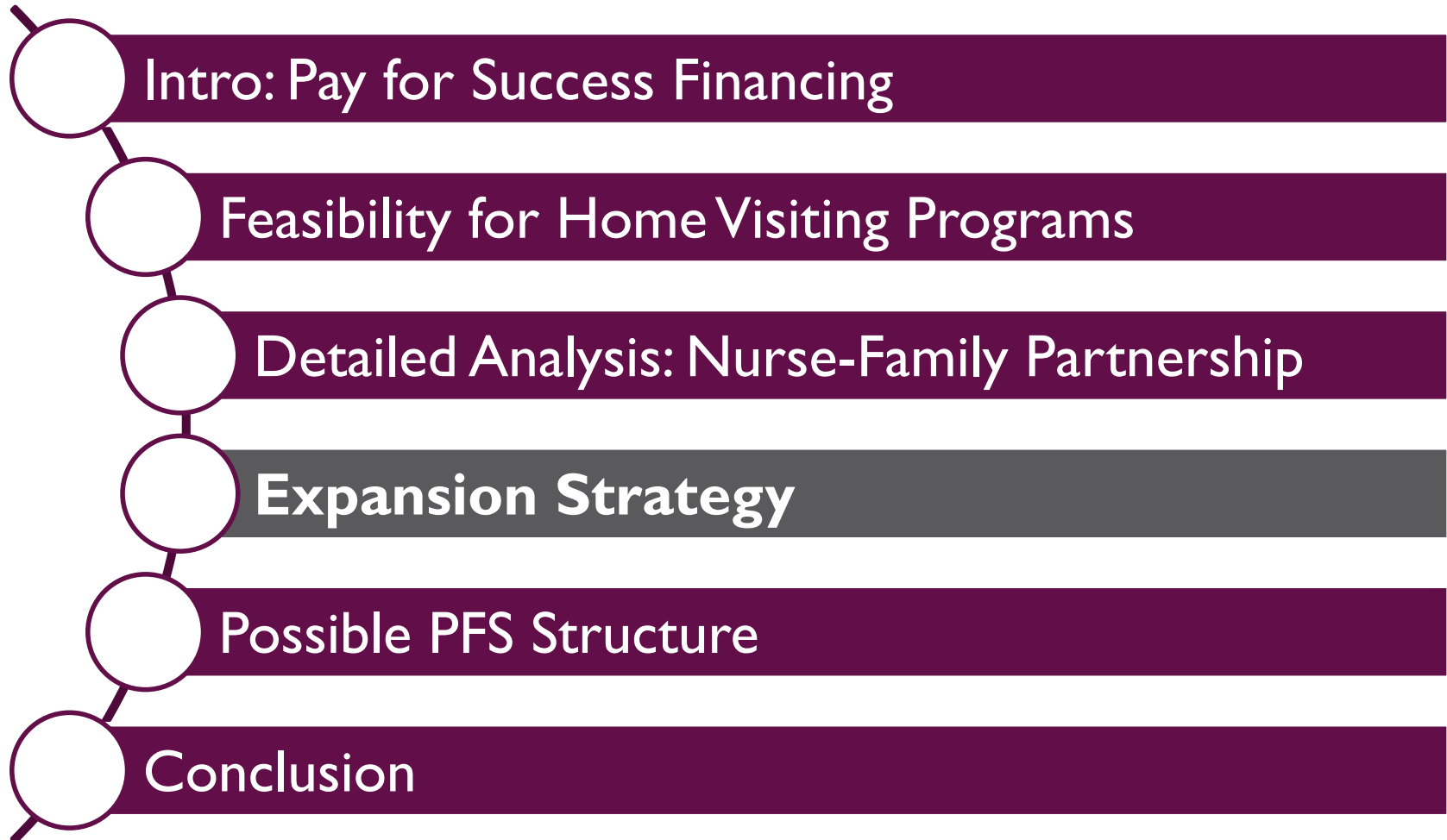
# Unmet Need for NFP in SC



Source: \* 2011 Data; Michael G. Smith, SC DHEC, Bureau of MCH

\*\* NFP State Nurse Consultant, South Carolina DHEC

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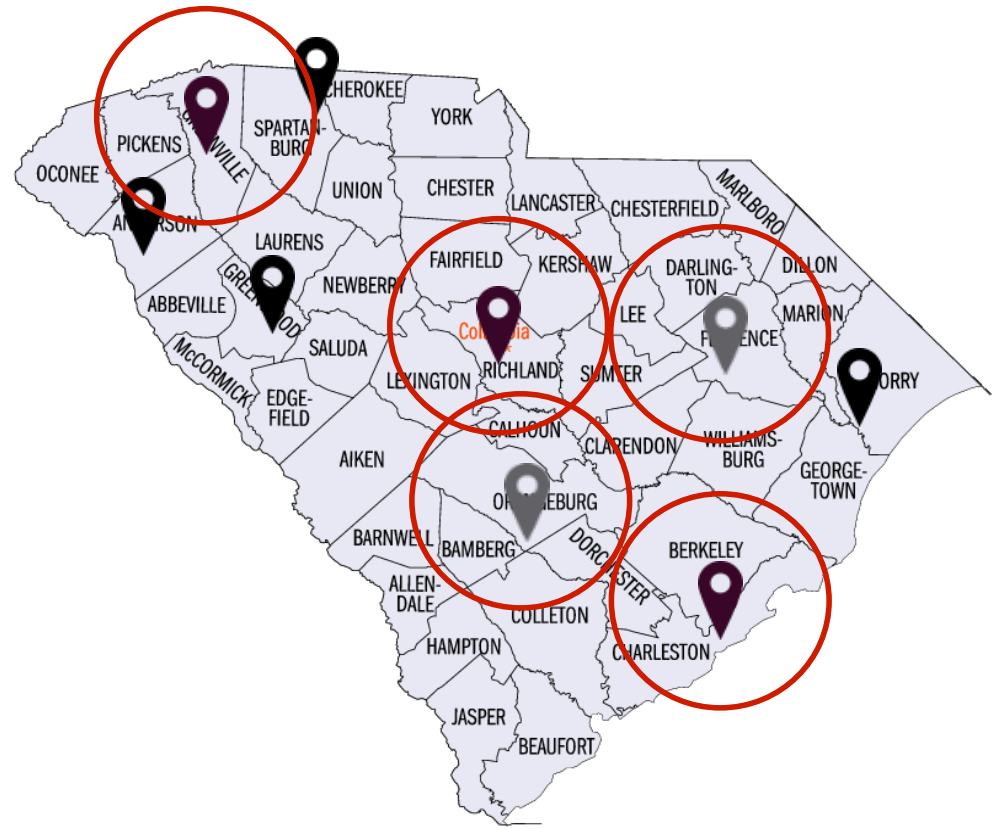
# Potential NFP Expansion Strategy

Expand three current locations:

- *Greenville*
- *Richland*
- *Charleston*

Add new location(s):

