# Impacts on Family Outcomes of Evidence-Based Early Childhood Home Visiting

## Results From the Mother and Infant Home Visiting Program Evaluation

OPRE Report 2019-07
January 2019

Executive Summary

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# Executive Summary

Children develop fastest in their earliest years, and the skills and abilities they develop in those years lay the foundation for their future success.[1] Similarly, early negative experiences can contribute to poor social, emotional, cognitive, behavioral, and health outcomes both in early childhood and in later life. Children growing up in poverty tend to be at greater risk of encountering adverse experiences that negatively affect their development. One approach that has helped parents and their young children is home visiting, which provides individually tailored support, resources, and information to expectant parents and families with young children. Many early childhood home visiting programs aim to support the healthy development of infants and toddlers and work with low-income families, in particular, to help ensure their well-being.

In 2010, Congress authorized the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program by enacting section 511 of the Social Security Act, 42 U.S.C. § 711, which also appropriated funding for fiscal years 2010 through 2014.[2] Subsequently enacted laws extended funding for the program through fiscal year 2022.[3] The program is administered by the Health Resources and Services Administration (HRSA) in collaboration with the Administration for Children and Families within the U.S. Department of Health and Human Services (HHS). The initiation of the MIECHV program began a major expansion of evidence-based home visiting programs for families living in at-risk communities.

The legislation authorizing MIECHV recognized that there was considerable evidence about the effectiveness of home visiting, but also called for research to increase knowledge about the implementation and effectiveness of home visiting.[4] States that receive MIECHV funding are required to devote the majority of their MIECHV funding to delivery of services according to the specifications of designated evidence-based models that meet HHS' criteria for evidence of effectiveness. [5] At the same time, states can spend part of their MIECHV funding on promising approaches to home visiting as long

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[1]National Research Council and Institute of Medicine. 2000. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC: National Academy Press.

[2] SEC. 511 [42 U.S.C. 711] (j) (1).

[3] Funds for subsequent fiscal years were appropriated by section 209 of the Protecting Access to Medicare Act of 2014, Pub. L. 113-93 (fiscal year 2015); section 218 of the Medicare Access and Children's Health Insurance Program Reauthorization Act of 2015, Pub. L. 114-10 (fiscal years 2016-2017); and section 50601 of the Bipartisan Budget Act of 2018, Pub. L. 115-123 (fiscal years 2018-2022).

[4]SEC. 511 [42 U.S.C. 711] (h) (3) (A).

[5]SEC. 511[42 U.S.C. 711] (d) (3) (A) (ii).

as research is conducted into the effects of those promising approaches.[6] The legislation also required an evaluation of MIECHV in its early years,[7] which became the Mother and Infant Home Visiting Program Evaluation (MIHOPE). The evaluation, which is studying the effects of MIECHV-funded evidence-based home visiting, is being conducted for HHS by MDRC in partnership with James Bell Associates, Johns Hopkins University, Mathematica Policy Research, the University of Georgia, and Columbia University.

The overarching goal of MIHOPE is to learn whether families and children benefit from MIECHV-funded early childhood home visiting programs as they operated from 2012 through 2017, and if so, how. The study is examining a broad range of outcome areas mentioned in the authorizing legislation:[8]

- Prenatal, maternal, and newborn health
- Child health and development, including child maltreatment
- Parenting skills
- School readiness and child academic achievement
- Crime and domestic violence
- Family economic self-sufficiency
- Referrals and service coordination

This report presents early effects on family and child outcomes in these areas, with the exception of school readiness and academic achievement (which are not included in the current report because children were too young to measure those outcomes, but which will be studied when additional information is collected from families when their children are in kindergarten).[9] In addition to investigating the overall effects on family outcomes of the local home visiting programs included in MIHOPE, the report explores whether the programs' effects vary among different subgroups of families. Finally, the report presents information on whether there is variation in effects related to the ways local programs were implemented (including which evidence-based model of

[6]Social Security Act of 1935. SEC. 511 [42 U.S.C. 711] (d) (3) (A) (i) (II) (2010).

[7]Social Security Act of 1935. SEC. 511 [42 U.S.C. 711] (g) (2) (2010).

[8]Social Security Act of 1935. SEC. 511 [42 U.S.C. 711] (d) (2) (B) (2010).

[9] MIHOPE is currently collecting information from study participants when the children are in kindergarten and will examine school readiness and academic achievement, in addition to the other outcome areas. See www.acf.hhs.gov/opre/research/project/mother-and-infant-home-visiting-program-evaluation-long-term-follow-up.

home visiting they used) and whether there is variation in effects related to the levels of services that families received.

