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Introduction

Research has suggested that high-quality implementation of evidence-based home visiting programs increases the odds of achieving the best outcomes for children and families.¹ However, there is little consensus in the field regarding the critical elements of home visiting program implementation quality and how these elements may lead to improved outcomes for families and children.² The Measuring Implementation Quality in Maternal, Infant, and Early Childhood Home Visiting (MIECHV)-Funded Evidence-Based Home Visiting Programs project is a collaboration between Child Trends and James Bell Associates ("the research team") -- under the direction of the Health Resources and Services Administration (HRSA) and the Administration for Children and Families-that seeks to address these gaps.

For this project, the research team (the first-person shorthand "we" will also refer to the research team) conducted a literature review on what is known about implementation quality.³ We also developed a conceptual framework depicting the various factors that are hypothesized to contribute to implementation quality across levels of the home visiting system (e.g., family, home visitor, community context).⁴ We engaged MIECHV awardees and other home visiting experts throughout this project to ensure that our work is relevant and applicable in the

Study Overview

Aim: To enhance understanding of the relationship between time allocated to supervision and home visitor self-efficacy and job satisfaction.

Design: Mixed methods exploratory study

Data sources: Home Visiting Budget Assistance Tool (HV-BAT); HV-BAT supplement; supervision measures; selfefficacy and job satisfaction measures; interviews and focus groups

Sample: All home visiting programs from a given model

Technical skill level: Moderate

Estimated cost: \$100,000 to \$171,000

Estimated time needed: 1 year

field. The final phase of this project is the development of study design reports that outline potential research plans to address identified awardee needs with respect to measuring program implementation quality. All these study designs—which represent a wide range of research questions, methods, and target audiences—are aimed at deepening our understanding of the factors that may contribute to implementation quality in the home visiting field.

This report presents one of the study designs developed as part of this project. The study design presented in this report explores whether the overall proportion of time allocated to supervision relates to home visitor self-efficacy and job satisfaction at the level of a home visiting program. This study design primarily relates to one thread in the conceptual framework: "qualified, stable, and supported workforce" (see Figure 1). This thread focuses on the characteristics of the workforce (including experience and skills), the availability of supports like training and supervision, and staff well-being.



Figure 1. Home Visiting Implementation Quality Conceptual Framework

Note: CQI stands for continuous quality improvement.

Source: Crowne, S., Rosinsky, K., Goldberg, J., Sparr, M., Ulmen, K., and Huz, I. (2021). A conceptual framework for implementation quality in home visiting. Washington, DC: Health Resources and Services Administration, U.S. Department of Health and Human Services.

This study design was inspired by HRSA's interest in exploring how home visiting program costs may be connected to implementation quality. We use the Home Visiting Budget Assistance Tool (HV-BAT)⁵ to measure time allocated to supervision. The HV-BAT is a tool developed by HRSA in partnership with RTI and James Bell Associates to promote the standardized collection of cost information. The tool is designed to help awardees and local implementing agencies (LIAs) with program monitoring, program and budget planning, economic evaluations, and the identification of alternative funding sources.⁶ HRSA is starting to require awardees to complete this tool. In 2022, one third of MIECHV awardees were asked to complete the tool. Over the next two years, the remaining awardees will be expected to complete it.

The tool collects cost-related data at the home visiting program level and includes sections about labor costs; overhead and infrastructure; contracted services; model costs, tools, and curricula; training; consumable supplies (like paper); non-consumable supplies (like computers); and travel. For the purposes of this study design, we focus on the labor costs section of the tool. That section records information about:

- Job title
- Full time equivalent (FTE) number
- Annual salary per person (including benefits)
- If fringe benefits are included in salary amount
- Total compensation amount (FTE * annual salary, including benefits)
- If position is MIECHV funded. If so, percentage MIECHV funded
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- Percentage time allocated to:
 - $\circ\,$ Service delivery
 - o Outreach
 - Program management/coordination
 - Supervising
 - Administration/data entry
 - Executive
 - \circ Other

The key item from the tool for this study is the percentage of time allocated to supervision. According to the HV-BAT User Guide, this field measures the "time spent overseeing service delivery personnel, such as home visitor staff."⁷ This field solely captures the overall percentage of time allocated to supervising; the percentage of time individuals allocated to being supervised is captured in other categories. For instance, the time home visitors spend in supervision would be recorded under the "service delivery" activity since their supervision is related to service delivery. A limitation of this tool is that it only tracks how staff allocate their time in terms of percentages; it does not assess the number of hours spent on an activity (which is an issue if staff work an unknown number of hours per week). In addition, information about different staff members may be reported in aggregate if they have the same role, which prevents any analyses at individual levels.

We propose an exploratory study to first understand whether the proportion of time allocated to supervision is associated with home visitor self-efficacy and job satisfaction and then explore what may explain any relationships found (such as the content and quality of the supervision). This report presents specific research questions for the proposed study design and summarizes prior work related to supervision and implementation quality. The report then provides details on the design approach, data sources and measurement, and sample, and offers an analysis plan. It also explores practical considerations (such as required cost and explains how findings from the study may be used.

This report is intended for home visiting model developers who are interested in conducting this study with home visiting programs that operate their model.