- *Orangeburg?*
- *Florence?*



# Potential NFP Expansion Strategy

## Counties included in each region

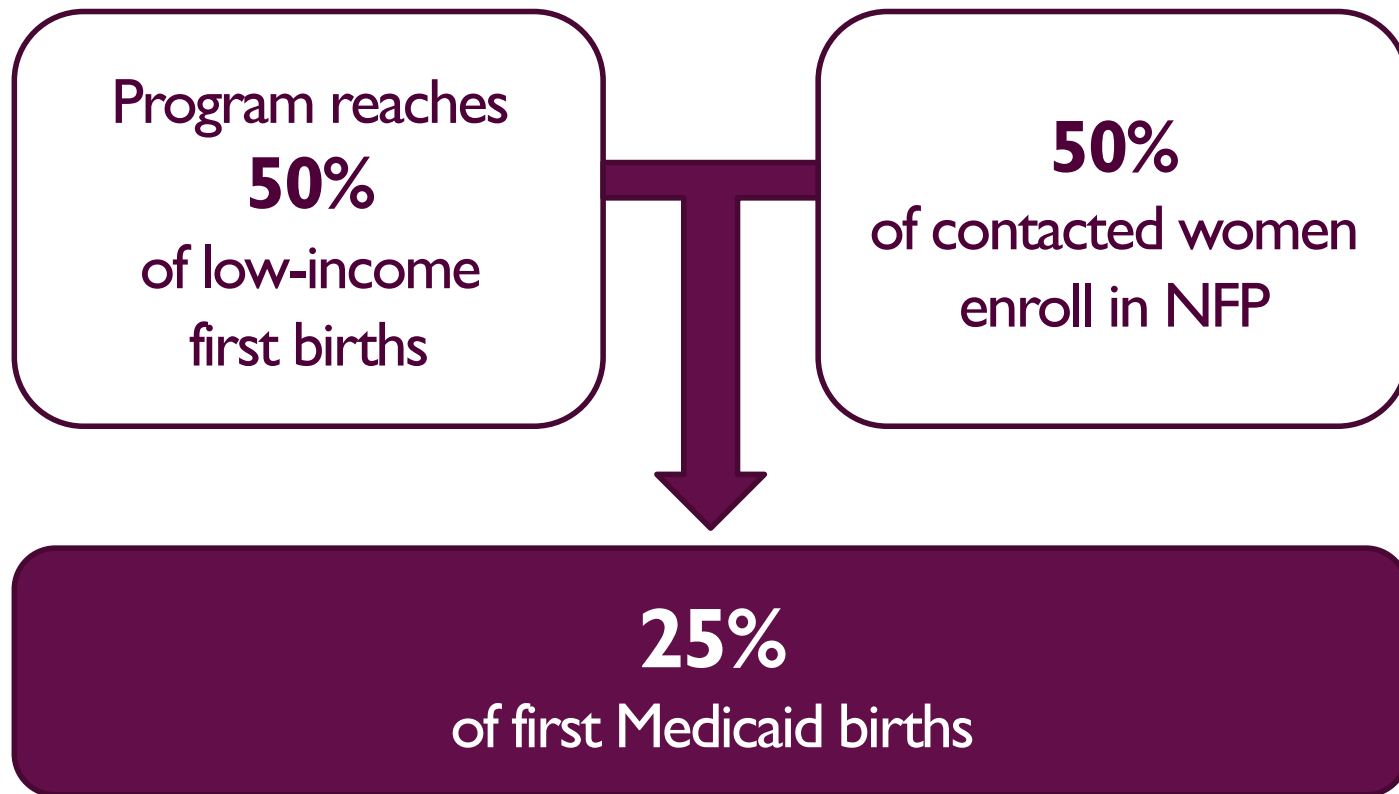
Greenville	Richland	Charleston	Orangeburg	Florence
Greenville	Barnwell	Berkeley	Allendale	Clarendon
Oconee	Kershaw	Charleston	Bamberg	Darlington
Pickens	Lexington	Colleton	Calhoun	Dillon
	Richland	Dorchester	Orangeburg	Florence
				Lee
				Marlboro
				Sumter