## Overview of the MIHOPE Design

MIHOPE includes the four evidence-based models that 10 or more states chose in their fiscal year 2010 plans for MIECHV funding: Early Head Start — Home-based option, Healthy Families America, Nurse-Family Partnership, and Parents as Teachers.

MIHOPE included women who met the following criteria when they enrolled in the study:

- They were pregnant or had children under 6 months old.
- They were at least 15 years old.
- They spoke English or Spanish well enough to provide consent and complete a survey when they entered the study.
- They were interested in receiving home visiting services and met the relevant local program eligibility criteria.

To provide reliable estimates of the effects caused by home visiting programs, women who enrolled in the study were randomly assigned to a MIECHV-funded local home visiting program or a control group who received information about other appropriate services in the community. From October 2012 to October 2015, a total of 4,229 families entered the study.

## The Evidence-Based Home Visiting Models Studied in MIHOPE

In general, home visiting consists of three types of activities:

- Assessing family needs
- Educating and supporting parents
- Referring families to needed services in the community and supporting the family's use of those services

Home visitors use a variety of strategies to provide education and support to families, including setting goals with caregivers and creating plans for meeting those goals, helping caregivers resolve problems, helping parents and children build better relationships, intervening during crises, providing information on children's developmental stages and commenting on parenting, working to strengthen families' support

networks, and providing emotional support, pamphlets, or other materials. Home visitors also use methods such as positive reinforcement, direct comments, and motivational interviewing to promote positive attitudes and behaviors. Finally, home visitors provide referrals to community health and human service resources based on each family's identified needs.

Although the four evidence-based models shared these major components and the overall goal of improving family outcomes during the period they were studied in MIHOPE, they differed in several important ways.

- **Goals.** All four models tried to improve child health and development, but Healthy Families America has historically focused on preventing child maltreatment, Nurse-Family Partnership on improving maternal and child health, and Early Head Start — Home-based option and Parents as Teachers on positive parenting or school readiness.

- **Target population and age at enrollment.** The models all aimed to serve at-risk families, but they focused on different types of risk. Nurse-Family Partnership targeted first-time mothers, Healthy Families America focused on families at risk of child maltreatment or with behavioral health issues, Early Head Start sought to serve a broad group of low-income families, and Parents as Teachers had no specific eligibility requirements at the national level. All four models could enroll women who met the MIHOPE eligibility criteria, although Early Head Start and Parents as Teachers also could enroll families with toddlers.

- **Home visitor qualifications.** Nurse-Family Partnership required home visitors to be nurses with baccalaureates, and Early Head Start required home visitors to have knowledge and experience in child development, early childhood education, or other areas. Parents as Teachers required home visitors to have at least a high school credential and a minimum of two years of supervised work experience with young children or parents. Healthy Families America required home visitors to have at least a high school credential and required local programs to look for relevant community-based experience and interpersonal characteristics.

## Choosing States and Local Programs for MIHOPE

To allow the study to include a diverse set of local programs and to provide enough statistical precision for the analyses, MIHOPE sought to include about 85 local programs from 12 states.

The study team chose local programs using the following criteria:

- They were operating one of the four evidence-based models of home visiting noted earlier.
- They had been in operation for at least two years.
- They could recruit enough families to allow for a randomly chosen control group.
- They had more than one MIECHV-funded home visitor.
- They were not operating in "frontier" locations, which were sparsely populated counties or those that were not adjacent to metropolitan areas. These areas were excluded to reduce the costs of recruiting families and collecting information.

In the end, MIHOPE included 88 local programs in 12 states: California, Georgia, Illinois, Iowa, Kansas, Michigan, Nevada, New Jersey, Pennsylvania, South Carolina, Washington, and Wisconsin. The 88 local programs consisted of 19 Early Head Start — Home-based option programs, 26 Healthy Families America programs, 22 Nurse-Family Partnership programs, and 21 Parents as Teachers programs. Since one local program did not enroll any families in the study and no sample members were randomized to the control group in another local program, the analysis included in the report is limited to 86 local programs.

The characteristics of the local programs included in MIHOPE reflect the criteria used in their selection. Reflecting both the exclusion of frontier locations and the difficulty of forming a control group in smaller locations, nearly 90 percent operated at least partly in metropolitan counties, a higher proportion than is the case for MIECHV-funded programs nationally. Most had been operating for six or more years and had considerable funding from other sources, reflecting the study team's decision to choose mature programs. They were relatively large, with 60 percent serving more than 100 families.