Overview of Prior Work in this Topic Area

Supervision in home visiting

Supervision can be an important tool in the support of home visitors, and a critical implementation factor of home visiting programs. Research has shown that consistent and high-quality supervision provides support to home visitors, reinforces skills, helps identify problematic relationships, and is associated with fewer symptoms of depression among home visitors.⁸ Supervision may be done individually—during regular one-on-one meetings between supervisor and home visitor—or in a group setting such as a team meeting.⁹ Supervisors may incorporate observations (e.g., through video or shadowing visits) and other assessment tools (e.g., rating scales) into their work with home visitors.¹⁰

Within the home visiting field, supervision typically incorporates both administrative and reflective components. Administrative supervision ensures home visits are scheduled and documented, home visitors receive the support and training needed, and the program's goals and mission are carried out, among other program management tasks.¹¹ During reflective supervision, supervisors work with home visitors to think through their experiences engaging families. According to Zero to Three, reflective supervision includes the following three essential "building blocks":

- **Reflection** provides supervisees with the space and structure to explore the range of thoughts and feelings they have related to their experiences working with families.
- **Collaboration** emphasizes the importance of supervisors sharing power with and lifting up the expertise of their supervisees; it encourages supervisors to recognize opportunities for shared responsibility and decision-making, which helps develop leadership among staff.
- **Regularity** refers to having a predictable schedule and sufficient time allotted for reflective supervision, which is fundamental to building and nurturing a trusting relationship between supervisor and supervisee.¹²

Reflective supervision is common. In fact, the MIECHV statute requires high-quality supervision and HRSA recommends the use of reflective supervision in the Fiscal Year 2021 MIECHV Notice of Funding Opportunity.¹³

Home visiting model requirements related to supervision

The Mother and Infant Home Visiting Program Evaluation (MIHOPE) showed that supervision requirements varied across MIECHV-funded home visiting models involved in the study at the time of evaluation. For example:

- The Early Head Start Home-Based option did not have specified requirements for the frequency of group or individual supervision but required home visit observations (unspecified frequency). Early Head Start required supervision but allowed local programs to determine the frequency of supervision.¹⁴
- Nurse-Family Partnership had specified requirements for group (1 to 1.5 hours per week) and individual (1 hour per week) supervision and required home visit observations (at least every 4 months).
- Healthy Families America included "...optional and allowable..." group supervision sessions if they were conducted by a qualified reflective group consultant. Team meetings were encouraged to be conducted at least monthly. The program required at least 1.5 hours of individual supervision per week for staff
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who worked more than 0.75 full time equivalent (FTE) and at least 1 hour per week for staff who worked for less than 0.75 FTE. Finally, at least 2 home visit observations were required per year.

Parents as Teachers required at least 2 hours of group supervision per month; at least 2 hours of
individual supervision per month for staff working more than 0.5 FTE and at least 1 hour of individual
supervision per month for staff working less than 0.5 FTE; and at least one home visit observation per
year.¹⁵

MIHOPE found that during the 12-month study period, home visitors received individual supervision in 59 percent of the weeks, of which over 75 percent included reflective supervision.¹⁶ While home visitors working in models that required weekly supervision received supervision more frequently, the study showed that supervision in these programs was still not happening weekly. MIHOPE also found that during the 12-month period, home visitors spent an average of 43 minutes per week in individual supervision. When comparing the average weekly amount of time spent in supervision to the requirements of the models included in the MIHOPE study, home visitors spent less time than required across all models.¹⁷

Outcomes associated with supervision in home visiting programs

Supervision and other aspects of professional development are associated with job satisfaction for staff and with positive outcomes for families. An exploratory study examining community, home visitor, and maternal attributes associated with retention in a home visiting child abuse prevention program found that families were more likely to stay engaged in program services when home visitors received more hours of direct supervision.¹⁸ Research has shown that reflective supervision, in particular, is associated with helping home visitors feel valued, and can positively impact self-efficacy, job satisfaction, compassion satisfaction (pleasure derived from work), professional development, and the ability to cope with job stress.^{19, 20, 21, 22} A meta-analysis of evidence-based home visiting program implementation found that inclusion of reflective supervision, compared to supervision focused on case management and other administrative tasks, is associated with greater program effectiveness.²³

Home visiting cost studies

There have been efforts to understand how costs are allocated within home visiting programs and which factors, if any, appear to contribute to home visiting costs. Results indicate that home visiting programs spend most of their funds on personnel costs as opposed to other costs like travel and rent.^{24, 25, 26} Costs vary by number of families served; the programs that serve more families pay less for serving each additional family.²⁷ Research has also shown that the cost of home visiting programs can vary by location, individual family characteristics, and other contextual factors.²⁸

While there have been studies to assess the cost-benefit of home visiting programs,²⁹ we are not aware of existing studies that examine the relationship between home visiting costs and home visitor outcomes. The study proposed in this report will contribute to this past research by examining whether and how the allotment of time to supervision (i.e., a labor cost) is associated with home visitor outcomes.

Research Questions

This study seeks to answer the following research questions:

- Is there an association between the proportion of time programs allocate to supervision and home visitor selfefficacy and job satisfaction?
- Does the content and quality of supervision moderate or mediate any relationship found between time allocated to supervision and self-efficacy and/or job satisfaction?

We are interested in learning about the relationship between time allocated to supervision and home visitor self-efficacy and job satisfaction, including whether this relationship is linear (with more supervision linked to more positive home visitor outcomes) or non-linear, with positive associations appearing to level off or decrease after a certain threshold is reached or surpassed. We are also interested in learning about the possible mechanisms through which this relationship occurs; for instance, is more time allocated to supervision associated with higher quality supervision? Finally, we hypothesize associations between time allocated to supervision and home visitor outcomes may, in part, be explained by program-level characteristics such as the content, amount, and quality of supervisor trainings, as well as the type of supervision supervision supervisors themselves receive.

Design Approach

We propose answering the research questions using an exploratory design with quantitative and qualitative components, each of which is explained below.

The purpose of the quantitative component is to examine associations between time allocated to supervision and home visitor self-efficacy and job satisfaction, including whether these relationships are moderated or mediated by the content and quality of supervision itself. Data drawn from surveys and the HV-BAT will be collected cross-sectionally (or point in time) from home visiting programs. As is explained in the following section, the quantitative component of this study design requires about 200 programs to detect a moderate effect size. We suggest focusing the study on programs within one model to ensure an adequate sample size and help control for factors that may vary between models (such as supervision requirements, training, and more). See the "sample" section for more details.

