

SOUTH CAROLINA PAY FOR SUCCESS FEASIBILITY STUDY


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Institute for Child Success



INSTITUTE *for* CHILD SUCCESS

Contents

- 
- Intro: Pay for Success Financing
 - Home Visiting Programs in SC
 - Nurse-Family Partnership as a SIB Pilot
 - Proposed Expansion Strategy
 - Possible SIB Structure
 - Next Steps

Key Features of Pay for Success Financing



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



Government contracts to pay 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

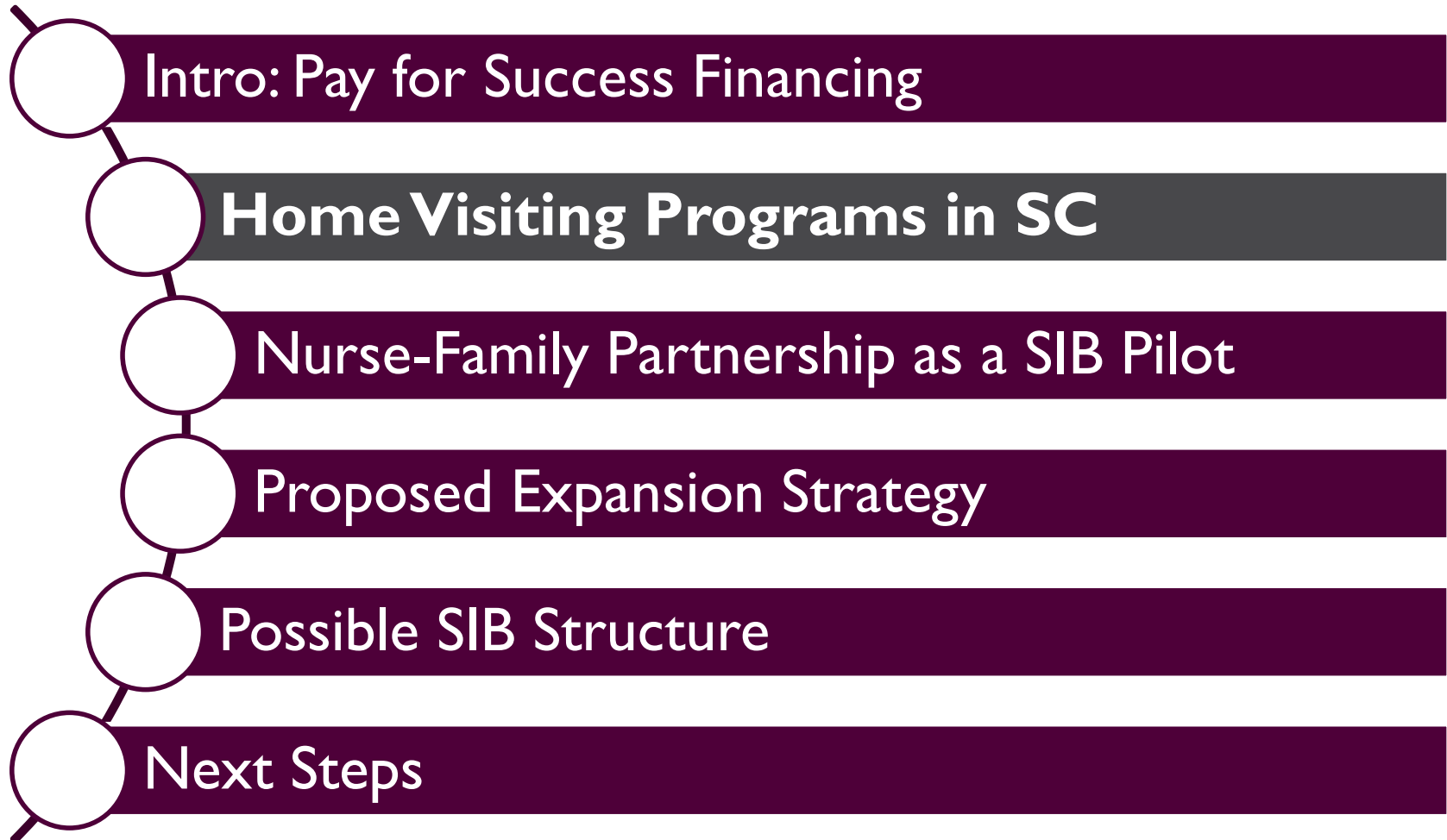
Government

- More cost-effective services
- Better results

Investors

- Modest returns
- Ability to make a positive impact

Contents



Outcomes for South Carolina Youth

SC ranked **45th** 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

...

- 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

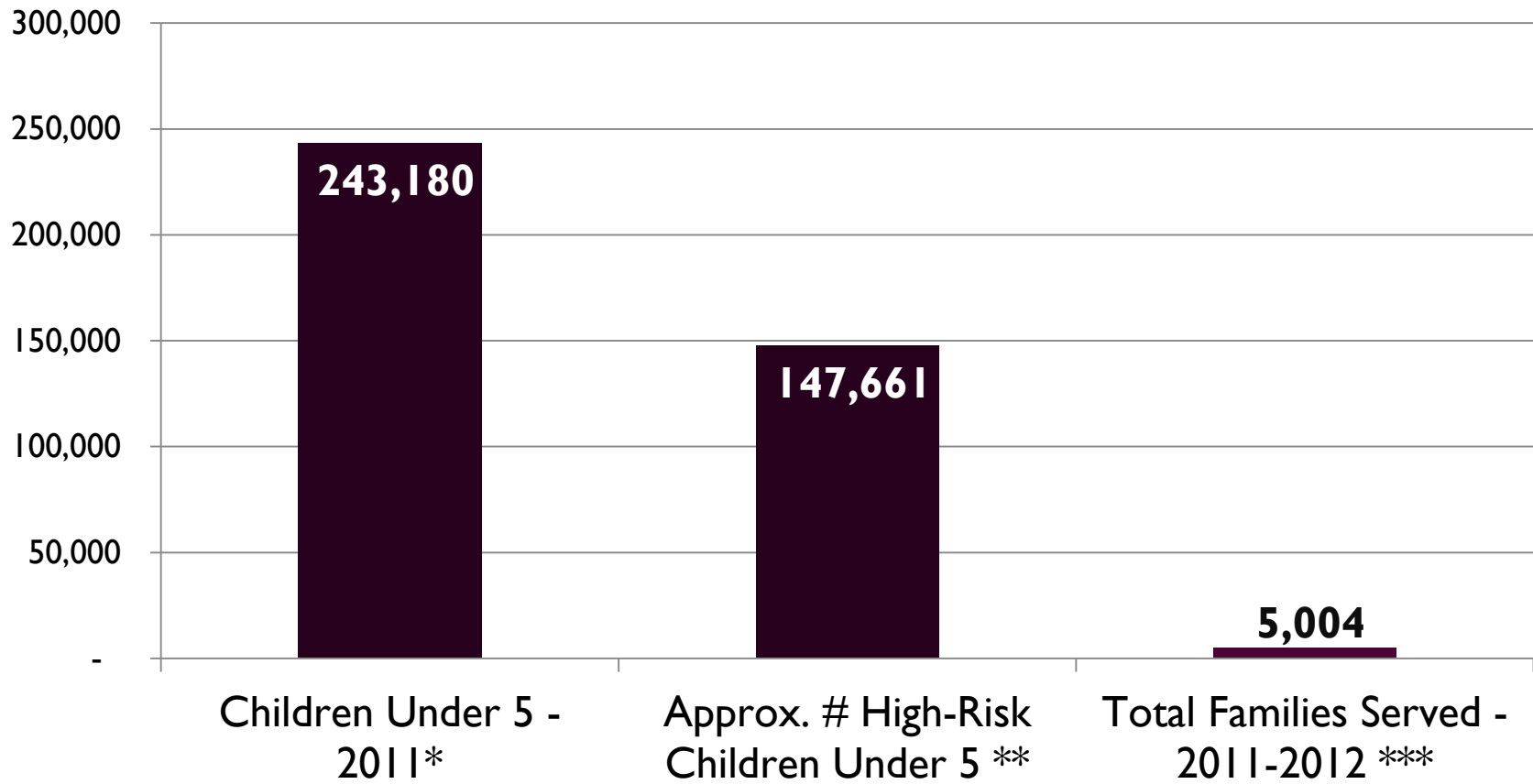


Home Visiting Programs in S.C.

