Supporting Evidence-Based Home Visiting to Prevent Child Maltreatment

Cross-Site Evaluation of the Supporting Evidence-Based Home Visiting Grantee Cluster: Evaluation Design—Volume 1

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ChapinHall at the University of Chicago

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EVIDENCE-BASED HOME VISITING GRANTEES

Grantee	Project Director
County of Solano, California Department of Health and Social Services	Linda Orrante
Rady's Children's Hospital, San Diego, California	Charles Wilson and Laine Alexandra
Colorado Judicial Department	Lilas Rajaee-Moore
Delaware Children & Families First	Vicky Kelly
Hawaii Department of Health	Cindy Hirai
Illinois Department of Human Services	Denise Simon and Ralph Schubert
Minnesota Department of Health State Treasurer	Mary Jo Chippendale
New Jersey Department of Children and Families	Sunday Gustin
Society for the Prevention of Cruelty to Children, Rochester, New York	Laurie Valentine
Ohio St. Vincent Mercy Medical Center	Connie Cameron
The University of Oklahoma Health Services Center	Jane F. Silovsky
Rhode Island Kids Count	Leanne Barrett
The Children's Trust Fund of South Carolina	Grace Stewart and Joan Hoffman
Child and Family Tennessee	Rebecca Kelly
Tennessee Le Bonheur Community Outreach	Ruth A. Hamblen
Texas DePelchin Children's Center	Debbie Arnold
Utah Department of Health	Robyn Lipkowitz

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I. INTRODUCTION

In 2007, 3.2 million referrals of alleged acts of maltreatment involving 5.8 million children were made to child protective services agencies. An estimated 794,000 children were victims of substantiated maltreatment, and, tragically, an estimated 1,760 children died because of maltreatment (U.S. Department of Health and Human Services 2009). Despite recent declines in the number of substantiated cases of neglect, physical abuse, and sexual abuse (Finkelhor 2007; Finkelhor and Jones 2006), child fatalities increased 15 percent during the most recent reporting period, and children younger than age 1 continue to demonstrate victimization rates two to four times the rate experienced by older children. Collectively, these findings underscore the need for strategies to prevent child maltreatment in order to improve outcomes for families and communities. Given the limited funding available to support human services programs and the push towards more accountability for outcomes, policymakers have become much more selective and insistent that funding support evidence-based programs that have demonstrated positive results. Over the last several years there has been sustained growth in the focus on identifying and using evidence-based programs and practices for a variety of disciplines such as health, mental health, substance abuse, education, juvenile justice, and child welfare programs. Currently, 40 states support state-based home visiting programs (Johnson 2009). Among the 30 states for which data are available, they have budgeted a total of $250 million to support home visiting programs (Johnson 2009). There is a growing body of evidence that some home visitation programs can be a successful child maltreatment prevention strategy.

Nearly all reported maltreatment occurs within families, many of whom are headed by single parents with low education levels and limited financial resources (Wolfe 2004). Furthermore, parents experiencing high levels of depression and parenting stress are more likely to maltreat their children (Wolfe 2004). The promise of well-designed and well-implemented home visiting program models is that they may improve important short- and longer-term outcomes, such as (1) the quality of the parent-child relationship and attachment, (2) children's school readiness, (3) women's prenatal health, and/or (4) safety of the home environment. In addition, a number of home visiting programs have reduced rates of self-reported and/or substantiated child maltreatment and use of emergency rooms to treat child injuries (Bilukha al. 2005; Gomby 2005; Olds et al. 2004; Olds et al. 2007; Sweet and Appelbaum 2004; Prinz et al. 2009). By providing models of positive parenting skills that focus on improving the parent-child relationship, home visiting programs give at-risk families the

knowledge and skills they can use to support their children's development and learning, and, ultimately, improve their children's well-being (Appleyard and Berlin 2007; Berlin et al. 2008; Daro 2006; Wolfe 2004).

With the increased emphasis on identifying evidence-based programs and practices, equal attention also must be placed on mechanisms and support needed for the successful dissemination of research-based programs, and their adoption and implementation in direct practice. Interventions cannot be fully successful without taking into account the systems in which families are served (Foster-Fishman et al. 2007). Service delivery systems are important because they define who will be served and how they will receive services. Furthermore, systems define how services will be funded, monitored, and staffed. Over the last several years, state health and human services officials have demonstrated an interest in implementing evidence-based programs and practices within their systems, but have been constrained by limited resources in their ability to develop the knowledge base of how such programs can fit within their systems. For home visiting interventions to have the greatest effects possible, the systems in which home visiting programs operate must be integrated, supportive, and conducive to service delivery. Knowledge is needed about how to build the infrastructure and service systems necessary to implement and sustain evidence-based home visiting (EBHV) programs with fidelity to their models, and whether and how to scale up these programs and adapt them for new target populations.

In 2008, the Children's Bureau (CB) within the Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services funded 17 grants, through cooperative agreements, to address this knowledge gap and prevent child maltreatment. Grantees are to leverage their grant funding with other funding sources to support the EBHV grantee-selected programs and practices. Specifically, grantees are to focus on supporting implementation of, scaling up, and sustaining home visiting programs with high fidelity to their evidence-based models. In addition, grantees will contribute to the knowledge base about large-scale implementation with fidelity by conducting local implementation and outcome evaluations, along with analyses of program costs. Each cooperative agreement runs for five years. The first year (fiscal year [FY] 2008-2009) was a planning year; grantees are to implement their plans during the remaining four years (FY 2009-2010 through FY 2012-2013).

CB/ACF has funded Mathematica Policy Research and Chapin Hall at the University of Chicago, along with our consultant Brenda Harden Jones from the University of Maryland, to conduct a six-year cross-site evaluation of the grantees' programs. As in the cooperative agreements,

the first year of the cross-site evaluation was a planning year. Mathematica-Chapin Hall, in collaboration with the 17 EBHV grantees and their local evaluators, will conduct the cross-site evaluation during the remaining five years. The primary purpose of the cross-site evaluation is to identify successful strategies for adopting, implementing, and sustaining high-quality home visiting programs to prevent child maltreatment. The evaluation was designed to be participatory and utilization-focused, engaging the grantees and other stakeholders at key points in the process and incorporating information gathered back into the program models and evaluation framework. To achieve these goals, the Mathematica-Chapin Hall team will support rigorous local evaluations carried out within a Peer Learning Network (PLN), and use data from local evaluations and cross-site research to assess participant, program, and systems outcomes. A unique feature of this evaluation is the careful attention it will pay to the infrastructure supports for and the implementation fidelity of the home visiting programs. The cross-site evaluation will add to the current home visiting evaluation literature, which tends to focus specifically on program impacts. The cross-site evaluation will focus on domains central to the implementation and monitoring of home visiting programs: systems change, fidelity to the evidence-based model, costs of home visiting programs, and family and child outcomes. The cross-site evaluation also will analyze the process that each grantee uses to implement the grant.

This report describes the cross-site evaluation design. The Mathematica-Chapin Hall team worked closely with the 17 EBHV grantees and their local evaluators, as well as CB/ACF and other federal partners, to design the cross-site evaluation. This chapter provides an overview of the EBHV grantees and the EBHV grantee-selected program models, describes the participatory design process that the Mathematica-Chapin Hall team led, and presents an overview of the design, elaborated in more detail in subsequent chapters.

EBHV Grantees and Their Selected Program Models

The summer 2008 federal grant announcement required applicants to select home visiting programs that met specified criteria so as to be considered an evidence-based model. These criteria were:

- No clinical or empirical evidence has been found suggesting the practice constitutes a risk of harm to families receiving services.
- An articulated theory of change is documented through a logic model or conceptual framework, and a manual or training program describes how to implement the model.

- At least two randomized control trials, or comparable methodology, have been conducted and found the practice to be superior to a comparison practice with published results in the peer-reviewed literature.
- The program has been tested and replicated in multiple sites and settings.
- The program must have demonstrated sustained effects, lasting at least one year beyond program end.
- Outcome measures used in studies are reliable and valid and administered consistently across subjects.
- The overall weight of evidence must support the program's efficacy.
- Programs must be working to build stronger evidence through ongoing evaluation and quality improvement.

During the grant review process, an independent panel of peer reviewers was asked to evaluate applications based on the criteria listed in the announcement to determine if the program(s) proposed by the applicant met standards related to evidence-based models. The funded applications included six different models to implement (Table I.1): Family Connections; Healthy Families America; Nurse-Family Partnership; Parents as Teachers; SafeCare; and Triple P.[1] The EBHV grantee-selected models have established performance standards that not only address issues such as service dosage and duration, but also provide guidelines on who can best serve as a home visitor, the initial and ongoing training levels for home visitors and supervisors, supervisory standards, and core characteristics of a high-quality participant-provider relationship. The models also specify requirements an applicant organization must meet with respect to its management capacity and financial stability.

[1] Triple P is not by definition a home visiting program. It is a practice reform designed to alter the manner in which all providers working with families approach their program participants regarding child management and parent-child interactions. Triple P is based on a multi-faceted program model that includes five levels of increasingly intensive and targeted services that can be delivered in different formats (Prinz et al. 2009). The EBHV grantee that is implementing Triple P is using home visitors to provide the most intensive services (Levels 4 and 5) in the Triple P model.

Table I.1 Summary of EBHV Grantee-Selected Program Models

EBHV Program Model	Target Population	Expected Dosage	Expected Duration
Family Connections	Families with at least one child age 5 to 11; demonstrated risk for neglect	Minimum 1 hour face-to-face per week	3 to 6 months
Healthy Families America	Pregnant women or new parents within two weeks of infant's birth	Scaled (from weekly to quarterly)	Until child's fifth birthday
Nurse-Family Partnership	First-time pregnant women < 28 weeks gestation	Scaled (from weekly to quarterly)	Until child's second birthday
Parents as Teachers	Birth or prenatal to age 5	Minimum monthly home visit and group visit	Until enrollment in kindergarten
SafeCare	Birth to age 5	1 to 2 hours per week	18 to 20 weeks
Triple P	Birth to age 12	Weekly	Varies by type of service (from 1 to 2 sessions to 8 to 11 sessions)

Source: http://www.family.umaryland.edu/ryc_best_practice_services/family_connections.htm; www.healthyfamiliesamerica.org/; nursefamilypartnership.org; www.parentsasteachers.org/; http://chhs.gsu.edu/safecare/model.asp; www.triplep-america.com.

EBHV = evidence-based home visiting.

All EBHV grantees are working to support the development of infrastructure for high-quality implementation of existing home visiting programs to prevent child maltreatment. However, the 17 grantees vary in their planned approaches and activities for supporting this infrastructure development (Table I.2). The grantees are working within diverse organizational settings to support the implementation of various home visiting models. In some situations, the grantee is the implementing agency for their selected home visiting model. In others, the grantee contracts or partners with the implementing agency to deliver services. Implementing agencies vary in the number of service delivery locations they oversee. In addition, grantees are at different stages of implementing their selected home visiting models. Through the grant, some grantees will implement a new home visiting model for their community, others will continue their implementation of a home visiting model, and still others plan to expand implementation of a model they already implement to new service delivery locations and/or new target populations. Additional diversity

exists in the geographic coverage of grantees' service areas, with grantees implementing in a targeted community, in selected areas of a state, or statewide.

As part of the EBHV initiative, all grantees must conduct a local implementation and outcome evaluation and an analysis of program costs. The local evaluations vary in planned rigor, from descriptive studies that focus on implementation, to randomized control trials of family and child outcomes resulting from participating in an EBHV program, to rigorous assessments of the added value to families and children of specific enhancements to the home visiting models.

Design Process

The EBHV cross-site evaluation design process was to be participatory and utilization-focused. Therefore, soliciting and incorporating input from grantees and other stakeholders was essential throughout the process.

Participatory Design Process with a Utilization Focus

Four principles guided the design process: (1) create a participatory process for designing the evaluation, (2) build on the local evaluation plans that the grantees proposed by focusing the cross-site evaluation on common elements across grantees, (3) keep the number of outcomes for assessment and the overall data collection requirements as low as possible to reduce burden and costs for grantees, and (4) provide utilization-focused reporting at key points in the project.

In keeping with the mandate from CB/ACF, the Mathematica-Chapin Hall team made the cross-site evaluation design process as participatory as possible by creating many opportunities for grantees and other stakeholders to provide input to and feedback on the proposed cross-site evaluation design. We began by reviewing the grant applications and summarizing the grantees' local evaluation designs and measurement plans. In November 2008, we hosted a session to initiate discussion about the domains and measures proposed by grantees and the cross-site evaluation team at the grantee kickoff meeting in Washington, DC. Starting in January 2009, we collaborated with grantee representatives to plan and facilitate PLN conference calls with grantees to identify cross-site measures within four of the evaluation domains. Between January and March, we conducted 13 PLN conference calls. Two calls presented the overall cross-site evaluation design. Of the rest, two focused on the systems domain, three addressed the fidelity to evidence-based models domain, three discussed the home visiting program cost domain, and three addressed family and child outcomes. These design activities culminated in memos with cross-site evaluation recommendations that we shared with the EBHV grantees for feedback.

Table I.2 Grantees' Selected Home Visiting Program Models, Implementation Status, and Number of Service Delivery Locations

State	Grantee	EBHV Grantee-Selected Program Model	EBHV Implementation Status
CA	County of Solano, Department of Health and Social Services	NFP	New
CA	Rady's Children's Hospital, San Diego	SC	New
CO	Colorado Judicial Department	SC	New
DE	Children & Families First	NFP	New
HI	Hawaii Department of Health	HFA	Continuing with enhancements
IL	Illinois Department of Human Services	NFP	Continuing
		HFA	Continuing
		PAT	Continuing
MN	Minnesota Department of Health State Treasurer	NFP	Expanding
NJ	New Jersey Department of Children and Families	NFP	Expanding
		HFA	Continuing
		PAT	New
NY	Society for the Prevention of Cruelty to Children, Rochester	NFP	Continuing with enhancements
		PAT	Continuing with enhancements
OH	St. Vincent Mercy Medical Center	HFA	New
OK	The University of Oklahoma Health Services Center	SC	Expanding with enhancements
RI	Rhode Island Kids Count	NFP	New
SC	The Children's Trust Fund of South Carolina	NFP	New
TN	Child and Family Tennessee	FC	Continuing
		NFP	New
TN	Le Bonheur Community Outreach	NFP	New
TX	DePelchin Children's Center	Triple P	New
UT	Utah Department of Health	HFA	Continuing
		NFP	Continuing

Source: Grantee applications and plan updates.

FC = Family Connections; HFA = Healthy Families America; NFP = Nurse-Family Partnership; PAT = Parents as Teachers; SC = SafeCare; EBHV = evidence-based home visiting.

In March 2009, during the EBHV grantee annual meeting, we convened several sessions specific to the cross-site evaluation design. Following input received from grantees during this meeting, we conducted conference calls with each grantee to discuss how the cross-site evaluation design aligned with the grantees' local plans and whether there were components of the cross-site evaluation that would be problematic for grantees. We then revised the cross-site evaluation design to incorporate the feedback received from grantees and presented this revised design through a memo to grantees and webinar in May 2009.

Each grantee then developed their implementation plan for the EBHV initiative. As part of the implementation plan, grantees discussed their local evaluation, their participation in the cross-site evaluation, and alignment between the local and cross-site evaluations. The Mathematica-Chapin Hall team reviewed sections of the implementation plans relevant to evaluation design and provided feedback to CB/ACF on the content of the implementation plans and concerns about grantees' plans to meet cross-site evaluation requirements. Reviewing the implementation plans also contributed to final revisions to the cross-site evaluation design included in this report.

The cross-site evaluation team sought to develop a utilization-focused design by making plans to provide usable information gathered from the cross-site evaluation to key stakeholders, including the 17 grantees, other operators of home visiting programs, CB/ACF, state and county agencies, other EBHV funders, and model developers seeking to replicate or scale up their models. We have designed the data collection process to provide information to grantees at several points across the six-year evaluation[2] that can support local examination of progress toward grantees' goals. The evaluation design uses a common framework to examine grantees' implementation and outcomes within each domain and to measure indicators of the evaluation domains that we hypothesize to be important across all grantees. At the same time, data collection and selection of measures was tailored to each grantee's goals.

Stakeholder Involvement

The cross-site evaluation design process involved many stakeholders to ensure that the design corresponded to grantee and partner initiatives and met high-quality standards. The Linking Actions for Unmet Needs of Children's Health Initiative (Project LAUNCH) and the State Early Childhood

[2] Year 1 (October 2008 through September 2009) of the cross-site evaluation was the planning year. The evaluation continues through September 2014.

Comprehensive Systems Initiative (ECCS) are two federal efforts that are engaged in similar work to develop infrastructure and build systems that support families and children. We coordinated with the federal project officers and evaluation teams for each initiative through conference calls, an in-person meeting, and shared materials. The shared goal in doing this was to use similar measures, particularly for systems change, to facilitate analysis of common issues by all three initiatives. In addition, coordinating with these initiatives was important to CB/ACF for both the evaluation and for the grantees' programmatic activities. Two EBHV grantees are also Project LAUNCH grantees, and 49 states have participated, or are participating, in ECCS.

To support the development of a high-quality design, we sought input from research and implementation experts, both among the grantees and external to the initiative, and from the program model developers (Table I.3). As part of the PLN conference calls that three of the domains sponsored, we engaged local evaluators for EBHV grantees and representatives from the National Data Archive on Child Abuse and Neglect (NDACAN). The experts participated in the planning and conduct of the PLN calls for domains that aligned with their areas of expertise. We also convened an expert panel with members who had experience in at least one of the cross-site evaluation domains. Expert panel members reviewed memos describing the proposed research design in each domain, provided written feedback on these memos, and participated in an in-person meeting. The Mathematica-Chapin Hall team also collaborated with representatives from the EBHV initiative's implementation technical assistance providers—the Family Resource Information, Education, and Network Development Services (FRIENDS) and the National Implementation Research Network (NIRN)—around coordinating technical assistance to grantees, facilitating the grantee meetings, and developing the outline for the grantees' implementation plan. We also engaged representatives of each of the six EBHV grantee-selected program model developers (sometimes referred to as the "program model purveyors") so that we could identify their method of training and monitoring. We did this to help us understand the similarities and differences across models in their intent and structure, and then to guide our selection of indicators and outcome measures.

Table I.3 Experts Consulted About the EBHV Cross-Site Evaluation Design

Name	Affiliation	Evaluation Domain	Expert Panel Member
Phaedro Corso	University of Georgia	Costs	X
Diane DePanfilis	University of Maryland, Baltimore	Fidelity	X
Kenneth Dodge	Duke University	Family and Child	X
Anne Duggan[a]	Johns Hopkins University	Fidelity	
Charles Izzo	NDACAN	Fidelity	
Glenda Eoyang	Human Systems Dynamics Institute	Systems	X
Ron Seifer[a]	Brown University	Family and Child	
Elliot Smith	NDACAN	Family and Child	
Paul Solano[a]	University of Delaware	Costs	

[a]Local EBHV grantee evaluator.

EBHV = evidence-based home visiting; NDACAN = National Data Archive on Child Abuse and Neglect.

Design Challenges Confronted During Cross-Site Planning

Throughout the design process for the cross-site evaluation, the Mathematica-Chapin Hall team, along with the EBHV grantees, their local evaluators, CB/ACF, and other federal partners, confronted several challenges that had to be addressed when developing a feasible cross-site evaluation approach. The challenges centered on the diversity across the 17 EBHV grantees and the six EBHV grantee-selected program models that grantees selected for implementation.

Challenges Related to EBHV Grantee Diversity

- ***EBHV program model implementation stage.*** EBHV grantees vary in whether they are newly implementing, continuing implementation of, or expanding implementation of their selected program model(s) (Table I.2). This variation has implications for the cross-site design, as research questions may vary based on implementation stage.
- ***Number of EBHV program models implemented by a grantee.*** EBHV grantees plan to support implementation for one to three models, depending on the grantee. Eleven grantees will support implementation of one model, while six will support implementation of two to three models.
- ***Geographic spread of EBHV program models.*** EBHV grantees are targeting a range of communities, with some grantees focusing on a single targeted community, others targeting selected geographic areas within a state, and still others focusing on statewide implementation. Therefore, the definition of "scale-up" is not consistent across grantees,

and the cross-site design had to be broad enough to capture variations in planned geographic spread.

- ***Systems change goals and strategies.*** All grantees are focusing on one or more of the initiative's three systems change goals: (1) implement with fidelity, (2) scale up implementation with fidelity, and (3) sustain implementation with fidelity. To achieve their systems change goals, grantees are using a broad range of strategies specific to the context in which they operate.

Challenges Related to the EBHV Grantee-Selected Model Diversity

- ***Fidelity standards and reporting requirements.*** Each EBHV grantee-selected program model has standards that implementing agencies must maintain for model fidelity, and models request that implementing agencies report a variety of data elements on specific timelines. This means that grantees vary in the information they already collect on training provided, staff hired, families enrolled, and services delivered. Developing a common set of measures for the cross-site design needed to incorporate and build on this variation.
- ***Target population.*** Home visiting programs are not one size fits all. Each model specifies a target population, and the level of specification for the population varies. For example, one model targets prenatal, first-time mothers early in pregnancy, while another enrolls families with children between birth and age 12. Accounting for this variation presented design challenges for the cross-site evaluation, as the recommended outcome measures needed to take this variability into account.

Cross-Site Evaluation Design Overview

The EBHV initiative is an effort to learn what it takes to support the implementation, scale-up, and sustainability of home visiting programs with fidelity, with the intended ultimate outcome of improved family and child outcomes. Grantees' efforts involve a complex array of activities and strategies to develop infrastructure to support home visiting programs. The conceptual underpinning for the EBHV initiative is that, through systems change activities, grantees will develop infrastructure capacity that improves the fidelity of implementation of the home visiting programs. Implementation of home visiting programs with fidelity, along with the operational costs of the programs, affects scale-up[3] and sustainability of the programs. Ultimately, the widespread adoption of home visiting programs implemented with fidelity leads to improved family and child outcomes.

[3] Scale-up is defined as the expansion of services through expanding the capacity of current home visiting programs, adapting the programs for new populations, or supporting new service delivery locations for home visiting programs.

This section provides an overview of the domain-specific and cross-domain research questions, the data collection strategy and analytic approach, the technical assistance provided to grantees, and the reporting and dissemination plans.

Evaluation Domains and Research Questions

To capture the initiative's complexity, the cross-site evaluation design consists of five domains relevant to (1) implementation, scale-up, and sustainability with fidelity, and (2) resulting outcomes for parents and children. The intent of each domain is to describe grantees' efforts related to the domain. The five domains, and their primary research questions, are:

1. ***Systems Change:*** How did grantees build infrastructure capacity to implement with fidelity, scale up, and sustain home visiting programs?
2. ***Fidelity to the Evidence-Based Model:*** Were the home visiting programs implemented and delivered with fidelity?
3. ***Costs of Home Visiting Programs:*** How much does the delivery and support of each home visiting program cost?
4. ***Family and Child Outcomes:*** Do home visiting programs improve family and child outcomes when programs are implemented in the "real world" and supported by investments in infrastructure?
5. ***Process Study:*** How did grantees plan and implement their grant initiative activities?

To address the primary and secondary research questions in each domain, the cross-site evaluation will collect and analyze data to describe grantee efforts within the domain (Chapters II through VI provide details on the approach to each domain).

Cross-Domain Research Questions

While the evaluation domains, as stand-alone components, are important to the cross-site evaluation, we must also look across the domains to address questions about relationships among how systems change, whether EBHV models are implemented with fidelity, the costs of home visiting programs, and the process grantees use to implement their initiatives. Specifically, the cross-site evaluation will address four cross-domain questions:

1. Are systems, and changes in those systems, related to the fidelity of implementation? What is the nature of this relationship?
2. What contextual factors were found to be barriers or facilitators to systems change and fidelity of implementation?
3. How are systems, program costs, and fidelity of implementation related to the scale-up and sustainability of home visiting programs?

4. Are systems change activities, and improvement in infrastructure capacity to support the implementation of home visiting programs with fidelity, scale-up, and sustainability related to positive family and child outcomes?

To address these questions, the cross-site evaluation will combine the data collected for each domain to analyze the relationships across domains (see Chapter VIII).

Data Collection Strategy

The cross-site evaluation data collection strategy includes gathering both quantitative and qualitative data. The quantitative and qualitative data collection modes cut across the domains by addressing the data collection needs for multiple domains. The quantitative data will be collected primarily through data entered by grantees into a web-based system designed by the cross-site evaluation team. Through the web-based system, grantees will provide service and cost data to assess fidelity to the EBHV grantee-selected models and the costs of implementing these programs, and will report on progress for their system goals.

The qualitative data will be collected primarily during two site visits. The first visit will take place in spring 2010, the second in spring 2012. Four primary types of data collection will occur during site visits: (1) semistructured individual and small-group interviews with key informants; (2) meeting attendance or observation of EBHV grant program activities; (3) focus groups, such as with supervisors and frontline home visiting staff members; and (4) reviews of case files of families participating in home visiting programs.

A partner survey will be timed to coincide with each site visit round, as well as with the end of the grant period, and will enable us to obtain the perspectives of key players within each grantee. Through the partner survey, we will understand grantee relationships with key partners and how these change. Additional data sources will include documents provided by grantees, administrative data provided by program model purveyors, and county-level maltreatment data.

Analytic Approach

The cross-site evaluation's analytic approach will employ mixed methods that combine qualitative and quantitative approaches, including network analysis. The qualitative analysis will be iterative and will involve systematic coding of the site visit data, following a coding scheme organized by the evaluation's research questions, to identify themes, patterns, and outliers across grantees. For each domain, the quantitative analysis will focus on describing grantees' activities and outcomes during the initiative and identifying grantee similarities and differences at specific points,

as well as over time. The analysis of the partner survey will include network analysis techniques that will measure and map relationships and communication patterns among grantees and their partners at each data collection point and over time. The team will also analyze the partner survey data by infrastructure level to track changes in relationships and communication patterns within and across levels. We will also conduct a systematic review of grantees' local evaluation findings related to child and family outcomes to assess whether the EBHV grantee-selected programs have impacts on the outcomes of families and children. The two goals of the systematic review are to (1) determine the level of evidence about effects of home visiting programs on families and children; and (2) present this evidence in a straightforward manner useful to CB/ACF, grantees, and other key stakeholders.

The cross-domain quantitative analysis will model the relationship between systems change, costs, and fidelity. More specifically, we will analyze the relationship between infrastructure capacity changes resulting from system activities, system attributes, program costs, and fidelity of implementation, accounting for differences in other relevant grantee and program characteristics. We will also examine the relationship between systems change, program costs, and fidelity with sustainability and scale-up of home visiting programs.

To address whether systems change activities undertaken through the grant initiative improved families' and children's outcomes for the grantees' target populations, we will draw on an analytic model designed to examine intervention effectiveness (Abrams et al. 1996). This model suggests that the effectiveness of an intervention, such as the EBHV initiative, depends on the combination of the effectiveness of the program implemented (in this case, home visiting programs), as well as the reach of that program (how many are served). The ideal combination is that a program model reaches many participants and demonstrates high levels of effectiveness in achieving its outcomes. To assess this, for each grantee, we will examine the evidence of EBHV effectiveness, based on the systematic review of grantees' local evaluations, in conjunction with measures of reach.

Evaluation Technical Assistance

The cross-site evaluation team offers EBHV grantees ongoing assistance to support high-quality, rigorous local evaluations and to ensure they are implementing the required components of the cross-site evaluation with rigor. From the beginning of the planning year, each EBHV grantee was assigned a cross-site evaluation liaison (a Mathematica team member) who serves as the grantee's key contact for questions on their local evaluation design or the cross-site design. As the cross-site evaluation proceeds, these liaisons will lead site visits to EBHV grantees to

promote continuity across evaluation stages. As the cross-site evaluation progresses from designing to conducting the evaluation, it will offer EBHV grantees additional training and support to ensure collection of high-quality evaluation data.