We will supplement this quantitative analysis with information from interviews and focus groups in the second phase of the study to further understand any associations found (and perhaps the lack of associations found). The interviews and focus groups will collect further information about supervision and/or home visitor outcomes (i.e., self-efficacy and job satisfaction). For instance, imagine that the researchers find in the first phase there is a positive association between time allocated to supervision and home visitor outcomes. The interviews and focus groups could help unpack why that association exists. It may be that reflective supervision takes longer than other approaches to supervision and most of the programs with more time allocated to supervision are all practicing reflective supervision. This would suggest that it may not be the time allocated to supervision driving outcomes, but rather the content and quality of the supervision itself.

The strength of this study design is that it is an efficient way to gather key insights into the value of time allocated to supervision. However, its limitation is that the findings will yield strong hypotheses rather than definitive statements about how time allocated to supervision and home visitor outcomes are connected.

In preparation for this study, sites must be identified and data collection tools developed. Guidance for sample and measurement is provided below.

Sample

We envision this study being implemented by a model developer with all home visiting programs operating that model. In Table 1, we provide estimates of the sample sizes needed to detect effects of various sizes. In this study, the effect size refers to the strength of the association of time allocated to supervision with self-efficacy and job satisfaction. An effect size of .90, or nine tenths of a standard deviation, would be a very large effect, while an effect size of .35 would be moderate. Larger sample sizes are needed to detect increasingly smaller effect sizes, so researchers in the social sciences typically strive to maximize sample sizes, given that large effects are relatively rare. Adding covariates—or other factors that are also associated with the outcome of interest—reduces the sample size needed to detect a given effect size. Mediators, such as supervision characteristics, function as covariates in this sense.

statistical significance			
	95%	90%	

Table 1. Power analysis showing number of programs needed to detect effects at 95% and 90% levels of

Effect size	With no covariates	With covariates explaining 20% of variation	With no covariates	With covariates explaining 20% of variation
.90	41	32	32	26
.80	52	41	41	34
.70	66	54	53	43
.60	87	72	71	57
.50	126	103	100	80
.40	192	160	152	124
.35	260	208	205	164

We recommend collecting supervision, self-efficacy, and job satisfaction measures from all home visitors who have worked in the program for at least 6 months. This tenure requirement will ensure respondents have had a chance to experience supervision at the program before responding. For interviews and focus groups, we suggest identifying a sample of home visitors and supervisors to participate using a mix of a purposive and convenience sampling approaches (see the "Sampling Approaches" box below). Selected participants should represent the diversity of staff within the programs in terms of education, race, ethnicity, age, gender, and other characteristics you believe may affect their thoughts on the subject matter being discussed. We recommend speaking with as many people as your budget will allow and/or stop interviews/focus groups when each additional conversation is not adding any new information. We recommend working with state/local model representatives to aid with participant recruitment, where available.

In addition to home visitors and supervisors, other home visiting program staff should be engaged in interviews and focus groups to get other perspectives on how supervision operates in the program and

Sampling approaches

A *purposive sampling* approach identifies individuals/programs with particular characteristics that are most relevant to the questions at hand. For example, you may identify home visitors working in a particular part of the state to ensure you have adequate geographic diversity among interviewees.

A *convenience sampling* approach identifies individuals/program who are most accessible to you and willing to participate. For instance, you may ask LIAs to distribute an email asking for those who are interested in participating in the study.

A *random sampling* approach identifies the universe of individuals/programs you may want to speak to and randomly selects the individuals/programs to participate. For example, you may have a list of all home visitors and randomly select five home visitors to invite to an interview.

information about the outcome(s) being examined. For instance, home visiting program leadership may have a broader view of various initiatives underway that affect the outcome(s) being examined than supervisors or home visitors may have. Depending on the size of the program, it may be possible to speak with all program staff. If resource constraints make this difficult, select the staff who have the most familiarity with supervision and efforts to affect home visitor self-efficacy and job satisfaction. This will likely include the program director and other management-level staff.

Finally, identify individuals at the state level to understand the state context in which the home visiting programs are operating. The state or regional model representatives, if available, are likely the most appropriate people to invite. The individuals should have a comprehensive understanding of the home visiting landscape in the state and the contextual factors that could be influencing home visiting programs.

Data Sources and Measurement

This study will rely on the following data sources: (1) Home Visiting Budget Assistance Tool (HV-BAT), (2) a supplement to the HV-BAT, (3) measures of self-efficacy and job satisfaction, (4) supervision measures, and (5) interviews and focus groups. The HV-BAT is being rolled out to MIECHV awardees over the next few years, so MIECHV-funded programs will have this information readily available. Non-MIECHV-funded programs will need to be asked to complete relevant sections of the tool. The outcome and supervision measures will likely need to be collected specifically for this study. The interviews and focus groups will also be held specifically for the purposes of this study. Each data source is described in more detail below.

We recommend collecting the measures of self-efficacy, job satisfaction, and supervision near the end of the HV-BAT reporting period (i.e., the end of a fiscal year). This will ensure that information about self-efficacy, job satisfaction, and supervision is captured when staff are experiencing the time allocation reported in the HV-BAT. Interviews and focus groups should be held as soon as possible after the analysis of quantitative data is complete.