- 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 Home Visiting Programs Do Not Meet SC Need

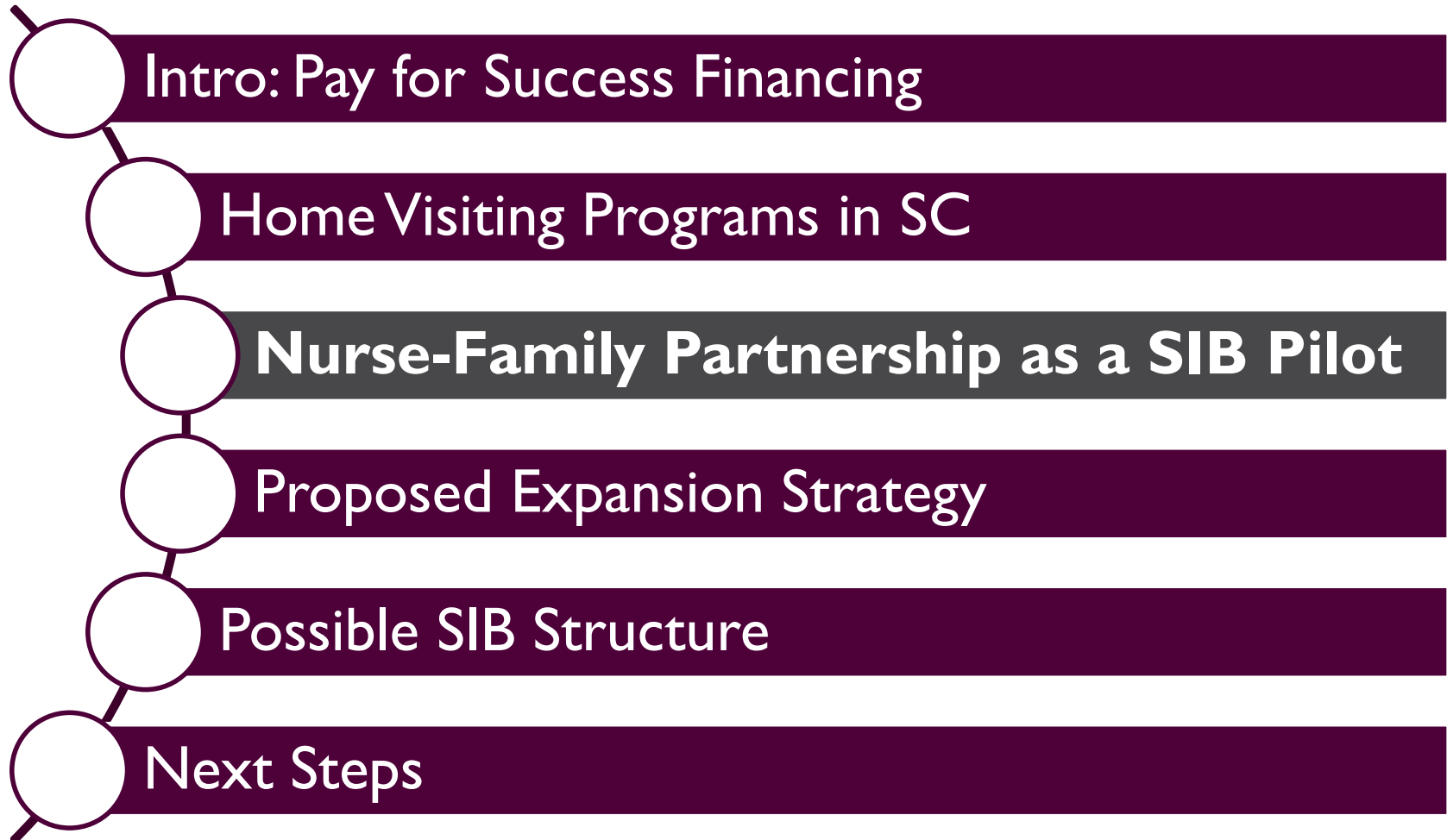


Source: * 2011 Data; DHEC Population Database

** 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)

Contents



Nurse-Family Partnership

- Targets high-risk (low-income) mothers' first pregnancies
- Home visitation by registered nurses from pregnancy through age 2
- Effectiveness proven in 4 random controlled trials plus > 20 other rigorous evaluations
- Cost-benefit analyses showing positive ROI
- Interested in PFS financing
- NFP infrastructure supports implementation with fidelity to model



Feasibility

- 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

Recommendation for PFS Financing



Pioneer PFS financing with Nurse-Family Partnership



Take steps to prepare other home visiting models for future PFS project with broader target population



Conduct feasibility studies of PFS financing for other interventions (e.g. Triple P child abuse prevention program)

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

NFP Benefits Far Exceed Costs

RAND Corporation*	Pacific Institute for Research and Evaluation**	Washington State Institute for Public Policy***
\$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)