Utilization-Focused Reporting and Dissemination

CB/ACF intends that findings from the evaluation be shared with grantees and other audiences at regular intervals over the cross-site evaluation period. The Mathematica-Chapin Hall team will produce annual reports, policy briefs, quick-turnaround analyses, and a final report that presents findings for a broad audience that includes EBHV grantees, state and national stakeholders and policymakers, and home visiting program administrators. Some of the products will be specific to grantees (the case study data from the process and systems domains), and some will be cross-cutting. In addition, the cross-site evaluation team will present findings at professional meetings and in CB/ACF briefings to facilitate timely dissemination. The cross-site and local evaluation data will be archived at NDACAN for use by researchers. The archive will allow for secondary analyses of the data.

Report Road Map

The remaining chapters of the report provide a detailed description of the five cross-site evaluation domains and measures, the data collection strategy, the analytic approach, and the reporting and dissemination plan. Each of the domain-specific chapters presents the specific research questions and an overview of the cross-site measures, data sources, and analytic approach. Chapter II describes the systems domain, with a focus on documenting the infrastructure capacities grantees develop to support the implementation with fidelity, scale-up, and sustainability of home visiting programs. In Chapter III, the cross-site implementation with fidelity domain focuses on strategies for documenting initial and ongoing fidelity to the grantees' selected program models. Chapter IV presents the approach to measuring program costs. Chapter V provides an overview of the family and child outcome domain, emphasizing the cross-site evaluation's recommended measures and the systematic review of evidence. In Chapter VI, the process study design describes how grantees implemented their initiatives in support of EBHV implementation. The details of the data collection approach for each domain are specified in Chapter VII. Chapter VIII describes the analytic approach for each domain and across domains. The report concludes with a summary of the evaluation reporting and dissemination plan.

II. DESIGN PLAN FOR ASSESSING SYSTEMS CHANGE

Traditional evaluations may depict a project or initiative as operating within an unchanging environment called "context." In the EBHV cross-site evaluation, the grantees operate in, and interact with, complex, dynamic, and unpredictable environments. As they adapt to these changing conditions, their plans and activities change, altering their pathways and, ultimately, their outcomes. Each grantee is operating in its own sphere of contacts and relationships with people and organizations at many levels and with its own capacities, opportunities, and constraints. In effect, the cross-site evaluation must document the characteristics and changes in 17 unique systems, which share the purpose of preventing child maltreatment.

One goal of the cross-site evaluation is to design an evaluation that reflects this more complex and adaptive contextual reality. To do this, the Mathematica-Chapin Hall team will use evaluation strategies that track not only grantees' plans and activities for systems change, but also key systems attributes of the environments in which they are working and interactions between grantees and their environments (Hargreaves and Paulsell 2009). The team also aims to create a flexible, developmental design that is responsive to changes in grantees' initiatives and their environments (Patton 2008).

This approach will enable the evaluation to provide a more accurate picture of grantees' experiences and draw useful lessons from those experiences about how to build infrastructure capacity that supports the implementation, scale-up, and sustainability of high-fidelity home visiting programs. Toward this end, we will track changes over time in (1) system attributes, (2) grantees' infrastructure capacity, and (3) grantees' progress toward achievement of their goals for systems change. We will seek to derive implementation lessons by examining barriers and facilitators to grantees' progress toward systems goals, and changes in patterns of system attributes.[4]

Overview of Domain and Key Research Questions

This section provides definitions of key system-based evaluation concepts and terms. We then bring together these concepts into an EBHV theory of change that depicts the process and

[4] Like other components of the cross-site evaluation design, the design for the systems domain will not permit us to make causal claims about the extent to which various system attributes and changes in infrastructure capacity contributed to the achievement of EBHV goals. Similarly, we will not be able to make causal claims about whether systems change produces particular family and child outcomes.

relationships that we aim to examine through the systems domain of the evaluation. Next, we introduce the research questions guiding the systems domain. The final section discusses the evaluation design for the systems domain and our measurement strategy.

Systems-Based Evaluation Concepts

To enhance understanding of the proposed research design, we begin by defining several key systems-based evaluation concepts. These are central to the systems domain evaluation design and provide the foundation for the rest of the topics covered in this chapter. First, we define systems-based evaluation. Second, we identify the attributes of systems, including boundaries, relationships, and perspectives, in which grantees function. Third, we define infrastructure capacity, which is the focus of the grantees' systems change activities, and list eight categories of infrastructure capacity, which we will track as part of the evaluation. Fourth, we define the infrastructure levels at which grantees are working to achieve their goals for the EBHV project. Finally, we describe and define the infrastructure development goals of the EBHV initiative that shape the systems change activities of the grantees.

Systems-Based Evaluation

The EBHV grantees operate in complex systems, conceptualized as groups of interrelated and interdependent agents (individuals and organizations) working together in various settings on activities that directly or indirectly influence the prevention of child maltreatment (Holland 1995; Foster-Fishman et al. 2007). These webs of agents form a complex whole that changes as interactions occur (Kauffman 1995; Coffman 2007). The actions of these semi-independent agents generate systemwide patterns of dynamic and unpredictable change (Olson and Eoyang 2001). These systems are nested, as well as networked; they have subsystems and function within larger systems (Barabasi 2002). Cause and effect relationships within these systems are likely to be recursive, not linear or unidirectional (Patton 2008). Such systems are not reducible to their individual parts; the whole is more than, and different from, the sum of its parts (Eoyang 2007).

Systems-based evaluation is concerned with looking not only at the interrelationships between individuals and programs, but also at their relationships to the functioning whole (Trochim et al. 2006). It is important to understand not only how relationships are currently structured within a given system, but also what types of relationships are needed to bring about desired systems change (Foster-Fishman et al. 2007). In the EBHV cross-site evaluation, we will use systems-based evaluation methods to understand how grantees are building infrastructure capacity, alone and in

combination, to achieve three infrastructure goals: (1) implementation with fidelity, (2) scale-up, and (3) sustainability of high-fidelity home visiting programs.

System Attributes

System attributes refer to specific system features—boundaries, relationships, and perspectives (Williams and Imam 2007; Cabrera et al. 2008). Similarities and differences in these and other attributes create systemwide patterns. Changes in these patterns may lead to systemwide change, as system attributes interact with grantee activities in ways that influence the system.

- ***Boundaries:*** Boundaries define what is inside and outside of a system and separate activities within the system (Midgley 2007). They can refer to physical entities, organizational identities, social systems, or other demarcations, such as the multiple levels at which the EBHV grantees are working. One way to determine a system's boundaries is to first identify a problem of interest and then ask who or what is involved in addressing that problem (Foster-Fishman et al. 2007). To define the boundaries of systems in which the 17 grantees are working, we asked them to identify the individuals and organizations they are working with on prevention of child maltreatment. The boundaries may change as grantees reach out to develop new partnerships.
- ***Relationships:*** Relationships are defined as the connections and exchanges that occur within and across system levels, such as flows of information, client referrals, collaborative arrangements, program funding, and other resources (Olson and Eoyang 2001; Parsons 2009). These relationships may also change, for example, when a grantee develops stronger relationships with local funders and policymakers.
- ***Perspectives:*** System perspectives refer to stakeholders' worldviews and purposes. System agents may have different perspectives or pursue different purposes within a given situation (Williams and Imam 2007; Parsons 2009). For example, grantees that choose different infrastructure development goals may focus on building different kinds and combinations of infrastructure capacity.

Infrastructure Capacity

The EBHV initiative is designed to help grantees develop the infrastructure needed to support the EBHV grantee-selected program models. Capacity is defined as "the skills, motivation, knowledge, and attitudes necessary to implement innovations, which exist at the individual, organizational, and community levels" (Wandersman et al. 2006). Infrastructure development involves building capacity in many areas: planning, operations, workforce development, funding, collaboration, communication, political support, and quality assurance or program evaluation (Table II.1).

Table II.1 Infrastructure Capacity Categories by Types of Activities

Infrastructure Capacity Categories	Types of Activities
Planning	Strategic planning, tactical planning, decision making
Operations	Outreach, intake, screening, assessment, referral procedures
Fiscal Strategies	Fiscal partnering, fundraising, researching funding sources, leveraging dollars to support direct services
Communications	Information sharing, dissemination of lessons learned, policy advocacy, marketing, public awareness, disseminating information through the media
Collaboration	Leadership, alignment of goals and strategies, development of relationships, working through existing partnerships
Community and Political Support	Building community awareness and support, building political buy-in and support
Workforce Capacity	Training, technical assistance, coaching, supervision, retaining staff
Evaluation Capacity	Data collection, storage, retrieval, and analysis for quality assurance, quality improvement, epidemiology, surveys, or program evaluation

Sources: Flaspohler et al. 2008; Coffman 2007; October 2008 evidence-based home visiting cross-site evaluation kickoff meeting.

Infrastructure capacity does not simply refer to "bricks and mortar"—fixed structures and processes—but also to infrastructure functions that are robust and flexible enough to sustain their original purpose even as they evolve in response to changing conditions (Holladay 2005). Effective home visiting programs depend on multiple infrastructure capacities that include establishing lasting relationships between home visitors and families, well-trained and competent staff, high-quality supervision, strong organizational capacity, and links between home visiting programs and other external resources and supports (Daro 2006).

Several kinds of infrastructure capacity are particularly important for leveraging systems change. Stakeholders use collaborative structures, for example, to moderate the impact of existing rules and regulations, so that system activities are more aligned with system values, beliefs, and goals (Hodges et al. 2007). Other common targets for systems change include financing services and making them more accessible (Emshoff et al. 2007). The flow, content, and structure of program feedback and other system information through formal and informal communication channels is also an important facilitator of systems change by expanding knowledge and spurring action (Hodges et al. 2007).

Infrastructure Levels

EBHV grantees are working at multiple levels to achieve the EBHV initiative's goals. In addition to working within levels, it is also important to align or have similar structures, incentives, and processes across levels (Fixen et al. 2005). Infrastructure change initiatives are more likely to succeed when they "permeate multiple levels and niches within a system, creating compatible changes or conditions across system components" (Foster-Fishman et al. 2007). Such a multilevel, ecological perspective is important for understanding the successful implementation of infrastructure change initiatives (Durlak and DuPre 2008). EBHV grantees are working at the level of core home visiting operations, organizations, communities, and states, and at the national level. Here, we describe each level in detail.

- ***Core Operations Level:*** Activities at the core operations level are defined as the most essential and indispensable components of an intervention practice or program (Fixen et al. 2005). These operations include direct home visiting services, daily management of core home visiting operations, ground-level implementation, and program adaptations and modifications. Such core components must be present for evidence-based program implementation to occur with fidelity (Fixen et al. 2005). At the core operations level, an EBHV grantee may work to build strong relationships between the home visiting program families, home visitors, and supervisors.
- ***Organizational Level:*** At the organizational level, core components are contained within, and are supported by, an organization that establishes administrative structures and processes to select, train, coach, and evaluate the performance of home visitors and other key program staff. At this level, managers also oversee program evaluation functions and intervene with external organizations to obtain ongoing resources and support for the home visiting practices within the organization (Fixen et al. 2005). Organizational-level functions include internal administration to support home visiting operations, external coordination with other local social service delivery agencies and organizations, external coordination with other social service organizations, and organizational cultural elements such as leadership commitment and staff belief in the program. For example, at this level, a grantee may work with or within home visiting agencies and other community organizations to coordinate system functions, such as common intake, triage, and referral services.
- ***Community Level:*** Community-level grant activities include developing government partnerships, advocating for community resources, building community-level awareness and support for home visiting programs, and creating political buy-in and support at the local level. At this level, for example, a grantee may work with the county board of commissioners, community advocacy groups, or local foundations to leverage local funding for home visiting services.
- ***State Level:*** At the state level, leaders influence evidence-based programs by working to improve the quality of local programs, replicate programs effectively, and link home visiting programs to other state efforts focusing on promoting child health and development (Johnson 2009). State activities include developing regional or statewide

awareness and support for home visiting programs, creating state-level political buy-in and support for expanding the program, leveraging funding for direct services, advocating for resources to preserve state fiscal support, and enacting home visiting-related legislative, regulatory, and policy changes. For example, at the state level, a grantee may work with or within the state health department, other state agencies, or state legislators and policymakers.

- ***National Level:*** At the national level, leaders influence the EBHV grantee-selected programs by creating multistate learning collaboratives to support and spread home visiting programs, supporting research on effective service delivery, providing federal leadership to support home visiting programs, and sponsoring federal legislation to support home visiting efforts (Johnson 2009). National-level activities include managing the EBHV grant and implementation, building awareness and support among policymakers and funders, sharing information and disseminating findings, and developing and implementing policy initiatives and financing policies. At the national level, for example, as part of this EBHV initiative, a grantee may work with a national home visiting model developer, the EBHV cross-site evaluation team, and CB/ACF.

Infrastructure Development Goals

Based on an initial review of the EBHV initiative's original grant announcement, grantee proposals, grantee kickoff meeting materials, and subsequent conversations with grantees, we confirmed that grantees are working to accomplish three infrastructure development goals:

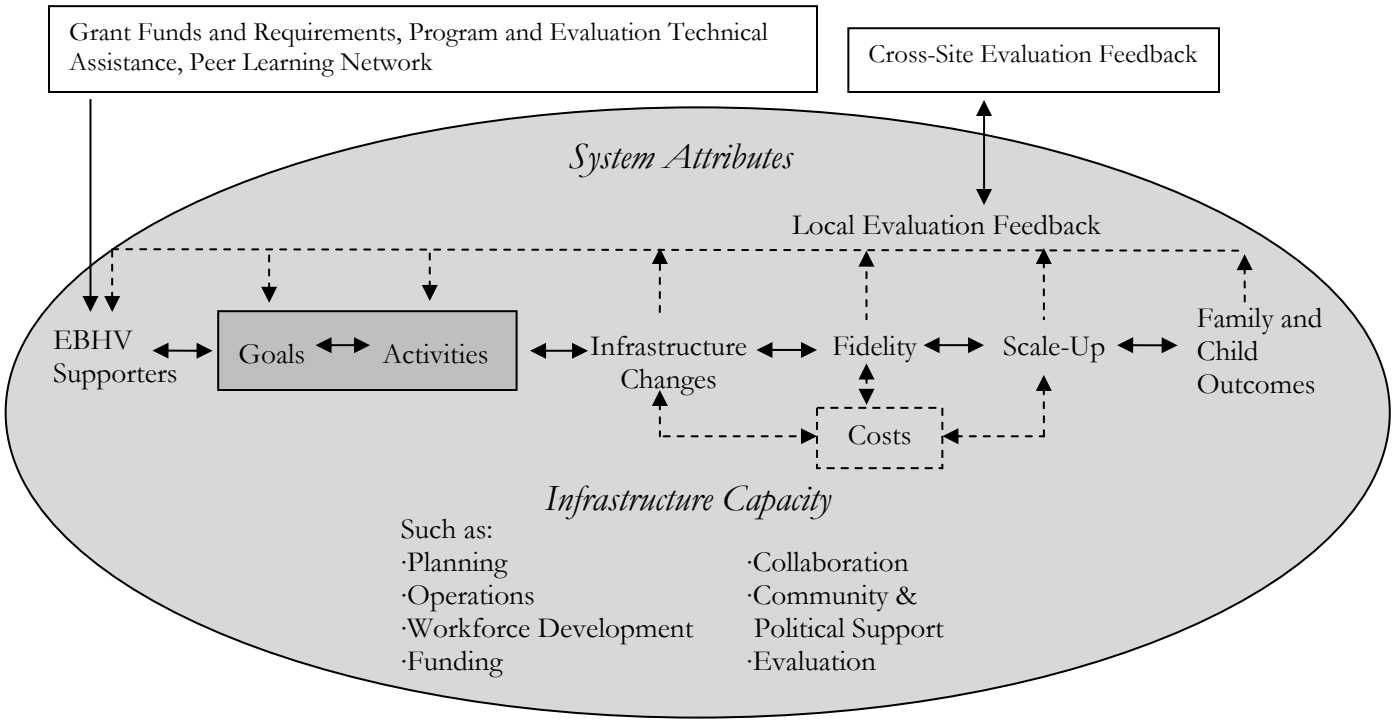
1. Develop infrastructure to support implementation with fidelity to the EBHV grantee-selected program models.
2. Develop infrastructure to support scale-up of home visiting models while maintaining fidelity. (Scale-up activities include expanding a model to a new geographic area, adapting a model for a new target population, increasing enrollment capacity in a home visiting program, and increasing adoption of home visiting models among funders and service providers.)
3. Develop infrastructure to support sustainability of the EBHV grantee-selected program models beyond the end of the grant period, while maintaining fidelity.

EBHV Theory of Change

In comprehensive systems change initiatives, it is important to focus the evaluation by articulating the initiative's theory of change (Walker and Kubish 2008). The Mathematica-Chapin Hall evaluation team developed a theory of change (Figure II.1) in which the 17 grantees are conceptualized as working within complex systems, supported by grant funding, program and evaluation technical assistance, a Peer Learning Network (PLN) of evaluators, and federal project staff. In these systems, individuals and organizations that understand and support the need for, and value of, evidence-based prevention programs work together on a wide range of activities to achieve

three EBHV goals: the implementation, scale-up, and sustainability of high-fidelity home visiting programs to reduce child maltreatment.

Figure II.1 EBHV National-Level Theory of Change



Source: Hargreaves and Paulsell 2009, adapted from Hodges 2007.
EBHV = evidence-based home visiting.

To achieve these goals, EBHV supporters may launch or modify existing activities designed to develop infrastructure capacity in specific areas, including program funding, supportive policies and regulations, intake and referral networks, workforce development and training programs, program evaluation functions, communication policies, collaborative partnerships, and mechanisms for policy advocacy. These changes in infrastructure capacity support fidelity of implementation to a home visiting model and, ultimately, the achievement of family and child outcomes, such as changes in risk and protective factors that should lead to reductions in child maltreatment. Findings from grantees' local evaluations and the cross-site evaluation are fed back to grantees, leading to changes in grantees' goals and activities. Changes in system attributes (boundaries, relationships, and perspectives) also influence grantees' goals and activities.

Research Questions

We expand on the overarching research question for the systems domain—*How did grantees build infrastructure capacity to implement with fidelity, scale up, and sustain home visiting programs?*—through three

research questions and multiple subquestions (Table II.2). The table includes the data collection modes and analytic approach used to answer each question. The cross-domain research questions that relate to the systems domain are presented in Chapter VIII.

Table II.2 Systems Domain Research Questions, Data Collection Modes, and Analytic Approach

	Data Collection Modes			Analytic Approach	
Research Questions	Web-Based Data System	Site Visits	Partner Survey	Qualitative	Quantitative
How did grantees build infrastructure capacities to support the goals of implementing home visiting models with fidelity, scaling up high-fidelity home visiting interventions, and sustaining high-fidelity home visiting interventions?					
In what types of infrastructure capacity building activities are grantees engaged at each infrastructure level? How do these change over time?	X	X		X	X
How many people and institutions were engaged in grant-related activities at each infrastructure level? How did that number change over time, creating what benefits and risks for the project?	X	X	X	X	X
What were the boundaries, relationships, and perspectives of grantees' projects, and how did they change over time?	X	X	X	X	X
What were the number and nature of collaborative relationships with partners? What factors influenced the number and nature of those relationships?	X	X	X	X	X
How did those relationships evolve over the course of the initiative?	X	X	X	X	X
What changes in grantee-specific infrastructure capacity occurred over the course of the initiative?					
What short-term and long-term infrastructure development goals did the grantees expect to achieve?	X	X		X	X
To what extent did grantees achieve their short-term and long-term infrastructure development goals?	X	X		X	X

Table II.2 (continued)

Research Questions	Data Collection Modes			Analytic Approach	
	Web-Based Data System	Site Visits	Partner Survey	Qualitative	Quantitative
What challenges, barriers, and system attributes impeded grantees' progress toward their infrastructure development goals?	X	X		X	
What factors and system attributes facilitated grantees' progress toward their infrastructure development goals?	X	X		X	
How were grantees' projects influenced by economic changes and other contextual factors?	X	X		X	
To what extent were the three overarching EBHV goals achieved over the course of the initiative?					
What EBHV initiative goals did the grantees expect to achieve?	X	X		X	
To what extent did grantees achieve their EBHV goals?	X	X		X	X
What patterns of infrastructure development strategies, achievements, and system attributes are associated with achievement of EBHV goals?	X	X	X	X	X

EBHV = evidence-based home visiting.

Systems Measures and Analytic Approach

To address these research questions, the evaluation team will use a design based on grantees' logic models for developing the infrastructure capacities needed to achieve implementation with fidelity, scale-up, and sustainability of their home visiting models. The design includes four elements: (1) working with grantees to create infrastructure development logic models at baseline, (2) tracking grantees' activities and progress toward building infrastructure capacities over time, (3) tracking changes in system attributes, and (4) tracking achievement of EBHV goals. To conduct these analyses, the evaluation team will draw on three primary data sources: (1) site visits, (2) the web-based reporting system, and (3) the partner survey. Chapters VII and VIII include further description of the data collection and analytic approach for the systems domain. Data collection instruments are included in Volume II.

These data will be analyzed using both quantitative and qualitative methods. We will use the results to create case studies of grantees' systems change efforts over time and to identify common themes and lessons across all 17 grantees and subgroups of grantees, as appropriate. For example, subgroups may include grantees implementing a particular home visiting model, those implementing more than one model, different types of grantees (for example, state agencies versus private nonprofits), and other groups of grantees that emerge from the analysis.

Working with Grantees to Create Infrastructure Development Logic Models at Baseline

As part of the systems design planning process, the grantee liaisons from the EBHV cross-site evaluation team worked with grantees to develop grantee-specific logic models for their infrastructure development activities and goals. Liaisons used grantees' proposals and presentations from the grantee kickoff meeting to prepare tables, which displayed grantees' activities and key players organized by system level. For each activity, the tables also display the infrastructure capacities needed to complete the activity (see Table II.1). Liaisons then reviewed the tables and confirmed their accuracy with grantees. During a second conversation, liaisons and grantees identified outputs for each of the activities and short- and long-term infrastructure development goals that grantees expected to achieve to support the three overarching EBHV goals: (1) implementation with fidelity, (2) scale-up with fidelity, and (3) sustainability with fidelity. Together these two tables constitute a logic model of grantee-specific systems change activities (Table II.3). These logic models provide important baseline information about the attributes of systems within which the grantees are working—their boundaries (who is and is not involved), relationships (key players by system level), and perspectives (infrastructure development goals)—and their infrastructure capacity needs.

Table II.3 Components Captured in EBHV Infrastructure Change Logic Models

Logic Model Category	Definition
System Levels at Which Grantees Are Working	Core operations, organizational, community, state, and national
Infrastructure Development Activities	Activities that grantees are carrying out to build infrastructure capacities at various system levels
Key Players	Types of individuals or organizations involved in grantee activities at different system levels
Infrastructure Capacities Needed to Carry Out Planned Activities	Planning, operations, workforce development, funding, collaboration, communication, political support, and quality assurance or program evaluation

Table II.3 (continued)

Logic Model Category	Definition
Outputs of Infrastructure Development Activities	Direct results of grantees' infrastructure-related activities, often quantifiable
Short-Term Infrastructure Development Goals	Grantee-specific infrastructure development outcomes of infrastructure-related activities grantees expect by 2011 (after the planning year, plus two years of implementation)
Long-Term Infrastructure Development Goals	Grantee-specific infrastructure development outcomes of infrastructure-related activities grantees expect by the end of the grant period[5]

EBHV = evidence-based home visiting.

Tracking Grantees' Activities and Progress Toward Building Infrastructure Capacities

As the EBHV cross-site evaluation proceeds, we will use these baseline logic models to track grantees' infrastructure development activities and progress toward building infrastructure capacities over time, as well as changes in system attributes. We will update the logic models regularly through two primary data collection activities: (1) the web-based reporting system, and (2) site visits. The web-based reporting system includes questions about elements of grantee logic models that grantees will complete every six months (see Volume II for more information about the specific data fields and response categories):

- Changes in short- and long-term infrastructure development goals and progress toward meeting the goals
- Changes in the external environment or key events that affected activities and progress toward goals, and the infrastructure capacities affected by the events
- Infrastructure development successes and their importance to the project
- Infrastructure development challenges and their importance to the project
- Ratings of infrastructure capacities

During site visits, the EBHV cross-site evaluation team will work with grantees to select representatives of the grantee's local EBHV team to participate in a group discussion about the grantee's infrastructure development logic model. This discussion will include a thorough review of the logic model components, any changes or updates that should be made to the model to reflect what the grantee is currently doing, potential revisions to short- and long-term expected

[5] These long-term expected infrastructure changes may change as the logic models evolve.

infrastructure changes, and successes and challenges encountered in working toward the outcomes under each of the three infrastructure goals. The focus group will include respondents from multiple organizations, including the grantee.

Tracking Changes in System Attributes

In addition to tracking changes in grantees' infrastructure development logic models and progress toward goals, the evaluation team will track changes in system attributes—boundaries, relationships, and perspectives—over time. This part of the evaluation will draw on two main data sources: (1) site visits, and (2) the partner survey. We will glean some information about system attributes from the site visit logic model discussions described above. For example, we will learn about changes in key players at different system levels and, thus, changes in system boundaries. In addition, site visitors will work with grantees to ensure that the team selects at least one informant from each infrastructure level and at least one informant involved in activities related to each of the three EBHV goals (implementation with fidelity, scale-up, and sustainability). We will include specific topics in the site visit interviews and focus groups to learn about system attributes and infrastructure development activities (see Volume II for the master site visit protocol).

We will also conduct a partner survey to learn more about the system attributes—the boundaries, relationships, and perspectives among key partners participating in grantee projects and how these change over time (see Chapter VII for more details about the survey and Volume II for the survey instrument). We will conduct three rounds of the survey—in 2010, 2012, and 2013—to track changes in system attributes over time. Grantee liaisons will work with each grantee to generate a list of survey respondents—organizations or organizational units within larger agencies—participating in grant activities. We will use the list of key players from grantee logic models described above as a starting point for developing these lists. We will work with grantees to ensure that we select respondents from each system level at which grantees are working, including the grantee agencies, local evaluators, and national model developers. We expect to survey approximately 25 respondents per grantee, on average.

The partner survey will collect information on the following topics:

- Respondent characteristics
- System levels at which respondent is working on the EBHV project
- Infrastructure capacity activities in which respondent is involved on the EBHV project

- Patterns of communication with other EBHV partners, including frequency, type, and content of communication
- Suggestions of organizations that are not involved in the EBHV project, but should be
- Quality of collaboration among partners
- Respondents' goals for the EBHV project and assessment of how well these goals align with those of other partners

Tracking Achievement of EBHV Goals

In addition to learning about changes over time in system attributes and progress toward infrastructure development goals, the evaluation team will examine the extent to which grantees achieve the overarching goals for EBHV: (1) implementation with fidelity, (2) scale-up with fidelity, and (3) sustainability with fidelity. Developing infrastructure capacity will be of limited value if it does not lead to achieving project goals. To track achievement of these EBHV goals, we will collect data to calculate common measures of progress across grantees at baseline and six-month intervals. These data will be collected through the web-based system (see Chapter VII for more information and Volume II for actual measures). Calculating common measures at multiple time points will provide snapshots of the grantees' progress. These quantitative measures will be standardized for comparison purposes.

These common measures include:

- Implementation of the EBHV Grantee-Selected Programs with Fidelity
  - Total number of program sites (ongoing and new) targeted for home visiting programs
  - Total number of sites (ongoing and new) operating at baseline and six-month intervals
  - Number and percent of (ongoing and new) sites that are certified by the national model developer (also called the program model purveyor)
  - Number and percent of (ongoing and new) sites delivering services to families with various levels of fidelity[6]
  - Percent change in the number of sites operating with high fidelity since the previous reporting period

[6] During the evaluation process, the Mathematica-Chapin Hall evaluation team plans to identify key indicators and fidelity scales, which are described in more detail in Chapter III.

