The Mother and Infant Home Visiting Program Evaluation-Strong Start: First Annual Report

OPRE Report 2013-54

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Overview

Improving birth, infant, and maternal health outcomes, particularly among socio-economically disadvantaged families, is an important health goal of the nation. Home visiting services have been identified by the Strong Start for Mothers and Newborns (Strong Start) initiative of the Centers for Medicare and Medicaid Services (CMS) as one promising method for reaching pregnant women who are vulnerable to poor health outcomes.

This report introduces the Mother and Infant Home Visiting Program Evaluation-Strong Start (MIHOPE-Strong Start), which was designed by CMS and the Administration for Children and Families (ACF), is funded by CMS, and is being implemented in partnership with the Health Resources and Services Administration (HRSA). The study is designed to assess the impacts of evidence-based home visiting programs for disadvantaged expectant mothers. MIHOPE-Strong Start uses a rigorous random assignment design to examine the effects of home visiting programs on birth outcomes and maternal and infant health and health care. The study will also examine rich information on local implementation processes. The study is being conducted by MDRC in partnership with James Bell Associates, Johns Hopkins University, and Mathematica Policy Research.

Local programs included in the evaluation will use one of two national home visiting models that have shown previous evidence of improving birth outcomes: Healthy Families America (HFA) and Nurse-Family Partnership (NFP). Local program implementation is guided by the direction of the national model developers (HFA and NFP) through the articulation of their service models, including their focus on particular outcomes and families and their guidelines regarding dosage and delivery of services. A detailed description of the two models, including their similarities and differences, is included in this report and can be summarized as follows:

- Both national models serve low-income, pregnant women over a period of multiple years. However, a significant proportion of HFA participants enroll after they have given birth rather than before, whereas NFP enrolls only first-time pregnant women. These differences in targeting strategies are consistent with the particularly high priority that HFA places on preventing child abuse and neglect, whereas NFP places very high priority on improving birth and maternal and infant health outcomes (as well as other family outcomes).

- There are also important differences across the two national models in the flexibility and structure that they provide to local programs in areas of program implementation, such as staffing requirements, timing of enrollment, and services delivered. HFA asks implementing agencies to follow a set of program principles but then allows local agencies to tailor operational decisions. NFP has a more highly defined and structured approach and expects local programs to strive for fidelity to the service model as it has been defined at the national level.

Future reports will examine how home visiting services are provided and the effects that the programs have on birth outcomes and on maternal and infant health and health care use.

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The discussion of the national home visiting service models of Healthy Families America and Nurse-Family Partnership was greatly informed by available program documentation and through surveys and discussions with the national model developers, including Cydney Wessel, Kathleen Strader, Kathryn Harding, Molly O'Fallon, and Ely Yost.

The report also reflects suggestions from the staff at the Centers for Medicare and Medicaid Services, the Administration for Children and Families, and the Health Resources and Services Administration.

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Executive Summary

Despite major advancements in the past century, rates of adverse birth outcomes in the United States remain high. In 2009, about 12 percent of infants born in the United States were born prematurely (before 37 weeks of gestation), and roughly 8 percent were classified as low birth weight (less than 2,500 grams). Preterm and low-birth-weight infants are at greater risk for mortality and numerous health and developmental problems during the first year of life and beyond, and poor birth outcomes can result in financial and emotional tolls on families. Healthy births, in turn, begin with and reflect the health, well-being, and resources of mothers and families, including having adequate access to supportive services and, from the prenatal period on, education to promote positive parenting, health behaviors, and home environments.

In an effort to improve birth outcomes and adverse health outcomes for mothers and infants — particularly for women enrolled in Medicaid and the Children's Health Insurance Programs (CHIP) — the Centers for Medicare and Medicaid Services (CMS) developed the Strong Start for Mothers and Newborns (Strong Start) initiative. The four-year initiative will examine whether nonmedical prenatal interventions, when provided in addition to routine medical care, can improve the health outcomes and health care use of pregnant women and newborns and can decrease the costs of medical care during pregnancy and delivery and over the first year of a child's life.

Home visiting for low-income, pregnant women — whereby individualized in-home services (including direct education, assessments, and referrals to community resources) are provided to families — has been identified by the Strong Start initiative as one promising method for reaching women who are vulnerable to poor health outcomes. To understand the effects of this service strategy, CMS has partnered with the Health Resources and Services Administration (HRSA) and the Administration for Children and Families (ACF) to implement the Mother and Infant Home Visiting Program Evaluation-Strong Start (MIHOPE-Strong Start). MIHOPE-Strong Start will evaluate the effectiveness of home visiting services at improving birth outcomes for women who are enrolled in Medicaid or CHIP, as well as the effectiveness of these services at improving infant and maternal health, health care use, and prenatal care. MIHOPE-Strong Start will examine local programs that use either of two national home visiting models that have shown previous evidence of improving birth outcomes: Healthy Families America (HFA) and Nurse-Family Partnership (NFP). The study is being conducted by MDRC in partnership with James Bell Associates, Johns Hopkins University, and Mathematica Policy Research.