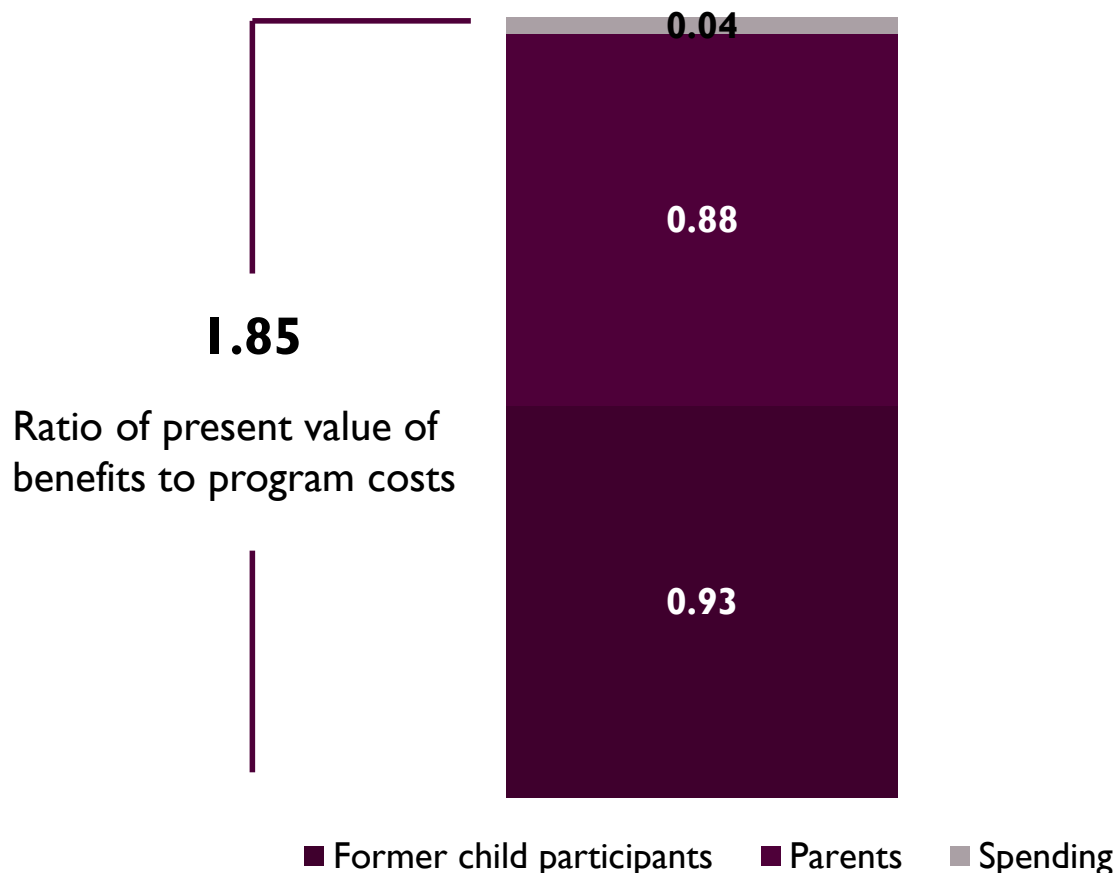
Economic Development Benefits of NFP

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



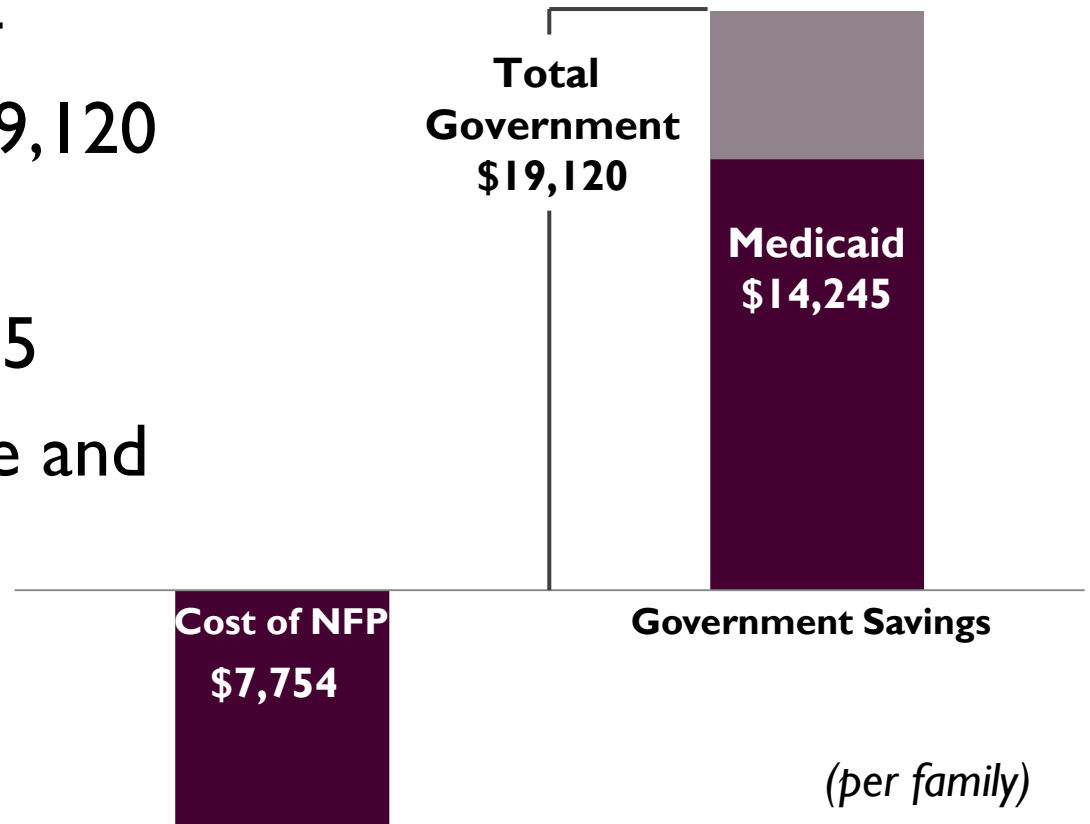
Economic Development Benefits of NFP

Economic benefits
alone produce an
85% return on
investment

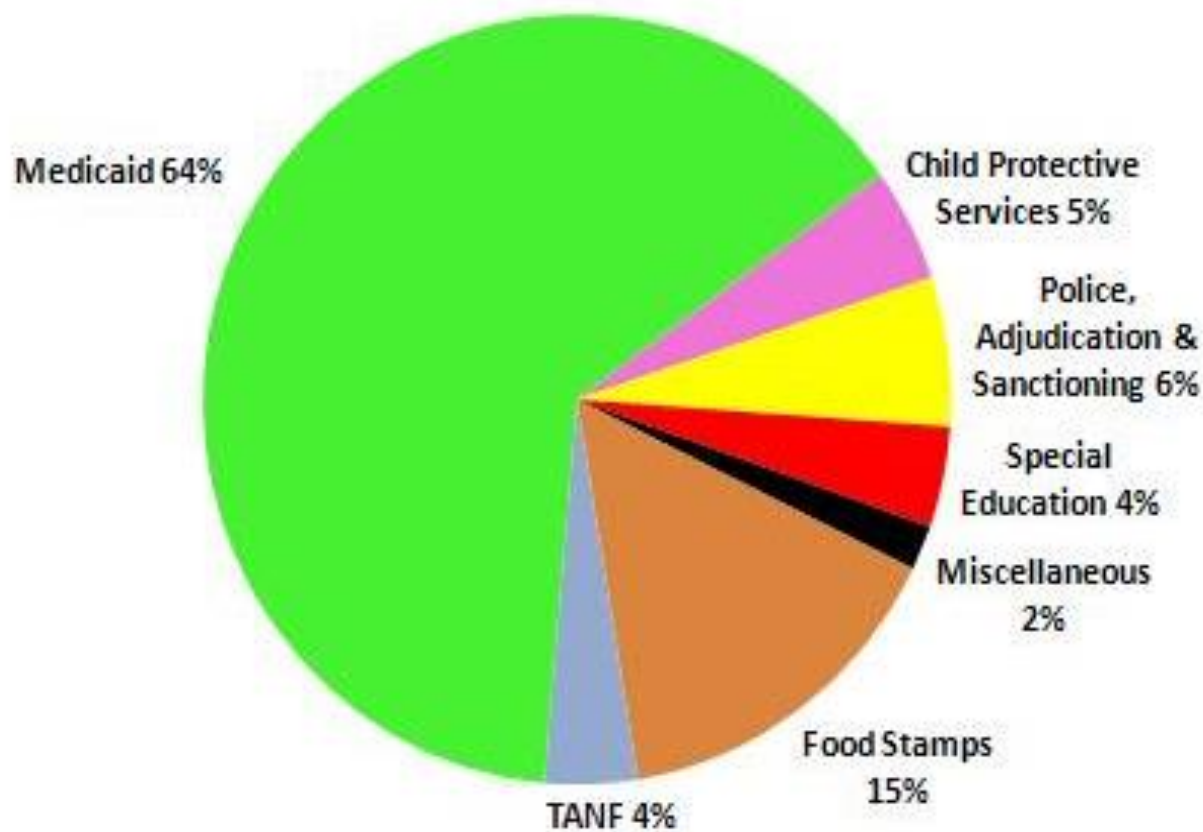


Government Savings More Than Cover Cost

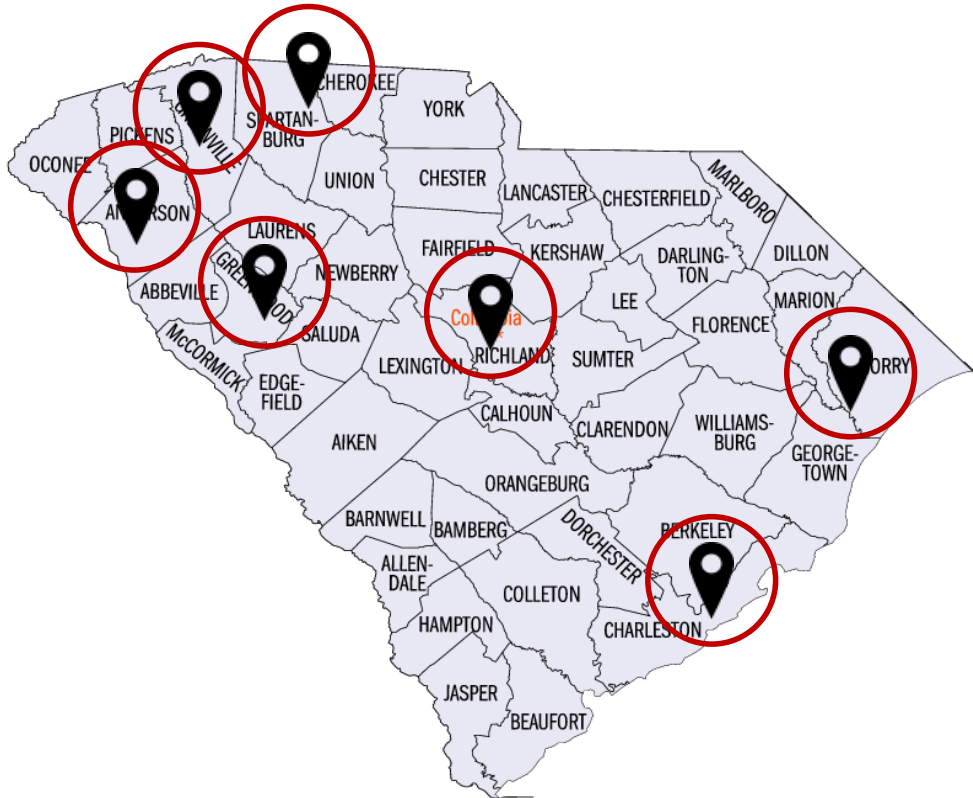
- Cost of NFP = \$7,754
- Government saves \$19,120 over 18 years
- Medicaid saves \$14,245
- Savings shared by state and federal governments