- Scale-Up of the EBHV Grantee-Selected Programs with Fidelity [7]
  - Total number of families eligible for home visiting services
  - Total number of families targeted for home visiting services
  - Current active enrollment of families in home visiting services
  - Percent change in active enrollment since the previous reporting period
  - Current active enrollment as a percentage of the total enrollment goal
  - Current active enrollment as a percentage of the total eligible families
- Sustainability of the EBHV Grantee-Selected Programs with Fidelity
  - Level of funding secured for home visiting services in each year
  - Proportion of funding that is long term, defined as secured for three years or more
  - The ratio of annual program costs to the amount of annual funding that is long term.

In the next chapter, we discuss in much greater detail how we will measure fidelity, which is critical to the initiative's first goal of EBHV implementation with fidelity. In Chapter IV, we discuss the measurement of program costs, which is a key element of the sustainability goal.

[7] The first three indicators will be used to estimate the program's reach, which is defined as the proportion of eligible families in the target area who are served by the program.

III. DESIGN PLAN FOR ASSESSING FIDELITY TO THE EVIDENCE-BASED MODEL

The goal of the cross-site evaluation analysis of fidelity to the evidence-based model grantees implement is to assess the extent to which an intervention is implemented as intended by its designers. This chapter provides an overview of the fidelity domain, lays out the key research questions, and describes the fidelity measures we will collect.

Overview of Domain and Key Research Questions

For the cross-site evaluation:

"Fidelity" refers to the extent to which an intervention is implemented as intended by the designers of the intervention. Fidelity refers not only to whether all the intervention components and activities were actually implemented, but also whether they were implemented in the proper manner.

This definition implies that fidelity comprises:

- Structural aspects of the intervention, which demonstrate adherence to basic program elements such as reaching the intended target population, providing participants with the recommended service dosage and duration, maintaining low caseloads, and hiring and maintaining high-quality direct service and supervisory staff.
- Dynamic aspects of the intervention, particularly the quality and content of the relationship between the home visitor and the participant.

Both aspects of fidelity are important in determining whether a program is being implemented in the manner conceived and tested by the program's developer. More important, delivering a program with fidelity is presumably necessary, though perhaps not sufficient, for achieving intended outcomes.

Program evaluations increasingly emphasize documenting the service delivery process and unraveling the "black box" of the service experience (Chen 2005; Hebbeler and Gerlach-Downie 2002). Understanding both the structural elements and the manner in which services are provided is particularly important for relationship-based programs such as those supported by the grant initiative. The home visiting programs in the cross-site evaluation have established a wide range of performance standards that address issues such as service dosage and duration and provide guidelines on who can best serve as a home visitor, the initial and ongoing training levels for home visitors and supervisors, supervisory standards, and core characteristics of a high-quality relationship between the home visitor and participants. In addition, the models set thresholds for organizations to reach with respect to management capacity and financial stability.

In most cases, the grantees will draw on national model performance guidelines in structuring their own plans for monitoring the quality and rigor of their home visiting services. The EBHV grantee-selected models will serve as the foundation for the measurement of fidelity within the cross-site evaluation. In some instances, however, these national model performance guidelines have been revised to capture variations in the service delivery process that result from grantees' adaptation of the models to better address the needs of their target population.

Table III.1 presents the research questions for the fidelity to the evidence-based model domain, as well as an overview of the data collection modes and analytic approach used to answer the questions. Additional detail on the data collection and analyses are presented in Chapters VII and VIII, respectively. The first question in Table III.1 is the primary research question for the domain, already presented in Chapter I. The other questions expand on the primary question, examining variation in fidelity by program model and other factors. Chapter VIII includes cross-domain research questions that relate to the fidelity domain.

Table III.1 Fidelity to Evidence-Based Model Domain Research Questions, Data Collection Modes, and Analytic Approach

	Data Collection Mode		Analytic Approach	
Research Questions	Web-based Data System	Site Visit Interviews	Qualitative	Quantitative
Were the home visiting program models implemented and delivered with fidelity?	X			X
To what extent did the grantees modify the national model to "fit" their target population and local service delivery context?	X	X	X	X
Does the fidelity of implementation vary across home visiting program models?	X			X
Does fidelity of implementation vary by contextual factors, such as target population, geographic variation, or workforce availability?	X			X
Does fidelity to the model increase or decrease over time? How is it associated with the stage of implementation?	X			X

Initial Fidelity

Implementation fidelity has two primary components, which we will assess for each EBHV grantee-selected program model implemented during the grant initiative: (1) initial fidelity, and (2) ongoing fidelity. Initial fidelity reflects the grantee's ability to meet the initial certification requirements of the national program model when implementing a new site. Ongoing fidelity reflects the grantee's ability to maintain the implementation and reporting standards of the model once a particular site is operational.

To document initial implementation fidelity, we will rely on the individual national model developers to certify that the grantees have met all necessary criteria for affiliation at each location. Although variation exists across the developers in the specific standards they impose on those seeking to replicate their model, all the national models screen potential applicants for their capacity to successfully implement and sustain services as intended. Grantees implementing a new model will be expected to meet criteria that include:

- The "readiness" of the applicant organization to take on the task of delivering the home visiting program, including the organization's capacity to house the service and manage the hiring, supervision, and payment of all personnel, and its general fiscal stability.
- Compliance with all staff qualifications and training requirements for the home visitors and supervisors, including education or experience requirements, attendance at all required training, and demonstration of key competencies as specified by the model.
- The agency's capacity to identify and enroll participants who reflect the model's target population by documenting that the proposed service area has enough births or families that meet the model's eligibility criteria and that the agency has identified appropriate linkages for securing referrals both to and from the program.
- A plan to monitor ongoing implementation and "quality control" through such strategies as consistent data collection on home visit activities or detailed supervisory guidelines and expectations. If appropriate, the ability to comply with all of the national model's data collection requirements.

Each national model has a procedure for tracking compliance with these criteria and does not allow sites to use its name until all required training and conditions have been addressed. Therefore, we will assume that, if a grantee has obtained approval from the national model to implement its program, all these initial criteria will have been met. Although these standards differ across the national models, this variation does not pose significant problems because the national models are making a comparable judgment: whether the grantee has complied with all the requirements the national model set for formal affiliation.

As summarized in Chapter I (Table I.1), 14 of the 17 grantees will be working with at least one new home visiting program or proposing an adaptation or enhancement to an existing program within the context of this initiative. In these cases, initial implementation will be assessed when services begin (most likely during 2010, year 2 of the initiative). For grantees continuing with or expanding implementation of a specific model and not proposing major modifications, we will discuss with each grantee its experiences in implementing these models. With the grantee's permission, we will also review these experiences with the appropriate national model to confirm when the grantee began implementing a given home visiting model and the extent to which the grantee has complied with national model standards.

This external assessment will be augmented by qualitative interviews with program managers, supervisors, and focus groups of direct service staff conducted during the initial Mathematica-Chapin Hall site visit. These methods will address such issues as:

- The extent to which respondents feel confident in delivering the model as designed
- Satisfaction with the training and preparation they received to deliver services
- Respondents' understanding of the type of information that must be provided on an ongoing basis to monitor service implementation
- Any constraints or challenges they anticipate

A final indicator of initial fidelity to the model will include documenting that each site has established a procedure for using the data gathered in response to national model guidelines in its ongoing program planning and decision making. It will also be particularly important to document any additional fidelity criteria the grantees establish to monitor any modification or adaption they propose to a given national model.

Ongoing Fidelity

A central feature of the initiative is testing the extent to which states and local communities can succeed in implementing and sustaining home visiting programs with fidelity. Although the specific home visiting programs being implemented under this initiative differ in content and structure, all share a common commitment to core principles, both in how they are structured and in how they are delivered. These common indicators of high-quality implementation include:

- A belief that low caseloads for each home visitor will improve outcomes
- Strong supervision of staff
- An ability to enroll a high proportion of families referred for service

- An ability to consistently deliver home visits to families enrolling in service
- Low staff turnover among home visitors and supervisors
- Expectations for sufficient service dosage

As noted in Chapter I (Table I.1), three of the models—Healthy Families America (HFA), Nurse-Family Partnership (NFP), and Parents as Teachers (PAT)—keep participants for several years, believing this is necessary to achieve attitudinal and behavioral changes. The other three models—Family Connections (FC), SafeCare, and Triple P—have a shorter service enrollment period tailored to the needs of individual families. These programs do not specify how many sessions a family needs to have a sufficient "dosage"; rather, they emphasize documenting that families have achieved mastery of the behaviors taught in a given module or articulated in the case plan. Some families may master these skills in two or three visits. Other families may take 12 visits to master them. Despite this variation in appropriate duration and dosage, the expectation for most of the models is that to make participant engagement easier, services are initially offered at least weekly.

The scope and intensity of service delivery reporting requirements vary across the national models (see Table III.2). Only NFP requires all affiliates to submit participant-level data (for example, after each home visit). HFA and PAT ask their replication sites to complete annual program reports that document aspects of program operations and include aggregate performance data. Both of these models collect more detailed performance information during their peer review and accreditation process, which occurs every three years. SafeCare has a detailed system for assessing the capacity of individual service providers to adhere to the model's core practice principles, as well as the extent to which program participants complete individual service modules and master the behaviors reflected in these modules. Although Triple P and FC do not require local sites to consistently provide ongoing data to the national office, both provide those replicating their programs with suggested assessment tools and performance expectations.

Finally, implementing these models with fidelity requires attention to the relationship between the participant and the home visitor, emphasizing how participants' needs are identified and addressed during the home visit. Although substantial variation exists across models in what is considered appropriate content for visits, all have guidelines regarding careful assessment of needs, as well as responsive and respectful practice. For example, NFP guidelines require the home visitors to use "professional knowledge and judgment and skill in applying program guidelines, individualizing them to the strengths and challenges of each family and apportioning time across

Table III.2 Data Reporting Requirements for the EBHV Grantee-Selected Program Models

EBHV Grantee-Selected Program Model	Data Reporting Requirements
Family Connections	Fidelity guidelines provided/no national data submission
Healthy Families America	Annual aggregate program report/accreditation every 3 years
Nurse-Family Partnership	Participant-level data collected on ongoing basis
Parents as Teachers	Annual aggregate program report/accreditation every 3 years[a]
SafeCare	Fidelity checklists provided/national data submission for new programs only
Triple P	Guidelines provided/no national data submission

Source: Written materials and group discussions with program model purveyors.

[a]The national Parents as Teachers office is establishing a web-based data system to track PAT performance indicators for its programs.

EBHV = evidence-based home visiting.defined program domains." SafeCare guidelines instruct the home visitors to "encourage the parent to ask questions and express concerns" and ask that the provider's demeanor communicate "empathy, warmth, and understanding." FC instructs providers to deliver "tailored, direct therapeutic services" to help clients reduce risks, strengthen protective factors, and achieve outcomes. PAT requires that parent educators "build and maintain rapport through interaction that is responsive to each family member's personal style." In short, each model places high value on creating a service context governed by mutual respect and individualized services.

Fidelity Indicators and Analytic Approach

In this section, we describe how we will select the sample of service delivery locations[8] for which we will collect fidelity data, the quantitative fidelity indicators, our methods for constructing key quantitative fidelity indicators, and the qualitative data on fidelity.

[8] A service delivery location is the site at which the EBHV program is delivered. If more than one EBHV model is delivered in one site, we will collect fidelity data separately for each model.

Sample

The fidelity indicators will be collected for all service delivery locations that the grantee has identified as the focus of the systems change activities during the grant initiative. For most grantees, only one or two service delivery locations are identified as part of the grant initiative; however, a few grantees, such as Illinois and New Jersey, have multiple service delivery locations. These grantees will sample service delivery locations in their state to identify a small number of locations for which fidelity data will be collected. There are approximately 40 service delivery locations, for which we will collect data in the first year, with potentially 20 more added during the grant initiative. We will collect fidelity data for all participants served at a location, whether or not the participant is part of the family and child outcomes evaluation sample.[9] The client referred for services—usually the caregiver of the child—will be the person for whom fidelity data are collected. The target child for the fidelity measures will be the youngest child in the family.

Fidelity Indicators

We derived a common set of program- and participant-level fidelity indicators for all program models. A common set of indicators will allow us to compare data across locations but also be useful to grantees in their own local evaluations. The set of indicators could not capture all critical elements articulated by the national models; however, the indicators have relevance across the models and include data the grantees will be tracking during their ongoing operation and local evaluations. Table III.3 lists the indicators we will be collecting and the frequency of collection. These indicators fall into five groups: (1) program-level descriptive data, (2) staff characteristics, (3) program-level service data, (4) participant characteristics, and (5) participant-level service data.[10]

1. ***Program-Level Descriptive Data.*** For each implementing agency, the grantees will provide descriptive information on the evidence-based program being implemented, including the number of home visitors and supervisors employed, the program's service capacity when fully enrolled, the date the program is certified by the national model, and its primary funding sources. These data will be entered into the web-based system at the onset of data collection and updated as information changes.

[9] Some grantees plan to select a subsample of EBHV program participants to participate in their family and child outcomes evaluation.

[10] The NFP National Service Office (NSO) has agreed to provide Mathematica-Chapin Hall with monthly participant-level data for the sites implementing NFP. The grantees implementing programs other than NFP will provide monthly participant-level data through a web-based system Mathematica-Chapin Hall has constructed for tracking program fidelity data. The web-based system is described in more detail in Chapter VII.

Table III.3 Ongoing Fidelity Data

Indicator	Frequency of Collection
Program-level Descriptive Data	
Program identification number[a]	Baseline
EBHV grantee-selected program model	Baseline
EBHV grantee-selected program model implementation status	Baseline[b]
Certification by national model developer	Baseline[b]
Program's service capacity	Baseline[b]
Primary funding sources	Baseline[b]
Staff Characteristics[b]	
Staff identification number[a]	Baseline
Race-Ethnicity	Baseline
Languages in which home visitors are fluent (for home visits)	Baseline
Gender	Baseline
Age category	Baseline
Date of hire	Baseline
Date of certification or completion of model-specific training	Baseline
Position (home visitor or supervisor or both)	Baseline
Full-time employment status	Baseline
Highest degree and field of study	Baseline
Prior experience in delivering home-based interventions	Baseline
Ever been a primary caretaker of a child	Baseline
Termination date (if applicable)	Monthly (as necessary)
Reason for termination	Monthly (as necessary)
Program-level Service Data	
Each home visitor's current caseload	Monthly
Each supervisor's current caseload of home visitors	Monthly
Average hours of one-to-one supervision provided each home visitor	Monthly
Participant Characteristics	
Participant identification number[a]	Baseline
Date of initial referral	Baseline
Referral source	Baseline
Relationship to target child	Baseline
Gender	Baseline
Race-Ethnicity	Baseline
Primary language	Baseline
Country of birth and time in U.S.	Baseline
Date of birth	Baseline
Marital status	Baseline
Employment status	Baseline
Whether parent is currently in school	Baseline
Highest grade or degree completed	Baseline
Estimated household income	Baseline
Receipt of public assistance	Baseline
Age at first birth	Baseline

Table III.3 (continued)

Indicator	Frequency of Collection
Number of live births	Baseline
Pregnancy status (number of weeks gestation or "enrolled at birth")	Baseline
Date of target child's birth	Baseline
Target child's gender	Baseline
Number of other children in household	Baseline
Participant-level Service Data	
Program identification number[a]	Visit by visit
Code/identification of participant's home visitor[a]	Visit by visit
Date of scheduled home visit	Visit by visit
Visit completed	Visit by visit
Duration of visit	Visit by visit
Location of visit	Visit by visit
Content of visit	Visit by visit
Percentage of planned content covered during visit	Visit by visit
WAI-Adapted participant score[c]	Periodically
WAI-Adapted home visitor score[c]	Periodically
Termination date	Monthly (as necessary)
Reason for termination (planned, moved, unable to locate, etc.)	Monthly (as necessary)
Date of last home visit	Monthly (as necessary)

[a]The identification number would be assigned by the Mathematica data manager.

[b]Updated as necessary.

[c]The WAI-Adapted questionnaires are modified versions of the client/therapist short form of the WAI for home visitors and their clients (WAI; Santos 2005 modifying Horvath 1994; Tracey and Kokotovic 1989).

EBHV = evidence-based home visiting; WAI = Working Alliance Inventory.

2. ***Staff Characteristics.*** Grantees will be asked to enter individual staff-level data into the web-based system for all home visitors and supervisors. These data include demographic characteristics; training, experience, and certification; and hiring and termination information.

3. ***Program-Level Service Data.*** On a monthly basis, program managers will be asked to compute and report indicators of caseloads and supervision from data available in their internal management information system and case records.

4. ***Participant Characteristics.*** These data will be entered into the web-based data system at participant intake. These data include demographic characteristics, including information on the youngest child in the household, participant referral date, and source.

5. ***Participant-Level Service Data.*** These data will be entered into the web-based data system at baseline and after every home visit, or as necessary. The participant-level data will include the participant's initial start and termination dates, and reason for termination. We will also collect information on the frequency, duration, and content of the home visits. We will collect a modified version of the Working Alliance Inventory (WAI) for both the participant and the home visitor (Horvath and Greenberg 1994; Horvath 1995), at two points during the participants' service receipt, for the subset of participants who are in the local evaluation family and child outcomes sample. These

relationship questionnaires measure the sense of collaboration and goal alignment between the home visitor and the participant.

Participant-Home Visitor Relationship Indicators. The perceptions of participant/home visitor relationship will be collected using modified versions of the WAI (WAI-Adapted) client and therapist short-form instruments (WAI; Horvath 1994; Santos 2005; Tracey and Kokotovic 1989). Because these data report the participant's perception of the home visitor and vice-versa, they must be completed by home visitors and participants and collected by a third party. Therefore, these data will be collected only on the sample of the participants who are also taking part in the family and child outcomes local evaluations. They will be used to supplement the broader range of fidelity measures. To assess the representativeness of the WAI-Adapted relationship data, the fidelity indicators and demographics described above about the WAI-Adapted respondents will be compared to the fidelity indicators and demographics of the sample not asked to complete the WAI-Adapted questionnaire.

While the modified WAI we will use captures one aspect of the relationship between the participant and the home visitor, the results cannot capture all dimensions of this relationship. Aspects of participants and home visitors that appear to be central to each model's philosophy include:

- A systematic assessment of participants' needs
- Individualized or responsive practice based on a family's assessed needs
- Participants' involvement in decision making and encouraging participants to ask questions and raise concerns
- Cultural relevance/sensitivity

Each national model has one or more criteria related to these concepts embedded within its data collection system or performance standards. We will look at participant satisfaction forms, which some grantees are using, when families terminate from the program. These forms include specific questions regarding participant engagement in decision making, the extent to which participants view services as being responsive and respectful of cultural differences, and the extent to which services address key participant needs. Furthermore, we will consider drawing on existing data to determine the proportion of cases in which staff judged that these concepts were adequately addressed. For NFP, Triple P, and SafeCare, in which these standards are routinely documented at the individual participant or home visitor level when services are provided, program staff will have a robust database on which to make these assessments. For HFA and PAT, this annual request would

correspond to the annual reporting requirements of these two national models and would reflect data included in both programs' practice guidelines.

Constructing Key Fidelity Indicators

We will construct key fidelity indicators, using the data described above. These will include indicators such as participants' dosage, duration of services, and reasons for service termination; home visitors' training, education, and experience, as well as their average caseload and reasons for termination among their caseload; and, for each location, the ratio of supervisors to home visitors and the ratio of clients served to program capacity. For each fidelity measure, we will present the indicator two ways: (1) the actual level of the indicator (for example, for the participant's dosage, we will calculate the number of home visits a participant received); and (2) whether the indicator met the model standards (using the example of participant dosage, we will determine whether the participant received the number of home visits required by the national model guidelines).

The fidelity indicators will be collected monthly; however, they will likely be aggregated up to a longer time frame, such as six months, to smooth out random monthly variation. We will aggregate the fidelity measures up to the service delivery location level to facilitate comparisons. For example, we will present the average participant dosage for each particular location. Finally, we will group these aggregate location-level measures by key subgroups, such as by grantee, program model, primary target population, or geographic area, to better understand the patterns of fidelity across locations.

Qualitative Fidelity Data

Additional information on program fidelity or quality will be obtained during the site visits by holding focus groups with supervisors and direct service providers to obtain their assessment of service quality and the consistency of supervisors' interactions with direct service staff. In the second site visit, we might collect additional fidelity data through two activities: (1) case record reviews to validate the information in the project-generated fidelity reports on enrollment rates, frequency of visits, and adherence to model standards; and (2) observations of home visits (or, perhaps, supervisory sessions). These data collection activities are described in more detail in Chapters VI and VII.

IV. DESIGN PLAN FOR ASSESSING COSTS OF HOME VISITING PROGRAMS

Given the critical need to use public resources efficiently, a key component of the cross-site evaluation will be to assess the costs of implementing the EBHV grantee-selected home visiting program models. The provision and management of home visiting services within service delivery location is the focus of the program cost domain. Specifically, the cross-site evaluation will work with grantees to assess the costs of delivering the program and of the essential infrastructure for supporting it, including training, supervision, and program management. These costs will reflect the full costs of the program and related support, beyond simple accounting costs, by including donated resources and volunteer time. In the cross-domain analyses, the Mathematica-Chapin Hall team will use the program cost data provided by the grantees through the web-based data system to explain and describe the context for the evaluation results in other domains.

In this chapter, we first provide an overview of the program costs we will examine and describe the key research questions for this domain. We then describe the cost measures and how we selected those measures, and provide a brief overview of the analytic approach.

Overview of Domain and Key Research Questions

To design a cost analysis, two questions must be addressed: (1) Who incurs the costs, and (2) What costs will be included? A key issue in undertaking cost analysis is determining the most appropriate perspective for the analysis (Corso and Lutzker 2006; Foster et al. 2003; Gold et al. 1996)—that is, whose costs will be examined. Typically, one of three perspectives is taken in a cost analysis: (1) the costs to those who fund the program, (2) the costs to those who operate the program, or (3) the costs to society of the program. The costs-to-funder perspective uses accounting or financial records to ascertain how money provided by a funder was spent on program-related activities. This perspective is useful to funding agencies in understanding how their funds are used to support programs. The second perspective, program costs, includes all the resources needed to deliver a program, including accounting costs and nonmonetary resources such as donations and volunteer time. This perspective is useful to organizations and sites interested in sustaining or replicating a program, because it provides program directors with information about the resources necessary to deliver essential program activities. The societal costs perspective includes all societal-level resources devoted to a program, including forgone opportunities, such as the value of clients' time spent participating in the program, usually measured as forgone wages. The societal costs

perspective is most useful for comparing the costs to society of disparate, publicly funded interventions. It requires making multiple assumptions about the value of time and resources.

The cross-site evaluation will use the program costs perspective. This perspective best reflects the priorities of the grantees and the aims of the cross-site evaluation. A primary goal of the grantees' projects is to support the implementation and sustainability of home visiting programs. Using the program costs perspective, grantees will have a full, consistent accounting of the costs of implementing a range of home visiting programs as part of this initiative. Using this perspective also allows the cross-site evaluation team to align the cost domain with the fidelity to the evidence-based model domain, which assesses the implementation of a specific home visiting program.

The second key issue in planning a cost study is identifying the program components to be included in the cost analysis. We will include the costs of the programs' core operations, which focus on delivery and management of services. To enhance the consistency and usefulness of the cross-site evaluation, we propose using the definition of core operations developed for the systems domain, which includes "direct home visiting services (such as outreach, assessment, referral, home visiting, case management, and other services) and daily management of those activities (hiring, training, supervision, fidelity monitoring, operations planning, data collection, and storage)" (Fixen et al. 2005). These operations include delivery of services, as well as infrastructure capacities essential to manage and deliver services, such as staff supervision, training, and monitoring of fidelity. We will also include the costs of materials, such as supplies and office space, which are necessary for carrying out core operations, as well as the costs of volunteer time and donations. We will not include grantee activities that are outside core operations, such as systems change activities.

Table IV.1 presents the cost domain research questions and an overview of the data collection modes and analytic approach we will use to answer each question. (Chapters VII and VIII present additional detail on the cost domain data collection and analytic approach.) The first question is the primary research question for the domain, as presented in Chapter I. The next four questions expand on the primary question, examining unit and program component costs, as well as factors associated with program costs. Chapter VIII includes the cross-domain research questions that relate to the cost domain.

Table IV.1 Cost Domain Research Questions, Data Collection Modes, and Analytic Approach

	Data Collection Mode		Analytic Approach	
Research Questions	Web-based Data System	Site Visit Interviews	Qualitative	Quantitative
What are the total costs of delivering and supporting the home visiting programs during a typical operating year?	X			X
What does each program cost per participating family?	X			X
How are costs allocated across key program components?	X	X		X
How do costs vary by key program features, such as program model, stage of implementation, and target population?	X			X
How do program costs vary by context, such as region of the country, urban/rural location, or political and economic factors?	X	X	X	X

Cost Measures and Analytic Approach

The plan for the cost domain analysis is based on three goals: (1) measure "steady-state" costs that best reflect the level of resources needed to operate ongoing programs; (2) collect costs from providers of all core operations, including direct services and essential infrastructure; and (3) break costs down into commonly defined program components to make it easier to compare programs. To achieve these goals, we will use a two-step approach: (1) build up an estimate of aggregate program costs, and (2) assign the costs to program components (Thompson 1998). This section discusses the primary data elements we plan to collect and analyze, as well as the plans for collecting these data.

Aggregate Program Costs

Aggregate program costs (total resources used in operating the program) will be assessed by collecting detailed information about each grantee's expenditures. We will examine the full range of costs associated with delivering services and operating the program—including all financial costs, such as salaries and benefits, program overhead, and purchases—as well as the value of volunteer labor and in-kind resources associated with delivering services, and the accounting costs or value of essential infrastructure supporting program delivery.

Grantees will be able to enter the total program cost data into the web-based system, described in more detail in Chapter VII. A list of the measures we will collect via the web-based system is provided in Volume II of this report. Collection of accurate, consistent cost data depends on clear, detailed definitions of what should be included. Therefore, we will work with the grantees to construct clear, detailed written instructions for the cost data collection. We will also provide technical assistance to sites during the collection of aggregate program costs to ensure consistent reporting across grantees. This will help grantees assign costs to categories, such as volunteer time or donated services.

The cross-site evaluation team will collect total aggregate program costs for calendar year 2011, when the programs should be fully operational but not yet winding down, and will ideally have stable program services, staffing, and a regular flow of clients into and out of the program. Grantees will provide cost data for the same service delivery locations as for the fidelity domain, described in Chapter III, to allow for analyses across domains. Grantees with only a small number of service delivery locations will provide program costs for all locations. Grantees with many service delivery locations, such as Illinois and New Jersey, have proposed a sampling strategy to identify the service delivery locations that will provide both fidelity data and program costs. We will collect program costs by service delivery location. If grantees are working with more than one program model in one location, we will work closely with those grantees to obtain the information separately by model to correspond to the fidelity data. If their financial records do not allow for this separation, we will collect the combined program costs for that location. We expect this to be a rare occurrence, as most grantees are providing services for different program models in distinct locations.

Program Component Costs

Once we have total program costs, they can be disaggregated into program component costs, which can be useful to various constituencies. Comparing program component costs allows for more detailed comparisons across alternative program approaches. Knowing component costs will be useful to program administrators who may be operating or planning similar programs, as well as to the EBHV grantees themselves. Finally, having the program component costs will also help the evaluation team understand those factors that contribute the most to program costs. Table IV.2 provides the definitions of each program component required for the analysis of program costs.