The evaluation will issue four reports — one in each year of the study, culminating in a final report that will present program implementation and impact results for the full sample of

study enrollees. The current report introduces the MIHOPE-Strong Start design, including the components of program implementation that will be subjects of the study and the family outcomes for which impacts will be measured. The report also describes the approaches to service delivery of the two national models — HFA and NFP.

Design Elements of MIHOPE-Strong Start

The report provides a brief overview of the design of MIHOPE-Strong Start, including the study research questions, the conceptual framework of how home visiting programs may improve appropriate health care use and birth outcomes among at-risk families, and the data sources within the evaluation for measuring the framework elements. The study aims to enroll as many as 15,000 families from NFP and HFA sites around the country. Families will be randomly assigned either to a home visiting group (program group) that can receive home visiting services or to a non-home visiting group (control group) that can receive other services available in the community. MIHOPE-Strong Start will enroll pregnant Medicaid or CHIP recipients who are interested in and eligible for home visiting services, are at least 15 years old, and are at least eight weeks from their due date for delivery. The evaluation will adhere to all ethical standards for program evaluation and has undergone human subjects review by the MDRC Institutional Review Board. The study includes an impact analysis to address questions about the effectiveness of the programs and an implementation analysis to describe the programs and the services they provide. The study will also examine the intersection of impacts and implementation to better understand the features of home visiting programs that lead to larger effects. Finally, the design is intended to provide information that would allow actuaries at CMS to estimate the effects of the programs on Medicaid costs.

National Home Visiting Models

Key to understanding how local home visiting services improve outcomes related to prenatal, maternal, and infant health is to understand how local programs are implemented. Local program implementation, in turn, is guided by the direction of the national model developers (HFA and NFP) through the articulation of their service models, including their focus on particular outcomes and particular families, their targeting of other outcomes of importance, and their guidelines regarding the dosage and delivery of services. This report describes in detail how service models are defined at the national level. Sources of information in the current report about the national models include interviews with national model office representatives, information from the models' Web sites, and documents and materials.

Table ES.1 highlights key aspects of HFA's and NFP's service models and illustrates the ways in which the two national models both overlap and differ in their guidance and structure. For example, both models target multiple domains through home visiting services, and they encourage home visitors to use the same types of supportive strategies for working with families. At the same time, while NFP ranks all the MIHOPE-Strong Start outcomes as being its highest priority, HFA is more variable in its emphasis, rating outcomes associated with parenting and children to be the highest priority while other maternal and health outcomes are of moderately high priority. Key features of each respective national home visiting model are further summarized below.

Healthy Families America (HFA) Service Model

One distinctive feature of HFA's national home visiting model is that it provides a basic framework for the program, such as the primary program goals and principles for service delivery, while allowing considerable flexibility for local programs to decide on target population characteristics based on community need, specific curricula to be used, and the educational background of home visiting staff. Implementation of HFA is guided by HFA's 12 Critical Elements and a set of more than 100 accompanying standards that operationalize policy and practice expectations for each element. The Critical Elements, developed in the early 1990s, define HFA's service model and implementation system, focusing on timing of service initiation, service content, and administration. They were derived from literature on best practices and expert opinion about effective strategies for working with families and have been updated as new research becomes available. Drawing from these elements, HFA provides the following guidance on delivering home visiting services:

- **Intended recipients.** HFA intends to enroll families with a pregnant woman or a child up to 3 months of age, although MIHOPE-Strong Start will only enroll women up to eight weeks before their due date. Local programs have flexibility in selecting participant eligibility criteria that represent risk factors for child maltreatment or other negative childhood outcomes; these criteria are often driven by an agency's funder and must be proposed to HFA's national office in the affiliation implementation plan. The model's primary focus is the parent-child relationship, and it reports the child, mother, and biological father as the individuals for whom the model assumes responsibility for improving outcomes.