Government Savings from NFP

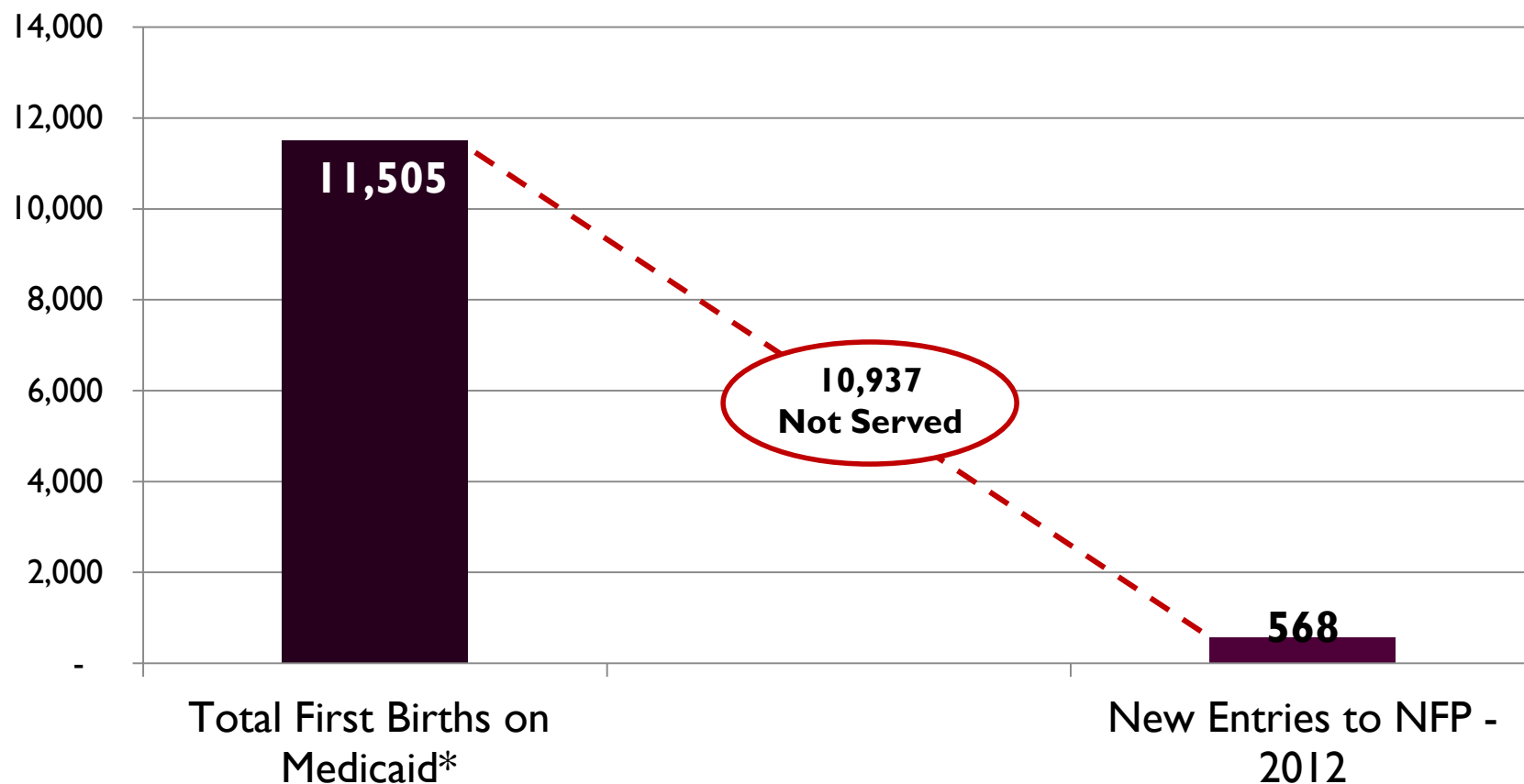


Current NFP Sites



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

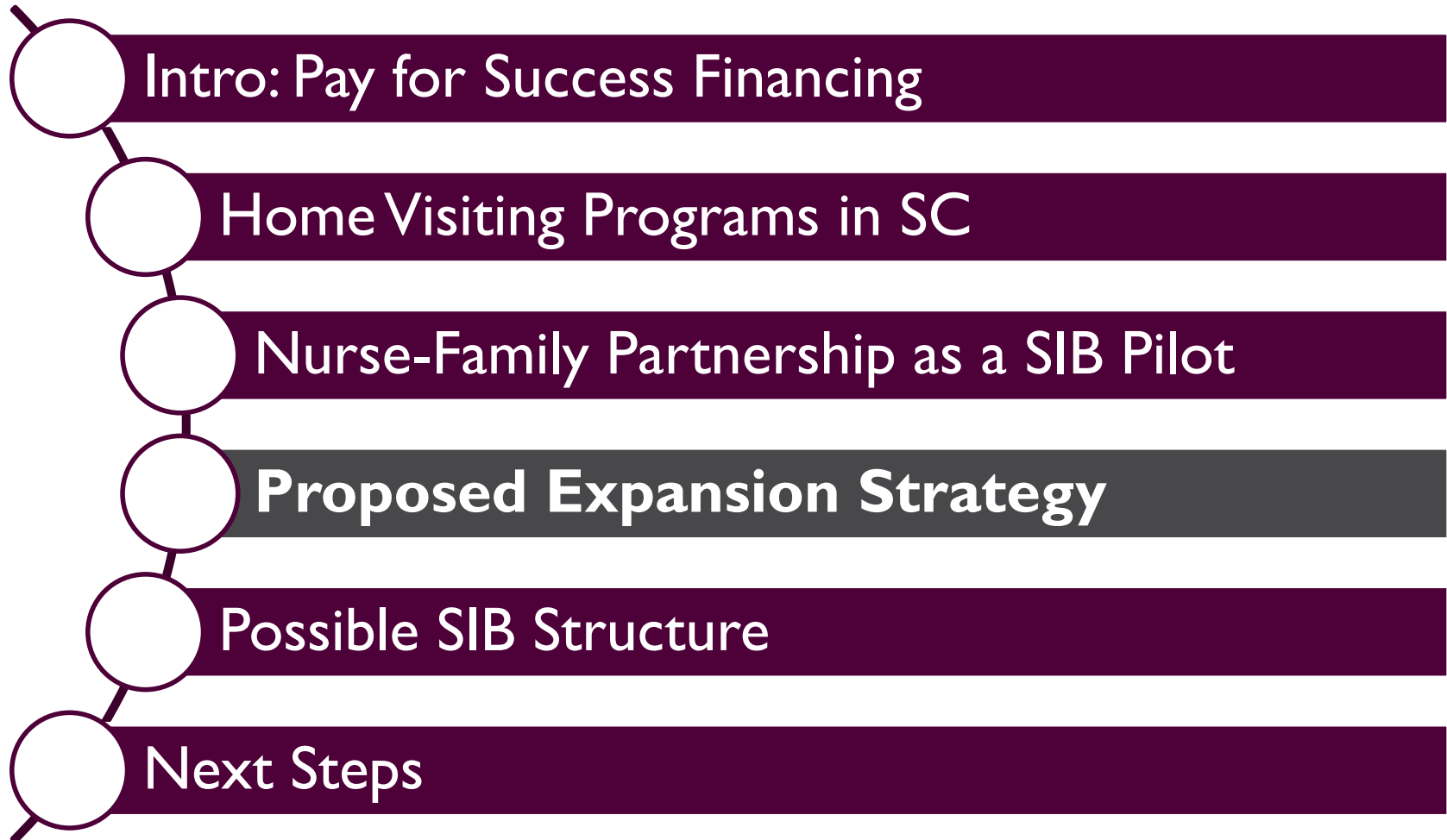
Unmet Need for NFP in SC



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

** NFP State Nurse Consultant, South Carolina DHEC

Contents



Proposed NFP Expansion Strategy

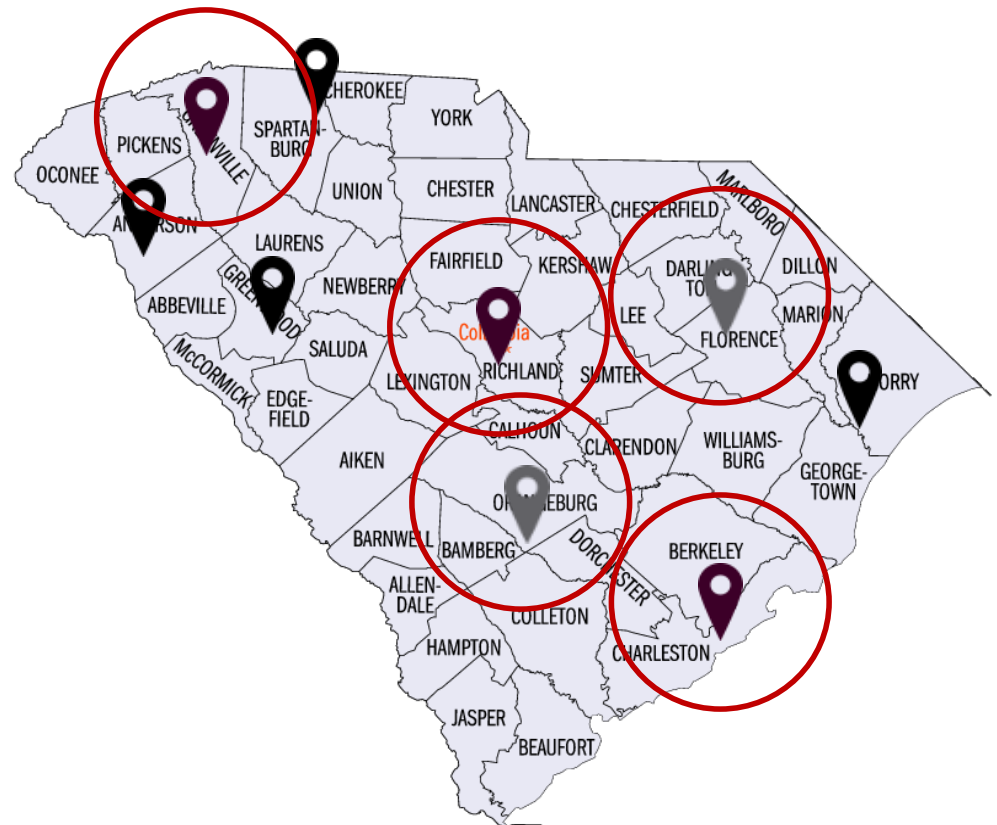
Increase **Capacity** in **Areas** with **Largest Unmet Need**

Expand three current locations:

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