Table IV.2 Description of Essential Program Components and Infrastructure Capacities

Essential Program Components and Infrastructure Capacities	Description
Training and Supervision	Time spent in training, supervision, and case consultation in support of delivering home visiting services
Program Management and Administration	Time spent in program management and administration (such as hiring staff, budget planning and monitoring, managing/negotiating contracts, state and local collaboration/meetings)
Home Visit Preparation, Delivery, and Followup	Time spent planning and delivering direct services to children and families
Case Management and Service Referral/Linkage	Time spent arranging/coordinating services on behalf of the children and families; case management
Fidelity Monitoring	Monitoring fidelity to the EBHV grantee-selected program model
Outreach and Recruitment	Outreach to local agencies/groups/providers; referrals from partner organizations
Screening and Assessment	Screening and assessing participants for the home visiting program
Evaluation Activities	Setting up systems for data collection, compilation, and analysis
Materials and Rent	Rent for office space, office supplies, and equipment; costs of communication services

EBHV = evidence-based home visiting.

Personnel time is usually the largest component of program costs. Therefore, the allocation of program costs to program components is based primarily on determining the amount of personnel time devoted to each element of core operations. Using consistent definitions of the program components across grantees is essential for correctly categorizing activities and ensuring the validity of the costs data across program components. The Mathematica-Chapin Hall cross-site evaluation team, in conjunction with the grantees, are working to further refine common program components and definitions. This process began through the PLN costs domain calls. We will provide grantees with our proposed definition of program components early in the first year of program services (fall 2009), with the idea that we will be flexible about grantees' feedback on the program components, based on what it is feasible to collect.

Program component costs will be allocated based on retrospective data.[11] To collect these data, we will ask supervisors, and administrators and managers, as appropriate, about the allocation of personnel time spent on program components, including key program activities and essential infrastructure. Program directors and other key staff with knowledge of staff time spent on core operations, such as supervisors, will be asked to complete the web-based system cost data collection in early 2012. Mathematica staff members will be available to provide technical assistance on definitions of the program components and collection of the costs data. During the spring 2012 site visit, we will do additional in-person quality reviews and request any clarifications needed about the data submitted by the grantees.

Analytic Approach

Our analytic approach is consistent with the data collection strategy: first, build up an estimate of aggregate program costs; second, assign the costs to program components. To determine the total program costs, we will sum the financial information provided by the grantees for 2011 (based on the calendar year). By applying this approach, the cost analysis will provide an estimate of the total costs of the home visiting program during a steady state of operation.

After we develop the aggregate program cost estimates, we will standardize the total cost estimates by converting them into costs per participating family. Calculating these unit costs will allow fairer comparisons across alternative programs. Using information on the number of families served, we will estimate the average total program cost per participating family. In this analysis, we will use several definitions of families served, such as the number of families enrolled in the program in that year and the number of families who completed the program in that year. Furthermore, we will examine whether the caseload of the home visiting program is related to the average cost per family, because programs that serve many families may benefit from economies of scale.

As described above, information collected from key staff will allow us to allocate total program costs across program components. First, we will estimate the proportion of personnel resources dedicated to each program component. Materials and resources will be allocated in the same

[11] A key strength of the retrospective approach is that it is less burdensome, and the interviewer can guide staff to a consistent definition of the program components. The weakness is that retrospective data could suffer from recall error. Studies suggest that retrospective reporting of typical work hours is similar to collecting data through time diaries, if the reference periods for data collection are the same across methods (Frazis and Stewart 2004).

proportions as personnel costs. If appropriate, we will estimate the average cost per family of key program components.

We will group programs according to characteristics that might be associated with their costs, such as program model, time since implementation, geographic region, or urban/rural locale, to determine whether costs vary by those factors. Through the implementation study, we will identify contextual factors that could influence program costs, such as major economic or political developments, or even natural disasters. Finally, we will examine relationships between program costs and key systems change outcomes, such as scale-up and sustainability, as outlined in Chapter II and described in more detail in Chapter VIII, in the section on the cross-domain analyses.

V. DESIGN PLAN FOR ASSESSING FAMILY AND CHILD OUTCOMES

While the primary goal of the EBHV grant program is to build sustainable infrastructure and learn about effective program implementation of the EBHV grantee-selected programs, the goal of home visiting programs is to improve family and child well-being and reduce rates of child maltreatment. To address this, the cross-site evaluation will examine the impact of home visiting programs on families and children by systematically assessing the grantees' evaluations of the effectiveness of their selected home visiting programs.

In this chapter, we provide an overview of the family and child outcomes evaluation design and describe the key research questions. We then describe the cross-site recommended measures, the process for selecting those measures, and the analytic approach (the latter is described in more detail in Chapter VIII).

Overview of Domain and Key Research Questions

The Mathematica-Chapin Hall evaluation approach in the family and child domain is quite different from that in the other domains. The primary evaluation goal for the other domains is to systematically describe what happened within those domains during the grant initiative. For the family and child domain, the primary goal is to assess whether the home visiting programs implemented by the grantees in selected local communities affected the outcomes of families and children. The analyses of the EBHV grantee-selected program impacts will occur once, at the end of the national evaluation.

After the grantees have completed their 17 individual, local impact evaluations of the EBHV grantee-selected programs, the cross-site evaluation team will systematically review the results of these evaluations. The systematic review will build on the local evaluation findings by both appraising and synthesizing their results. In the systematic review, we will determine the level of causal evidence about the effectiveness of the EBHV grantee-selected programs based on the research design and implementation. We will also describe the magnitude and statistical significance of the findings. The systematic review method is a useful way to summarize the results of the 17 evaluations; it is also highly flexible and supports the diversity in grantee program implementation and goals.

A key strength of a systematic review for the cross-site evaluation is that it does not require alignment of the outcome measures across all 17 grantee evaluations. Thus, for the systematic

review, it is not necessary for each evaluation to use the same family and child outcome measures or assess them at the same time (for example, based on child age or time since enrollment). While aligning the measures supports the potential for future cross-grantee analyses, both for this evaluation and for the users of the research data set required under the Mathematica-Chapin Hall contract, mandating one set of measures and data collection points would be prohibitive within the context of the cross-site national evaluation. Grantees are supporting the implementation of multiple home visiting programs, targeting different population groups, and pursuing a variety of evaluation designs. Most relevant for the family and child domain, the EBHV grantee-selected program models target children of different ages, ranging from prenatal through 16 years, and serve families for different lengths of time. As described in Table II.3, 12 of the 17 grantees plan to implement the Nurse-Family Partnership (NFP) model, which targets expectant first-time parents and provides home visits through age 2. Most of the other models target families with children from birth through age 5. One grantee is implementing Triple P, which can include families with children up to 18 years old, though this grantee is planning to enroll families with children up to age 16.

We have strongly encouraged grantees to use a recommended set of constructs, specific measures, and data collection points that resulted from extensive discussions with grantees. However, we recognize that grantees and their local evaluators have different goals and constraints. The systematic review allows the cross-site evaluation to summarize local evaluation results, regardless of how and when the outcomes are measured, affording grantees flexibility in their evaluation designs. At the same time, the systematic review will provide CB/ACF and policymakers with useful information about how effective investments in "real-world" home visiting programs are in producing positive outcomes for parents and children.

Based on the CB's vision and overall goals for the initiative, reviews of the grantee proposals, additional information obtained during the grantee kickoff meeting, and the PLN domain calls, the cross-site evaluation team identified three overarching family and child outcomes goals for CB's EBHV grant initiative:

1. Understand how the grantees' infrastructure investments may affect family and child outcomes—specifically, rates of child maltreatment
2. Understand variations in effects across the different populations (family risk level, age of child, linguistic/cultural family background) that grantees targeted
3. Document how implementation issues may affect progress toward achieving family and child outcomes

Building on these goals, we identified specific research questions for the family and child outcomes domain. Table V.1 presents the family and child outcomes domain research questions. The first bolded question is the primary research question for the domain, as presented in Chapter I. The second bolded question expands on the primary question, examining how effects vary across populations and program models. For each key research question, we present the subquestions we will use to evaluate the research question, as well as an overview of the data collection modes and analytic approach we will use to answer each question. The process domain will also examine how the grantees identified their intended outcomes and/or adjusted their perspective as the initiative matured. Chapters VII and VIII present additional detail on the data collection and analyses for the family and child outcomes domain. Chapter VIII also includes the cross-domain research questions that employ family and child outcomes data.

Table V.1 Family and Child Outcomes Domain Research Questions, Data Collection Mode, and Analytic Approach

	Data Collection Mode	Analytic Approach
Research Questions	Local Evaluation Reports	Systematic Review of Evidence
Do home visiting programs improve parent and child outcomes when programs are implemented in the "real world" and supported by investments in infrastructure?		
Do home visiting programs decrease rates of child maltreatment?	X	X
Are home visiting programs associated with improvements in parent and child health and well-being?	X	X
How do effects vary across different target populations and across program models?		
Do subgroups of the target population experience differential effects of the investments in supports for evidence-based home visiting programs?	X	X
Do effects vary by the program model that grantees implement?	X	X

Family and Child Measures and Analytic Approach

We factored in many considerations when recommending the final measures for the cross-site evaluation. In addition to the preferences and goals of the grantees and the PLN family and child outcomes group, we considered:

- Assessment of constructs potentially influenced by home visiting programs
- Demonstrated sensitivity to similar interventions
- Successful use in other large-scale research
- Appropriateness for families and children from different cultural, racial, ethnic, and linguistic backgrounds (for example, availability in Spanish), as well as across different age groups
- Costs of measures (for purchasing and using copyrighted measures), training required for collecting high-quality data, and time and frequency required for data collection
- Reliability and validity of the measures in general and for Spanish speakers in particular

The cross-site evaluation is designed to assess family and child outcomes in seven measurement domains: (1) parent health, (2) parent mental health, (3) parenting, (4) child physical health/nutrition, (5) overall child development/functioning, (6) child social-emotional development, and (7) child maltreatment/agency action.

Across the grantees, considerable variation exists in the measures they will collect. The PLN family and child outcomes group encouraged grantees to include measures in each of the seven high-priority domains and, if possible, the recommended constructs. Variations across grantees in their measurement approach are driven by the specific model they are implementing, the ages of the children in their study, and the level at which they are working (grantees working only at the systems level focus on aggregate-level outcomes, such as the rates of maltreatment in a county or state).

Eight of the 17 grantees are assessing all the constructs recommended by the cross-site evaluation team; 2 of the 8 are planning to use all the recommended measures and are completely aligned with the cross-site evaluation plan. The remaining nine grantees have excluded at least one of the recommended constructs from their evaluation plans. Of the nine, three are relying on the NFP Clinical Information System database as their primary source for family and child outcome measures. (Chapter VII provides more information about the Clinical Information System.)

Grantees proposed alternative measures for 4 of the 7 recommended family and child outcome constructs, with 11 unique measures proposed as alternatives to the recommended cross-site measures. The cross-site evaluation team reviewed each of the proposed measures and provided feedback to the grantees on which measures met the reliability and validity standards most

psychometricians use to establish minimum thresholds for inclusion in research.[12] Eight of the alternative measures proposed have been approved for use based on their psychometric properties. There are also 21 supplemental measures that met the same reliability and validity standards, which grantees will collect in addition to the recommended cross-site measures. Appendix A contains a list of the approved additional/supplemental outcomes that some of the grantees are collecting.

Below, we list the domains, the recommended constructs within them, and the specific measures recommended for each. Volume II presents the cross-site measures at the item level.

Outcome Domains, Constructs, and Measures

In this section, we describe the overarching measurement domains, constructs, and specific measures, as well as the rationale for including them in the cross-site evaluation. Unless otherwise noted, the recommended outcome measures described below are available in both English and Spanish and meet the reliability and validity standards used in the field of psychology described in the footnote below.[1] The measures have a demonstrated history of success in studies that included parents and children from diverse backgrounds (education, race/ethnicity, age, culture, and economic status). Members of the cross-site evaluation team recently completed measures reviews for two large national evaluations: (1) the Early Head Start Family and Child Experiences Survey (Baby FACES); and (2) the Head Start Family and Child Experiences Survey. The cross-site evaluation recommendations in this section draw on the work conducted for those studies, as well as on reviews of the measures used in other large-scale research/evaluation projects: the National Survey of Child and Adolescent Well-Being (NSCAW II), Building Strong Families (BSF), the Early Head Start Research and Evaluation Project (EHSREP), the Fragile Families and Child Wellbeing Study, and the Early Childhood Longitudinal Surveys, Birth and Kindergarten Cohorts (ECLS-B and ECLS-K).

Parent Health. In this domain, there are a number of constructs on which the home visiting program models selected by the grantees focus. For example, for NFP, a key thrust of the prenatal

[12] For example, internal consistency reliability must be at least .70. Test-retest reliability over a short period of time (less than two weeks) must be at least .85. Kisker et al. (2003) described commonly used heuristics/thresholds for assessing the psychometric properties of outcome measures. In addition, Kisker et al. profiled more than 40 measures, including many of those that we considered for this evaluation and were candidates for sites to select from to increase alignment across the local evaluations.

home visits is to reduce risky health behaviors and increase the use of prenatal health care services that may affect the development of the baby. According to all the models and most of the PLN members participating in the family and child outcomes planning, the construct of substance use (specifically, reducing the incidence of alcohol and drug use during pregnancy and reducing the abuse of substances overall) is an outcome of importance in its own right. In addition, it is a risk factor for child maltreatment (Duggan et al. 2004). One concern about this domain and self-reports by parents is underreporting. Evidence exists that respondents report more instances of substance abuse when questions are administered by more private computer-assisted methods than by another person (Feigelson and Dwight 2000). However, the cost of computer-assisted administration may be prohibitive for grantees. In addition, we would not expect the privacy concerns to affect reporting differently for parents in treatment and control groups in a local evaluation using an experimental design.

The two cross-site measures include short parent self-report instruments that some of the local evaluators have used successfully and that have been used in large-scale research projects (Maisto et al. 1995; Bradley et al. 1998; Teitelbaum and Mullen 2000). The Alcohol Use Disorders Identification Test (AUDIT; Babor et al. 2001) identifies excessive drinking behaviors that can be classified as hazardous or risky. The AUDIT self-report questionnaire includes 10 questions that ask respondents to indicate the frequency of drinking behaviors. The AUDIT has been found to be the most appropriate for use with diverse populations, particularly for identifying early-stage indicators of alcohol misuse (Dawe et al. 2002). The Drug Abuse Screening Test (DAST; Selzer 1971; Gavin et al. 1989) asks respondents to report on 20 items. The DAST assesses drug-related problems in areas that include drug-related impairment affecting daily living and relationships and other problems caused by drug use, such as incarceration. Respondents report whether each item is a "yes" or a "no" for a given behavior or experience. The DAST has sound psychometric and predictive properties (Shields et al. 2007; Yudko et al. 2007).

Parent Mental Health. In this domain, most program models the EBHV grantees will implement focus on three risk factors for child maltreatment: parent depression, stress, and anxiety. Because depression, stress, and anxiety are often highly intercorrelated (Wolfe 2004), we will include only one of these measures as part of the cross-site evaluation. We chose client depression because there is a well-established short-form instrument with good psychometric properties that has been widely used. The Center for Epidemiological Studies Depression 12-item Short Form (CES-D) (Radloff 1977; Ross and Mirowsky 1984; Ross et al. 1983) is a screening tool used to identify

symptoms of depression or psychological distress. The 12-item short form of this self-administered questionnaire takes fewer than 10 minutes to complete. It has been used in many large-scale research projects (the EHSREP as well as FACES, ECLS-K, and ECLS-B). Respondents are asked to rate how often each of the items applied to them in the past week, on a 4-point scale from "Rarely or none of the time" (score of 0) to "Most or all of the time" (score of 3). The scale is best used as an indicator of depressive symptoms rather than a means to diagnose a clinical case. Its strengths include that it is simple to administer and score, and there are no costs associated with using it.

Parenting. Each of the home visiting program models views parenting and the parent-child relationship as the pathway to obtaining improved child outcomes. Parenting encompasses a range of constructs that broadly includes parenting attitudes, parent knowledge of children's development, approaches to guidance and discipline, supports for children's learning, and the quality of the parent-child relationship. Parenting is challenging to measure because parent reports about psychological constructs such as the quality of the parent-child relationship are not adequate, and the alternatives (live or videotaped coding of parent-child interactions) are costly to train research staff to collect and to code. Therefore, for the cross-site evaluation, we are focusing on parenting practices. We will include two questions about spanking: (1) whether the parent spanked the child in the past week; and (2) if yes, how often. Parental spanking is predictive of later child well-being and there are demonstrated positive impacts of similar interventions on spanking (Administration for Children and Families 2002).

Child Physical Health/Nutrition. The home visiting program models also address a range of child health and nutrition constructs, from overall physical health, birth outcomes (pre-term births and birth weight) and breastfeeding, to injuries and immunizations. The cross-site evaluation includes injuries and emergency room visits because they are proxies for child abuse. In addition, given the health prevention and promotion focus of many of the program models, immunizations provide a reasonable indicator of these types of behaviors. Parent self-report items on these topics have been used extensively in large-scale research projects and have demonstrated intervention effects and acceptable properties.

Overall Child Development/Functioning. Many of the home visiting program models are designed to support children's overall development[13] and prevent developmental delays. Some of them focus on this directly, and others expect indirect effects through referrals for additional assessment and to early intervention service providers. In this domain, the cross-site includes a screening assessment—the Ages and Stages Questionnaires, 3rd Edition (ASQ-3; Bricker et al. 1999; Squires et al. 2009) that addresses a range of child development areas, including communication, motor skills, and social interaction. Grantees were also offered the option of using the Denver Developmental Screening Test II (Frankenburg et al. 1996), but none included it in their implementation plans. It is not discussed further. The cross-site evaluation did not propose a child development measure appropriate for use with children 6 years old or older. This seemed appropriate given the focus of the program models grantees are using with families—the models that can be used with older children tend to focus mainly on the safety of the home environment and on child maltreatment outcomes.

The ASQ-3 are parent-report questionnaires appropriate for parents of children between 1 and 66 months of age. This series of 20 questionnaires with 30 developmental items in each questionnaire is used to screen infants and young children for developmental delays. The questionnaires focus on assessment of five key developmental areas: (1) communication, (2) gross motor, (3) fine motor, (4) personal-social, and (5) problem solving. Items in the problem-solving domain assess attention, memory, reasoning, academic skills, and perception. Parents are asked to respond on a frequency Likert scale to questions such as "If you give your child a bottle, spoon, or pencil upside down, does he turn it right side up so that he can use it properly?" Each questionnaire takes 10 to 15 minutes to complete and approximately 3 minutes to score. Questionnaires are written at a sixth-grade reading level. The ASQ-3 has demonstrated reliability, validity, and accuracy in discriminating children with and without developmental delays. Baby FACES (a study of nationally representative Early Head Start programs) conducted the ASQ-3 by telephone with

[13] Many developmental psychologists ascribe to a comprehensive view of child development and well-being that includes dimensions of development similar to those viewed as central to school readiness: cognitive development, language development, social-emotional development, approaches to learning, and physical development (Kagan et al. 1995; Love 1999; Love et al. 1994). In identifying the cross-site domains, constructs, and measures, the cross-site evaluation team brought together information about important EBHV outcomes from many sources, including the grantees' own proposals and the outcomes targeted by the EBHV program models. This led us to group and refer to outcomes in a somewhat different way than is typical in studies of other aspects of child development, such as school readiness.

parents when children were 12 months old, which may also be an option for local evaluators to consider if in-home interviewing is too costly.

Child Social-Emotional Development. The home visiting program models generally focus on supporting parents in their interactions with their children. The goal in this area is to reduce behavior problems by supporting the development of healthy social-emotional behavior and positive interactions between children and adults, and children and their peers. In this area, we will assess children's behavior problems. This is a common area of assessment in the social-emotional domain, given that early behavior problems are often associated with later behavioral issues and poor outcomes for children (Achenbach and Rescorla 2000). In this area, grantees were encouraged to select one of three measures: (1) the Brief Infant Toddler Social Emotional Assessment (BITSEA; Briggs-Gowan and Carter 2005); (2) the Achenbach System of Empirically Based Assessment (ASEBA) Child Behavior Checklists (CBCLs) (Achenbach and Rescorla 2000, 2001); or (3) the Behavior Problems Index (BPI) (Peterson and Zill 1986). For grantees working with children 3 years old and younger, the BITSEA provides an assessment of positive behaviors in addition to problem behaviors. As described below, these measures provide full coverage of the age range of children grantees have targeted to enroll in their home visiting programs. No grantees selected the BPI so we do not discuss that measure further.

The BITSEA is the screener version of the longer ITSEA. Both are designed to detect emerging social and emotional competence, as well as social-emotional and behavior problems and delays in the acquisition of competencies in children 12 to 36 months old. BITSEA scales assess externalizing (activity, aggression), internalizing (inhibition, separation, depression), dysregulation (sleeping, eating), maladaptive habits, fears, and competence (attention, compliance). The BITSEA is a 42-item parent and caregiver report that takes approximately 7 to 10 minutes to complete. The scale focuses on the development of competencies (for example, hugs or feeds dolls or stuffed animals), as well as problem behaviors (for example, avoids physical contact). Respondents are asked to rate each item as "not true/rarely," "somewhat true/sometimes," or "very true/often." Reliability and validity are both in acceptable ranges. The BITSEA was normed on a sample that was not nationally representative: the sample excluded children who, at birth, were expected to have severe developmental delays and excluded parents who could not speak English. Strengths of the BITSEA include that it is available in English and Spanish and that it can be administered both to parents and to primary caregivers.

The CBCL uses information collected from parents to assess the behavioral, emotional, and social functioning (including language development) of children. The Preschool Forms assess children between the ages of 1.5 and 5 years, and the School-Age Forms assess children between the ages of 6 and 18 years. The CBCL consists of a self-administered parent report on a 99-item child behavior checklist. Parents rate their child for how true each item is now or within the past 6 months using the following scale: 0 = not true; 1 = somewhat or sometimes true; 2 = very true or often true. The 99 items in the preschool CBCL are organized into two broad groupings of seven syndromes. The internalizing grouping includes subscales that assess whether the child is emotionally reactive, anxious/depressive, withdrawn, or has somatic complaints. The externalizing grouping includes subscales that assess whether the child has attention problems or exhibits aggressive behavior. A third set of items in the preschool version assess whether the child has sleep problems. The items are also organized into five Diagnostic and Statistical Manual of Mental Disorders (DSM)-oriented scales (American Psychiatric Association 2000). Scales are based on ratings of 1,728 children and are normed on a national sample of 700 children.

For the CBCL School-Age Form checklist (CBCL/6-18), parents provide information for 20 competence areas covering their child's activities, social relations, and school performance. The CBCL/6-18 has 113 items that describe specific behavioral and emotional problems, plus 2 open-ended items for reporting additional problems. The items are also organized into six DSM-oriented scales. The scales are based on factor analyses of parents' ratings of 4,994 clinically referred children, and were normed on 1,753 children ages 6 to 18. The normative sample represented the 48 contiguous states for socioeconomic status, ethnicity, region, and urban-suburban-rural residence. Children were excluded from the normative sample if they had been referred for mental health or special education services in the past year. The main drawback to the CBCL is that it is very long, and the publishers prefer that all the subscales be administered. In addition, some researchers report that parents find the questions too focused on negative behavior.

Child Maltreatment/Agency Action. The specific constructs proposed in this domain include the number of child abuse/neglect reports (both substantiated and unsubstantiated), involvement in the child welfare system, and the number of foster care placements. Many published findings demonstrate that maltreatment rates have been affected by some of the specific home visiting models the EBHV grantees are using and by other similar types of interventions (for example, Appleyard and Berlin 2007; Berlin et al. 2008; Daro 2006; Prinz et al. 2009; Wolfe 2004). The child maltreatment data will be collected from administrative records obtained by local

evaluators using a common set of definitions developed by the cross-site evaluation team in collaboration with the PLN members who have experience working with these data.

The grantee representatives and local evaluators who participated in discussions about the family and child outcomes domain have discussed whether the number of reports or the number of substantiated reports (those verified after an administrative inquiry) is a more appropriate measure. When comparing long-term outcomes and developmental challenges for the children with a report of child abuse during a given period with children who have had a substantiated report of child abuse during the same period, there is little difference (Daro 2009). However, there are advantages and disadvantages associated with each measure. The advantage of focusing on reported cases is that the number of reports is larger than the number substantiated and is considered by many to be a more sensitive predictor of how children in intervention programs are doing. The disadvantage is that the administrative data quality on "reports only" may not be as good as for the substantiated cases. Substantiated cases may constitute a more accurate measure of child maltreatment because a legal standard for maltreatment has been met in the case. However, there are state differences in procedures and criterion for substantiation. For example, some states define abuse incidents less strictly than others, which may lead to different rates of investigation. Similarly, local norms may affect whether members of the public or professionals report suspicions of child abuse and neglect. We will address these limitations by collecting both reported and substantiated cases, and by focusing the systematic review of evidence at the grantee level rather than across all grantees. The local definitions reflect the experiences of families and children in the context in which they live and thus are the outcomes of interest for this grantee cluster as defined by CB/ACF. This will potentially limit the ability to conduct analyses across subgroups for the child maltreatment outcomes.

Recommended Periodicity of Data Collection and Information Submission Requirements to Support the Cross-Site Design

For the systematic review of evidence, it is not necessary, but it is desirable, to align the data collection schedule across grantees as much as possible. Collecting the data on a similar schedule will produce benefits for the study and enhance the utility of the resulting data for subsequent analysis by the local evaluators or other researchers who might access the data through the national data archive (National Data Archive on Child Abuse and Neglect [NDACAN]). Benefits include:

- Enhancing the possibility of collaboration in research efforts among grantees and analyses of subgroups across grantees (for example, coding the quality of parent-child interactions conducted at age 1; analyzing family demographic subgroups of interest across grantees)

- Aligning the timing of the TA/training the cross-site evaluation team provides in support of collecting a given measure

The recommended timing of family and child outcomes assessment will vary by measure, but generally the minimum recommended collection schedule is at baseline and at program exit. Ideally, grantees would also collect outcomes data at the midpoint of the program model implementation (this may not be necessary for the shorter interventions), at program exit, and, if possible, 12 months after families are expected to leave the program. We also recommend that all sites include permission for obtaining child maltreatment data through county/state records beyond the life of the current study as part of their consent process.

Ensuring Data Quality

To strengthen the local evaluations' family and child outcomes results and the utility of the final data file that will be prepared as a restricted-use file for NDACAN (see Chapter IX), the Mathematica-Chapin Hall team has undertaken and planned several technical assistance activities. First, in their draft implementation plans, we asked grantees to provide information about their required sample sizes to detect effects, sample recruitment, response rates, and other information about the major milestones in the project that will affect the soundness of the evaluation design. Both during and after writing the draft plans, grantee liaisons, other Mathematica-Chapin Hall staff, and CB/ACF provided technical assistance to grantees to support them in making sure their designs are as strong as possible. To continue that effort, grantees will be asked to submit a summary of their local evaluation status during key points in their data collection so that Mathematica-Chapin Hall staff can help them review indicators of evaluation quality and adjust recruitment or data collection strategies as necessary. We will ask the sites to provide:

- Study sample and design information (the number of parents and children targeted for recruitment, the number recruited with and without consent, the number assigned to participate, the number of people participating, and the total number of home visitors)
- Information about family and child data (for each cross-site and key local outcome construct, the measure used, the number of parents/children with whom collection of each measure was attempted and completed, the number of measures with substantial missing data, and the oldest and youngest age children on which the measure was used)[14]

[14] At the end of the evaluation, for all scales (including the Adapted Working Alliance Inventory), we will also ask grantees to provide the internal consistency reliability, as measured by Cronbach's alpha, for each measure, and separately for English and Spanish versions of the instruments.