- **Intended goals and outcomes.** The mission of HFA is to promote child well-being and prevent the abuse and neglect of children through the provision of home visiting services. The goals of HFA are to (1) build and

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Table ES.1

Summary of Healthy Families America's and Nurse-Family Partnership's Home Visiting Service Models

HFA	NFP
Intended recipients (or target population)	
Families with risk factors for child maltreatment or other negative childhood outcomes. Families enroll prenatally or within the first 3 months after a child's birth.	First-time, low-income pregnant women. Families receive their first home visit no later than the end of week 28 of pregnancy.
Focus on MIHOPE-Strong Start outcomes	
Variable, but moderately high ratings on prenatal, health, and birth outcomes.	Uniformly high ratings on prenatal, health, and birth outcomes.
Duration and intensity of services	
Visits ranging from weekly to monthly through child's third birthday (though can extend to child's fifth birthday). Weekly visits during pregnancy.	Visits ranging from weekly to monthly through child's second birthday. Weekly or biweekly visits during pregnancy.
Content focus on MIHOPE-Strong Start outcomes	
Screenings and assessments required at intake, but sites select tools.	Screenings and assessments required on an ongoing basis; timing and instruments prescribed by national model.
Education and supportive strategies	
Topic focus on parent-child interaction, parenting skills, child development, child health and safety, and family functioning. Local programs determine how to address these content areas. Strategies include caregiver goal setting, caregiver problem solving, crisis intervention, working to strengthen a family's support network, and providing emotional support, pamphlets, or other materials.	Topic-apportioned time across 5 NFP model domains: personal health, environmental health, life course development, maternal role development, and family and friends. Strategies include caregiver goal setting, caregiver problem solving, crisis intervention, working to strengthen a family's support network, and the provision of emotional support, pamphlets, or other materials.
Intended staffing	
Recommends selecting home visiting staff based on a combination of personal characteristics (for example, nonjudgmental, compassionate, experience working with families, child development knowledge, and educational qualifications).	Home visitors must be registered professional nurses with a minimum of a baccalaureate degree in nursing. NFP programs must submit a formal variance to get approval to employ staff who do not meet the staff qualification standards.
Flexibility toward intended recipients, services, and implementation	
Implementing agencies follow a set of program principles, but operational decisions (such as targeted risk factors or populations, and the structure and content of home visits) are left up to the discretion of local agency.	Highly defined and structured approach and expects local programs to strive for fidelity to the service model as it has been defined at the national level.

sustain community partners to systematically engage overburdened families in home visiting services prenatally or at birth; (2) cultivate and strengthen nurturing parent-child relationships; (3) promote healthy childhood growth and development; and (4) enhance family functioning by reducing risk and building protective factors. Among the outcome areas often targeted by home visiting programs, HFA rates outcomes associated with parenting and children to be of highest priority. For programs that enroll participants prenatally, outcomes associated with pregnancy are ranked moderately high. Other maternal outcomes — such as physical health, use of family planning, and tobacco use — are rated lower but are still of moderately high priority.

- **Intended service delivery: Dosage.** HFA states that services should be offered at least weekly during pregnancy and in the initial postpartum period. After the first six months, the frequency of visits is determined by family well-being, stability, and self-sufficiency. Visits continue through the child's third birthday (but can continue through the child's fifth birthday).

- **Intended services: Content.** While HFA outlines some parameters for the content of home visits, state intermediaries or local programs might more specifically and comprehensively define intended content. Home visit content for the purposes of this report includes assessments; parent education and support; and referral, coordination, and linkages. For example, prior to or soon after enrolling a client, local programs must complete a comprehensive assessment of that individual using a standardized tool to determine the presence of various factors associated with increased risk for child maltreatment or other adverse childhood experiences. HFA indicates that home visits should focus on topics such as parent-child interaction, parenting skills, child development, child health and safety, and family functioning. HFA provides home visitors with core training on how to address these content areas, including how staff will observe families in these areas. In addition, local programs determine the materials and curricula to share information with families on these topics. HFA requires the use of observation and relationship development skills taught in core training, in addition to an evidence-informed curriculum to address parent-child interactions — though local programs have the flexibility to select which curriculum they use. HFA expects home visitors to provide referrals to community health and human service resources and services based on each family's identified needs.

- **Intended service delivery techniques.** HFA trains home visitors in recommended service delivery techniques. HFA encourages a variety of supportive strategies for working with families, including caregiver goal setting, caregiver problem solving, crisis intervention, working to strengthen a family's support network, and providing emotional support, pamphlets, or other materials.

- **Intended staffing.** HFA recommends selecting home visiting staff based on a combination of personal characteristics (for example, being nonjudgmental, compassionate, and able to establish a trusting relationship); willingness to work in, or experience working with, culturally diverse communities; experience working with families who have multiple needs; an ability to maintain boundaries between personal and professional life; knowledge of infant and child development; and educational qualifications. HFA home visitor caseloads are determined by the mix of families across levels; home visitors should have no more than 15 families on weekly service intensity and no more than 25 families at any service intensity.