Add new location:

- *Orangeburg?*
- *Florence?*



Proposed 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

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%

Total Number of New Clients from Expansion

Greenville, Richland, Charleston, **Orangeburg**

1,024

Greenville, Richland, Charleston, **Florence**

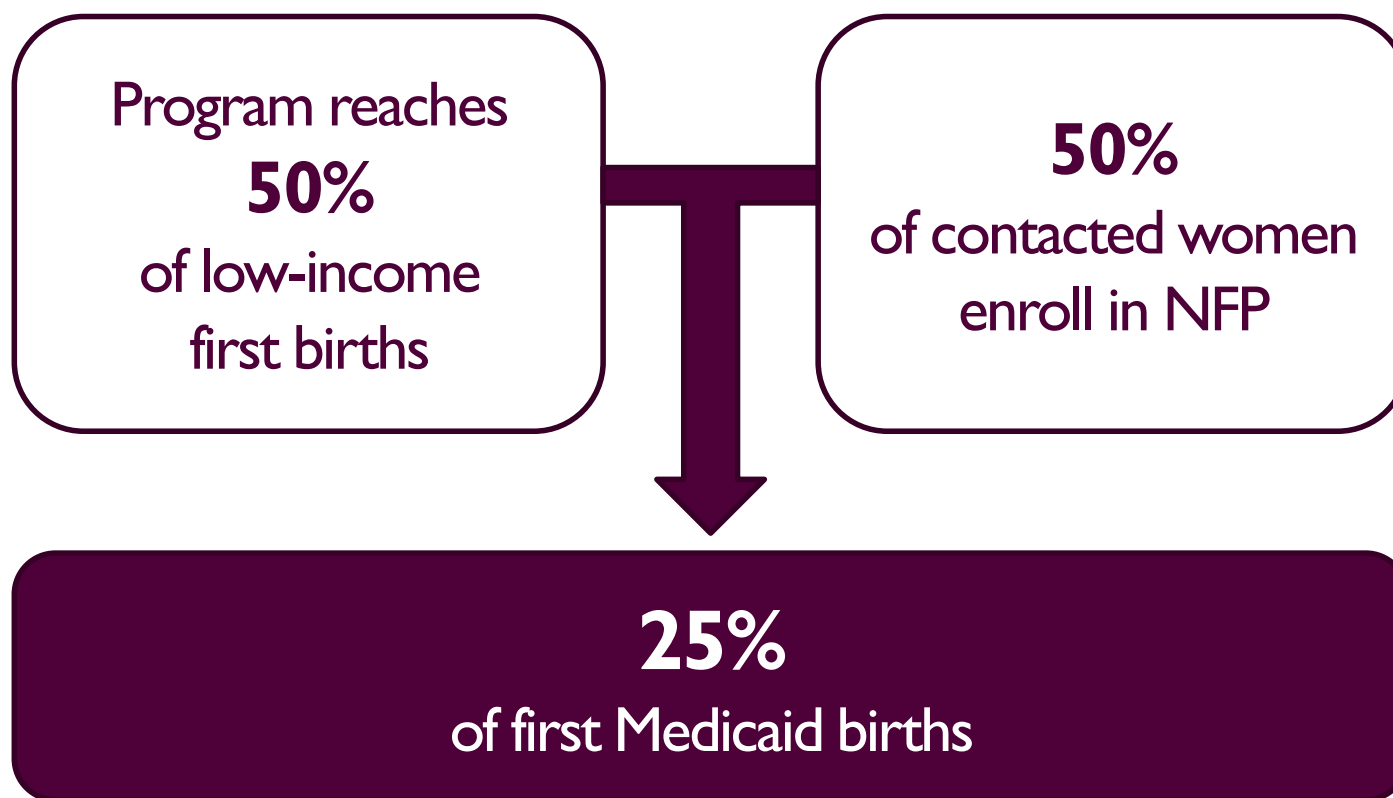
1,194

Source: * 2009-2011 Averaged data; Michael G. Smith, SC DHEC, Bureau of MCH

**2012 Data; NFP State Nurse Consultant, South Carolina DHEC

Expected New NFP Clients Calculation

Assumption:



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

Approximate Cost of Expansion

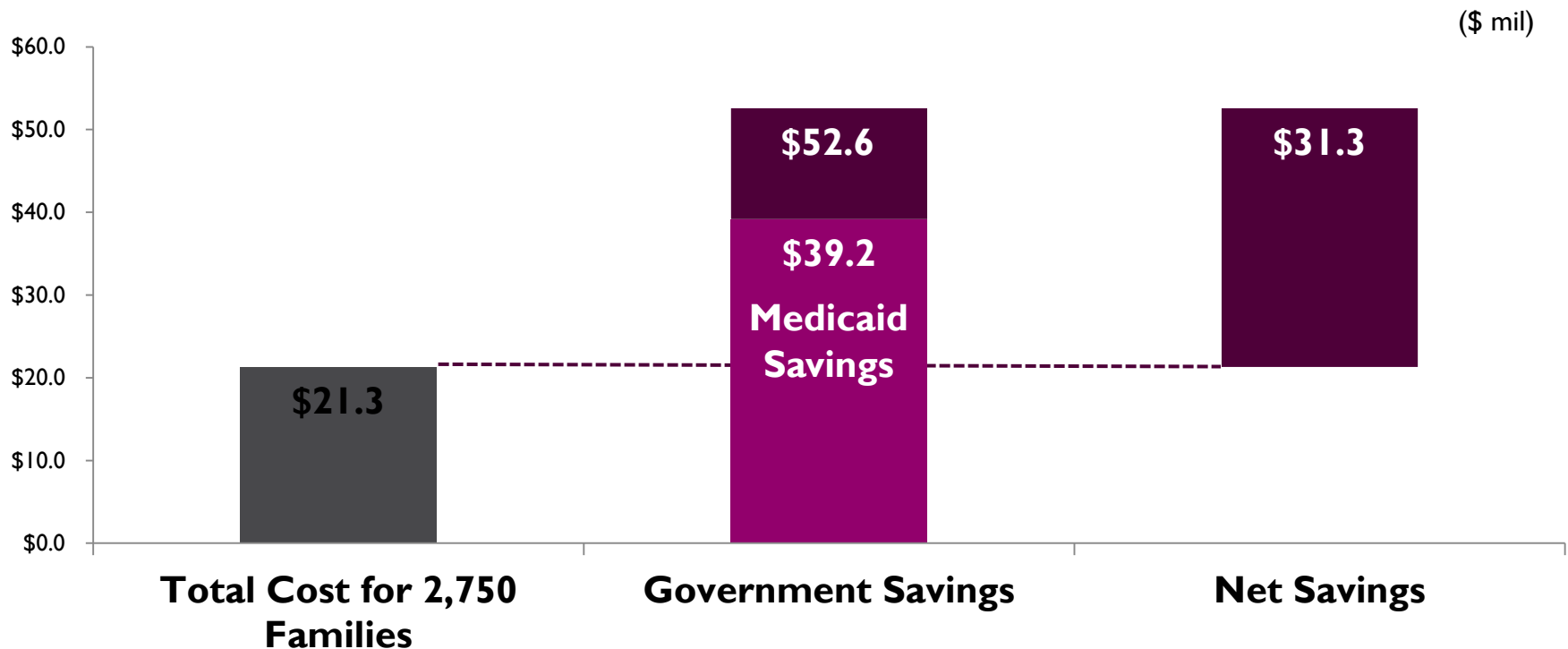
It will cost \$8.5 million to provide NFP to 1,100 new high-risk families.

Number of New Clients
1,100
Average Cost of NFP per Family*
\$ 7,754
Cost Over Length of Program for Each Cohort
\$ 8,529,400

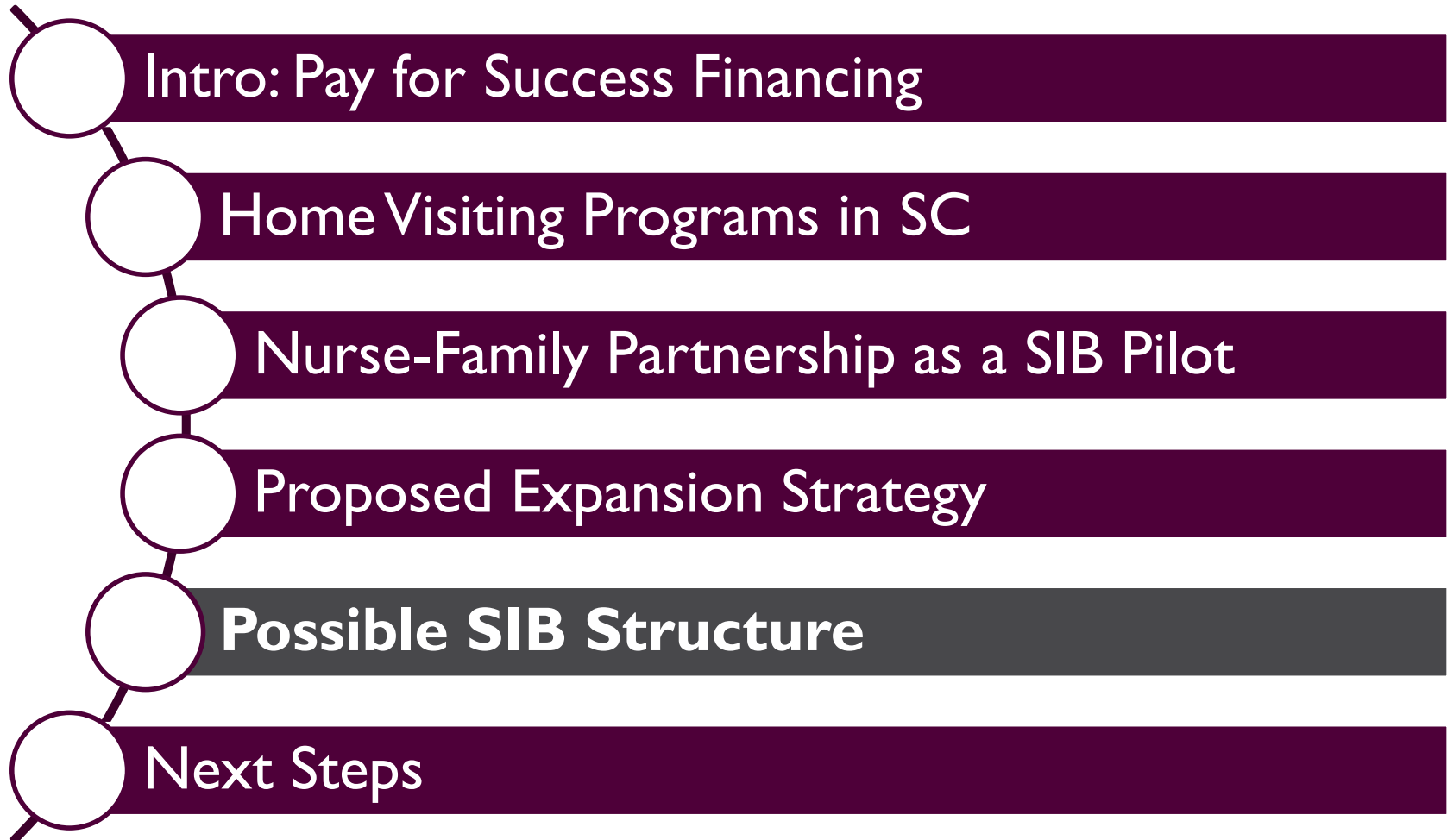
*Source: Average cost for full 2+ years of program services; *Miller, Cost Savings of Nurse-Family Partnership in South Carolina*, April 2013