- Home visit relationship data (the number of participants and staff who were identified for participation in the study, attempted, and completed the Adapted Working Alliance Inventory at each time point, and the number with substantial missing data)

The cross-site evaluation technical assistance team will work with the local evaluators and grantees to support the initial and ongoing training required to collect the cross-site evaluation data. We will do this using a number of proven strategies learned over many years of experience conducting similar research projects. We will provide detailed training manuals with question-by-question explanations of the items and how to score them. As needed, we will conduct training webinars using a training-of-trainers model. Ideally, local evaluators will only select parent report measures in the recommended cross-site evaluation domains. This will greatly reduce the local evaluation data collection burden. We will work with local evaluators to certify a small number of trainers per site (one is preferred but possibly two if a backup is needed) to collect the parent questionnaire/interview data. After the local trainer is certified, he or she will train the data collectors at the site and report to the cross-site team about whether a data collector met the certification criteria. No data collector should be permitted to collect cross-site evaluation data without being certified. We will work with the local evaluators to ensure that data are reviewed for completeness and quality before they are provided to the cross-site team for inclusion in the data set that will be archived at NDACAN.

Within the constraints of the cross-site evaluation resources, we will also provide additional technical assistance, including on local measures not part of the cross-site evaluation (for example, by providing data collection and coding manuals from large-scale research projects that included measures local evaluators are using). The cross-site evaluation team will also provide technical assistance on family and child outcomes data analysis plans to help grantees conduct analyses and sensitivity tests on topics such as calculating minimum detectable effects and weighting for nonresponse.

Systematic Review of Evidence

To understand whether home visiting programs affect families and children, the cross-site evaluation will undertake a systematic review of evidence of effectiveness of the programs as implemented in grantees' local communities. The systematic review will assess whether home visiting programs supported by the grantees affect the outcomes of families and children. Each grantee will measure family and child outcomes for the common constructs described above, although the number and specific measures may vary by grantee. In addition, grantees will include

other outcomes in their analysis of initiative outcomes, which will also be within the purview of the systematic review of evidence.

At the end of the local evaluations, the cross-site evaluation team will review evaluation designs to determine each local study's level of evidence. Each grantee's evaluation will be categorized into one of three evidence groups: (1) strong evidence about effectiveness, (2) moderate evidence about effectiveness, and (3) exploratory evidence about effectiveness. The level of evidence will be based on the quality of the outcome measures, the rigorousness of the evaluation design, and the implementation of the design. The strong evidence about effectiveness group includes studies with the most rigorous study designs, specifically well-implemented randomized controlled trials. The moderate evidence about effectiveness group includes studies with strong, but somewhat less rigorous, designs, such as quasi-experimental designs with comparable comparison groups. The exploratory evidence of effectiveness group includes studies that do not meet the standards of the strong or moderate evidence groups, such as pre-post studies, which include no comparison group, or studies that use only outcome measures that do not meet the cross-site evaluation's required levels of reliability and validity. Exploratory studies can provide information about whether the results are consistent with the study hypotheses, which provides important information for future research; however, they cannot provide causal evidence about the links between supporting home visiting programs and family and child outcomes. For the specific criteria used to evaluate these methodological considerations, we reviewed the latest methodological developments in this area, surveying the U.S. Department of Education's What Works Clearinghouse, the Campbell Collaboration, and a review of other systematic review methods. The systematic review of evidence is described in more detail in Chapter VIII.

VI. DESIGN PLAN FOR THE PROCESS STUDY

The cross-site evaluation's process study will focus on the implementation of the entire EBHV grant initiative. The process study serves three purposes for the cross-site evaluation. First, it will provide information at points in time about the context in which each grantee operates, as well as how this context influences the grantee's progress and results in each evaluation domain. Second, it will inform the cross-site evaluation by focusing on how and why grantees implemented key grant activities, including the home visiting programs grantees selected. Third, it will document factors that facilitated the implementation of key activities within the grant initiative, challenges and barriers encountered in the implementation of these activities, how grantees responded to emerging concerns, and how the concerns affected their plans and activities.

Overview of Domain and Key Research Questions

The scope of this cross-site evaluation domain is broader than the other four evaluation domains because it is designed to inform our understanding of the EBHV grant initiative as a whole. The process study will look beyond grantees' efforts to support implementation of home visiting programs by also looking at how grantees participated in activities associated with the grant initiative, such as their involvement in the cross-site evaluation and their receipt and use of technical assistance. It will also collect point-in-time contextual information that will complement the other evaluation domains. The process study will use a case study approach that examines the 17 grantees funded through the initiative, mainly through information gathered as part of site visits to grantees in 2010 and 2012 (Creswell 1998).

The process study comprises eight overarching research questions that provide context for the other four evaluation domains. The questions are cross-cutting, in that the information gathered will be relevant to the general understanding of how grantees implemented this initiative. Table VI.1 provides the key research questions, as well as a detailed list of subtopics for each process study research question. It also identifies the respondents who will inform each subtopic.

Table VI.1 Process Study Research Questions, Subtopics, and Respondents

	Respondent				
	Lead Grantee Staff	Local Evaluators	Home Visit Program Model Purveyors	Grantee Partners	Implementing Agency Staff
What are the key characteristics of EBHV grantees, and how did these change over time?					
Staff structure and responsibilities, wage rates, time allocation, and turnover	X				X
Activities conducted by direct service staff, including content and frequency	X				X
Pace of enrollment and whether this pace aligned with grantees' plans	X				X
Target population and actual population enrolled, including level of risk	X		X		X
Common needs and concerns of families served and how program addresses these				X	X
Related programs in community (or primary service area) and coordination efforts with the EBHV grant program	X			X	X
Active partnerships and collaborations; role and activities	X		X	X	X
Available funding streams and changes during the planning and implementation periods	X			X	
How did grantees plan and implement their EBHV projects?					
Processes used by grantees to plan for and implement their EBHV project	X	X	X	X	X
Participants in the planning and implementation processes; role played by each participant and their level of involvement and contributions	X	X	X	X	X

Table VI.1 (continued)

	Respondent				
	Lead Grantee Staff	Local Evaluators	Home Visit Program Model Purveyors	Grantee Partners	Implementing Agency Staff
What is the context in which EBHV grantees planned and implemented their projects, and how did the context change over time?					
Geographic location of EBHV project activities	X			X	X
Political climate in state and target community	X			X	
Changes in program direction or management during the planning and implementation periods	X				
Natural (or man-made) disasters or other unexpected events that occurred during the funding period and substantially altered service delivery or planning	X				
What factors facilitated or posed barriers to planning and implementation of the EBHV projects over time?					
Facilitating factors, challenges, and constraints that influenced the grantees' ability to support the implementation of their selected home visiting program(s); strategies developed to address challenges and constraints and how well the strategies worked	X		X	X	X
Facilitating factors and ongoing challenges and constraints that influence the grantees' ability to maintain implementation fidelity; strategies for addressing challenges and constraints	X		X		X

Table VI.1 (continued)

	Respondent				
	Lead Grantee Staff	Local Evaluators	Home Visit Program Model Purveyors	Grantee Partners	Implementing Agency Staff
What initial and ongoing training and technical assistance did EBHV grantees receive from the purveyors of national program models?					
Satisfaction with training and other support received from purveyors of national program models for preparing to implement the EBHV grantee-selected models[a]	X				X
Ongoing training and support received from purveyors of national program models once the EBHV grantee-selected models were implemented	X		X		X
Frequency and content of ongoing communication received from purveyors of national program model	X		X		X
Use of information entered into purveyors of national program model's data system for program monitoring and improvement	X		X		X
What technical assistance did grantees receive from the Children's Bureau (CB), its contractors, or other technical assistance providers to support their planning and implementation efforts, and how was it used?					
How grantees used the technical assistance offered by the program technical assistance provider throughout the grant period; specific ways in which this technical assistance supported implementation[b]	X	X			
Assessment of usefulness of program technical assistance	X	X			

Table VI.1 (continued)

	Respondent				
	Lead Grantee Staff	Local Evaluators	Home Visit Program Model Purveyors	Grantee Partners	Implementing Agency Staff
How grantees used the evaluation technical assistance offered by Mathematica-Chapin Hall; specific ways in which this technical assistance supported local evaluation efforts and why grantees received varying levels of technical assistance	X	X			
Assessment of usefulness of evaluation technical assistance	X	X			
Role of Peer Learning Network (PLN) in supporting grantees	X	X			
Assessment of usefulness of PLN	X	X			
Whether grantees received technical assistance from sources other than the CB and its contractors; if so, type and usefulness of technical assistance received and how grantees accessed these resources	X	X			
How did grantees participate in the design and implementation of the cross-site evaluation?					
Assessment of alignment between the local and cross-site evaluations	X	X			
Assessment of the degree to which the cooperative agreement and cross-site evaluation met the CB's goals of being participatory and utilization-focused	X	X			
Role of participatory and utilization-focused cross-site evaluation in supporting EBHV grantees	X	X			
Suggestions for improving participatory and utilization-focused efforts	X	X			

Table VI.1 (continued)

	Respondent				
	Lead Grantee Staff	Local Evaluators	Home Visit Program Model Purveyors	Grantee Partners	Implementing Agency Staff
How did grantees identify their expected outcomes; how and for what reasons did grantees adjust their perspective on achieving these outcomes as the initiative matured?					
Activities to achieve buy-in and consensus among partners on targeted outcomes, effectiveness of activities, perceived level of agreement, and challenges to developing consensus	X	X		X	
Whether stakeholders, in addition to the grantee, have responsibility for maintaining a focus on outcomes and how this manifests in interactions, relationships, and accountability requirements	X	X		X	
Accountability for achieving outcomes; how accountability is assessed; when stakeholders expect to see outcomes	X	X		X	
Main challenges that hindered achieving targeted outcomes	X	X		X	
Strategies developed for overcoming challenges and how well the strategies worked; individuals or entities most helpful in overcoming these challenges	X	X		X	
Assessment of whether the local and cross-site evaluation designs were on track to measure targeted outcomes; if not, why; threats to documenting impact on outcomes	X	X		X	
Anticipated sustainability of grant outcomes; challenges	X	X		X	

Table VI.1 (continued)

	Respondent				
	Lead Grantee Staff	Local Evaluators	Home Visit Program Model Purveyors	Grantee Partners	Implementing Agency Staff
Suggestions for how grantees could change their local or the cross-site evaluation designs to better address their expected outcomes	X	X		X	

[a]This topic will be addressed during the first round of site visits only.

[b]The program technical assistance providers contracted by the Children's Bureau are the Family Resource Information, Education, and Network Development Services (FRIENDS), and their partners, National Implementation Research Network (NIRN), and Human Systems Dynamics (HSD).

EBHV = evidence-based home visiting.

Process Study Data and Analytic Approach

The process study will produce case studies of each grantee's implementation experiences and a cross-site analysis of common themes about implementation experiences, facilitators and barriers to implementation, and strategies for overcoming roadblocks. The cross-site analysis will also explore common themes among subgroups of grantees, such as those implementing specific home visiting models, grantees implementing more than one model, different types of grantee auspice (for example, state agencies versus private nonprofits), grantees with different geographic service areas (such as one county or community versus a state, or whether grantee service areas are rural, urban, or suburban), and other subgroups that emerge from the analysis. Chapter IX provides a more detailed discussion of reporting for the cross-site evaluation.

A primary data source for the process study will be two rounds of site visits conducted with each grantee.[15] The first visit will occur in spring 2010 and focus on learning about each grantee's planning process and initial implementation experiences. The second visit will occur in spring 2012 and focus on documenting grantee's ongoing implementation experiences and the evolution and

[15] While the site visits are the primary data source for the process study, we will also review background information, such as grantee implementation plans and six-month grantee progress reports submitted to the CB.

maturation of each grantee's program, as grantees will most likely be operating at a steady state of implementation by this time.

During site visits, we will address most process study research questions and subtopics described in Table VI.1 to learn about grantees' experiences implementing the EBHV grant, the challenges they face, and their successes when facing challenges (see the master site visit protocol in Volume II for a detailed list of site visit topics and questions). As described in more detail in Chapter VII, each visit will last for multiple days and be conducted by two members of the Mathematica-Chapin Hall evaluation team. Site visitors will work closely with grantees to plan the visits and select respondents to participate in individual and small-group interviews and focus groups.[16] While all site visits will cover the research questions and topics listed in Table VI.1, site visitors will work closely with grantees to tailor the plans for each visit to the unique plans and circumstances of each site. For example, some grantees are implementing more than one program model; the site visit team will need to include respondents implementing each model. Although the configuration of respondents for each grantee will vary, the evaluation team anticipates including the following types of respondents in all visits (see Chapter VII for more details):

- Lead grantee staff
- Local evaluators
- National program model purveyors
- Partners such as private and state-level funders, referral sources, state or county child welfare offices; Community-Based Child Abuse Prevention state program leads, and others
- Implementing agencies that provide direct home visiting services

We will use an alternative data collection method, such as a web-based survey, for gathering information on the process study research questions related to technical assistance from the Children's Bureau and its contractors and grantees' involvement in the design and implementation of the cross-site evaluation. We will ensure the alternative method will allow grantees to feel comfortable reporting non-favorable experiences, particularly about experiences that involved

[16] When feasible, local evaluators may also participate in some site visit activities to streamline data collection across the local and cross-site evaluations.

representatives of the Children's Bureau or members of the EBHV cross-site evaluation team and the programmatic technical assistance team.

The process study will primarily use qualitative methods to analyze the data collected (see Chapter XIII for a more detailed discussion of analytic methods). All data collected during site visits, such as interview and focus group notes, will be coded in Atlas.ti using a coding scheme developed by the evaluation team. We will use the case study approach to triangulate data from different sources and identify common themes or categories (Yin 1994). Triangulation will allow us to compare data sources for reliability, as well as to identify areas of agreement and disagreement across respondents. Through theme identification, we will reduce the large volumes of data gathered during site visits and other sources (progress reports) to a manageable number of topics/themes/categories that are important to address the process study's research questions (Coffey and Atkinson 1996).

As noted earlier, we will conduct two main types of analysis for the process study to examine grantees' implementation experiences. First, we will develop case studies to gain a detailed understanding of each grantee and its context, the design and implementation of its home visiting program, and its perspective on achieving specified results. Second, we will conduct a cross-site analysis to identify themes and patterns about implementation experiences across all grantees and relevant subgroups.

VII. DATA COLLECTION PLAN

The data collection plan includes gathering both quantitative and qualitative data—primarily through a web-based system, site visits, and a partner survey. EBHV grantees will enter data into the web-based system to inform three domains: (1) fidelity to the evidence-based model, (2) systems change, and (3) costs of home visiting programs. Some of these data will overlap with data that grantees will collect as part of their local evaluations. Grantees will enter data into the system monthly, although specific elements will vary in how often they are entered. The EBHV cross-site evaluation team, in collaboration with the grantees, will conduct two rounds of site visits to all grantees to gather data for all evaluation domains. The visits will take place in spring 2010 and spring 2012. The partner survey will support the systems domain and be administered at three time points. The first two administrations will coincide with the site visits in spring 2010 and spring 2012. The final administration will occur at the end of the grant period, in summer 2013. Additional data sources will include documents provided by grantees, administrative data provided by program model developers, and county-level maltreatment data. All data collection instruments are included in Volume II of the design report.

Web-Based System

The web-based data entry system designed specifically for the EBHV cross-site evaluation will be an important data collection source and will ensure that data are collected in a uniform manner from all EBHV grantees. A web-based system is a flexible tool for gathering information across evaluation domains. The system will be hosted by Mathematica, and all its technical aspects are being developed by Mathematica information systems experts. The content and specific questions in the web-based system are drawn from the collaborative evaluation design work conducted through the Peer Learning Network. The system will serve as a primary data collection source for information on the characteristics of the families served, home visits provided by staff at service delivery locations, home visitor characteristics, grantees' activities on systems change efforts and progress toward identified goals, and financial information about the total and program component costs. Grantees will enter data monthly, with the evaluation domains reported in a given month varying based on the needs of each domain (for example, some collections will be biannual, while others will be monthly) and the need to ensure receipt of high-quality data (higher-frequency collection is expected to support higher-quality data).

Strategies for Minimizing Grantee Burden

To minimize the time needed for data entry, the cross-site evaluation team will consult with grantee staff as the team designs and develops the web-based system. We have already taken the following steps to minimize staff burden:

- We will use a web-based system so that no software installation will be required and data can be entered from any computer with internet access. This is especially important for grantees with more than one implementing agency and service delivery location.
- Data will be collected in a central database automatically, in real time, so that grantees will not need to periodically upload data or transmit it to Mathematica.
- When designing the data entry screens, we will use check boxes and drop-down lists as much as possible to reduce the time required for data entry.
- We will collect a limited, focused set of data on grant components that are most central to addressing the EBHV cross-site evaluation research questions.
- Fidelity data on families served and home visits provided will build on information that grantees must collect for their respective home visiting program models.
- We will design, and provide grantees with, *optional* hard-copy forms to collect information for later entry into the web-based system. Staff at implementing agencies or service delivery locations can collect and record necessary information on the forms as they are providing or arranging services, then enter the information into the system later, perhaps once a month.

Web-Based System Users

The primary users of the web-based system will be the EBHV grantees, who are the direct recipients of the grant. Selected components of the web-based system will ask for information from the agency that directly delivers home visiting services. Some grantees contract or partner with one or more implementing agencies to deliver services. In turn, implementing agencies may have one or more service delivery locations they oversee. When there is one location for an implementing agency, the location and implementing agency are typically one and the same. When there is more than one service delivery location, an implementing agency oversees a set of service delivery locations. Thus, while the web-based system asks that grantees make sure data entry is completed, it specifies two data reporters: (1) EBHV grantees, and (2) service delivery locations.

Web-Based System Design

We are designing the system to be as user-friendly as possible. To use the system, each grantee and its service delivery locations must have access to a computer with an internet connection. Users will enter the system through a log-on screen by entering a password stored in the system for each

user. Grantees will designate their own user names and passwords, which Mathematica staff will then program into the system. The system will be able to accommodate multiple user names and passwords for each grantee, including staff from service delivery locations.

To support system planning and design, Mathematica's grantee liaisons obtained contact information for the person on each grantee's team responsible for data management. The Mathematica web-based system development team will work with the EBHV grantees and their data managers to learn about their existing data systems and determine whether they have any existing data-sharing or data confidentiality requirements that must be taken into account.

Web-Based System Content

The web-based system will capture data for three cross-site evaluation domains: (1) fidelity, (2) systems, and (3) costs. Table VII.1 summarizes the categories of measures we plan to collect for each domain.[17] As part of our web-based system development process, we are consulting with federal staff, grantee representatives, and other stakeholders to refine the specific measures and will modify them as needed.

Table VII.1 Web-Based Data Collection Domains and Measures, Frequency of Collection, and Data Reporters

Domain and Measure	Frequency of Collection	Data Reporter
Fidelity Domain		
Program-level descriptive data	Baseline	Service delivery location
Staff characteristics	Baseline with ongoing updates for attrition	Service delivery location
Program-level service data	Monthly	Service delivery location
Participant characteristics	Baseline	Service delivery location
Participant-level service data	Ongoing	Service delivery location
Systems Domain		
Infrastructure development goals	Semiannual	Grantee
External environment – changes and key events	Semiannual	Grantee
Program successes and challenges	Semiannual	Grantee
Infrastructure capacity	Semiannual	Grantee

[17] Further detail on the specific measures to be collected in the web-based system was presented in earlier chapters of this design report. Volume II of the design report includes the instruments supporting development of the web-based system.

Table VII.1 (continued)

Domain and Measure	Frequency of Collection	Data Reporter
Cost Domain		
Aggregate program costs	Once	Service delivery location
Program component costs	Once	Service delivery location

As part of our assessment of fidelity to the EBHV grantee-selected program models, the web-based system will collect data on five categories of measures. At the program level, service delivery locations will provide descriptive data on their program's staffing and service capacity and aggregate service data on staff caseloads and supervisory sessions. For staff characteristics, service delivery locations will provide descriptive data on each supervisor and home visitor. For each family served by the service delivery location, the web-based system will request descriptive information on the characteristics of the participating children and caregivers and service information on the number and content of home visits.[18] Chapter III provides additional information about the fidelity measures.

For the systems domain, the web-based system will ask grantees to report on infrastructure development goals, factors external to the grant initiative that may affect infrastructure development and systems change, successes and challenges in meeting infrastructure development goals, and infrastructure capacity. For infrastructure development goals, grantees will report on their personalized short- and long-term goals by describing whether each goal is attained and, if not attained, the grantees' progress toward achieving each goal. The web-based system will also ask grantees to report on changes external to the grant and how these changes affected grant operations and to describe successes and challenges in developing infrastructure capacities.

The web-based system will collect two types of cost information. First, service delivery locations will report total aggregate program costs to deliver home visiting services. Total costs will include all financial costs, the value of volunteer labor and in-kind resources associated with delivering home visiting services, and the value of essential infrastructure supporting program delivery, such as staff supervision, and training and monitoring of fidelity. Second, for program

[18] The WAI-Adapted participant data will be collected and entered by the local evaluators in order to protect confidentiality of the respondents.

component costs service delivery locations will report on how staff time is allocated across operational activities.

Schedule for Data Entry

We anticipate receiving Office of Management and Budget (OMB) clearance by January 2010. If we meet that schedule, we will be able to implement the web-based system in January 2010, a few months after the start of the EBHV grantees' implementation period in October 2009. We will collect information through the web-based system during the grantees' four implementation years, which conclude in September 2013.

We will request that EBHV grantees enter data into the web-based system at least monthly, though the actual data required each month will vary across data elements (Table VII.1). The fidelity domain will require the most frequent data entry, as all categories of measures will require baseline and/or monthly entry. Baseline entry will be defined as the time of hire for staff characteristics and time of program entry for participants. After entering staff characteristics at baseline, additional data on staff characteristics will be required only as staff turnover occurs. Semiannual entry for elements in the systems domain will match the progress report timing and allow for regular reporting. The cross-site evaluation will request that grantees enter aggregate program costs and labor costs for selected program components into the web-based system as part of their data entry for FY 2011. These data will be received before the site visits conducted in spring 2012 to allow site visitors to clarify the cost data, as needed, while on-site. The data collection will occur at this frequency throughout the initiative to ensure receipt of high-quality data and support responsive technical assistance by the cross-site evaluation team when data quality concerns are detected. In addition, asking for monthly data will ensure that grantees and their implementing agencies remain up-to-date with their collection and entry of data.

Technical Assistance and Support for System Users to Ensure Data Quality

The EBHV cross-site evaluation team will provide initial training and ongoing technical assistance to grantees to ensure that staff can effectively enter information into the web-based system throughout the data collection period with minimal difficulties. We will provide three main types of support: (1) a user's manual and data dictionary, (2) system orientation and data entry training through conference calls with grantees, and (3) ongoing technical assistance from cross-site evaluation staff by telephone and email.

We will develop a user's manual that will explain in clear, concise language the functions of the web-based system and a data dictionary. The manual will include screen shots in color so that grantee staff can read about different functions while seeing what the computer screen should look like at each step. As noted earlier, we will also provide *optional* forms that match data entry screens, which staff can complete in the field and bring back to a central location for later data entry. The data dictionary will provide definitions of terms for the cross-site evaluation and will allow for consistent use of terms across data collection modes.

We will work with grantees, their implementing agencies, and their service delivery locations to set up user passwords. We will send copies of the user manual, with instructions for logging into the system. Grantee, implementing agency, and service delivery location staff will have at least one week to review the manual before we provide initial training on the web-based system by teleconference. The evaluation team will set up conference calls and provide a toll-free telephone number to grantees, implementing agencies, and service delivery locations for these calls. Each grantee, implementing agency, and service delivery location will need to participate in one two-hour call. Ideally, grantee staff and staff from their implementing agencies and service delivery locations will participate in the same conference call. We will attempt to schedule approximately four to six grantees per call. During the call, users will log in to the system online, and staff will walk them through all the system functions and data entry screens.

Cross-site evaluation staff will also be available to provide ongoing technical assistance to grantees by telephone or email throughout the data collection period. A research assistant will be designated as the primary contact for grantees, and web-based system users will receive telephone and email contact information for the research assistant. Other team members will serve as backup, as needed, to answer questions and resolve difficulties. We expect that most technical assistance questions will be addressed immediately, and all within one business day.

To maintain the quality and completeness of the data, we will expect grantees to ensure that information is entered into the web-based system for their grant at least monthly. To ensure that data entry procedures are implemented correctly, we will monitor data entry closely during the initial months of the data collection period and at least monthly after that. Because the data will be collected in a central database automatically, in real time, we will be able to monitor the status of data entry for particular grantees at any time. Problems with quality and completeness of the data can be identified quickly. When we identify problems, we will contact grantees and work with them to resolve the problem.

Site Visits

Mathematica cross-site evaluation team members will make two multiple-day site visits to each grantee during the grant period. As described in Chapter VI, the first visit, in spring 2010, will focus on understanding the planning process and initial implementation for each grantee. The second visit, in spring 2012, will document implementation evolution and maturation, as grantees will most likely be operating at a steady-state implementation level by this time. Although the content of each visit will vary according to implementation stage, the type of activities and sources of data collection are likely to be similar across visits. Activities will primarily include individual or group interviews and/or focus groups. During the second site visit in 2012, the EBHV cross-site evaluation team may also schedule observations of EBHV grant program activities or meetings or review selected case files of families participating in home visiting programs. Visits will be conducted by a two-person team consisting of Mathematica grantee liaisons and research analysts.

Interview and Focus Group Participants

Each visit will consist of interviews—individual or group—and focus groups with key staff and stakeholders involved in the grant's operations. Site visit interviews and focus groups will be used to gather, from specific participants, in-depth information that is needed only once or twice during the grant period.

To identify potential respondents, we will review the data the grantee has entered in the web-based system for the fidelity and systems domains, then confirm those respondents during discussions with grantees and local evaluators. With guidance from the grantee and local evaluator, we intend to select respondents representative of the key staff and stakeholders involved in the grantee's efforts. Selected respondents will represent efforts both to build infrastructure to support home visiting programs and to implement services. Specifically, we will identify at least one respondent from each infrastructure level at which the grantee is working and at least one respondent involved in each infrastructure development goal (to support implementation with fidelity, scale-up, and sustainability). Respondents will likely include:

- ***Lead EBHV Grantee Staff:*** People responsible for the planning and implementation of the EBHV grant. Depending on the grant's structure, these people may be in the agency implementing the program or at a separate organization.
- ***Local Evaluation Team Members:*** Each EBHV grantee-selected person or organization to conduct the local evaluation of its grant. Local evaluators are from state agencies, universities, or research organizations.

- ***Program Model Purveyors:*** The person or organization that developed the EBHV grantee-selected program being implemented and that will certify the grantee and its implementing agencies to deliver its program.
- ***Partners — Private and State-Level Funders:*** People representing organizations that are providing, or may provide, funding for home visiting programs in the areas served by the grant.
- ***Partners — Referral Sources:*** Representatives from community organizations with which EBHV grantees and their implementing agencies work to identify families eligible to receive home visiting services.
- ***Other Partners:*** Individuals and representatives of organizations that partner with the EBHV grantee to develop the capacity to implement, scale up, and sustain the EBHV grantee-selected programs. These partners may be associated with state or county child welfare offices; be a Community-Based Child Abuse Prevention (CBCAP), Early Childhood Comprehensive Systems (ECCS), or Project LAUNCH grantee; or participate in steering or planning committees organized by the grantee.
- ***Direct Service Providers:*** EBHV grantees work with implementing agencies and service delivery locations to deliver home visiting services. At implementing agencies and locations, program managers, supervisors, and home visitors serve as direct service providers through their work with families.

Interview and Focus Group Guides

As part of the EBHV cross-site evaluation's OMB clearance package, we developed a master interview and focus group discussion guide that identifies the range of questions to be asked during each visit and the respondent categories (see Volume II of the design report for the master discussion guide). The master discussion guide will steer development of respondent-specific discussion guides tailored to the role and perspective of each respondent category. Site visit teams assigned to each EBHV grantee may further refine the discussion guides to meet the circumstances of a particular grantee.