## Characteristics of Families Who Enrolled in the Study

- **The mothers who enrolled in the study are racially and ethnically diverse, were young when they entered the study, and reflect the study's eligibility criteria.** About a third of the women in the study are Hispanic, a little more than a quarter are black, and a little more than a quarter are white. Almost two-thirds of the women were less than 25 years old when they entered the study, and 35 percent were less than 21 years old. Sixty percent were first-time mothers when they entered the study, and more than two-thirds of them were pregnant (with the rest having given birth within the past six months). While the racial and ethnic diversity of the MIHOPE sample is similar to that of women enrolled in MIECHV-funded programs nationally in fiscal year 2017, the MIHOPE sample was more likely to have women under 20 years old (27 percent compared with 16 percent).

- **Most had graduated from high school and had worked in the recent past, but nearly all were receiving some form of public assistance.** Almost 60 percent of women ages 18 to 20 had graduated from high school and more than three-quarters of all women had been employed during the previous three years. Nearly 75 percent were enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children and more than half were enrolled in the Supplemental Nutrition Assistance Program, but fewer than a quarter were enrolled in Temporary Assistance for Needy Families or disability insurance (Supplemental Security Income or Social Security Disability Income). Reflecting the high rate of public-assistance receipt, more than 90 percent had health insurance when they entered the study, primarily through Medicaid.

- **A sizable minority of women faced behavioral health issues.** Nearly one-third of the mothers in the sample reported substance use before pregnancy and more than 40 percent reported either depressive symptoms (38 percent) or symptoms of anxiety (23 percent).

- **Women faced rates of intimate partner violence that are similar to national averages for low-income women.** About one-fifth of women reported experiencing or perpetrating physical acts of intimate partner violence during the year before entering the study.

## Home Visiting Services

Random assignment is designed to ensure that the program and control groups are similar in all respects when they enter the study. As is the standard method in studies that use random assignment, the primary analytical strategy in MIHOPE is to compare the outcomes of the entire program group with those of the entire control group. Any differences that emerge after random assignment can then be reliably attributed to the program group's access to evidence-based home visiting. A consequence of using this analytical strategy is that the estimated effects will be influenced by the extent to which program group and control group families received different amounts of home visiting services. This section therefore discusses how many program group and control group members received home visiting services after they entered the study.

As reported in a MIHOPE report on implementation research, weekly family service logs completed by home visitors indicate that 83 percent of program group families received at least one home visit (and 17 percent received no home visits), and that the average family who did receive a visit received about 18 visits during the first year of participation in home visiting services.[10] In addition, almost half of the families who had received at least one visit were still participating in home visiting at the child's first birthday. Although these participation rates are lower than those recommended by the evidence-based models, they are consistent with rates observed in past studies on home visiting.

Although family service logs are not available for the control group, the 15-month follow-up survey asked parents whether they received home visiting or parenting services in the year preceding the survey. During that year, 51 percent of the program group reported receiving home visiting or parenting services compared with 20 percent of the control group. In addition, program group members received much more intensive home visiting. For example, 26 percent of the program group reported receiving 26 or more visits in the past year compared with 4 percent of the control group. In other words, the control group was less likely than the program group to report receiving home visiting and reported receiving fewer home visits than the program group. It is common in studies such as MIHOPE for some control group members to be able to find similar services in their communities.

[10]Duggan, Anne, Ximena A. Portilla, Jill H. Filene, Sarah Shea Crowne, Carolyn J. Hill, Helen Lee, and Virginia Knox, *Implementation of Evidence-Based Early Childhood Home Visiting: Results from the Mother and Infant Home Visiting Evaluation*, OPRE Report 2018-76 (Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2018).

## Estimated Effects for the Full Sample

As noted earlier, the legislation that authorized MIECHV indicated that the MIECHV program should improve a wide range of outcome areas for families.[11] Based on the evidence that existed before the analysis in this report was conducted, the policy relevance of various outcomes, and the quality of the tools available to measure those outcomes, the study team chose to focus the analysis of effects on 12 "confirmatory" outcomes that were measured around the time the child was 15 months old.[12] These outcomes are generally ones where previous studies had consistently found effects or that have objective measures that come from observations or direct child assessments. As noted earlier, the outcomes included all areas specified in the statute other than school readiness and academic achievement.