Home Visiting Budget Assistance Tool (HV-BAT)

The HV-BAT will be the source of information about time allocated to supervision. The time allocated to supervision will be expressed as the average percentage time allocated to supervision per full time equivalent (FTE) of service delivery personnel. To calculate this:

Sum the total time allocated to supervision. See Table 2 for fictional data one could find in the labor costs tab of the HV-BAT and Figure 2 for a visual representation of the data. Note the dotted bars in the figure, which represent time allocated to supervision. You can see that Home Visitor Supervisor I works 80%-time and spends 100% of that time supervising. The Home Visitor Supervisor II role is comprised of multiple people whose collective FTE is 3.5. Each of those individuals spend 40% of their time supervising. Finally, the Manager is full-time and spends 20% of that time supervising. In this scenario, to calculate the total time spent supervising (see Table 3 for a visual representation of these calculations):

- Home Visitor Supervisor I: 80% FTE * 100%-time supervising = 80%-time spent supervising
- Home Visitor Supervisor II: 350% FTE * 40%-time supervising = 140%-time spent supervising
- Manager: 100% FTE * 20%-time supervising = 20%-time spent supervising
- The total time spent on supervising is 80% + 140% + 20% = 240%. In other words, the program uses 240% FTE (or 2.4 full time people) to provide supervision to direct service staff.

Table 2. Example Excerpt of Labor Costs Tab

Job Title	FTE Number	Percentage time allocation for service delivery	Percentage time allocation for supervising
Home Visitor I	12.5	100%	0%
Home Visitor III	2.8	100%	0%
Home Visitor Supervisor I	0.80	0%	100%
Home Visitor Supervisor II	3.5	30%	40%
Manager	1.0	0%	20%

Figure 2. Visual Representation of Time Allocation



 Table 3. Supervision Time Calculation

Job Title	FTE Number	Percentage time allocation for supervising	Total supervision time allocated
Home Visitor Supervisor I	0.80	100%	.80*100% = 80%
Home Visitor Supervisor II	3.5	40%	3.5*40% = 140%
Manager	1.0	20%	1.0*20% = 20%
TOTAL			240%

⁹ A Study Design Exploring Time Allocated to Supervision and Home Visitor Self-Efficacy and Job Satisfaction

• Sum the total time allocated to service delivery. Identify in the HV-BAT all staff members who indicated they spend at least some time on service delivery. Using Table 4 as an example, follow the same process detailed above to calculate the percentage time allocated to direct services. The Home Visitor Supervisor I and the Manager are not included in this calculation because they indicated they spend 0% of their time for service delivery. If someone provides supervision to direct service delivery staff but is not supervised themselves, exclude them from this count. The result from this example is 1,635%. In other words, the program employs 1,635% FTE (or 16.35 full time people) to provide direct services.

Job Title	FTE Number	Percentage time allocation for service delivery	Total direct service time allocated
Home Visitor I	12.5	100%	12.5*100%=1250%
Home Visitor III	2.8	100%	2.8*100%=280%
Home Visitor Supervisor II	3.5	30%	3.5*30%=105%
TOTAL			1,635%

Table 4. Service Delivery Time Calculation

• Divide the total time allocated to supervising by the total time allocated to service delivery. Continuing with the same example, we would divide 240% by 1,635% (or 2.4 full time staff by 16.35 full time staff). The result is 14.7%. This means this program allocates an average of 14.7% FTE time for supervising each service delivery FTE. Put another way, the program allocates 0.147 of a full- time person to supervise each full-time service delivery staff member.

HV-BAT supplement

If a program contracts with another entity to provide supervision (such as group supervision), the time allocated to supervision in the HV-BAT will be incomplete since that information is only provided on the HV-BAT for program staff. The costs of contracts are included on the tool, but not the amount of time contractors spend providing supervision to home visitors. In this case, it will be necessary to supplement the HV-BAT with additional information. The program should ask its contractors for information about the amount of their time allocated to supervision for staff in their program. This information can be included in the calculations above. For instance, if the contractor spends 10% of one full time person's time supervising direct service staff in the program, that 10% should be added to the numerator in the calculation above.

Measures of self-efficacy and job satisfaction

There are existing measures of self-efficacy and job satisfaction that are applicable to the home visiting context. We suggest reviewing available measures and selecting one or two to streamline data collection, reduce burden on study participants, and ensure the study stays focused on the topics of greatest interest. When deciding which measures to use, consider:

- The mode of administration. Is the measure a short self-report survey? Does it require observations?
- The burden on home visiting staff. How much time will it take home visiting program staff?
- **Relationship to the researcher's hypothesis.** The researcher may have a specific hypothesis they are interested in testing. In this case, select the measure that most closely aligns with the hypothesis.
- Cost. Is the measure proprietary or can it be used freely?
- Validity and reliability. Has the measure been tested to ensure it captures what it is meant to capture, and can be consistently measured over time by different raters and different methods? Has the measure

been tested with individuals of different demographic characteristics to ensure it is valid for various cultural contexts?

In Table 5, we list several measures to consider, although there are others that may be appropriate. The "Quality Considerations Across Levels of the Home Visiting System: A Literature and Measure Review" report provides detailed information about many of the measures presented below.³⁰ The same measure must be used across all programs.

Measure	Description	Self- Efficacy	Job Satisfaction
Home Visitation Developmental Assessment Scale ³¹	Includes an item about showing confidence in difficult situations, and one about experiencing satisfaction with home visiting.	Yes	Yes
Early Childhood Professional Well- Being ³²	Measures overall well-being across nine domains: comfort, security, affinity, self-respect, communication, engagement, contribution, efficacy, and agency. The efficacy domain can be used on its own, or the full measure can be used to assess wellness as a proxy for job satisfaction. While developed for people working in childcare, the items can be adapted to the home visiting context.	Yes	Yes
Organizational Social Context Measure ³³	Includes a domain with 9 items that measure an individual's job satisfaction.	No	Yes
Home Visit Program Quality Rating Scale ³⁴	Includes items about staff satisfaction with wages and benefits, overall morale, and the quality of the work environment.	No	Yes
Early Head Start Early Childhood Development and Health Services Implementation Rating Scale ³⁵	Includes an item assessing staff morale.	No	Yes
Early Childhood Work Environment Survey ³⁶	Offers many items related to different aspects of job satisfaction like attitude toward work, relationships with colleagues, clarity of roles, agreement on program goals, and more.	No	Yes
Early Childhood Job Satisfaction Survey ³⁷	Includes questions about co-worker relations, supervisor relations, the work itself, working conditions, and pay/promotion opportunities. While developed for early care center staff, it can be adapted to the home visiting context.	No	Yes