# Rationale

- Greenville, Richland, Charleston
  - Highest numbers of people in need
  - Existing NFP sites → efficient expansion
- Florence
  - High number of people in need
  - Potential for hospital-based site (McLeod hospital)
- Orangeburg
  - Underserved geographic region

# Expected New NFP Clients Calculation

Assumption:



25% of first births paid by Medicaid = 10% of all SC births to low-income women



# Expected New NFP Clients by Site

Region	First Births Paid by Medicaid*	Number Expected to Enroll in NFP per Year	Current Capacity**	Number of New Clients from Expansion
Greenville	1,548	387	94	293
Richland	1,793	448	79	369
Charleston	1,352	338	95	243
Orangeburg	477	119	-	119
Florence	1,153	288	-	288



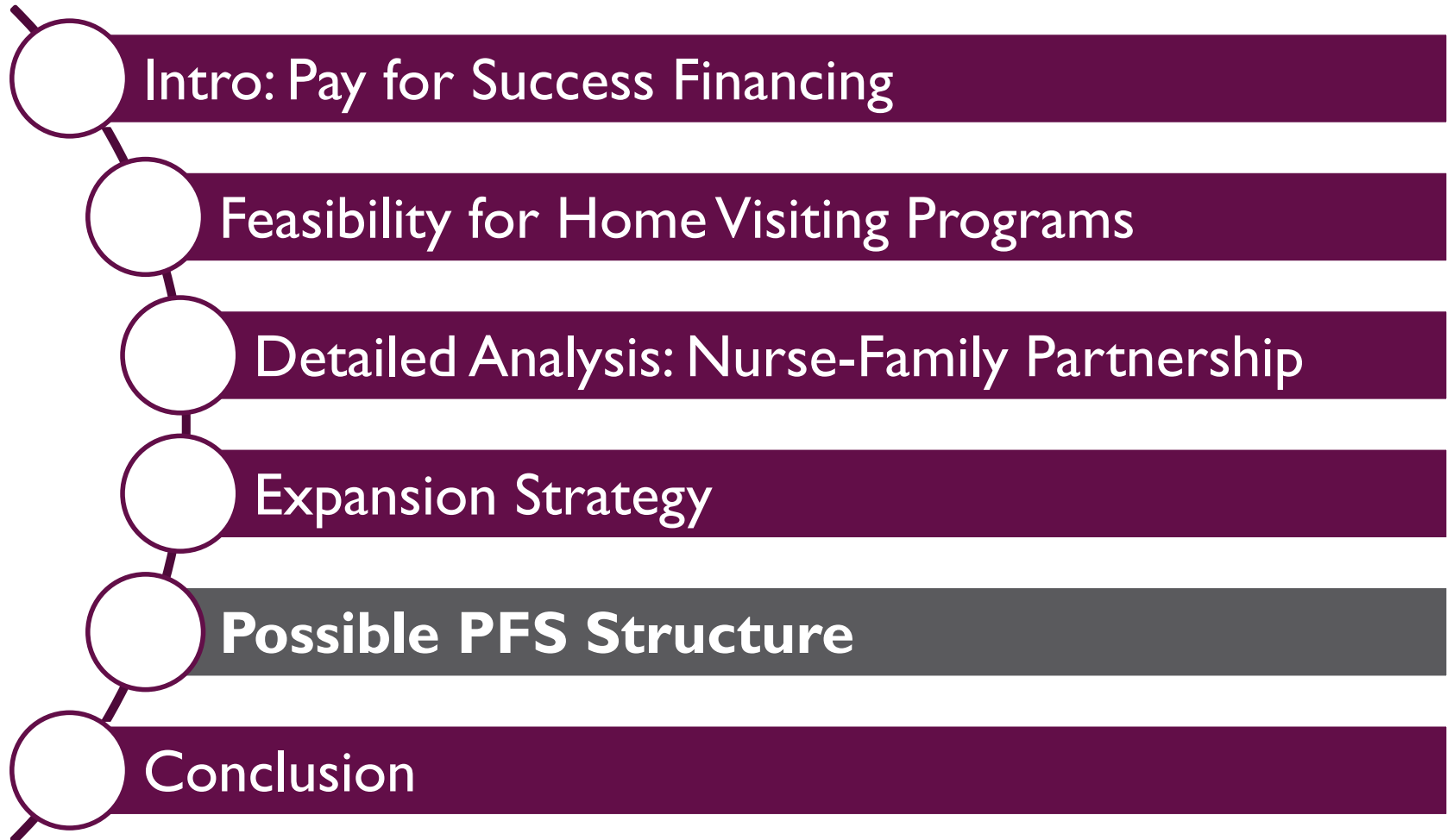
x 25%

# A Feasible Expansion Plan

- If NFP expanded in Greenville, Richland, Charleston & Orangeburg, it could serve 1,024 new families per year
- If NFP expanded in Greenville, Richland, Charleston & Florence, it could serve 1,194 new families per year