The master guide, organized into 10 categories of questions, encompasses all the cross-site evaluation domains:

1. Introduction
2. EBHV Grantee Characteristics and Context
3. EBHV Grantee Planning, Implementation, and Sustainability
4. Home Visiting Operations and Workforce Development

   A. National Program Model Certification

   B. Workforce Training and Supervision

C. Home Visiting Service Delivery

D. Time Allocation by Program Category

E. Monitoring Service Delivery

F. Home Visiting Operations Successes and Challenges

5. Partnerships and Collaborations
6. Building Community and Political Support
7. Communication
8. Building Fiscal Capacity
9. EBHV Grantee Logic Models and Intended Outcomes
10. EBHV Grantee Successes and Challenges

Through the discussion guides, we will explore questions with multiple participants in different roles to triangulate information and to compare responses across participants with different perspectives. Most questions in the discussion guides will be open-ended to allow a range of responses. The guides will include probes to provide site visitors with guidance on the type of in-depth information needed. When appropriate, we will develop questions that incorporate scales (or other limited-response categories) to make it easier to gather objective information for comparison across grantees. We will develop discussion guides for each round of site visits. The second-round discussion guides will build on those developed for the first round, as well as what we learned in the first round, and will include a core set of questions to make comparison across implementation stages easier.

Site Visit Selection of Implementing Agencies and Locations

EBHV grantees vary in the number of home visiting program models they are implementing and in the number of implementing agencies/service delivery locations providing services. For the cross-site evaluation, grantees identified the home visiting program models and number of implementing agencies from which they would collect cross-site evaluation data. Some grantees specified a methodology for selecting the specific implementing agencies. Other grantees still need to determine their approach.

We will select program models and implementing agencies for site visits based on grantees' plans. Table VII.2 identifies our preliminary understanding of the number of implementing agencies and plans for the number to be selected for site visits for each grantee. Ideally, we will visit at least

one implementing agency for each home visiting model in the cross-site evaluation. We may visit more than one implementing agency if the grantee is implementing only one model, the implementing agencies are near each other, and there is analytic value in visiting more than one agency. If there is more than one implementing agency, we will work with grantees to determine how many and which ones to visit. To ensure cost-effectiveness of visiting selected agencies during a single visit, we will choose agencies located near each other.

Site visits will range from two to four days, depending on the number of implementing agencies. We plan to spend one day during each visit conducting interviews with grantee and local evaluation staff, as well as with representatives of the grantee's partners. We will then allocate one additional day on-site per selected implementing agency.

Planning and Scheduling Visits

To schedule the site visits efficiently with 17 grantees, we will designate a lead member of each site visit team to plan and schedule all visit activities. The EBHV cross-site evaluation grantee liaison will do this for the first visit in 2010; the senior member of the team conducting the second site visit will do this for the second visit in 2012. To initiate planning, site visitors will conduct a telephone call with each grantee and distribute a memo documenting the scheduling process. This call, which will occur about six weeks before the target date for the visit, has four key purposes: (1) to review the activities planned during the visit and identify the appropriate participants for each activity (Table VII.3 presents a preliminary activity list for the 2010 site visits); (2) to identify the key grant contact who can help the site visit team with scheduling and coordination; (3) to establish a scheduling and coordination process; and (4) to determine dates for the visit. Our objective will be to schedule each visit so that we can obtain rich information for the cross-site evaluation while minimizing disruption to the other activities and responsibilities of the grant staff and partners.

After the preparatory discussion, the lead site visitor will send a memo to the grantee's point of contact, summarizing the discussion, outlining the activities to take place during the visit, and providing guidance for scheduling the activities. The lead site visitor will continue to coordinate with the point of contact until the site visit agenda is finalized, which will be at least two weeks before the site visit date. During the planning process, the lead site visitor will regularly communicate with the EBHV cross-site evaluation site visit task leader to ensure that appropriate activities are scheduled to provide consistency and comparability across grantees, yet allow flexibility in recognition of grantees' varying goals and strategies.

Table VII.2 Implementing Agencies to Be Selected for Site Visits (Preliminary Estimates)

State	Grantee	EBHV Grantee-Selected Program Model	IAs per Program Model	IAs to Be Selected for Site Visit	Site Visit Length (Days)
CA	County of Solano, Department of Health and Social Services	NFP	TBD	1	2
CA	Rady's Children's Hospital, San Diego	SC	1	1	2
CO	Colorado Judicial Department	SC	1	1	2
DE	Children & Families First	NFP	3	1	2
HI	Hawaii Department of Health	HFA	2	1	2
IL	Illinois Department of Human Services	NFP HFA PAT	2 3-5 3-5	1 1 1	4
MN	Minnesota Department of Health State Treasurer	NFP	5	1	2
NJ	New Jersey Department of Children and Families	NFP HFA PAT	23 9 2	1 1 1	4
NY	Society for the Prevention of Cruelty to Children, Rochester	NFP PAT	1 1	1 1	3
OH	St. Vincent Mercy Medical Center	HFA	1	1	2
OK	The University of Oklahoma Health Services Center	SC	2	2	3
RI	Rhode Island Kids Count	NFP	1	1	2
SC	The Children's Trust Fund of South Carolina	NFP	6 (or 2)	1	2
TN	Child and Family Tennessee	FC NFP	1 1	1 1	3
TN	Le Bonheur Community Outreach	NFP HFA	1 1	1 1	3
TX	DePelchin Children's Center	Triple P	1	1	2
UT	Utah Department of Health	HFA NFP	3 1	1 1	3

Source: EBHV Grantees Implementation Plans submitted in June 2009. These are preliminary estimates subject to change based on grantee plans and funding situations.

Note: Visit length, presented on the first row for each grantee, calculated as one day for grantee staff plus one day per implementing agency.

FC = Family Connections; HFA = Healthy Families America; NFP = Nurse-Family Partnership; PAT = Parents as Teachers; SC = SafeCare; EBHV = evidence-based home visiting; IA = implementing agency; TBD = to be determined.

Table VII.3 Preliminary Spring 2010 Site Visit Activities, Participants, and Interview Time

Activity and Participants	Approximate Interview Time
EBHV Grant Lead – individual (or small-group) interview with lead staff for EBHV grant	1.5 hours
Other EBHV Grant Staff – small-group interview with other organizational staff with EBHV grant responsibilities	1 hour
Local Evaluation Team – individual (or small-group) interview with team conducting the local EBHV grant evaluation	1.5 hours
Partner: Funder – small-group interview with people representing organizations that are providing, or may provide, funding for home visiting programs	1 hour
Partner: Referral Source – small-group interview with representatives from community organizations with which EBHV grantees and their implementing agencies work to identify families eligible to receive home visiting services	1 hour
Other Partners – small-group interview with individuals and representatives of organizations that partner with the EBHV grantee to develop the capacity to implement, scale up, and sustain home visiting programs	1 hour
Implementing Agency: Manager – individual interview with manager or lead staff at the agency implementing the home visiting program as part of the grant	1.5 hours
Implementing Agency: Supervisors – focus group with home visitor supervisors at the agency implementing the home visiting program as part of the grant	1.5 hours
Implementing Agency: Home Visitors – focus group with home visitors at the agency implementing the home visiting program as part of the grant	1.5 hours

EBHV = evidence-based home visiting.

Each site visit will balance the need to gather common data across grantees with the individual goals and efforts of each grantee. To achieve this, we will allocate time to accommodate the structure and organization of each grantee and to ensure that we develop an understanding of the context in which each grantee is influencing systems and supporting the implementation of home visiting programs. We will work with each grantee to tailor the site visit agenda to ensure that we conduct activities that allow us to fully understand the grantee's design and implementation efforts. We need to ensure that our planned agenda reflects the grantee's focus, as grantees vary in the emphasis they place on direct services and infrastructure building. For example, several grantees are not directly working with a selected home visiting program and are instead using this grant to focus solely on building infrastructure to support home visiting programs. In these sites, we will likely

spend less time with direct service staff and more time with people involved in infrastructure development, such as partners and committee members.

Participant Identification and Recruitment

To identify and recruit participants for interviews and focus groups, we will, during the preparatory call for each site visit, gather lists of involved individuals and their role in grant activities. We will ensure that we identify people for each type of interview or focus group. As much as possible, we will speak with everyone involved in key grant activities. While we may not be able to coordinate with everyone identified, we will ensure that all interview participant categories are covered, to develop a thorough understanding of grant implementation.

We also plan to conduct two focus groups at each implementing agency during each site visit. We anticipate that one group will include supervisors of home visitors and the other will include home visitors. To select participants for each focus group, we will ask the grantee's point of contact for a roster of supervisors and home visitors. Depending on the number on each list, we will recruit all supervisors and home visitors, or a subset. The goal will be to convene focus groups with up to 10 people (although smaller groups are possible, depending on the number of direct service staff). We will adapt our selection and recruitment strategy to try to reach this number, and we will engage the grantee point of contact in focus group recruitment.

Site Visit Data Quality

We will take several steps to ensure consistent, high-quality data collection across grantees. Before conducting each round of site visits, we will provide comprehensive training to all site visitors to review the study's objectives, the cross-site evaluation design, and the data collection procedures. At a minimum, training sessions will cover the following topics:

- Background information on child welfare, home visiting, and the goals and objectives of the supporting EBHV grantee cluster
- Cross-site evaluation design and analysis plan
- Guidelines for setting up site visits, including conducting a preparatory telephone call and scheduling activities
- Data collection instruments (interview and focus group guides)
- Interview templates for writing up site visit notes that will be used to ensure reporting consistency
- Interview and focus group moderating techniques

In addition to site visit training, we will take other steps to ensure consistent, high-quality data collection. After we conduct an initial set of site visits, the site visit team will debrief about them, discuss any issues that have come up, and ensure that staff are following consistent procedures. Senior team members will also review and provide feedback on site visit interview write-ups to ensure coverage of all topics and request additional information, if gaps are detected.

Partner Survey

Collaboration among partners involved in each EBHV grant project is a central strategy for building infrastructure capacity to implement, scale up, and sustain home visiting programs. Understanding the relationships developed by grantees and their key partners and how these change is important for understanding how the initiatives develop, as well as the implementation challenges and successes that grantees experience. To collect information on these topics, the EBHV cross-site evaluation will conduct a partner survey timed to coincide with each site visit round, as well as the end of the grant period. By conducting these surveys, we will obtain the perspectives of key players in grantees' projects, including grantee staff, service providers, county and state government officials, and program model purveyors. Through the partner survey, we will confirm and track not only the infrastructure areas in which partners are collaborating, but also whether their relationships become stronger or weaker and more or less collaborative over time—moving along the collaboration continuum from sharing information to sharing service referrals, training, technical assistance, and resources.

Survey Content and Development

The partner survey will address four questions:

1. What are the key system attributes (patterns of boundaries, relationships, and perspectives) of the grantees' projects, and how did they change over time?
2. How many people and institutions were engaged in project-related activities at each infrastructure level? How did that number change over time, creating what benefits and risks for the project?
3. What were the number and nature of collaborative relationships with partners? What factors influenced the number and nature of those relationships?
4. How did those relationships evolve over the course of the initiative?

To select and develop survey questions, the EBHV cross-site evaluation team compiled questions from similar surveys developed by Mathematica and from existing collaboration measures. Questions on system attributes are adapted from two Mathematica-developed network surveys:

(1) the Consumer Voices for Coverage Baseline Leadership Team Survey, and (2) the Survey of Early Learning Initiative Community Service Providers and Planning Participants. Collaboration measures come from existing scales and surveys: The Working Together Assessment Tool, The Wilder Collaborative Factors Survey – Community Group Member Survey and Community Organizational Assessment Tool, and The Texas Families: Together and Safe Collaborative Survey. For areas not covered in any of our reviewed sources, we also developed questions to learn about partners' activities in the eight infrastructure capacities we are focusing on for the systems domain.[19] The draft partner survey is included in Volume II of the design report.

Respondent Identification and Survey Administration

The survey will be web-based using Opinio, a leading survey development software package. We expect that nearly all respondent organizations will have internet access and can complete the survey online. Doing so has several advantages. It will reduce burden for respondents, because they will not need to mail a paper copy of the survey to Mathematica. Furthermore, it will allow for the inclusion of automated organizational rosters, so that the user does not need to record partner names throughout the survey. A web-based survey also reduces the potential for data entry errors or lost surveys. Finally, Mathematica staff can monitor survey completion rates in real time and follow up by email with respondents to encourage survey completion.

We expect to identify approximately 25 survey respondents per grantee. To generate the list of respondents, each EBHV cross-site evaluation grantee liaison will work with its grantees to identify partner organizations or organizational units within larger agencies that are participating in grant activities. The respondent lists will include representatives from all implementing agencies, local evaluators, and other local and state partners. We will also include home visiting program model purveyors that grantees have been working with for model affiliation.

The EBHV grantee liaisons will request contact information for all identified respondents. This includes, at a minimum, respondent name and email address, organizational name, mailing address, and telephone number. Each identified respondent at each partner organization will receive an invitation by email to participate in the survey. The email will explain the survey's purpose, address

[19] We also considered data collection plans for the evaluations of Project LAUNCH and the ECCS initiative to coordinate across related initiatives, but we found that the proposed measures for those studies did not address the EBHV cross-site evaluation's needs.

confidentiality concerns and the voluntary nature of participation, and describe the intended use of findings. We will also provide a telephone number and email address so that respondents can contact us with questions. The invitation email will include a personalized hyperlink to the survey. The respondent's user name and password will be embedded in the hyperlink, thus reducing burden associated with a log-in page that requires manual entry of those items. We will send reminder emails during the six- to eight-week data collection period, encouraging nonresponders to complete the survey as soon as possible. Each successive reminder will have slightly altered wording and a heightened sense of urgency. We estimate a response rate of approximately 80 percent.

Grantee buy-in is essential for achieving a high response rate to the survey. A low response rate to the survey or specific items would limit our ability to conduct the analysis. We will ask grantees to assist the EBHV cross-site evaluation team by stressing the importance of the survey to its partners or following up with respondents who do not complete the survey.

Other Data Collection

The EBHV cross-site evaluation will also gather data from several sources that will not be provided by grantees. These include grant administration documents provided to the cross-site team by CB/ACF, administrative data on program fidelity for grantees implementing the Nurse-Family Partnership (NFP) program model, and county-level child abuse and neglect data.

Grant Program Administration Documents

As part of their grant requirements, EBHV grantees will develop many reports that will provide useful contextual information for the cross-site evaluation and will support the conduct of the systematic review of evidence. These include applications grantees developed to apply for grant funds, implementation plans grantees developed at the end of their first year of funding, progress reports grantees submit semiannually, and local evaluation reports. In addition, as part of the cross-site design process, grantee liaisons worked with each grantee to define systems change goals to be pursued through the grant. The cross-site team may also obtain additional documents, such as media clippings or news stories, in the future either from CB/ACF or from the grantees directly.

Grant Applications. Grant applications shared by CB/ACF provided information to support the beginning stages of the cross-site evaluation design. Although scope and level of detail varied by grantee, the applications contain several key pieces of information. These include (1) key partner agencies and organizations, (2) the initial home visiting program model(s) chosen and the target

population for services, (3) logic models for their initiatives, (4) goals for family and child outcomes as well as systems change, and (5) the proposed local evaluation approach.

Systems Change Planning Information. Although a few grantees emphasized systems change as a central goal for their activities from the beginning, others focused less attention on this aspect of the project in their applications. Since then, CB/ACF clarified for the grantees and for the cross-site evaluation that building infrastructure to support the EBHV grantee-selected program models is a priority for the project. Because most grantees had not planned or described this aspect of their activities in detail in their applications, to support evaluation planning the Mathematica grantee liaisons conducted two telephone discussions with each grantee in January and February 2009 to review and help them develop their systems change plans. The discussions addressed establishing goals, identifying specific steps and a logic model for systems change, and identifying potential evaluation measures. Documents developed with each site have also been provided as feedback and local evaluation tools to the grantees.

Implementation Plans. After spending the first several months of their grants planning their program and evaluation processes, in June 2009 grantees submitted a detailed implementation plan that CB/ACF reviewed. Grantees followed a common template developed for the plan by the Mathematica-Chapin Hall team, CB/ACF, and the program implementation technical assistance providers, the Family Resource Information, Education, and Network Development Services (FRIENDS) and the National Implementation Research Network (NIRN). The plans provided greater detail than the grant applications. In addition, they described any changes in the local initiative implementation or local evaluation that the grantees proposed to their original plans. These documents essentially replace the grantee applications as a source of baseline information and updates about plans for using specific data collection tools and data collection schedules. The plans provide information on:

- Management structure for the overall grant program
- Systems change and infrastructure development goals and activities
- Home visiting program implementation, support, or expansion
- Selected home visiting program models
- Home visiting program operations
- Home visiting quality assurance and fidelity
- Plans for local (grantee-specific) evaluation

- Plans for supporting and participating in the cross-site evaluation
- Supporting appendixes and documents

Progress Reports. The government requires recipients of its discretionary grants to file regular progress reports to inform their project officers about activities. CB/ACF collects such reports from its discretionary grantees (including cooperative agreement recipients) biannually, beginning six months after the grant award. For the EBHV grant program, progress reports are due in April and October, beginning in April 2009 and continuing through October 2013. While the key focus of the reports is program monitoring and accountability information required by the government, the cross-site evaluation team will receive copies of the report as contextual information for the evaluation.

Grantees' Local Evaluation Reports. To support conducting the systematic review of evidence, the Mathematica-Chapin Hall team will receive the final evaluation report from each grantee. We will receive additional evaluation reports that grantees produce to extend our understanding of grantee efforts.

NFP Administrative Data

Eleven of the EBHV grantees are implementing the NFP program model through the EBHV grant and are planning to include data on implementation in the cross-site evaluation. NFP requires that all implementing agencies enter data in the NFP Clinical Information System[20] to track services provided. Given the large number of grantees implementing this model and NFP's data entry expectations, CB/ACF explored the feasibility of the NFP National Service Office (NSO) providing data directly to the Mathematica-Chapin Hall team for the cross-site evaluation.

The NSO has agreed to provide data from its Clinical Information System to inform the cross-site evaluation in the areas of fidelity, participant demographics, and family and child outcomes. Data-sharing details are under development, but we anticipate that the NSO will provide data monthly, to align with expectations that grantees implementing other home visiting models will meet regarding data entry in the web-based system.

[20] The Clinical Information System is a web-based management information system that gathers data on a range of service delivery items, family and child characteristics and measures of well-being, and quality monitoring. It is a proprietary data collection system that includes the use of a number of forms and questionnaires nurses and nurse supervisors use to document their work and fulfill NFP requirements.

County-Level Child Abuse and Neglect (CAN) Data

All EBHV grantees, regardless of their family and child outcome evaluation design, will be responsible for collecting administrative CAN data for the home visiting program participants in their research sample. CB/ACF and the cross-site evaluation team have requested that grantees gather both substantiated and reported cases of CAN as part of this effort. Grantees will provide these data to the EBHV cross-site evaluation team for analysis.

To obtain the data, EBHV grantees will need a process for obtaining consent from individual participants to obtain CAN records data from the county/state during the local evaluation. As part of the consent language, grantees will seek permission to either (1) obtain CAN data beyond the CB/ACF funding period, or (2) contact participants to obtain additional consent if funding becomes available for more followup. This will allow for potential followup of the research sample in the future.

VIII. DATA ANALYSIS PLAN

The cross-site evaluation will use a mixed-method approach to complement the diversity in home visiting program models, populations, and local evaluation approaches. We will conduct qualitative and quantitative analyses of fidelity, cost, and systems data, both within and across domains. The analyses will focus on systematically and clearly describing these domains and associations among domains. We will use a primarily qualitative process study to examine the overarching context and implementation of the grant initiatives. To determine whether the programs affected family and child outcomes, we will conduct a systematic review of evidence on the impacts of the EBHV grantee-selected programs on family and child outcomes by reviewing the grantees' local evaluation results. The analyses will also combine measures of the effectiveness and reach of the programs to examine whether supporting EBHV grantees' systems change is related to improvement in families and children's outcomes within their communities.

In this chapter, we build on the information provided in previous chapters about the cross-site evaluation's approach to addressing the study's research questions. We first provide an overview of the qualitative analyses. Next, we describe the quantitative analyses, including our approach to analyzing measures within each domain, the relationships across domains, and our analysis of the partner networks grantees use to bring about systems change. Finally, we describe the systematic review of evidence we will conduct in the family and child outcomes domain and how we will combine the evidence from that review with measures of intervention reach to examine the overall effects of the EBHV initiative for grantees' communities. Table VIII.1 provides the analytic approach for each of the cross-site evaluation domains. Chapter IX provides an overview of when we will report on each type of analysis.

Table VIII.1 Cross-Site Evaluation Domains by Analytic Approach

	Qualitative Analysis	Quantitative Analysis	Systematic Review of Evidence	Reach and Effectiveness Analysis
Systems Change	X	X		X
Fidelity to the Evidence-Based Model	X	X		
Costs of Home Visiting Programs	X	X		
Family and Child Outcomes			X	X
Process Study	X			

Qualitative Analysis

The cross-site evaluation will have three types of qualitative data to analyze: (1) site visit data, (2) web-based system data, and (3) partner survey data.[21] To analyze these data, we plan an iterative process that consists of three steps: "noticing, collecting, and thinking" (Seidel 1998). We will use a case study approach to triangulate data from different sources and identify common themes or categories (Yin 1994). Triangulation will allow us to compare data sources for reliability, as well as identify areas of agreement and disagreement across data sources and interview respondents. Through theme identification, we will reduce the large volumes of qualitative data gathered to a manageable number of topics/themes/categories pertinent to the qualitative aspects of the cross-site evaluation (Coffey and Atkinson 1996).

Overall, we will pursue two main goals for analyzing qualitative data gathered for the cross-site evaluation. First, we will organize the data to develop a detailed understanding of each grantee and its context, the design and implementation of its home visiting program, and its perspective on achieving specified results. Second, we will conduct a cross-grantee analysis to identify themes and patterns in the implementation process of the overall initiative across the grantees.

Summarize Site Visit Interviews

Site visits will provide one source of qualitative data. After each visit, the site visit team will write up interview notes by respondent, as well as a brief site visit summary. For each type of respondent, we will develop report templates that all team members will use for writing up notes from the interviews conducted during their site visits. This will make note-writing easier and will ensure that comparable information and degree of detail in the written notes is captured across grantees. We will provide training on use of these reporting templates during the site visitor training. The reporting template for each respondent will follow the topic areas developed for the site visit protocols that were identified by looking across the evaluation domains to discern what would be gathered during site visits.

[21] As described in Chapter II, the partner survey includes closed-ended survey questions, network questions, and open-ended questions about partners and how they work together. Partner survey data will be analyzed using a few different techniques: qualitative, quantitative, and traditional network approaches.

The primary purpose of the site visit summary will be to provide feedback to CB/ACF and each grantee on overall themes and issues identified during the visit. The site visit summary will follow a common template that highlights major successes and challenges for the grantee as learned during the visit, and provides recommendations for technical assistance to support implementation and evaluation, as appropriate. To make sure the summaries are useful, we will work with CB/ACF and grantees to develop a reporting template for recording information about the topics of greatest interest to them.

Code Qualitative Data

All qualitative data sources—site visit interviews, web-based system data, and partner survey data—will be systematically coded. We will develop a coding scheme for the site visit interviews early in the data collection period. The coding scheme will align with the research questions for each domain in the cross-site evaluation. We will define codes for each of the key themes and subtopics we anticipate. Once data collection is under way, senior members of the evaluation team will review the codes, along with initial data output, and refine the coding scheme as necessary to better align it with the topics that emerge during data collection. Codes will be reviewed throughout the data collection period to ensure they capture the themes and topics being collected in the data.

Three project team members will be trained to code the qualitative data. To ensure reliability across coders, all three team members will code the initial data for each source and compare codes to identify and resolve discrepancies. In addition, one team member will review a subsample of coded data for all sources to check reliability as coding proceeds.

Mathematica-Chapin Hall will use a qualitative analysis software package, Atlas.ti (Scientific Software Development 1997), to make it easier to organize and synthesize the interview write-ups produced after the site visits. Atlas.ti will be appropriate for coding these qualitative data, as the write-ups will include narratives that require careful coding to be useful for analysis. This software will enable the evaluation team to apply the structured coding system for organizing and categorizing the data, entering them into a database according to the coding scheme, and retrieving data linked to primary research questions. Data can then be retrieved from this system on particular research questions across all grantees, by data source, from individual respondents within sites, or by type of respondent (for example, grantee lead, evaluation partners, or direct service staff). Research team members can also use the system to retrieve all the relevant data on specific topics and assess the consistency and quality of information across respondents and sites.

The evaluation team will code responses to open-ended questions in the web-based reporting system and partner survey into relevant categories by theme. For example, in the web-based system, grantees report on key events that affected project implementation. We will compile responses and then code similar responses together, creating a smaller set of themes. In the partner survey, respondents will report on their three main goals for the EBHV grant initiative. We will compile responses from surveys for each grantee and code similar responses together.

Conduct Within- and Cross-Grantee Analysis

After all qualitative data from site visits have been coded, we will conduct searches to retrieve data on the research questions and subtopics to facilitate theme identification. Data can be retrieved on particular codes across all data sources, from individual informants or categories or data sources, or for specific waves of data collection. We will also be able to retrieve data on particular questions to compare across multiple waves of data collection and data sources. Researchers can use the database to assess the consistency and quality of information across sources and informants.

We will use a within-grantee perspective, followed by a cross-grantee perspective, to identify themes and patterns discernable to an individual grantee, a set of grantees, or all grantees. The within-grantee perspective will be helpful in describing how each grantee implemented its home visiting program and its efforts to develop infrastructure to support the implementation, scale-up, and sustainability of EBHV services. Through the cross-grantee perspective, we will explore relationships across themes—for example, the kinds of implementation challenges grantees faced or similarities in their staffing patterns and partnership arrangements. The Mathematica-Chapin Hall team will use these findings to create grantee-specific case studies and a cross-grantee analysis of the patterns of grantee activities, system attributes, and changes in infrastructure capacity over time.

To facilitate analysis of common themes and patterns across subgroups of grantees, we will also code qualitative site visit data according to selected characteristics for the specific grantee. We will create these codes based on information obtained during the site visit interviews and from other data sources, such as implementation plans or the web-based system. For example, we may want to group sites according to their grantee agency type, selected home visiting model(s), whether they are newly implementing or expanding implementation of their selected home visiting model(s), the length of time that the grantee has been enrolling families for home visiting services, or their overall grantee goals. Likewise, we may want to group sites according to the populations of children and families they serve, such as first-time mothers, risk factors, or age of target child. Creating these

subgroups will enable us to compare, for example, how implementation varied (1) across grantees implementing different home visiting models, (2) among grantees newly implementing a home visiting model, or (3) among grantees not offering direct services.

Quantitative Analysis

The cross-site quantitative data analysis will draw on a variety of data sources and use a number of analytic techniques. The quantitative data will be drawn from the web-based data system, the data provided by the National Service Office of the Nurse-Family Partnership, and surveys of grantees and their partners. To analyze the quantitative data, we will use descriptive statistics and multivariate models to examine the measures of fidelity of implementation, systems, and program costs at a point in time, as well as over time. Before describing our analysis, we address three key data issues that will affect our analytic approach: (1) data collection frequency, (2) the unit of data collection, and (3) the unit of analysis.

Frequency of Data Collection. The systems, fidelity of implementation, and program cost data will be collected at different frequencies, as described in Chapter VII and summarized in Table VIII.2. Much of the fidelity data will be collected monthly, the systems data will be collected biannually, and data covering annual program costs will be collected once. Because these measures will be collected at varying frequencies, we plan to aggregate the fidelity and systems data to a consistent time frame, such as biannually, to facilitate the analyses. Thus, the systems data will provide a "snapshot" of grantees' systems change activities, infrastructure development goals, and infrastructure capacity over six months. The fidelity of implementation data will provide information about how faithful the delivered services were to the EBHV grantee-selected program model over six months.