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Measure	Description	Self- Efficacy	Job Satisfaction
Teacher Self-Efficacy Scale ³⁸	Includes items about job accomplishments, skill development, social interaction, and coping with stress. While developed for teachers, it can be adapted to the home visiting context.	Yes	No
Job Satisfaction Survey ³⁹	A multi-dimensional measure of job satisfaction developed for the human services field.	No	Yes

Supervision measures

While the amount of time allocated to supervision is important, the content and quality of the supervision is also important. In fact, the content and quality of supervision may help explain associations found between time allocated to supervision and the outcome measures. Supervision can be approached in many ways, and it is reasonable to expect that these differences are important when it comes to self-efficacy and job satisfaction. Therefore, we suggest collecting additional information about the content and quality of the supervision. Several relevant measures are presented in Table 6. The table includes measures that capture general information about supervision (such as frequency, format, etc.), as well as measures of reflective supervision. Based on your interests and resources, you could select one or several of these measures. You may also consider using any model-specific measures related to supervision. The same measure must be used across all programs.

Table 6. Supervision Measures

Measure	Description	General information about supervision	Reflective supervision measures*
The Home Visit Program Quality Rating Tool ⁴⁰	 This tool measures a variety of aspects of home visiting programs and is intended to be applicable across models. One of the subscales in this measure is focused on supervision. It helps programs assess: Supervision frequency: whether supervision happens at least weekly and is tracked and monitored in a data system Supervision style: whether the supervision is reflective Supervisor to staff ratio: whether each supervisor has 8 or fewer supervisees and there are at least two people who supervise home visitors Group/peer supervision: whether group or peer-to-peer supervision happens more than twice a month Supervisor observations: whether supervision includes ongoing observations of home visits This measure is designed to be completed through a site visit by an external party and self-assessment measures. 	Yes	Yes
The Supporting Evidence- Based Home Visiting to Prevent Child Maltreatment (EBHV) measure ⁴¹	This tool has several items related to supervisor training, supervisor qualifications, supervisor caseloads, and the amount of supervision. This measure requires the completion of several related forms to capture necessary supervision-related items.	Yes	No
Reflective Supervision Rating Scale ^{42, 43, 44}	An assessment completed by supervisees about the extent to which the supervisor provides reflective supervision. An adapted version was created for supervisor self- report as well. The measure includes items related to reflective process and skills, mentoring, supervision structure, and mentalization.	No	Yes

¹³ A Study Design Exploring Time Allocated to Supervision and Home Visitor Self-Efficacy and Job Satisfaction

Measure	Description	General information about supervision	Reflective supervision measures*
Reflective Supervision Rating Scale for Supervisors ^{45, 46}	Helps supervisors assess the degree to which supervisees use reflective practice and engage in reflective supervision.	No	Yes
Reflective Supervision Self- Efficacy Scales for Supervisees and Reflective Supervision Self-Efficacy Scales for Supervisors ^{47, 48}	Measure the level of confidence individuals have with various aspects of reflective supervision and practice.	No	Yes
Reflective Supervision and Learning Culture Scale ⁴⁹	Measures the extent to which supervisees think their supervisor prompts critical thinking.	No	Yes
Reflective Supervision Case Vignette for Supervisors ⁵⁰	Measures the extent to which supervisors use reflective supervision skills in responding to case vignettes related to reflective supervision.	No	Yes
Reflective Supervision Competency Scale ⁵¹	Assesses the extent to which supervisors demonstrate different elements of reflective supervision, such as collaboration, emotional regulation, and attention to culture.	No	Yes
Reflective Interactive Observation Scale ^{52, 53}	A tool to assess the extent to which recorded supervision sessions exhibit characteristics of reflective supervision.	No	Yes
Reflective Supervision Self- Assessment Tools (Supervisee/Supervisor) ^{54, 55}	Help individuals identify their strengths and weaknesses related to reflective supervision and guide them in improving reflective supervision practice in their organization.	No	Yes

Example measures pulled from West, A., Madariaga, P., & Sparr, M. (2022). *Reflective supervision: What we know and what we need to know to support and strengthen the home visiting workforce.* Office of Planning, Research, and Evaluation; Administration for Children and Families; U.S. Department of Health and Human Services.

We recommend choosing supervision measures that use the same considerations that are used for the outcome measures.

Interviews and focus groups

The interviews and focus groups will provide additional contextual information to understand any associations found (or not found) between time allocated to supervision and the outcome(s) of interest. During the interviews and focus groups, the goal is to uncover information about supervision and the

outcome(s) being examined. This information can help the researcher better explain why time allocated to supervision is or is not associated with the outcome(s). Example questions include:

- Outcomes
 - How would you describe home visitors' sense of self-efficacy (or their confidence to achieve their goals)?
 - Do you think supervision is related to home visitors' job satisfaction? Why/why not? (Probe about the length of supervision, content discussed, form of supervision, etc.)
 - Have there been efforts to improve self-efficacy? Job satisfaction?
- Supervision
 - Can you explain how your organization approaches supervision in terms of philosophy, content, techniques, length, and any other factors?
 - What kind of support or training do supervisors receive regarding supervision best practices?
 - Have there been any changes in supervision practices over the past year? If yes:
 - Please explain.
 - What were the goals of these changes?
 - How well do you think these supervision practices are implemented?
- Review findings from quantitative analysis.
 - Our findings show that [insert findings, ex. the more time allocated to supervision is associated with higher levels of self-efficacy]. Does this make sense to you? Why/why not?
 - Our analysis also showed that this relationship is/is not explained by [describe supervision measure used]. Does this make sense to you? Why do you think this is the case?