- Since we do not know which new site(s) SC will choose, we assume NFP could add 1,100 families per year
- Would serve fewer new families in first year of scale-up, while building staff and caseload

*Actual expansion sites and numbers to be determined!*

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# Possible Scale-Up Plan for PFS Project

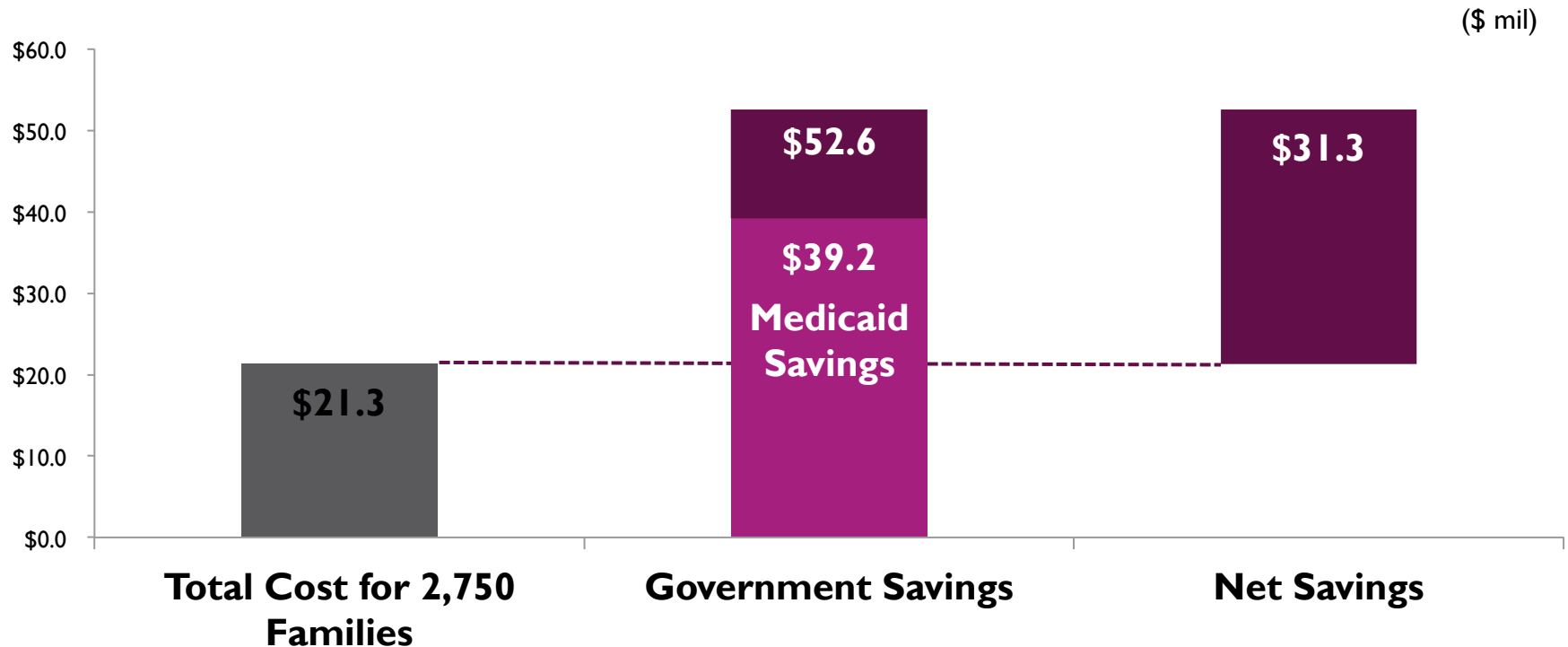
- Project must fund intake for multiple years to achieve efficient caseload and warrant investments in capacity
  - But more years of intake funded → higher cost and longer wait for investors
  - One possible scenario: fund 3 years of expanded intake, paying for outcomes of those groups; add more years of expansion if warranted by initial results
  - Under expansion scenario proposed:
    - Expand to 50% of 1,100 capacity in 1<sup>st</sup> year (550 new families)
    - Add 1,100 new families in 2<sup>nd</sup> year
    - Add 1,100 new families in 3<sup>rd</sup> year
- = 2,750 new families added over 3 years*