The 12 outcomes (and areas from the authorizing legislation in which they fall) are:

- Maternal health: new pregnancy after study entry
- Family economic self-sufficiency: mother receiving education or training
- Parenting skills: quality of the home environment and parental supportiveness
- Child health and development:
    - Frequency of minor physical assault toward the child
    - Frequency of psychological aggression toward the child
    - Health insurance coverage for the child
    - Number of Medicaid-paid well-child visits
    - Number of Medicaid-paid child emergency department visits

[11] Social Security Act of 1935. SEC. 511 [42 U.S.C. 711] (d) (2) (B) (2010).

[12] A plan for the impact analysis — including the confirmatory and exploratory outcomes and family subgroups — was reviewed by an Advisory Committee to the Secretary of Health and Human Services in September 2015. Materials from that meeting are available at https://www.acf.hhs.gov/opre/resource/secretarys-advisory-committee-maternal-infant-early-childhood-home-visiting-evaluation-9-21-2015. After receiving comments from the Advisory Committee, changes were made to two confirmatory outcomes: any emergency department visit for the child was changed to the number of Medicaid-reimbursed emergency department visits, and whether the child had language skills in the normal range was changed to a continuous measure of receptive language skills. These changes were made before the analysis began. The study was also registered at ClinicalTrials.gov.

- Any child health encounter for injury or ingestion
- Child behavior problems
- Child receptive language skills

The analysis also examines additional "exploratory outcomes" that capture other aspects of the areas the legislation intended home visiting to improve. These outcomes were considered exploratory because past home visiting studies had not found effects on them or they had not been examined in previous studies. Some exploratory outcomes provide information that can shed more light on a confirmatory outcome. Others represent areas where home visiting programs have increased their effects over time and where there might now be benefits for families.

Figure ES.1 shows the estimated effects for the full MIHOPE sample on the study's 12 confirmatory outcomes, and Box ES.1 provides an explanation of how to interpret the figure.

- **There are positive effects for families in MIHOPE. Most estimated effects are similar to but somewhat smaller than the average found in past studies of individual home visiting models.** Estimated effects are statistically significant for 4 of the 12 confirmatory outcomes: the quality of the home environment, the frequency of psychological aggression toward the child, the number of Medicaid-paid child emergency department visits, and child behavior problems.[13] Overall, for 9 of the 12 confirmatory outcomes, program group families fared better than control group families on average,[14] which is unlikely to have occurred for the study sample if the home visiting programs made no true difference in family outcomes.[15] However, no outcome or

[13]Consistent with the study's design and analysis plan, the 10 percent significance level is used in this report. See Michalopoulos, Charles, Anne Duggan, Virginia Knox, Jill H. Filene, Helen Lee, Emily K. Snell, Sarah Crowne, Erika Lundquist, Phaedra S. Corso, and Justin B. Ingels, *Revised Design for the Mother and Infant Home Visiting Program Evaluation*, OPRE Report 2013-18 (Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Service, 2013).

[14]This tally includes five outcomes where program group families had better outcomes on average than control group families but where the difference between them is not statistically significant.

[15]A statistical test of the number of outcomes for which estimated effects would be positive resulted in a p-value of 0.096 for having 9 or more positive findings out of 12, meaning there is less than a 10 percent probability that this pattern of results would have resulted if home visiting had no effect on any of the 12 outcomes. A statistical test that accounts for the magnitude of the estimated effects has a p-value of 0.025, meaning there is a 2.5 percent probability this pattern of results would have been found if home visiting had no effects on the 12 outcomes. Neither test was prespecified in the study's analysis plan.

**Box ES.1**

## How to Interpret Estimated Effects

The effects of home visiting are estimated by comparing the outcomes of the program and control groups, adjusted for background characteristics of the sample members. Figure ES.1 shows the estimated effects for the study's confirmatory outcomes as circles. For example, there is a small, negative estimated effect on whether a child had health insurance coverage at 15 months but a small, positive estimated effect on whether a mother was receiving education or training at 15 months.

All results are presented as effect sizes, which is a way of standardizing outcomes so they are on the same scale. The interpretation of an effect size will vary with the outcome and the context, so it is difficult to characterize the magnitude of effect sizes in general. A standard intelligence quotient (IQ) test has a standard deviation of 10, for example, so an effect size of 0.10 would represent a one-point change in IQ. For an outcome expressed as a percentage, such as the percentage of mothers with a subsequent pregnancy, an effect size of 0.10 would represent a change of about 3 percentage points to 5 percentage points in the outcome.