Unit of Data Collection. The measures of systems, fidelity of implementation, and program costs will be collected for different units. As described in Chapter I, the 17 grantees are each working with varying numbers of service delivery locations. We will collect systems data from the 17 grantees. We will collect fidelity and cost data from the approximately 60 service delivery locations that are part of the grantees' initiatives. Approximately 40 of the 60 total service delivery locations will be implemented in the first year of the grant initiative, and we estimate 20 more locations will be added over the course of the grant initiative. Most grantees will provide data for all service delivery locations in their grant initiative because they are working with only a few locations. Illinois and New Jersey, however, are working with multiple service delivery locations; therefore, they will provide fidelity and cost data for a sample of about six to eight locations.

Unit of Analysis. The grantee is the unit of analysis for the systems change data. Corresponding to the data collection units, the cost and the fidelity data will be presented at the service delivery location. For the fidelity data, as described in Chapter III, this will require us to summarize the fidelity data collected at the participant and home visitor levels at the location level.

We will explore the use of participant- and home visitor-level data in our statistical analyses, but for ease of presentation, we discuss fidelity data at the location level below. Because the program fidelity and cost data are nested within systems, we will use hierarchical linear modeling (HLM) for the cross-domain analyses, which is described in more detail below and in Appendix C.

Table VIII.2. Frequency and Unit of Data Collection and Unit of Analysis by Domain

	Systems Change	Fidelity	Program Costs	Family and Child Outcomes
Frequency of data collection	Biannually	Primarily monthly[a]	Once	Once
Unit of data collection	Grantee (17)	Service delivery locations (60)	Service delivery location	Grantee
Unit of analysis	Grantee	Service delivery location[b]	Service delivery location	Grantee reports on local evaluations[c]

[a]Some of the fidelity data will be collected for every home visit; however, these data will be submitted monthly to the national cross-site evaluation team. We plan to aggregate the fidelity data to biannual time units; however, we will explore different time units, such as monthly indicators, in the fidelity analyses.

[b]The fidelity data for the service delivery location level will be aggregated from home visitor- and participant-level data. We will explore analyses at the home visitor and participant levels.

[c]Grantee local evaluation reports include data collected from parents and children. Local evaluation reports will include one or more separate evaluations of their home visiting program model(s).

Analytic Approach

The quantitative data analysis plan is presented in two sections:

1. The within-domain analysis section describes systems change, fidelity of implementation to selected program model(s), and program costs. The within-domain analysis section includes a description of the network analysis, which will document grantee collaborations to understand the systems in which grantees are working.
2. The cross-domain section describes the relationship between systems change, fidelity, and program costs, as well as the relationship between scale-up and sustainability of the home visiting programs and these three domains.

As discussed in Chapter V, we will assess the impact of the EBHV grantee-selected models on family and child outcomes through a systematic review of evidence, described in more detail below. Finally, we plan to examine the overall effectiveness of the intervention to change systems to support the grantees. We will assess, across the home visiting programs, the combination of the impact of each program and the reach of that program to describe the broader effects of the program on families and children in the grantees' service areas.[22]

Within-Domain Analyses

The data collected on systems change, fidelity, and costs will be used to describe grantees' progress within each domain during the grant initiative. As noted in Chapter I, the primary research questions for each domain include:

- ***Systems Change:*** How did grantees build infrastructure capacity to implement with fidelity, scale up, and sustain the home visiting programs?
- ***Fidelity to the Evidence-Based Model:*** Were the home visiting programs implemented and delivered with fidelity?
- ***Costs of Home Visiting Programs:*** How much does the delivery and support of each home visiting program cost?
- ***Family and Child Outcomes:*** Do home visiting programs improve family and child outcomes when programs are implemented in the "real world" and supported by investments in infrastructure?
- ***Process Study:*** How did grantees plan and implement their grant initiative activities?

The quantitative analyses for the three domains will consist of summarizing the data on each domain at points in time. For systems and fidelity data, which will be collected at multiple time points during the initiative, we will also examine change over time within grantees for systems and within locations for fidelity. Finally, we will use multivariate analysis to examine differences in the trajectories of fidelity by grantee and by subgroups, such as home visiting program model, and trajectories of systems by subgroups, such as type of grantee auspice (for example, a state agency or a nonprofit organization). As described in this chapter in the section on qualitative analysis, we plan to code the qualitative data on systems and fidelity and develop quantitative indicators from it. This will allow us to use these indicators in the quantitative analyses.

[22] Reach is defined as the proportion of eligible families in the target area who are served by the programs (see Chapter II).

Describe Indicators at Points in Time. We will summarize data from the cost and fidelity measures for each service delivery location and the systems data for each grantee at points in time, such as for the prior six months, using basic descriptive statistics, such as means, proportions, and standard deviations. For fidelity of implementation and program costs, we will examine the indicators at the location level for key subgroups, such as grantee or home visiting program model. We will also examine the systems data, including systems change activities, infrastructure development goals, and infrastructure capacity, for key grantee subgroups, such as by type of grantee or primary home visiting model supported.

In addition to describing each measure, we will use exploratory methods to identify the key indicators that best summarize the findings in each domain. For example, we will use correlational analyses to identify indicators that are highly correlated with multiple other indicators to identify those that are central to assessing each domain. We will also use factor analyses to identify indicators that can be combined to create parsimonious scales with acceptable internal consistency reliability. Reducing the number of indicators to scales and key indicators will enable us to focus our descriptive and multivariate analyses on a subset of the most important outcomes.

Trajectories. Using key indicators and scales, we will examine change over time in fidelity (within each service location) and in systems (within each grantee). We will identify common trajectories across locations, such as improving fidelity, and across grantees, such as expanding infrastructure capacity. We will examine fidelity and systems trajectories by key subgroups, to describe and explain differences across trajectories. For example, we will examine fidelity trajectories for particular home visiting models.[23]. To do this, we will analyze the "snapshots" of fidelity, summarized to the location level, at multiple points in time to determine whether fidelity is increasing or decreasing at that location.[24] We will group locations by their fidelity trajectories, such

[23] As described in Chapter III, we purposively selected fidelity measures that apply across multiple program models, in order to enable us to examine fidelity trajectories across different models. We plan to measure fidelity as both the fidelity indicator itself (such as, the actual number of home visits), as well as the indicator relative to the program model requirements (such as, whether the clients received the number of home visits recommended by program developers). As described in Chapter VII, we plan to collect the fidelity data in the web-based data system for all home visiting programs, except NFP, making the data collection similar across the programs. We anticipate that because of differences in program requirements, for some programs it will be easier to reach fidelity than for other programs. We plan to analyze and report these differences across program models.

[24] As explained in this chapter, for ease of presentation, we discuss fidelity at the location level; however, we will explore the use of fidelity measures at the home visitor or participant level for constructing trajectories. The home visitor

as by improving or declining fidelity, to identify which factors, such as home visiting program model, are associated with trajectories.

For the systems analysis, we will group grantees by trajectories of systems indicators. For example, we will track whether infrastructure capacities expand a great deal or only a little over the course of the grant initiative. Using the same method as employed for fidelity, we will examine similarities and differences among the grantees with similar trajectories. The small number of grantees will be an obstacle to finding statistically significant differences in these analyses; however, we can use these analyses to uncover common patterns of systems change.

Network Analysis. The partner survey contains a set of network questions in which respondents are asked to report on their relationships—for example, frequency and type of communication—with all other respondents for that particular grantee. Completed surveys from partners for each grantee will be analyzed together. In other words, we will conduct 17 sets of network analyses—one per grantee—rather than analyzing the data across grantees.

We will use these data to create a square sociomatrix for each grantee—a tabular representation of relationships among responding organizations where the number of rows and columns equals the number of organizations in the system—for each grantee. The sociomatrix will also be displayed as a diagram (sociogram), where the responding organizations are displayed as nodes, and relationships between organizations are portrayed as lines or arcs between the nodes. (See Appendix B for examples of sociomatrices and sociograms.) The strength of the collaboration can be indicated by the size of the line, with stronger collaborations shown by thicker lines. In addition, placement of circles has significance in the sociogram, as circles that are close together collaborate in similar ways in the network. The sociomatrix and sociogram will be used to describe the size of the given network, and can be used to identify organizations isolated from the collaboration. To explore changes in the pattern and structure of collaboration over time, the cross-site evaluation team will compare the size of the network and the proportion of isolated organizations across the three data collection points.

(continued)
or participant level trajectories would be created in the same way as the trajectories at the location level. We will examine multiple "point-in-time" measures, or "snapshots" of fidelity measured within each service delivery location.

The evaluation team will also calculate the density of the matrix (the proportion of existing collaborative ties relative to all possible collaborative ties) for each grantee. This measure can be examined at multiple time points to establish if, and how, the amount of communication among a grantee's partners changes over time.

We will also analyze the network data to describe the attributes of grantee partners and relationships among grantees' partners within and across infrastructure levels. To do this, we will complete the network analyses described above by subgroups of respondents at each infrastructure level. This analysis will enable us to depict communication patterns both within and across levels and identify potential breaks in communication. For example, perhaps partners at the community level are in frequent communication, but they have little or no communication with partners at the state level. This information about communication patterns within and across levels may be helpful to grantees as they seek to address implementation challenges and improve implementation.

We will also calculate means, standard deviations, and minimum and maximum scores for all continuous variables in the partner survey (such as number of employees, budget, years of experience) to describe the characteristics of the organizations within the grantees' network. Frequencies will be reported for all categorical variables (for example, the infrastructure levels at which the respondent organization works). We will combine selected collaboration items into scales and analyze them as a series of continuous variables for each collaboration construct. By using confirmatory factor analyses, we will establish the multiple dimensions of collaboration. For published measures, we will calculate scores according to the author's specifications (if available), and using confirmatory factor analysis. Finally, we will perform traditional descriptive analyses for the remaining, non-scale-based collaboration survey measures (for example, length of time participating in grantee projects).

Explaining Change Within Domains. The Mathematica-Chapin Hall team will use multivariate methods, such as Ordinary Least Squares (OLS) or logistic regression analysis, to document within-domain changes in grantees and locations with a range of characteristics. We will examine the relationship between subgroup characteristics, such as grantee type or home visiting program model (controlling for contextual factors, such as geographic location), to explore why fidelity might differ across service delivery location and why systems change might differ across grantees. These analyses will be exploratory, and we cannot draw causal conclusions from them. In addition to incorporating qualitative data into the analyses, by coding it into quantitative indicators, we will use the qualitative data to inform this explanatory analysis. Both the quantitative and

qualitative analyses will provide explanations for levels of fidelity of implementation or change in systems. The quantitative results will present a "story" of improvement. For example, the quantitative data might show that locations in states with prior experience using a home visiting model achieve fidelity more quickly than locations without such experience. Similarly, the qualitative interview data will be analyzed to identify themes that explain the facilitators and obstacles to achieving rapid fidelity of implementation, primarily based on the perceptions of staff who deliver the services. In an exploratory analysis, we will contrast the explanations for achieving rapid fidelity of implementation based on the quantitative and qualitative analysis results to identify whether they are similar, complementary, or contrasting. This mixed-method approach will provide a fuller explanation of the change within domains.

Cross-Domain Analyses

The associations among the systems, fidelity of implementation, and program cost domains are a central element of this evaluation. As noted in Chapter I, the cross-domain research questions, which will be analyzed using quantitative data and methods, include:

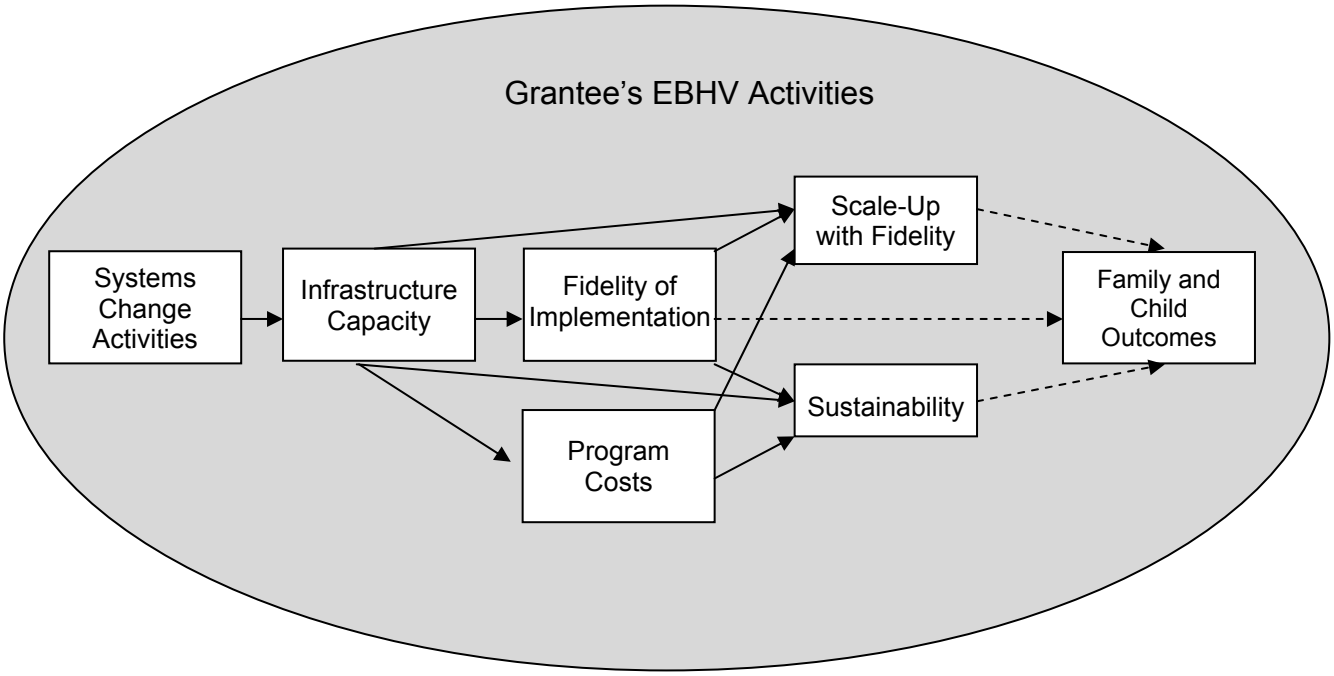
- Are systems and changes in those systems related to the fidelity of implementation? What is the nature of this relationship?
- How are systems, program costs, and fidelity of implementation related to the scale-up and sustainability of home visiting programs?
- Are systems change activities and improvement in infrastructure capacity to support the implementation of home visiting programs with fidelity, scale-up, and sustainability related to positive family and child outcomes?

The cross-domain quantitative analyses will examine the relationship between infrastructure changes resulting from systems activities; program characteristics, including costs; and fidelity of implementation, accounting for differences in relevant grantee and program characteristics. Furthermore, we will examine the relationship between systems change, program costs, and fidelity with two key outcomes: sustainability and scale-up of home visiting programs. Analysis regarding the third cross-domain research questions on improving infrastructure capacity and how that may impact family and child outcomes, is discussed separately at the end of this chapter.

Figure VIII.1 shows the relationships between the domains. The cross-site evaluation will analyze the relationships between the domains, as depicted by the arrows. The solid arrows represent relationships we will analyze directly, while the dashed arrows represent relationships we will assess indirectly. Our analysis of the relationship between systems change and family and child

outcomes (that is, the dashed arrows), is described in the last section of this chapter. To study changes in fidelity, scale-up, and sustainability associated with systems activities and program characteristics, we will use multilevel HLM because the measures of fidelity, at the level of service delivery location, are nested within the measures of systems, at the grantee level. HLM is a powerful tool for analyzing nested data because it can handle nested data in its estimation procedures, and it allows the relationships between fidelity and systems change to differ across grantees. Appendix C provides technical details about the analytic models.

Figure VIII.1 Cross-Domain Relationships Examined in the Quantitative Analyses



To examine how observed improvements in fidelity are associated with the systems change activities, infrastructure capacity, and program cost measures, we will enter the key indicators and scales for each domain into the analytic model, and control for (1) relevant grantee characteristics, such as grantee type and geographic area; and (2) service delivery location characteristics, such as home visiting model or time since implementation. One set of HLM models will include the key fidelity indicators as the dependent variables. The other two sets of HLM models will include fidelity measures as explanatory variables, in addition to systems change activities, infrastructure capacity, and program costs, and will include indicators of scale-up and sustainability as the dependent variables. We will conduct the cross-domain analysis midway through the initiative and at the end of the initiative. We will also perform the cross-domain analyses using subgroups of similar grantees

(for example, those supporting the implementation of the same EBHV home visiting model or those at the same stage of implementation) to determine whether cross-domain relationships differ for key subgroups of grantees.

Systematic Review of Evidence

The goal of the systematic review will be to assess whether the EBHV grantee-selected program models affect the outcomes of families and children. The systematic review of evidence will examine the impacts of the home visiting programs, based on grantees' local evaluations. The cross-site evaluation team will follow three basic steps in the systematic review of evidence: (1) reviewing grantees' evaluation designs, (2) standardizing effects across grantees, and (3) presenting the findings systematically and clearly.

Reviewing Grantees' Evaluation Designs. When the grantees' family and child outcomes evaluations are complete, the cross-site evaluation team will review the evaluation designs to determine the strength of their evidence. Each grantee's evaluation will be categorized into one of three evidence groups: (1) strong evidence about effectiveness, (2) moderate evidence about effectiveness, and (3) exploratory evidence about effectiveness. The level of evidence will be based on the quality of the outcome measures, the rigorousness of the evaluation design, and the implementation of the design. The strong evidence about effectiveness group includes studies with the most rigorous study designs—specifically, well-implemented randomized controlled trials (RCTs). The moderate evidence about effectiveness group includes studies with strong, but somewhat less rigorous, designs, such as quasi-experimental designs with comparable comparison groups. The exploratory evidence of effectiveness group includes studies that do not meet the standards of the strong or moderate evidence groups, such as pre-post studies or outcomes-only studies, which include no comparison groups, and studies with only outcome measures that are not reliable or valid. Exploratory studies can provide information about whether the results are consistent with the study hypotheses, and this provides important information for future research; however, they cannot provide causal evidence about the links between home visiting programs and family and child outcomes. Table VIII.3 shows the minimum requirements necessary to meet the strong and moderate categories of evidence.

Table VIII.3 Overview of Design Elements by Research Design Rigor

Design Elements	Strong	Moderate
Random Assignment, Intent-to-Treat	X	
Random Assignment, Not Intent-to-Treat		X
No Random Assignment, Comparison Group		X
Reliable and Valid Outcome Measures	X	X
Data Collected Comparably Across Treatment and Comparison Groups	X	X

The evaluation designs must be well implemented to meet the requirements of the strong and moderate categories. Study implementation issues that will affect the categorization of the evidence level include sample attrition, particularly differential attrition across the treatment and control groups, which creates bias in the impact estimates, and lack of baseline equivalence of the treatment and comparison groups in quasi-experimental designs. Random assignment designs with high levels of attrition must also demonstrate comparability across the final treatment and comparison samples. As we develop the specific criteria to evaluate these methodological issues, we will look at the latest developments in this area, surveying the U.S. Department of Education's What Works Clearinghouse, the Campbell Collaboration, and a review of other systematic review methods.

Table VIII.4 (first set of columns) shows the designs that the grantees were planning as of September 2009. A challenge to the cross-site evaluation of family and child outcomes is that only nine grantees are planning to use RCTs, which provide the strongest evidence of a causal link between the program and family and child outcomes. Furthermore, for RCTs to be highly rigorous, they must be well implemented. For example, if the treatment and control groups have very different rates of attrition, it is more difficult to draw causal conclusions from an RCT study. Issues, some beyond the control of the grantees, may arise that challenge the execution of well-designed RCTs (for example, funding cuts may reduce the number of families served by grantees). By rating the study design and implementation, the systematic review will draw attention to the results based on the strongest designs, rather than presenting all designs as equally valid in drawing causal conclusions.

A second challenge to the cross-site evaluation is the small sample sizes in the grantees' evaluations, which leads to a lack of power to detect small impacts on family and child outcomes. In particular, the ability to detect impacts on incidence or reports of child maltreatment is likely to be

Table VIII.4 Grantees' Proposed Evaluation Designs and Sample Sizes

		Evaluation Design				Sample Size			
State	Grantee	RCT	QED	Pre-Post	Outcomes	200-299	300-399	400-499	500 or more
CA	County of Solano, Department of Health and Social Services		X			X			
CA	Rady Children's Hospital, San Diego				X				X
CO	Colorado Judicial Department	X				X			
DE	Children & Families First				X	X			
HI	Hawaii Department of Health	X				X			
IL	Illinois Department of Human Services			X				X	
MN	Minnesota Department of Health State Treasurer		X			X			
NJ	New Jersey Department of Children and Families	X					X		
NY	The Society for the Protection and Care of Children, Rochester	X							X
OH	St. Vincent Mercy Medical Center	X							X
OK	University of Oklahoma, Health Sciences Center	X					X		
RI	Rhode Island Kids Count	X				X			
SC	Children's Trust Fund of South Carolina		X				X		
TN	Child and Family Tennessee	X				X			
TN	Le Bonheur Community Outreach				X	X			
TX	DePelchin Children's Center	X							X
UT	Utah Department of Health		X						X
	Total	**9**	**4**	**1**	**3**	**8**	**3**	**1**	**5**

Source: Grantee plans, October 2009.

QED = Quasi-experimental design; RCT = Randomized controlled trial.

low given the low rates of incidents and reports in the population. Table VIII.4 (second set of columns) shows grantees' proposed sample sizes for their evaluations of impacts on families and children. Table VIII.5 shows the minimum detectable effects (MDEs), which are the smallest impacts that the program must produce in the target population for statistical tests to have a reasonable chance of detecting an effect, for a range of sample sizes. As shown in these tables, for a sample size of 500, the MDE for impacts on child maltreatment reports is a drop of 8 percentage points, assuming a 15 percentage point rate of child maltreatment reports in the grantees' target populations. We assumed this level of child maltreatment reports because the target populations identified by grantees are at higher risk of reports of child maltreatment than the general population (see, for example, Duggan et al. 2007 for rates of substantiated and unsubstantiated reports in the child's first year of life). Many grantees are proposing sample sizes smaller than 500 for their local evaluations. Furthermore, the sample sizes identified in the tables are the number of respondents; thus, if grantees have high levels of attrition in their evaluations, it will be more difficult to attain the power needed to detect effects.

Table VIII.5 Examples of Minimum Detectable Effects (MDEs) for Child Maltreatment and Maternal Depression Measures

Sample Size (at Followup)	MDEs for Child Maltreatment Reports[a]	MDEs for Maternal Depression Using the CES-D—Assumption 1[b]	MDEs for Maternal Depression Using the CES-D—Assumption 2[b]
350	9	.24	.21
500	8	.20	.17
1,000	5	.14	.12
2,000	4	.10	.09
3,500	3	.07	.07

[a]The MDEs for child maltreatment reports, as measured by a combination of substantiated and unsubstantiated reports, are calculated based on the following assumptions: $R^2 = .10$ based on controlling for baseline characteristics, alpha = .10 (two-tailed); no clustering in the sample, substantiated and unsubstantiated child maltreatment reports in target population = 15 percent, and power = 0.80.

[b]The MDEs for maternal depression, as measured by the CES-D, are calculated based on the following assumptions: Std Dev = 7, alpha = .10 (two-tailed), no clustering in the sample, power = 0.80, and controlling for baseline characteristics and baseline measure of CES-D with $R^2 = .2$ for assumption 1 and $R^2 = .4$ for assumption 2.

CES-D = Center for Epidemiologic Studies Depression Scale; MDE = Minimum Detectable Effect; QED = Quasi-Experimental Design; RCT = Randomized Controlled Trial; Std Dev = Standard Deviation.

The cross-site evaluation team has addressed the local evaluation sample size issue in several ways. First, as described above, our systematic review includes parental risks for child maltreatment, such as maternal depression, which occur with more frequency than child maltreatment. Examining more prevalent risk factors increases the likelihood of detecting significant effects. Furthermore, we will recommend to grantees that they control for baseline indicators of the parental risk outcomes in their local evaluations. Controlling for baseline measures increases the precision of statistical tests, thereby improving the power of the local evaluations. Parent risk factors, such as maternal depression, can be controlled for baseline levels, while child maltreatment reports cannot. Finally, we encouraged grantees to use evaluation designs that increase the chances of detecting impacts, such as increasing sample sizes if possible and ensuring that the comparisons they plan represent truly different experiences for families (maximizing the possibility of seeing differences), selecting indicators that have the greatest chance of being affected by the program, and focusing on short-term followup to reduce sample attrition. Regardless of steps taken to address this issue, this challenge could pose a problem if sample sizes are low and changes in outcomes are small.

In examining the quality of the family and child outcomes measures, we will be looking for several key indicators. For example, grantees must have used the vetted, age-appropriate indicators of the key cross-site evaluation constructs. Data must have been collected (and scored) by staff with the proper training, and the amount of missing data must be limited. Moreover, data must be collected in the same way for the clients receiving the home visiting services and for those in the comparison group.

Standardizing Effects. For the cross-site evaluation, the Mathematica-Chapin Hall team will work with grantees to calculate their estimates of effects consistently, so that comparable estimates can be presented across grantees. To calculate estimates of effects that are consistent across grantees, the Mathematica-Chapin Hall team will work with grantees to convert their estimates of home visiting impacts to effect sizes to provide consistent measures of effects across differing scales.

Presenting the Findings. After the grantee evaluation results are categorized by level of evidence and their estimates of effects have been calculated in a standardized way, the results will be presented clearly and systematically across the grantees. The goal of the presentation will be to describe the level of evidence of the effects of home visiting programs about family and child outcomes in a way that is straightforward and useful to CB/ACF, the grantees, and other key stakeholders. For example, reports might include tables that provide an overview of (1) the level of

the evidence, (2) the direction (positive or negative) of the effects, and (3) the size of the effects. The reports will also include text that describes how decisions were reached about categorizing the grantees' evaluation designs, as well as providing guidance for readers about how to interpret the level of evidence and the size of the effects.

Systems Change and Family and Child Outcomes

The grant initiative focuses on building infrastructure to support home visiting programs, with the ultimate goal of preventing child maltreatment in the grantees' communities. Thus, the cross-site evaluation of the systems change, fidelity of implementation, and costs will complement the systematic review of evidence, which focuses on the impacts of home visiting programs for families who receive program services. To conduct a global assessment of the potential for the reduction of child maltreatment within grantees' communities, we will examine the results of systems change activities intended to increase scale-up and sustainability of home visiting programs, alongside the program impacts. Based on the work of Abrams et al. (1996), we will examine two key measures from the cross-site evaluation results: (1) measures of the size and significance of the impacts of the EBHV grantee-selected program models on family and child outcomes; and (2) measures of reach of the home visiting program models, defined as the proportion of eligible families who receive services. We will present the measures together and explore methods for combining them.

Effectiveness of EBHV Grantee-Selected Program Models. The measures of effectiveness will include the effect sizes for each family and child outcome grantees include in their local evaluations, which will be calculated for the systematic review of evidence. Whether the evidence is strong, moderate, or exploratory, we plan to include all measures of effectiveness in this analysis; however, we will provide information about the rigor of the evidence when presenting the results of this analysis.

Reach. To calculate the indicator of reach, we will use the information gathered through the scale-up measures in the systems domain, discussed in Chapter II, regarding the number of families referred and enrolled for services and the definitions of the target population. Reach is typically defined as the ratio of (1) clients served to (2) the size of the target population (Abrams et al. 1996). We will work with CB/ACF and grantees to explore different measures of reach to identify the most accurate definition for each grantee, as well as comparable definitions across grantees. For example, the number of clients served could be the capacity of the program in one year or the average number of clients who complete the program each year, over the course of the intervention. The

size of the target population could vary by the geographic boundaries and density of population in the target area.