# Estimated Costs of Expansion

Number of New Clients
2,750
Average Cost of NFP per Family*
\$ 7,754
Cost Over Length of Program
\$ 21.3 million

# Expected Savings for 2,750 New Families

For each additional NFP family, government saves \$19,120 at a cost of \$7,754



# Possible Health Outcomes for PFS Contract

- Fewer preterm births
- Fewer infant deaths
- Fewer child emergency department visits
- Fewer closely spaced second births
- Fewer subsequent births
- Fewer subsequent preterm births
- Increase in children fully immunized through age 2

# Possible Other Outcomes for PFS Contract

## Child welfare

- Fewer incidences of child abuse or neglect

## Education

- Fewer remedial school services through age 6

## Criminal justice

- Fewer youth crimes through age 17

## Maternal life-course

- Increased employment, decreased TANF use



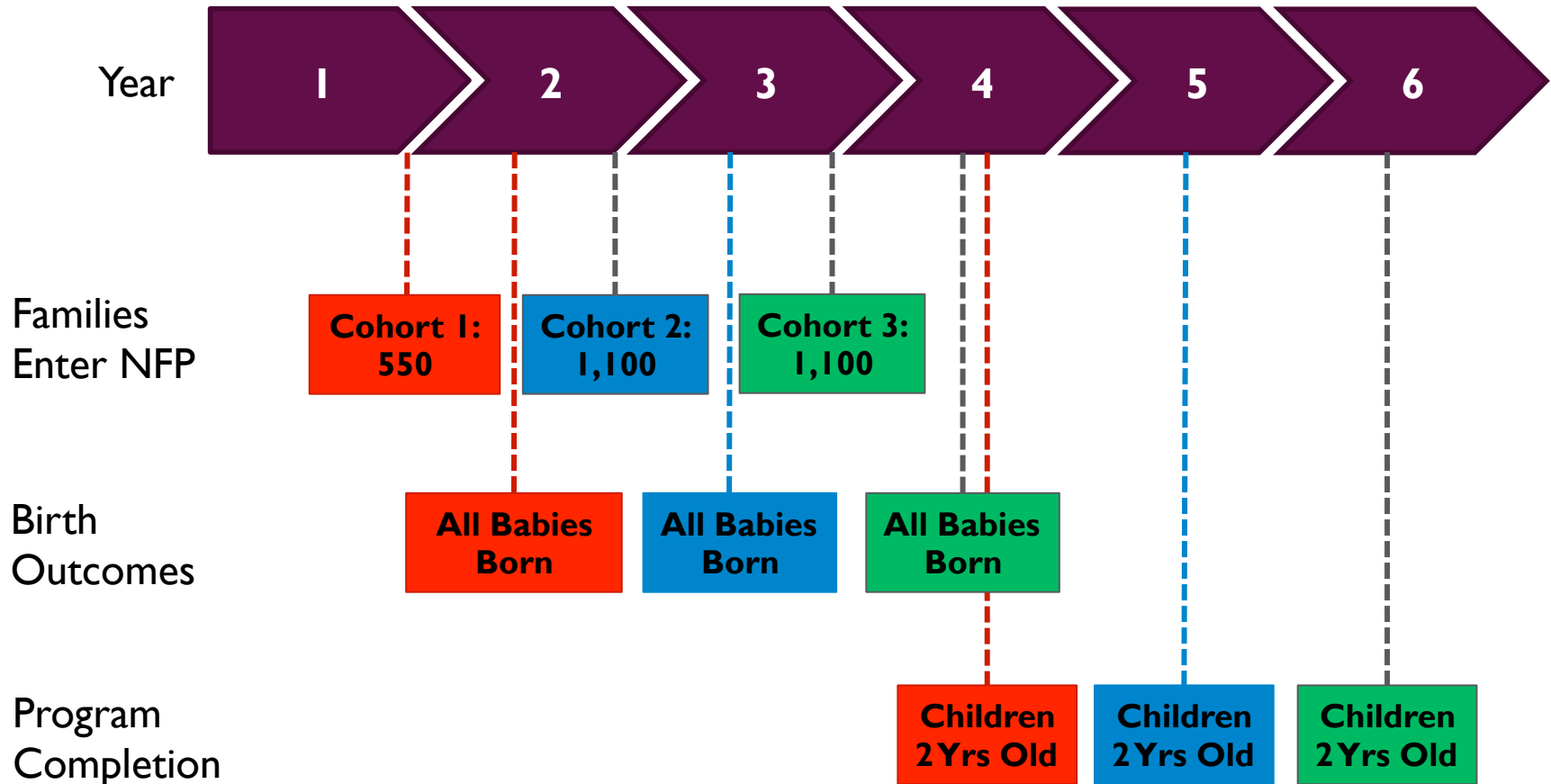
# Proposal: Base PFS Contract on Health Outcomes

- Health outcomes happen relatively quickly
  - At birth/in first 2 years
  - Can do 4- or 6-year deal
- Government interest in using Medicaid dollars more efficiently

## Most promising health outcomes

- Reduce preterm births
- Reduce ER visits for injuries in first 2 years
- Improve spacing of second birth to lower risk

# Possible PFS Timeline: Health Outcomes



# Potential PFS Outcome: Fewer Preterm Births

- SC has 4<sup>th</sup> highest preterm birth rate in the US\*
- In 2011, 11.2% of SC Medicaid-paid first births were pre-term\*\*
- Costs include medical care, early intervention services, special education, TANF\*\*\*