Nurse-Family Partnership (NFP) Service Model

The required components of NFP's service model and implementation system are comprehensive and specific. Implementation of NFP is guided by the NFP Model Elements and a set of implementation objectives that further specifies expectations for some of those elements. The NFP Model Elements were derived from evidence of effectiveness based on research, expert opinion, field lessons, and theory. Although some elements were specified and implemented in the initial NFP trials, the current version was articulated and finalized in 2007. NFP's National Service Office (NSO) suggests that if local programs implement the elements with fidelity, the local programs can have a high level of confidence that they will achieve the same outcomes as achieved in previous studies of NFP. If a local program intends to adapt any of the Model Elements, they must first receive approval from the national office. Similar to HFA's requirements, prior to being approved to implement NFP, agencies must develop an implementation plan that specifies how the NFP Model Elements will be implemented.

- **Intended recipients.** A pregnant woman and her child are eligible for NFP if the woman is expecting her first child and meets low-income criteria at intake. In addition, women must enroll in the program and receive their first home visit no later than the end of the 28th week of pregnancy. This means that all NFP enrollees will meet the gestational-age eligibility criteria for MIHOPE-Strong Start. Local programs must apply for a variance if they intend to modify the target population from that specified by the NFP NSO.

NFP assumes responsibility for improving outcomes for the child and the mother of the child.

- **Intended goals and outcomes.** The mission of NFP is to empower first-time mothers living in poverty to improve their lives and the lives of their children through evidence-based nurse home visiting. The goals of NFP are to (1) improve pregnancy outcomes by helping women engage in good preventive health practices, including obtaining thorough prenatal care, improving their diets, and reducing their use of cigarettes, alcohol, and illegal substances; (2) improve child health and development by helping parents provide responsible and competent care; and (3) improve the economic self-sufficiency of the family by helping parents develop a vision for their own future, plan future pregnancies, continue their education, and find work. Among the outcome areas often targeted by home visiting programs, NFP rated all domains as the highest priority for intended outcomes, including improving prenatal health, birth outcomes, maternal mental health, physical health, use of family planning, tobacco use, and positive parenting.

- **Intended service delivery: Dosage.** NFP home visitors conduct visits to women during pregnancy and through the child's second birthday. More frequent visits occur immediately following enrollment (to facilitate relationship building between the family and the home visitor) and after birth (to provide increased support to the family during the transition into parenthood). Visits are expected to occur weekly upon enrollment and to fade gradually to monthly visits as the child ages. The visit schedule may be adjusted by the home visitor to meet client needs.

- **Intended services: Content.** Home visitors follow the NFP Visit Guidelines, which specify the structure of the home visits, the frequency and timing of the visits, and the content to be covered. NFP provides curricula and materials that define the intended content of home visits. The model requires initial and ongoing assessments of the family's physical, emotional, social, and environmental strengths. Use of several standardized assessment tools, as well as data collection forms developed by NFP, is required at regular intervals. Local programs can supplement data collection processes by introducing additional tools. NFP home visitors conduct visits in accordance with the NFP Model Elements, apportioning time across five NFP model domains: personal health (for example, mental health functioning), environmental health (for example, neighborhood), life course

development (for example, education), maternal role development (for example, mothering role), and family and friends (for example, assistance with child care). NFP requires home visitors to provide referrals to community health and human service resources and services based on each family's identified needs and goals.

- **Intended service delivery techniques.** NFP encourages a variety of supportive strategies for working with families, including caregiver goal setting, caregiver problem solving, crisis intervention, working to strengthen a family's support network, and the provision of emotional support, pamphlets, or other materials. Home visitors also apply reflective practice and motivational interviewing with women and their families to elicit positive changes in attitudes and behaviors.

- **Intended staffing.** NFP home visitors are professional registered nurses with a minimum of a baccalaureate degree in nursing, with preference for strong written and verbal communication skills, home visiting experience, and two years of recent experience in maternal and child health, public health, or mental/behavioral nursing. NFP programs must submit a formal variance to get approval from the NFP NSO to employ staff who do not meet the qualification standards. A full-time home visitor carries a caseload of no more than 25 active clients.

Conclusion

Differences in the HFA and NFP national models imply that there are likely to be somewhat different patterns of implementation in the local programs operating each model. Independent of national service models, however, there are likely to be important variations in how services are structured and delivered at the local level, whether through discretion that is provided to local sites, through deliberate adaptations by local sites, or through drift from the defined service model. These variations in service delivery, combined with estimates of the impacts of each local home visiting program on its enrolled families, will provide an opportunity to advance the understanding of how to design and implement effective home visiting programs.

Future reports on MIHOPE-Strong Start will examine the process by which local programs put evidence-based models into action, the range of home visiting services that are provided around the country as a result, and the service delivery strategies that are associated with the greatest improvements in birth outcomes, infant and maternal health, and infant and maternal health care use for families served by home visiting programs.