Interviews and focus groups should be no longer than 90 minutes and should target about eight to ten individuals, and include one facilitator and one notetaker.⁵⁶ Separate interview/focus group protocols may be needed for the different types of respondents (e.g., you may want to ask supervisors different questions than home visitors).

Interviews vs. focus groups

Interviews and focus groups are best in situations when the researcher wants to understand how something works, understand nuanced points of view, understand a topic area that has not been explored in the past, and otherwise understand an issue at a great level of depth. Focus groups are appropriate when you have limited resources/time and/or if you want to understand a variety of perspectives on a topic participants would feel most comfortable discussing as a group. For more sensitive topics, or when it is especially important to understand a particular participant's views, individual interviews are more appropriate.

Analysis Plan

Data preparation

Quantitative data

The time allocated to supervision will need to be calculated as described above and then compiled into a spreadsheet containing the program name and the time allocated to supervision variable. This spreadsheet will be at the program level.

The measures of self-efficacy, job satisfaction, and the content or quality of supervision may be collected via surveys, depending on their administration protocol. Although many online survey platforms (Survey Monkey, Qualtrics, etc.) allow a user to produce basic statistics, it may not be possible to calculate summary scores for the measures used in this study within those platforms. Instead, it will likely be necessary to export the data into a format that can be read by data analysis software (e.g., Excel, Stata, SAS, R). If data were not collected electronically, manually input the data into a spreadsheet. This spreadsheet may be at the program level or the level of individual respondents within a program, depending on the measure used. It is possible you may measure job satisfaction at an individual level, while measuring the content or quality of supervision at the program level.

Then, review the data for:

- Duplicates (i.e., an individual accidentally submitting two responses, or with duplicate records in the HV-BAT data)
- Missing data, including ensuring that missing values are coded properly (e.g., an item that is not applicable to a respondent should not be considered "missing")
- Formatting to ensure all variables are amenable to analysis (e.g., that numeric variables are stored in a numeric format)
- Any signs of data errors (e.g., unreasonable values, contradictory responses, incorrect execution of skip patterns)

Next, create any additional variables needed for analysis. Further coding could be necessary to generate a summary score for each of the measures of self-efficacy, job satisfaction, and supervision. Such measures generally consist of multiple questions (or items) to which a study participant can respond. Often, for a given measure, respondents rate each item on a Likert scale—e.g., strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, and strongly disagree. Follow the standardized method specific to each measure for calculating a summary score using the measure's items. If instructions for this calculation are not readily available, you may need to contact the researcher who developed the measure. In some cases, measures may be proprietary and the approach for creating summary scores (and use of the measure itself) is only available for a fee.

Summary scores are typically continuous numerical values that fall within a specific range. For some measures, pre-determined cut-points may be available to enable you to create a categorical variable. Categorical measures can facilitate interpretation and understanding of the findings, because the categories typically have substantive meaning (e.g., scoring at a certain level or above means a person is satisfied with their job; or high, medium, or low levels of self-efficacy) whereas an average scale sore is difficult to interpret (e.g., is a 5.5 a good outcome or a bad outcome?).

For measures collected at an individual level, you will need to summarize the calculated scores across respondents to generate program-level information. For measures that are continuous, you can calculate an

average. For measures that are categorical, you can calculate the percentage of respondents in each category. If your sample size is sufficiently large, you can also calculate these aggregate scores for subgroups of interest, such as type of respondent, or based on characteristics that you think may be related to outcomes, such as years of experience. Existing measures may have guidelines or recommendations for aggregating results at the program level.

Ultimately, the goal is to produce one spreadsheet at the program level with all program-level data points for the measures being analyzed.

Interviews and focus groups

The first step in analyzing interview and focus group data is to finalize the notes from each interview or focus group. The notes should be a comprehensive record of all substantive comments from study participants. We recommend having two study team members in each interview/focus group—one who leads the conversation and one who is responsible for taking notes. It is helpful to record sessions as well so the notetaker can fill in any substantive gaps in their notes. If recording, ensure you obtain permission from study participants to record the conversation. If a verbatim transcription of each conversation is desired, recording will be necessary. If you plan to use direct quotes to support your findings, you will either need to refer to verbatim transcriptions or to the recording. Transcriptions can also be helpful (although they are not strictly necessary) if you are using qualitative analysis software, such as Dedoose or NVivo. On the other hand, notes that capture all points made during the conversation, but not at a verbatim level, are typically sufficient if direct quotes are not needed.

Once the notetaker has finalized the notes, the conversation leader should review them to ensure the notes capture their recollection of the conversation. Ideally, the notes will be completely finalized within two days of the interview or focus group to ensure the conversation is accurately documented.

To analyze data from interviews and focus groups, we recommend the following approach:

- Review notes from the interviews and focus groups.
- Generate a list of codes (i.e., topics) you identified across responses. For example, regarding changes in supervision practices, you may want to group responses by type of change, as well as having a category for no changes. These codes could be developed in advance of the analysis and/or in response to the content of the data.
- Code each set of notes by assigning portions of text to one or more codes. Using the example above, if the notes indicate someone saying supervision includes an emphasis on a collaborative process that incorporates the supervisees' perspectives, you could code that text as "reflective supervision." Qualitative analysis software, mentioned above, can help you organize your coding.
- **Review the text associated with each code, across the notes.** Summarize themes emerging from the codes. For example, if only one person mentioned reflective supervision, you can conclude this is not common.
- **Analyze by subgroups.** You may also want to summarize themes by role to understand whether responses vary depending on type of respondent, such as supervisors versus supervisees.