Source: \*March of Dimes 2012 Preterm Birth Report Card

\*\* 2011 Data on live births less than 37 weeks of gestation; Michael G. Smith, SC DHEC, Bureau of MCH

\*\*\*Institute of Medicine, *Preterm Birth: Causes, Consequences, and Prevention*, July 2006, p 398-429

# Analysis of Evaluations from Around US: NFP Can Reduce Pre-term Births by 27.4%

- Most reliable of 7 studies of NFP effect on pre-term birth:  
Among 5,239 unmarried mothers in Oklahoma, preterm births **decreased by 29%** (Carabin et al. 2005)
- NFP National Service Office tracking data for 2005-2007:  
mothers in NFP reported 9.3% preterm birth rate, while age-matched national average was 13.3% (**30% lower**)
- Miller multiplies 30% expected reduction by 94% replication factor to adjust for average # visits in S.C. NFP programs

# SC Preliminary Analysis Shows Similar Reduction

- SC DHEC compared birth outcomes for 354 NFP participants (from DHEC sites only) to matched comparison groups\*
- 8.8% of women in NFP had premature births, compared with 12.7% of women outside the program
- NFP reduced preterm births by **30.7%** in SC compared to target population
- Reduced **52.6%** compared to subset matched on race, education, WIC status

\* Source: Michael G. Smith, SC DHEC, Bureau of MCH, Birth Outcomes for SC NFP Clients Delivering Live Births in 2010-2011, presentation, 2/25/13

# Expected Preterm Birth Reduction by Site

Assuming NFP reduces preterm births by **27.4%\***

Region	Current Rate	Post-NFP Expansion Rate
Greenville	11.2%	8.1%
Richland	11.1%	8.1%
Charleston	10.9%	7.9%
Orangeburg	9.7%	7.0%
Florence	13.8%	10.0%