To calculate the overall effectiveness of the program, we will present the effectiveness and reach indicators together. Furthermore, we will explore methods, such as multiplying them together (Abrams et al. 1996), for combining the two indicators into one scale of overall effectiveness.

Taken together, the analyses will provide a wealth of information designed to answer CB/ACF's research questions, inform grantee program management and decision making, and contribute to policy and research in home visiting. The findings will be summarized in a range of publications and presentations as described in the next chapter.

IX. REPORTING AND DISSEMINATION

The cross-site evaluation will provide utilization-focused information grantees can apply to improve their local initiatives, as well as summative information to guide future national, state, and local efforts to support high-fidelity implementation of home visiting programs to prevent child maltreatment. To meet these goals, the Mathematica-Chapin Hall team will disseminate findings and lessons from the cross-site evaluation throughout the evaluation period. We will do this by creating annual reports, a final report, and periodic ad-hoc reports CB/ACF requests on priority topics. CB/ACF and the cross-site evaluation team are committed to providing timely information to the child maltreatment research and practice communities through other types of dissemination approaches, as well including policy briefs, presentations at professional conferences, briefings for federal interagency groups and CB/ACF staff members, and publication in leading scholarly journals. In addition, the cross-site evaluation will prepare a restricted-use data file that will be available to qualified researchers[25] through the National Data Archive on Child Abuse and Neglect (NDACAN) at Cornell University. The cross-site evaluation team will work closely with NDACAN staff to ensure that the data and documentation provide strong support to other investigators interested in the data set.

To meet the needs of the EBHV grantees and CB/ACF, the reporting and dissemination plan includes two primary levels of reporting: (1) grantee-specific, and (2) cross-grantee. First, the cross-site evaluation team will provide each grantee with grantee-specific findings based on the case study approach used for the systems and process domains (described in Chapters II and VI). Grantee-specific reporting will include findings from the 2010 and 2012 site visits and partner surveys, as well as the final partner survey in 2013, ongoing fidelity and systems data, and program costs (2011 data collected in early 2012). This reporting will include a profile of the grantee's basic characteristics (for example, program and local evaluation activities in the past year), as well as analysis of grantee strategies and progress in meeting their local EBHV goals for systems development and change and supports for home visiting program model fidelity. Second, based on the grantee-specific, cross-grantee, and cross-domain analyses (Chapter VIII), the Mathematica-

[25] Qualified researchers are those who agree to the data archive's requirements for using the data for research purposes only and agree to protect the confidentiality of study participants by not making any attempts to use the data to identify individuals.

Chapin Hall team will report findings for subgroups of grantees and for the EBHV initiative as a whole.

This chapter presents the preliminary plans for reporting and disseminating the cross-site evaluation findings. The plans may change to reflect CB/ACF priorities. CB/ACF will review and provide feedback on the outline and draft versions of each proposed product and presentation developed by the cross-site evaluation team during the contract period.

Annual Reports

Each fall, the Mathematica-Chapin Hall team will produce an annual report that addresses key evaluation questions. The content of the annual reports will vary, depending on the stage of the study and the data available. Reports will be accessible to broad audiences of practitioners and policymakers, with enough detail for a research audience. The current plans for the content of the annual reports are:

- ***The 2009 report*** reviews the initial year's evaluation activities, discusses the grantees and their evaluation plans, and concludes with a discussion of the lessons learned and the next steps for the cross-site evaluation. Grantee profiles based on summer 2009 grantee revisions to their implementation and evaluation plans will be provided and verified with grantees in fall 2009.
- ***The 2010 report*** will present findings drawn from the grantee-specific and cross-grantee analyses. These analyses will focus on the systems and process domains. In addition, the Mathematica-Chapin Hall team will present the findings from the fidelity analyses. The systems reporting will document the status of grantee goals and activities designed to reach them, as well as findings from the first grantee partner survey. For the fidelity domain, the report will include initial confirmation from purveyors that grantees are approved to implement their chosen home visiting program models, home visiting program and staff characteristics, program enrollment and participant characteristics, and the services received by families. Process study findings will be used to report how and why grantees made the choices they did during the planning and early implementation period. The process study reporting will also describe the early challenges and successes that grantees report.[26]

[26] The current cross-site evaluation contract requires brief site visit summaries and information about the emerging themes identified across grantees shortly after site visits are completed. The Mathematica-Chapin Hall team will work with CB/ACF to streamline the reporting process. We currently recommend focusing on providing grantees with the case study (based on the systems and process domain data) findings within three months of conducting the site visits. This will allow time for verification of the information before conducting the cross-site analyses.

The cross-site evaluation team will also provide grantees with an updated grantee-specific profile, as well as findings from the systems and process analyses (below, we describe the verification process and the utilization-focused technical assistance activities that will support this). As described in Chapter VII, these data will be drawn from site visits to grantees, the partner survey, feedback from program model purveyors, and the web-based data collection system.

- ***The 2011 report*** will provide the first opportunity to conduct analyses of changes over time at both the grantee-specific and the cross-grantee levels. This report will include analyses of data on systems and implementation fidelity drawn from the web-based system, highlighting changes over time. As in the 2010 report, this will include analyses of grantees' progress toward meeting their systems goals, home visiting program and staff characteristics, program enrollment and participant characteristics, and the services received by families. In addition, the cross-site team will provide grantee-specific information to grantees on these topics as part of updates to their annual profile.
- ***The 2012 report*** will build on the 2010 report structure and content; it will also present analyses of change over time on a broad set of measures. Findings from the 2012 site visits and partner survey will be included, as will the ongoing assessment of fidelity to the home visiting program models. The cost analyses based on 2011 data will also be included in this report. As in 2010, the cross-site team will provide an updated grantee-specific profile, as well as findings from the systems and process analyses.
- ***The 2013 report*** will provide cross-site analyses of changes over time for a prescribed set of systems and fidelity indicators. The primary data source will be the web-based system. The report will be similar in structure and content to the 2011 report, except that it will also include findings from the final partner survey.[27] The cross-site team will provide grantee-specific information to grantees on these topics as part of updates to their annual profile and a brief summary of the findings from the partner survey for their project.

Table IX.1 summarizes the contents planned for each of the annual reports and the 2014 annual/final report.

Final Evaluation Report

The final report, delivered in fall 2014, will be the final project deliverable. It will serve as the final annual report, as well as the final evaluation report. The report will be comprehensive, synthesizing all aspects of the study. It will also be written to be accessible to a range of audiences. In addition to presenting the systematic review of evidence in the family and child outcomes domain, it will include detailed descriptions of operational structures and of systems outcomes, as

[27] Analyses of the partner survey across all three rounds of data collection will be presented in the final report.

Table IX.1 EBHV 2010-2014 Annual and Final Report Contents

Domain	2010 Annual	2011 Annual	2012 Annual	2013 Annual	2014 Annual/ Final
Systems Change					
Logic Models	X	X	X	X	X
Partner Survey	X		X	X	X
Fidelity to the Evidence-Based Model					
Initial	X				X
Ongoing		X	X	X	X
Costs of Home Visiting Programs					
Program Components			X X		X X
Process Study					
Site Visits	X		X		X
Case Studies	X		X	X	X
Family and Child Outcomes					X
Cross-Domain			X		X

EBHV = evidence-based home visiting.

well as integration of qualitative information from the process study with costs, outcomes, and fidelity. To the extent possible, it will describe linkages between grantee characteristics and systems change efforts, fidelity of implementation to the program models, and program costs. In the final report, the cross-site evaluation will describe lessons learned for policymakers, program operators, and researchers and outline next steps in research that can help answer emergent questions suggested by the study.

Key topics for the final report may include:

- A cross-site synthesis of implementation and change over time based on the process domain activities (site visits and partner survey)
- Longitudinal analysis of family characteristics, enrollment, and service delivery
- The evidence for impacts of the initiative on targeted family and child outcomes (based on the systematic review of grantee evidence)

- Analysis of associations between enrollee characteristics and implementation
- Analysis of cost data
- Analysis of cross-domain findings linking systems, fidelity, and program costs
- Analysis of evidence supporting linkages between success in supporting the fidelity of home visiting program models and subsequent scale-up and sustainability of home visiting programs
- Analysis of the links between program effectiveness and reach into the target population
- Grantee perceptions of the participatory process and focus of the evaluation

The final report will also serve as the basis for additional dissemination efforts, including a briefing for CB/ACF staff members, presentations at professional meetings, and policy briefs.

Periodic Ad-Hoc Reports and Literature Reviews

Beginning in 2010, the Mathematica-Chapin Hall team will produce up to two additional reports per year. These will be brief reports of analyses completed upon request from CB/ACF, usually within a few days. Most ad-hoc reports will be short supplemental analyses, tables, or figures, with brief interpretive summaries.

Mathematica-Chapin Hall staff will also write, and update as needed, two short literature reviews on key evaluation issues throughout the project. In 2009, the evaluation team will produce a review on cost analysis and the team recently completed one on the systems domain evaluation design (Hargreaves and Paulsell 2009).

Utilization-Focused Reporting

Starting in 2010, the Mathematica-Chapin Hall team will produce up to three utilization-focused reports per year. Their purpose is to distill key cross-site evaluation messages that focus on practice, for ease of sharing with grantees, home visiting staff, and other stakeholders. These reports will include practitioner-friendly materials designed to promote wide use. The content of these reports will be determined in conjunction with CB/ACF and the grantees. These reports may be policy briefs or short articles in practitioner-oriented publications. Other possible outlets include conference presentations aimed at grantees and home visiting staff and administrators.

The case studies produced as part of the annual report activities will be utilization focused, and the Mathematica-Chapin Hall team will provide technical assistance to grantees on how to interpret and use them in their work with their implementing agencies and other partners. The grantee-specific case studies will include partner survey findings (including the sociomatrixes and sociograms

described in Chapter VIII), as well as findings from the site visits. The technical assistance provided by the cross-site team may include a webinar on how to interpret the findings, as well as one-on-one and group consultation between grantee liaisons and the grantees.

NDACAN Data Restricted-Use Data Files

The Mathematica-Chapin Hall team will submit cross-site evaluation data files to NDACAN. This is a regular practice for CB/ACF grants to facilitate ongoing research through data collection supported by federal dollars. The data files will include (1) data submitted by grantees and their implementing agencies through our web-based data collection system, (2) family and child outcomes quality indicators submitted by grantees and local evaluators on a customized form through SharePoint, (3) family and child outcomes data grantees include in their final reports/articles that serve as the basis for the cross-site systematic review of evidence, (4) selected data collected during site visits, and (5) data submitted directly to Mathematica by home visiting national models, such as data from the Nurse-Family Partnership's Clinical Information System. The Mathematica-Chapin Hall team will work collaboratively with NDACAN, as well as with the grantees and CB/ACF, to coordinate the archiving of the data sets to ensure the format supports NDACAN's mission of providing data sets to researchers on child abuse and neglect for secondary analysis.

This collaboration includes developing data structure and variable naming conventions, missing code values, syntax, and a codebook that defines the variables and layout of the data files. The codebook will comply with NDACAN requirements and industry best practices, such as those guidelines issued by the Inter-University Consortium for Political and Social Research. All data and documentation will be transmitted to NDACAN from the Mathematica-Chapin Hall team electronically through Secure Sockets Layer transmission protocol into a secure space on NDACAN servers. All data will be in SAS format, in keeping with NDACAN's preference for SAS or SPSS. There will be no delivery of hard-copy files or documentation.

The cross-site evaluation team will work closely with NDACAN staff to ensure that the data are not identifiable. Because of the sensitive nature of the data and the fact that data are being collected in a relatively small number of sites, the data set will be available only to researchers who agree to meet the following requirements: (1) they hold an Institutional Review Board approval for their proposed project, and (2) they sign a data security agreement.

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APPENDIX A

ALTERNATIVE AND SUPPLEMENTAL FAMILY AND CHILD OUTCOME MEASURES

Along with the grantees and local evaluators, the Mathematica-Chapin Hall team identified a set of seven family and child outcome domains that encompass the measures being collected for the local evaluations. For each of these domains, the cross-site evaluation team reviewed all of the proposed measures as well as some additional measures. The team recommended one or more of these measures to represent the domain, balancing the following factors:

- Assessment of constructs potentially influenced by home visiting programs
- Demonstrated sensitivity to similar interventions
- Successful use in other large-scale research
- Appropriateness for families and children from different cultural, racial, ethnic, and linguistic backgrounds (for example, availability in Spanish), as well as across different age groups
- Cost of purchasing and using copyrighted materials and training staff to collect data; frequency of data collection and time required for it
- Reliability and validity of the measures in general and for Spanish speakers in particular

Some grantees will be collecting measures other than the recommended measures for their local evaluations. Eight measures (denoted with an asterisk in Table A.1 below) will be collected as alternatives to the cross-site measures. There are also 23 supplemental measures that will be collected in addition to the recommended cross-site measures. All 31 measures were reviewed by the cross-site evaluation team and meet the recommended psychometric properties described in Chapter V. The alternative and supplemental measures are listed in the table below.

Table A.1 Alternative and Supplemental Measures Collected for Local Evaluations

Construct	Measure	Grantee
Substance Use		
Substance Use, Parental Depression	Global Appraisal of Individual Need (GAIN), GAIN-SS	CO
Substance Use	NFP CIS "Health Habits" form	CA-Solano, MN, SC
Substance Use	Diagnostic Inventory Schedule (DIS) Alcohol and Drug Modules*	OK
Parental Depression		
Parental Depression	NFP CIS "Maternal Health Assessment: Pregnancy – Intake" form*	CA-Solano, MN, SC
Parental Depression	Beck Depression Inventory-II (BDI-II)*	NY, OK

Table A.1 *(continued)*

Construct	Measure	Grantee
Parental Depression	Edinburgh Postnatal Depression Scale (EPDS)*	TN-LeB
Parental Depression	Depression, Anxiety, and Stress Scales*	TX
Parenting		
Parenting: Harsh Discipline	Conflict Tactics Scale, Parent-Child version (CTS-PC) (includes spanking in last week)*	HI, IL, NJ, OK
Parenting: Harsh Discipline	Harsh Discipline Scale*	TN-C&F
Parenting: Discipline*	Parenting Scale (PS)	TX
Parenting: Parent Knowledge of Child Development, Discipline	Parent Opinion Questionnaire (POQ)	TX
Parenting: Parent Stress	Parental Anger Inventory (PAI)	TX
Parenting: Parent-Child Interaction	Parenting Stress Index (PSI), PSI-SF	HI, IL, NJ, TN-C&F, NY
Parenting: Parent-Child Interaction	Adult-Adolescent Parenting Inventory (AAPI)	HI, NJ, TN-C&F, CA-Solano
Parenting: Parent-Child Interaction	Nursing Child Assessment Satellite Training (NCAST) Parent-Child Interaction (PCI) Program	HI, NJ
Parenting: Parent-Child Interaction	Nursing Child Assessment Satellite Training (NCAST)	TN-C&F, CA-Solano
Parenting: Parent-Child Interaction	Keys to Interactive Parenting Scale (KIPS)	HI, NJ, OH
Parenting: Parent-Child Interaction	SPIN Video Home Training (SPIN-VHT)	HI, NJ
Parenting: Parent-Child Interaction	Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO)	UT
Parenting: Parent-Child Interaction	Ages & Stages Questionnaires: Indicator for "meet parental bonding benchmark"	CA-Solano
Parenting: Parent-Child Interaction	Family Development Matrix (FDM)	CA-Solano
Parenting: Parent-Child Interaction	Parent/Caregiver Involvement Scale (P/CIS)	RI, OH
Parenting: Parent-Child Interaction	Emotional Availability Scale (EAS)	RI
Parenting	Parenting Practices Inventory (PPI)	NY
Parenting: Physical Abuse	Child Abuse Potential Inventory (CAPI)	NY

Table A.1 *(continued)*

Construct	Measure	Grantee
Parenting: Child Maltreatment	Brief Child Abuse Potential Inventory (BCAP)	OK
Parenting: Child Maltreatment	Child Well-Being Scales-Revised	OK
Parenting: Maternal Functioning	Maternal Self-Efficacy Questionnaire (MEQ)	NY
Parenting: Home Environment and Quality	Home Observation for Measurement of the Environment (HOME)	HI, NJ, TN-C&F, RI, NY
Child Social-Emotional Development		
Child Social Emotional Development	Ages & Stages Questionnaires: Social-Emotional (ASQ:SE)	CA-Solano, MN, SC
Child Social Emotional Development	Eyberg Child Behavior Inventory (ECBI)	TX

NOTE: * Denotes an alternative measure.

APPENDIX B

SAMPLE SOCIAL NETWORK MATRICES AND SOCIOGRAMS

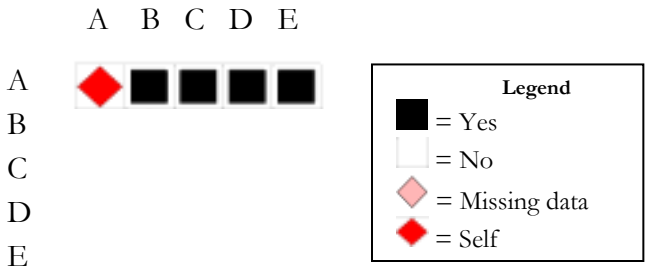
This appendix contains sample sociomatrices and sociograms, with appropriate explanations, to help the reader understand what these graphic displays of the network data will look like and how they can be helpful for interpreting the network findings. These examples were developed for another project and were adapted to illustrate potential visualizations of network data for the EBHV project.

Social network matrices and sociograms are novel visual approaches to displaying relationship data. This appendix systematically explains these figures so that the reader can better interpret the data that are contained in the figures.

For the purposes of this appendix, we will focus on a single hypothetical relationship between partner organizations defined in the partner/network survey (though, additional relationships are measured by this instrument). The survey has a question where respondent organizations are prompted to indicate whether or not they work with other organizations, presented as a roster of potential working partners. The data collected from each responding organization can be organized into a matrix for visualization and analysis.

Illustrations B.1, B.2, and B.3 show *sociomatrices*, which are convenient ways of displaying network data. In this small example, we have defined the boundaries of the "work" network as the working relationships between 5 partners (A, B, C, D, and E). The sociomatrices in these illustrations have five rows, and five columns, to allow for all possible relationships between partner organizations. On the survey instrument, there are opportunities for respondents to indicate additional partner organizations who should be included to more accurately define (and expand) the network.

Illustration B.1



The first row in Illustration B.1 shows organization A's responses about their working relationships with others in the network. The red diamond in the first column (A) is a *self-response*. In network analysis, it is typical to ignore the *self-response* diagonal in a sociomatrix.

The squares in the rest of the row show that A reported working with all other organizations in the network (B, C, D, and E).

Illustration B.2

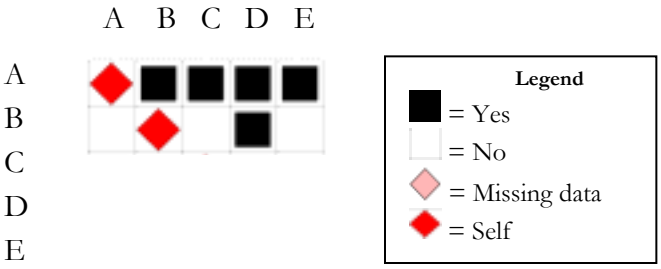


Illustration B.2 shows B's responses in the row below A's responses. B reported working with only one other organization, D. The other columns for row B are empty (except for the self-response).

A reported working with B, but B did not report working with A. The working relationship between A and B, then, is not *reciprocal*—one individual sees a working relationship here, but not both.

Illustration B.3

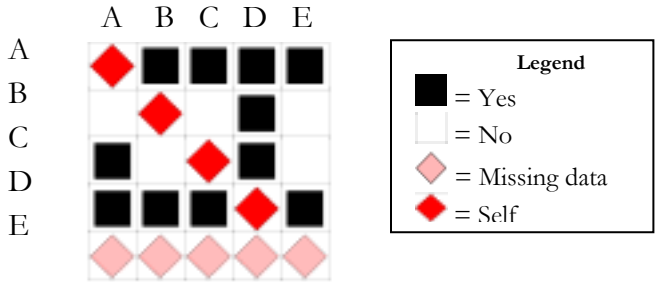


Illustration B.3 is a matrix showing all the working relationship data for the network. When we compare A's responses (the first row) with all responses about A (the first column), A's working relationships with C and D are reciprocal since C and D reported working with A.

The last row (E) contains pink diamonds; E's data are "missing" because we do not have data from E. This can occur if E fails to respond to the partner/network survey, or if E fails to respond to the network component of the survey instrument. We do, however, have data about E from each of the other organizations in the network. As seen in the last column of the matrix (E), two individuals (A and D) reported working with E.

Illustrations B.4, B.5, and B.6 show the same working relationship data as a series of *sociograms*, which is another way of graphically showing network relationships.

Illustration B.4

Illustration B.4 shows a sociogram of the relationship between A (a red circle) and B (a red circle). The line linking A and B shows the working relationship between the two. The arrow pointing from A to B means that A reported working with B. There is no arrow from B to A, since B did not report working with A.

Illustration B.5

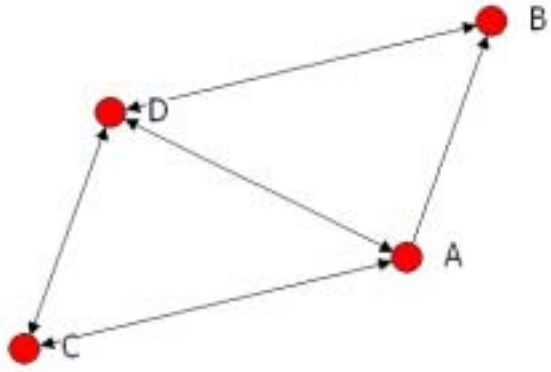


Illustration B.5 shows the working relationships among A, B, C, and D. We include data only for those individuals for whom we have complete data; E is not shown because response data are missing from E.

In this picture, A and D reported working with all other organizations (that is, they have arrows pointing to every person in the network). This corresponds to the data in Illustration B.3; the rows for A and D showed that each organization reported working with all others in the network.

What is also clear in this picture is that all people in the network reported working with organization D. There are three arrows pointing to D, while others have only two. This also corresponds to the data in Illustration B.3; column D is completely filled (except for row E, which is missing), unlike other columns.

There is no line between B and C; neither individual reported working with the other.

Illustration B.6

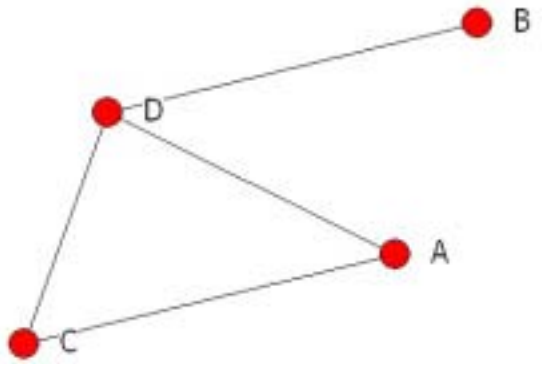


Illustration B.6 only shows friendships that were reciprocal, where both organizations reported working with each other. The line between A and B is removed because their working relationship is not reciprocal (B did not report being friends with A).

A, C, and D all reported working with each other, and so they are connected to each other with lines. B, on the other hand, is connected with the group only through his relationship with D.

In this sociogram, there are no arrows since they would be redundant; lines connect pairs of organizations only if both reported being in a working relationship.

APPENDIX C

GROWTH CURVE MODEL OF ASSOCIATION BETWEEN SYSTEMS, PROGRAM COSTS, AND FIDELITY

This appendix presents an example of the statistical equations for the hierarchical linear model (HLM) analysis of the relationships across domains described in Chapter VIII. This example focuses on the relationship between systems change and fidelity indicators, measured over time at the home visitor level. Home visitors are nested within locations, which are nested within systems. As explained below, these equations can be adapted to analyze different levels of the outcome fidelity indicators (that is, service-location-level, home-visitor-level, or participant-level indicators). They can also be adapted to analyze different levels of the independent variables (that is, systems-level or location-level variables).

The basic level 1 model (within-individual model) can be depicted as:

$$Y_{tij} = \pi_{0ij} + \pi_{1ij}(Time_t) + e_{tij} \qquad (1)$$

In equation 1, Y_{tij} represents the fidelity measure (in this example, measured at the home visitor level)[28], for home visitor i at Time t within a location j; π_{0ij} is fidelity for home visitor ij at Time 0 (baseline); π_{1ij} is the rate of change (the slope) in fidelity for home visitor ij over time; and e_{ti} is the residual variance in repeated measurements for individual ij. We will test two measures of time: (1) time since implementation of the grant initiative and (2) time since program implementation at location j. This model can be modified to examine service delivery location-level indicators (by aggregating home-visitor-level indicators) or examine participant-level fidelity measures, adjusting for clustering within home visitor, by using robust standard errors. HLM models can incorporate individual-level data for individuals who are missing data at time points throughout the observed period, thus home visitors (and participants) who join the program after implementation or drop out before the grant period ends will be included in the model.

The level 2 model is the between-individual model and predicts the intercepts and slopes from the average intercepts and slopes of the home visitors within a location. The first equation of the level 2 model predicts the intercept from equation 1:

$$\pi_{0ij} = \beta_{00j} + Z_{ij}^{T}\alpha_0 + r_{0ij} \qquad (2)$$

[28] In addition to individual indicators of fidelity, we propose developing a summary measure of fidelity that will capture fidelity to the program model more generally.

In equation 2, π_{0ij} represents the initial fidelity for home visitor ij at baseline. Z_{ij}^{T} is a vector of home-visitor-level characteristics, and vector α_0 measures the association between home visitor characteristics and baseline fidelity. π_{0ij} is predicted by β_{00j}, the average fidelity across all home visitors within a location at baseline, plus the difference in baseline fidelity explained by home visitor characteristics. Finally, r_{0ij} is the error term.

The second equation of the level 2 model predicts the slope (change over time) of fidelity:

$$\pi_{1ij} = \beta_{10j} + \beta_{10j} + Z_{ij}^{T}\alpha_1 + r_{1ij} \qquad (3)$$

In equation 3, π_{1ij} is the slope of fidelity for home visitor ij; β_{10j} represents the mean slope of home visitors within location j. Z_{ij}^{T} is a vector of home visitor characteristics, and α_1 is the estimate of the relationship between the home visitor characteristics and fidelity slope. r_{1ij} is the error term.

Equations 4 and 5 (level 3 models) represent the key associations we will test, between location and system-level characteristics and fidelity:

$$\beta_{00j} = \gamma_{000} + \gamma_{001}(Cost) + \gamma_{002}(System) + W_j^{T}\gamma_{003} + u_{00j} \qquad (4)$$

$$\beta_{10j} = \gamma_{100} + \gamma_{101}(Cost) + \gamma_{102}(System) + W_j^{T}\gamma_{103} + u_{10j} \qquad (5)$$

In these equations, γ_{000} and γ_{100} represent the mean fidelity at baseline and mean slope of fidelity, respectively, across locations; γ_{001} and γ_{101} are the associations between program cost and mean baseline fidelity and mean slope of fidelity, respectively. γ_{002} and γ_{102} are the associations between systems measures and mean baseline fidelity and mean slope in fidelity, respectively. W_j^{T} is a vector of location and system characteristics, and γ_{003} and γ_{103} represent the measured relationship between baseline fidelity and change in fidelity and location/system characteristics. u_{00j} and u_{10j} are the error terms.

Level 3 can be either location- or system-level. If system is identified as the top level (level 3), location-level measures (for example, program costs or home visiting program characteristics) can be aggregated to the system level and modeled as system-level covariates.