Analysis

The findings for this study will be based on descriptive analyses carried out at the program level (that is, using programs as the unit of analysis). Measures pertaining to time allocated to supervision, self-efficacy, job satisfaction, and supervision will be quantitative—that is, expressed as a number. Contextual

information that can help explain findings regarding these factors, as well as further information about each of them, will come from qualitative data collected through interviews and focus groups.

RQ1: Is there an association between the proportion of time programs allocate to supervision and home visitor self-efficacy and job satisfaction?

To address the first research question, we suggest running two bivariate linear regression models. One model should regress home visitor self-efficacy on time allocated to supervision, and the other model should regress job satisfaction on time allocated to supervision. Assuming that higher scores indicate more positive outcomes, a positive, statistically significant coefficient on the variable for supervision time would indicate a positive association with the outcomes (i.e., more time allocated to supervision is associated with better outcomes). In addition, we recommend running non-linear bivariate models to test whether time allocated to supervision and the outcome are related in a non-linear way.

In these models, we recommend considering controlling for state to help account for any differences between states that may relate to the variables of interest. While you may control for other factors that you think are related to time allocated to supervision and/or the outcomes (such as program location [rural, suburban, urban]), this is not necessary for this exploratory study. In fact, later steps of this study will provide insights into what appropriate control variables are for future, more sophisticated analyses.

RQ2: Does the content and quality of supervision moderate or mediate any relationship found between time allocated to supervision and self-efficacy and/or job satisfaction?

The second research question involves testing for moderation and mediation. Testing for moderation will show whether the content or quality of supervision makes the relationship between time allocated to supervision and outcomes stronger or weaker. Testing for mediation will show whether content or quality of supervision explains the relationship between time allocated to supervision and outcomes.

To test for moderation, one would regress the outcomes on time allocated to supervision, the variable measuring the content or quality of supervision, as well as an interaction term (time allocated to supervision multiplied by the content/quality variable). Separate models should be run for each outcome. If the interaction term is statistically significant, it shows that the relationship between time allocated to supervision and the outcome varies by the content/quality of the supervision.

To test for mediation, variables pertaining to the content or quality of supervision would be added as regressors to the models. A reduction in the size of the coefficient on the regressor (the number representing the direction and magnitude of the relationship between the variables) for time allocated to supervision would indicate that the other regressor(s) help explain the relationship between supervision time and the outcome. The following framework is helpful for better understanding the results of an analysis like this.

- In Figure 3, the arrow labeled "1" represents the regression of job satisfaction on time allocated to supervision, without any other covariates. Assume the result is a positive and statistically significant coefficient (i.e., as time allocated to supervision increases, job satisfaction improves).
- Imagine you add a variable representing the content or quality of supervision to that regression (e.g., the extent to which the supervision is reflective), which reduces the size of the coefficient on the regressor for time allocated to supervision (as described above). This suggests that the extent to which the supervision is reflective is a mediating factor.
- To better understand this, you could regress the variable measuring the extent of reflective supervision on time allocated to supervision (arrow 2 in Figure 3) and regress job satisfaction on the reflective supervision variable (arrow 3). Imagine the results are statistically significant, (i.e., they show time allocated to supervision is associated with the extent to which the supervision is reflective, and that the extent to which the supervision is reflective is associated with job satisfaction).
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• This provides evidence that the extent to which the supervision is reflective is mediating the association between time allocated to supervision and job satisfaction (arrow 1). In other words, programs that spend more time on supervision also tend to practice reflective supervision. At the same time, reflective supervision is independently associated with job satisfaction—that is, reflective supervision increases job satisfaction independent of the amount of time spent on supervision. The results of this analysis will help you understand the most important factors contributing to the outcome being examined.

Figure 3. Mediation Example



An analysis of the qualitative data collected through the interviews and focus groups is especially useful for identifying other explanations for any associations found that cannot be easily quantified. Although findings from qualitative analyses will, by definition, not provide quantifiable evidence regarding the questions, they could provide more nuanced evidence than is available from standardized scales. In addition, qualitative data can be particularly useful in circumstances in which it may be challenging to achieve a sample size that is sufficiently powered to detect statistically significant effects.

Practical Considerations

There are many practical considerations to weigh for the proposed study design. We have outlined key considerations below.

Technical skill required: The proposed study will require a study team that includes a project director who is responsible for all aspects of the study design and implementation, and 1-2 staff to assist with data collection and data analysis. Those leading interviews and focus groups should have experience in similar types of data collection activities; otherwise, training will need to be provided. Research staff should be external to participating programs to provide some level of confidentiality for study participants. The study would also benefit from the involvement of other key advisors to advise on measure selection, interview/focus group protocol development, sample selection, and interpreting findings.

Level of effort: We have assumed a one-year timeline. See Table 7. The first four months of the timeline are dedicated to study planning, including measure selection and the development of the interview/focus group protocols. The planning phase may also include Institutional Review Board (IRB) review, depending on the purpose and approach ultimately implemented by the evaluator. Studies may require IRB approval if they meet the definition of research, involve human subjects, include interaction or intervention with human

subjects, or involve access to identifiable private information. *Research* can be defined as a systematic investigation designed to develop or contribute to generalizable knowledge. Studies designed solely to inform quality improvement efforts do not typically need IRB approval. The subsequent months are dedicated to data collection and analysis.

We anticipate 40-65% effort for staff (total split across 2-3 staff members), which includes time for measure selection, protocol development, IRB, data collection, analysis, and a final memo.