# Possible PFS Contract Structure

- 2,750 new families, phased in over 3 years
- Choose 1 or 2 health outcomes
- Pay for percentage reductions in 1 or both outcomes compared to a control or matched comparison group
  - Greater percentage reduction → higher payment
  - Recognize savings from these outcomes alone do not cover full cost
- Interim payments after each cohort (group entering NFP in 1 year) reaches outcomes
- 4- or 6-year contract term
- Measure other, longer-term outcomes to test viability for future PFS contracts

# NYC Payment Terms, 4-Year Investment (for comparison)

Reduction in Reincarceration	City Payment to MDRC (Intermediary)
≥ 20.0%	\$11,712,000
≥ 16.0%	\$10,944,000
≥ 13.0%	\$10,368,000
≥ 12.5%	\$10,272,000
≥ 12.0%	\$10,176,000
≥ 11.0%	\$10,080,000
≥ 10.0%(breakeven)	\$9,600,000
≥ 8.5%	\$4,800,000



# Possible Financing Structures

- Several possibilities for mixing private, philanthropic & government financing to create a viable deal
- Tolerance for risk, required returns vary by funder type
- Government may need to make some non-outcome-based payments to limit down-side risk (i.e. risk that funders lose everything if outcome not achieved)
- The two largest intermediary organizations have prepared proposed structures to consider in Phase 2



# Illustrative Term Sheet

<b>Investment Required</b>	<b>\$24 million (\$21.3 m for program + \$2.7 m for intermediary and evaluation)</b>
<b>Term of Financing</b>	6 Years
<b>Total Lifetime Government Savings <sup>1</sup></b>	\$52.6 million
<b>Government Payout</b>	Up to \$30 million
<b>Commercial Investment</b>	\$12 million
<b>Philanthropic Investment</b>	\$12 million (first loss position)
<b>Investor IRR/Rate of Return</b>	6.0%-10% <sup>2</sup>
<b>Philanthropic IRR/Rate of Return</b>	0%-4% <sup>2</sup>
<b>Outcomes metrics</b>	Reduction in pre-term births (illustrative)
<b>Evaluation Methodology</b>	TBD
<b>Service Provider</b>	Nurse-Family Partnership Implementation Agencies
<b>Individuals Served</b>	2,750 low-income, first time mothers and their families in South Carolina
<b>Intervention Model</b>	Nurse home visitation during pregnancy and after birth up to age 2

<sup>1</sup> Represents federal and state savings. Source: Miller, *Cost Savings of Nurse-Family Partnership in South Carolina*, April 2013, p 1

<sup>2</sup> Investment return dependent on various assumptions, including capital drawdown schedule and timing of investor returns.

# Option 1 for Assessing Whether Outcomes Are Achieved: Randomized Controlled Trial

- Eligible women *randomly assigned* to NFP or control group at each site, ideally **AFTER** they consent to participate in the program
- Track outcomes through state Medicaid database for program and control groups
- Analyze differences between program and control group in preterm birth rates and other outcomes

# Advantages and Disadvantages of Option 1

## Advantages

- High level of confidence that program caused changes in outcomes

## Disadvantages

- More complicated and expensive
- Serves fewer families since some go into control group
- Takes longer to reach efficient caseload
- Randomization process can be difficult for staff

# Option 2 for Assessing Whether Outcomes Are Achieved: Quasi-Experimental Design

- NFP recruits all eligible women at each site and accepts all who agree to participate
- Using state databases, identify a group of women who gave birth at the same time who match those served by NFP on key demographic characteristics, using propensity score matching (women in this group should not have refused NFP)
- Track outcomes through state Medicaid database for program and comparison groups
- Analyze differences between program and comparison group in preterm birth rates and other outcomes

# Advantages and Disadvantages of Option 2

## Advantages

- Can serve all families in need
- Less expensive and easier to implement (DHEC already using similar methodology)