Expected Savings for 2,750 New Families

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



Contents



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

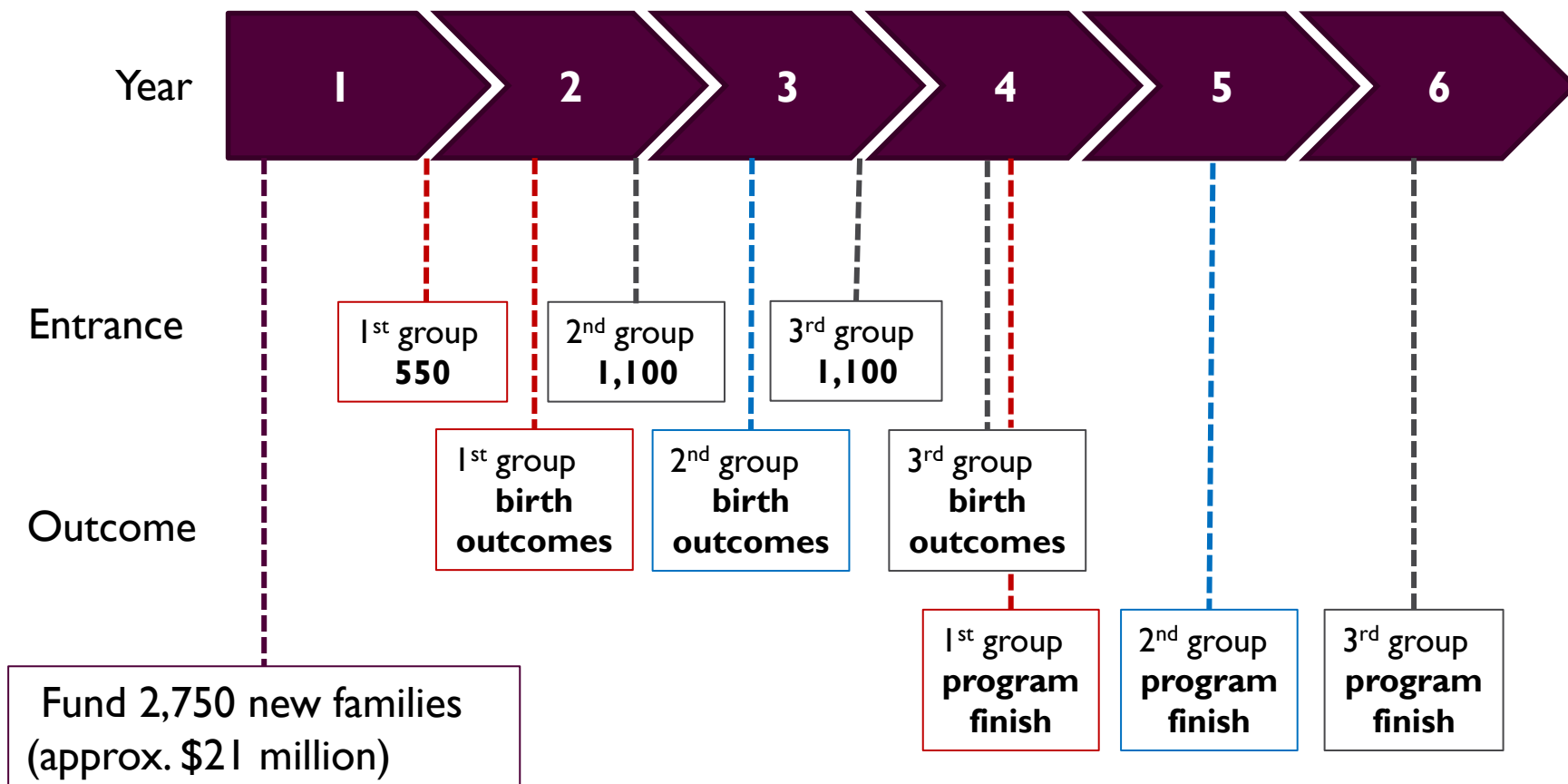
Proposal: Base PFS Contract on Health Outcomes

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

Most promising health outcomes

- Reduce pre-term births
- Reduce emergency dept visits for injuries in first 2 yrs
- Improve spacing of second birth to lower risk

Possible PFS Timeline: Health Outcomes



Potential PFS Outcome: Fewer Pre-term Births

- SC is 47th in the country in pre-term births*
- In 2011, 11.2% of S.C. Medicaid-paid first births were pre-term**
- Costs include medical care, early intervention services, special education services, lost household and labor market productivity

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

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 pre-term 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 Pre-term Birth Reduction by Site

Assuming NFP reduces pre-term 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%

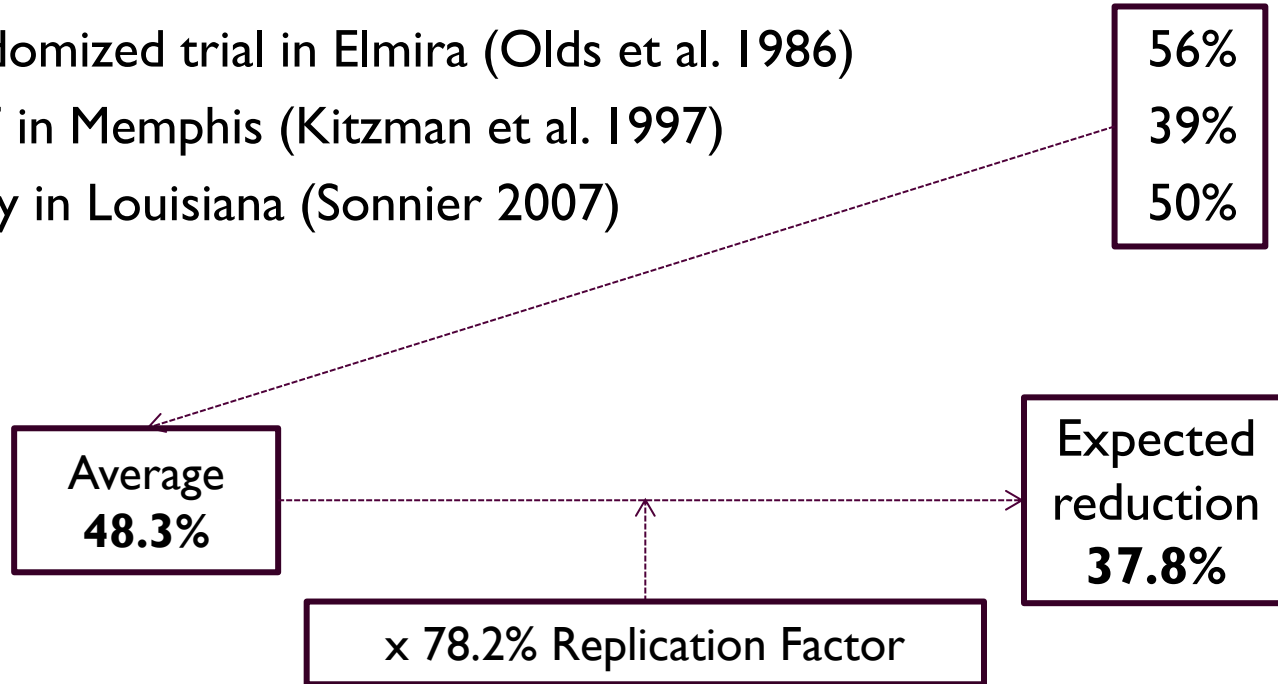
Potential Outcome: Reduce Emergency Dept. Visits for Injuries in 1st 2 Years

- SC is 40th in the country in childhood injuries, age 0-2*
- In 2010-11, there were approximately 21 ED visits within 2 years of birth for every 100 children whose births were paid by Medicaid**
- Costs include medical care, lost household productivity