Activities	Timing
Study planning, including measure selection, protocol development, IRB	Months 1-4
Quantitative data collection (HV-BAT, self-efficacy, job satisfaction, content or quality of supervision)	Months 5-6
Quantitative analysis	Months 7-8
Interviews and focus groups	Months 9-10
Final analysis and memo	Months 11-12

Table 7. Timeline

Costs: In addition to staff time, there may be costs for software (for example, Dedoose or NVivo for qualitative data analysis), recording devices, and transcription of interviews and focus groups, as necessary. In addition, some of the measures chosen may have an associated fee. We recommend providing incentives to those who respond to the measures or participate in interviews/focus groups. You can provide gift cards to all respondents or arrange a lottery that all respondents are entered into for the chance to win a gift card. The amount of the gift cards will vary depending on the length of the survey, interview, or focus group (e.g., \$25-40 per person for an interview or focus group depending on length and budget). Some individuals may not be able to accept an incentive (such as government employees). When planning for the study, be sure to consult any relevant policies around the allowability of incentives (e.g., funder requirements, agency policy). An alternative could be to provide a stipend to participating programs if their individual staff cannot accept an incentive.

As shown in Figure 4, the estimated costs for this study range from about \$100,000 to \$171,000 depending on specific assumptions. The low-cost option assumes the use of 1 outcome measure, 1 supervision measure and 25 interviews or focus groups with up to 50 people. The high-cost option assumes the use of 2 outcome and 2 supervision measures, and 50 interviews or focus groups with up to 100 people. Figure 4 uses a staff salary rate of \$130/hour for the project director and \$100/hour for other staff, which is assumed to include fringe and benefits. The researchers will need to adjust the salary rate to reflect their own pay scales.



	Low Cost Approximately \$100,000	High Cost Approximately \$171,000
Staff	20% for PD, \$130 rate = \$54,080 ; 20% for other staff, \$100 rate = \$41,600	30% for PD, \$130 rate = \$81,120 ; 35% for other staff, \$100 rate = \$72,800
Software	Use of free or existing software: \$0	Examples include NVivo or Dedoose = \$500
Recording devices	1 encrypted recording device = \$100	2 encrypted recording devices = \$200
Transcription	None	\$6,250
Participant incentives	500 respondents to the outcome and supervision measures, \$5 each; interviews/focus groups with 50 people, \$25 each = \$3,750	1000 respondents to the outcome and supervision measures, \$5 each; interviews/focus groups with 100 people, \$40 each = \$9,000
Proprietary measures	None	\$1,000

Ethical considerations: All study team members will need to complete trainings on privacy and confidentiality. All study team members will be responsible for explaining the study to participants, ensuring their participation is voluntary, and maintaining their confidentiality. If the study requires IRB review, there may be additional requirements like written documentation of consent. At a minimum, evaluators should obtain verbal consent from all interview/focus group participants and require survey respondents to indicate their written consent on the survey (e.g., through a check box).

Use of Findings

Use information to inform guidance on resources for supervisor hiring, supports, and supervision practices. More information is needed about the influence of time spent supervising on proximal staff outcomes. This information can be used by models, local programs, and awardees to refine guidance related to time spent in supervision and to develop more specific guidance on the content of supervision sessions. For example, if this study shows that self-efficacy or job satisfaction tend to suffer when supervisors have less time allocated to supervising, it has implications for guidance on time spent in supervision and may require the hiring of more supervisors. It also may mean that, without more supervisors, new initiatives that require significant supervisor support may negatively impact the outcome measures examined in this study. In that case, guidance that specifies additional resources that will be needed to support new initiatives should be developed. Findings could alternatively lead to a conclusion that time allocated to supervising is not as important as the topics discussed in supervision. In other words, guidance developed from the results of this study would have implications on program costs by informing decisions about hiring supervisors, or reallocating time (i.e., labor costs) in different ways. We suggest that models work closely with awardees and local implementing agencies to develop guidance that is most feasible and successful.

Use information about the time allocated to supervision to inform technical assistance and training.

Models may use the findings from this study to inform efforts to support staff through technical assistance and training. For example, information might lead to technical assistance for programs to examine if and how they could restructure their supervision meetings to allocate more time to reflective supervision. Study findings might also suggest where there are needs for supervisor training to support home visitor selfefficacy and job satisfaction, aside from simply spending more time on supervision.

Use information to identify how contextual factors impact programs. The study may show the importance of contextual factors unrelated to supervision time. For instance, the study might find that more time allocated to supervising and poor job satisfaction seem to be related. Through interviews, you may learn that high rates of home visitor turnover in the program mean that supervisors need to spend more time onboarding and training staff. This information can help models provide guidance to programs on ways to target their resources to address the original source of turnover or provide more supports for supervisors to accommodate the increasing demands on their time.

Conclusions and Next Steps

This report presents a study design for exploring whether time allocated to supervising is related to home visitor self-efficacy and job satisfaction. We suggest an exploratory design to deeply examine this potential relationship within a home visiting model. We envision this initial study as a first step that could set up a more rigorous study in the future. For instance, this study could help identify aspects of supervision that can help explain associations between time allocated to supervision and the home visitor outcomes. A subsequent study could more formally test relationships using a regression model that is informed by what is learned via this study. For instance, while results from this initial study cannot be interpreted in a causal way given its design, the information gleaned from this work can provide strong working hypotheses about how time allocated to supervising home visitors may or may not affect home visitors themselves. These working hypotheses can then be translated into research questions for subsequent studies in the future. These future studies could explore questions like:

- How much time should be spent on different topics in supervision to maximize home visitors' selfefficacy? How does this translate to costs?
- How does home visitor turnover affect the amount of supervision veteran home visitors receive?
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• Is there an optimal amount of time supervisors should spend with each home visitor per week to maximize job satisfaction?

These questions could be answered by using data collected at an individual level, rather than a program level, to understand the topic at a finer level of detail. The lessons learned from this study and subsequent studies will help support the home visiting workforce. However, the lessons would also be applicable to other professions such as early care and education providers, teachers, or coaches that provide support to staff who work with families and/or young children.

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