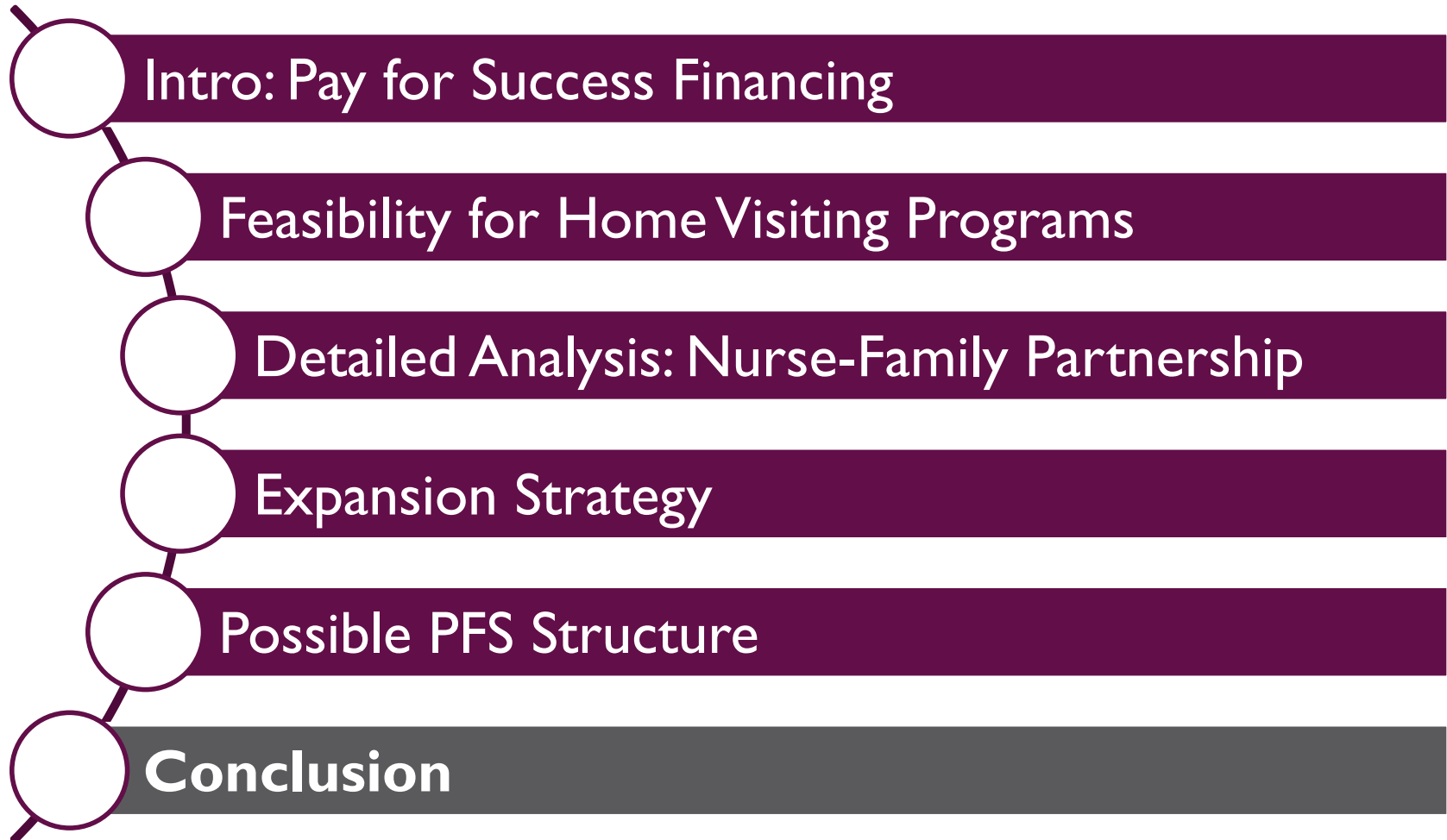
## Disadvantages

- Possibility that differences between program and comparison group contributed to changes in outcomes
- May be difficult to find comparison group that did not refuse NFP or participate in another program

# Implementation Challenges for NFP PFS Project

- Need procedures to systematically identify low-income women pregnant with first child in all sites
- Need to build proper infrastructure to achieve results at scale
- Raising substantial philanthropic capital in SC is difficult; will need national foundations
- Service provider in at least 2 expansion sites is government agency (DHEC) = unusual for PFS model

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# Conclusion



Pay for Success is a *feasible* and promising way to improve outcomes for South Carolina children



Analysis shows PFS could be used to scale up Nurse-Family Partnership; it also may be appropriate for other early childhood interventions



South Carolina should pursue Pay for Success financing for early childhood programs

# Benefits for South Carolina

Better outcomes for SC children

Positive impact on SC economy

International leader in PFS financing

Test new, efficient use of Medicaid \$



INSTITUTE *for* CHILD SUCCESS

JOE WATERS

Vice President of Policy and Communications

[jwaters@instituteforchildsuccess.org](mailto:jwaters@instituteforchildsuccess.org)

MEGAN GOLDEN

Consultant & Fellow at New York University Wagner School

[mgoldennyc@gmail.com](mailto:mgoldennyc@gmail.com)

KEVIN SEOK-HYUN MUN, Intern