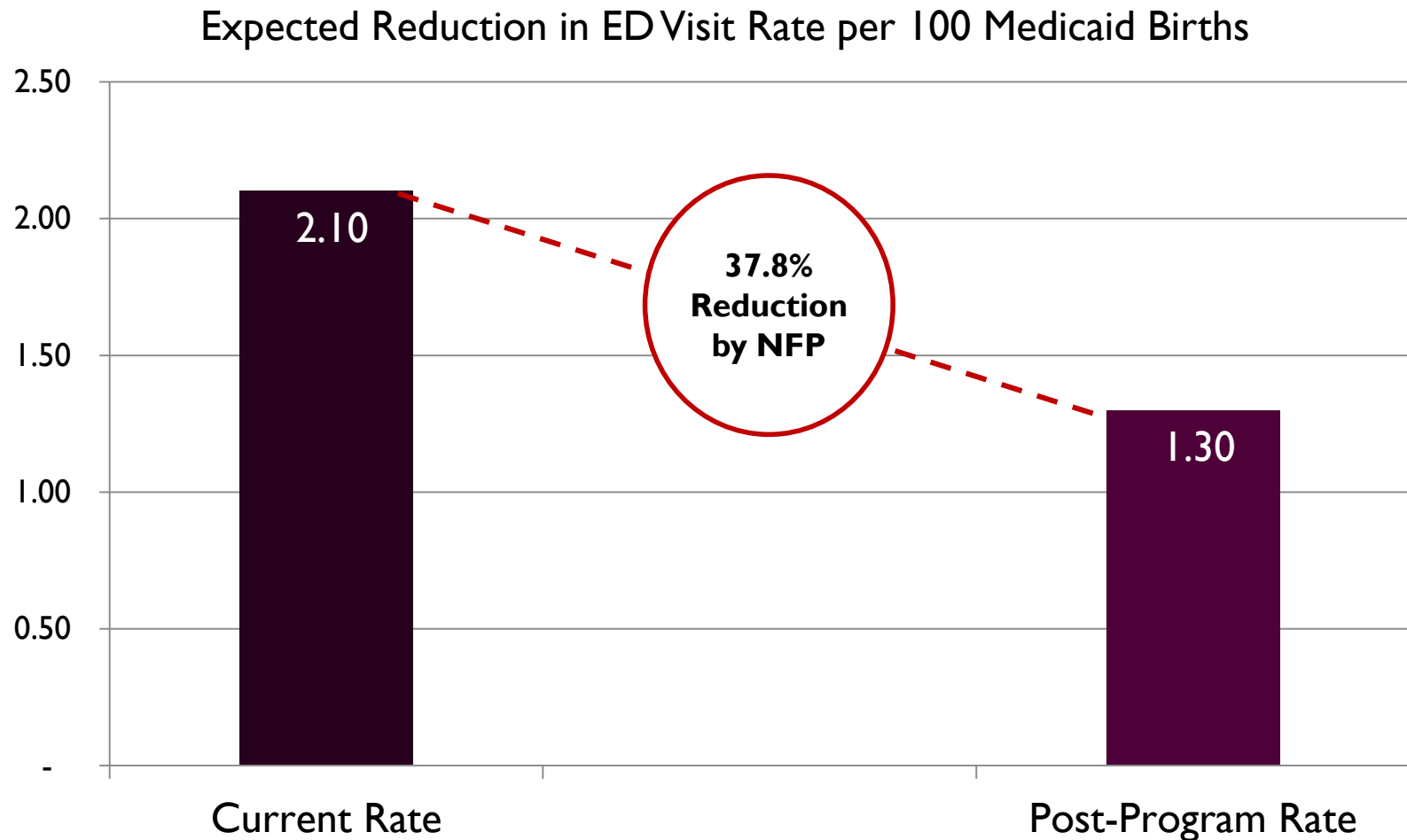
NFP Reduces Emergency Dept. Visits

Ted Miller: NFP babies have **37.8%** fewer injuries treated in emergency departments (ED's) through age 2

- Randomized trial in Elmira (Olds et al. 1986)
- RCT in Memphis (Kitzman et al. 1997)
- Study in Louisiana (Sonnier 2007)



Potential ED Visit Reduction for SC



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 (like 1st 2 SIBs)
 - 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-year 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

Parameter	
SIB Investment Required	\$24 million
Term of Financing	6 Years
Government Payout	Up to \$30 million
Commercial Investment	\$12 million
Philanthropic Investment	\$12 million (first loss position)
Max Investor IRR / Rate of Return	10.0% net IRR
Max Philanthropic IRR/Rate of Return	4.0% net IRR (returns capped at 4%)
Timing of Repayment	Years 4, 5, and 6 (3 years after entry of each cohort).
Capital Drawdown Schedule	Year 1, 2, and 3 (at time of cohort entry). Intermediation & Evaluation Fees collected at upfront Year 0
Outcomes metrics	Reduction in pre-term births (illustrative)
Evaluation Methodology	TBD
Service Provider	Nurse-Family Partnership Implementation Agencies
Individuals Served	2,750 low-income, first time mothers and their families in South Carolina
Intervention Model	Nurse home visitation during pregnancy and after birth up to age 2

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 I

Advantages

- High level of confidence that program caused changes in outcomes

Disadvantages

- More complicated and expensive
- Serve fewer families since some go into control group
- 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
- 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

Implementation Challenges

- 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 difficult; will need national foundations
- Service provider in at least 2 expansion sites is government agency (DHEC) = unusual for PFS model

Benefits for South Carolina

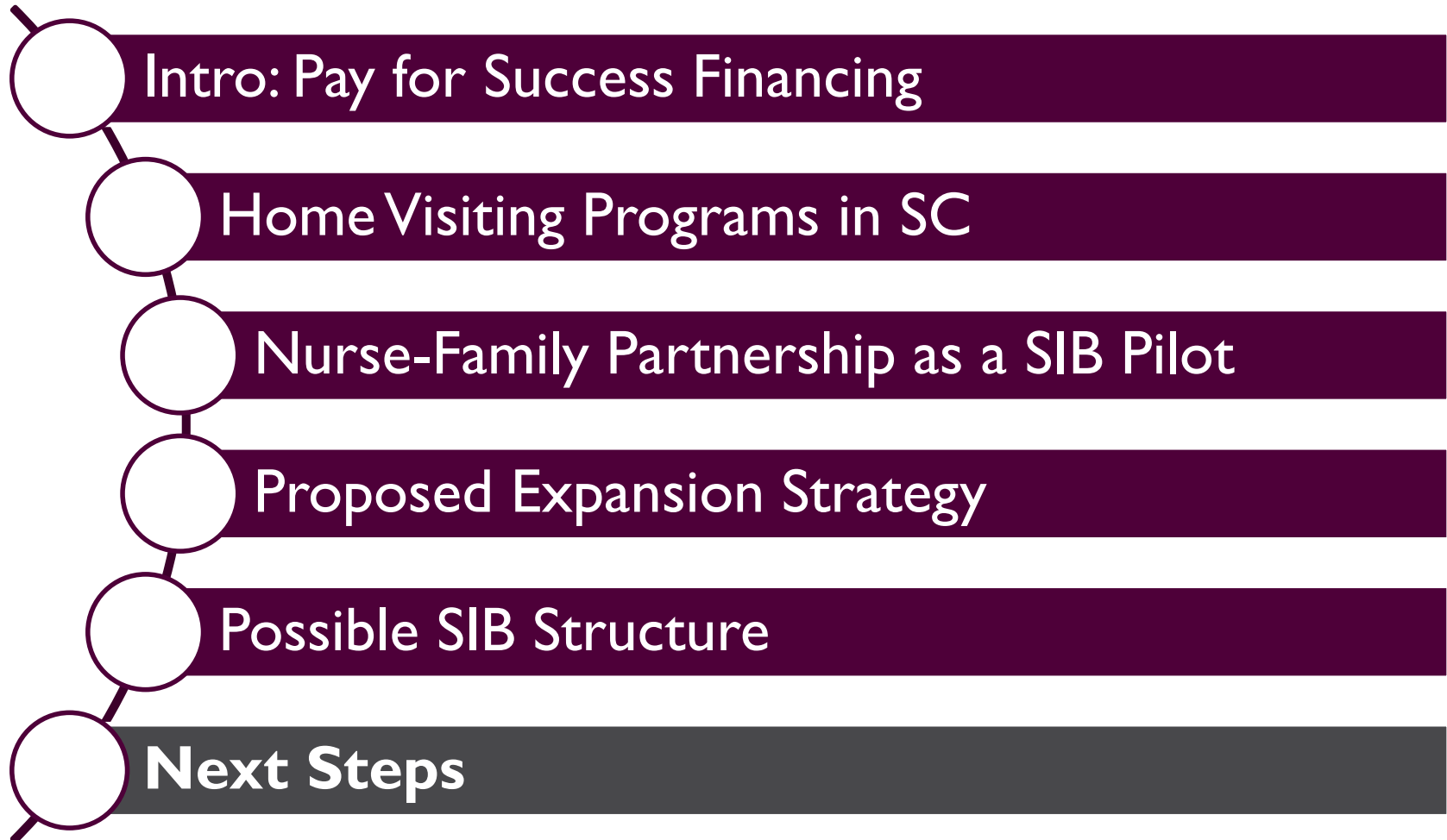
Better outcomes for SC youth

Positive impact on SC economy

International leader in PFS financing

Test new, efficient use of Medicaid \$

Contents



Next Steps for NFP PFS Project

Government Processes

- Determine contractual, procurement & budget processes
- Coordinate with other state efforts (e.g. BOI) & analyze data to solidify target population
- Secure support from legislature & other officials; pass any required legislation
- Begin procurement for PFS project

Next Steps for NFP PFS Project

Other Key Stakeholders

- Work with NFP National Service Office to define role
- Select intermediary/project manager
- Identify investors and secure investments
- Identify evaluator and determine evaluation methodology
- Identify service providers for specific sites

Next Steps for NFP PFS Project

Constructing the “Deal”

- Construct detailed budgets for services, intermediation & evaluation, including data collection & analysis
- Develop plans for expansion in specific sites
- Finalize outcomes and payment terms for PFS contract
- Develop preliminary terms & conditions with funders
- Negotiate contracts

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