The lines surrounding the estimated effect in Figure ES.1 represent the 90 percent confidence interval, an estimate of the variability (or statistical imprecision) of the effects. A narrower confidence interval suggests a more precise estimate than a wider confidence interval; a wider interval indicates greater variability and thus greater uncertainty. Confidence intervals that do not contain zero (that is, that are fully to the right or the left of the zero line) indicate that the effect is different from zero to a statistically significant degree, using 10 percent as the benchmark for statistical significance. That is, there is less than a 10 percent chance of finding an estimated effect this big if the true effect of the program were zero. The figure shows that the effect is different from zero to a statistically significant degree for four outcomes: quality of the home environment, frequency of psychological aggression toward the child during the past year, number of Medicaid-paid child emergency department visits, and child behavior problems.

outcome area stands out as having consistently large effects.[16] In addition, the effects are generally smaller than those found in past studies, although it is important to note that MIHOPE differs from those

[16]In addition, after adjusting for the number of confirmatory outcomes, none of the 12 estimated effects is statistically significant. Although the evidence as a whole points to positive effects for families, this finding reduces the study team's confidence that any individual outcome was improved by the home visiting services that were studied.

studies in many respects. For example, most of those studies were conducted in a single local area rather than including sites across the country, and some were conducted many years ago, when similar services were less likely to be available to control group families. In addition, previous studies each examined only one evidence-based model, and might have chosen outcomes where those models were expected to make the largest differences.

- **There are some statistically significant differences in effects on the confirmatory outcomes among the evidence-based models that are generally consistent with the models' focuses.** For example, in the main report analysis, Parents as Teachers produced the largest increase in parental supportiveness and Nurse-Family Partnership produced the largest reduction in emergency department visits for children. The differences are somewhat sensitive to the statistical method used to examine them but these two patterns were found across different estimation methods.

- **Most estimated effects are not statistically significant.** Although the results suggest that families are benefiting from MIECHV-funded home visiting services, it is important to note that only about one-third of the confirmatory outcomes and one-third of the exploratory outcomes showed effects that were statistically significant. In addition, only one of the 67 estimated effect sizes is greater than 0.20, a level sometimes used as a threshold for considering an effect to be small.[17]

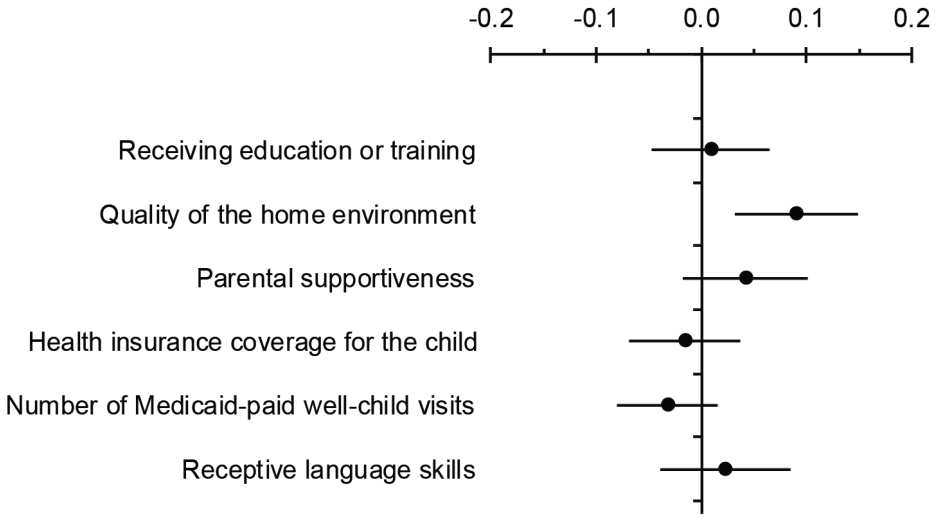
- **Results for several exploratory outcomes suggest home visiting may improve maternal health**. MIHOPE found statistically significant improvements in women's general health, increases in health insurance coverage, and reductions in depressive symptoms (although program group mothers were also more likely to say they had abused drugs or alcohol in the recent past). Note that results for exploratory outcomes are not shown in Figure ES.1 because there are so many, but these results can be found in Chapter 3 of the report. Improving maternal mental health could be especially important since it could result in improvements in many other areas, such as child development and economic self-sufficiency.

[17] Jacob Cohen, *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. (Hillsdale, NJ: Lawrence Erlbaum, 1988).

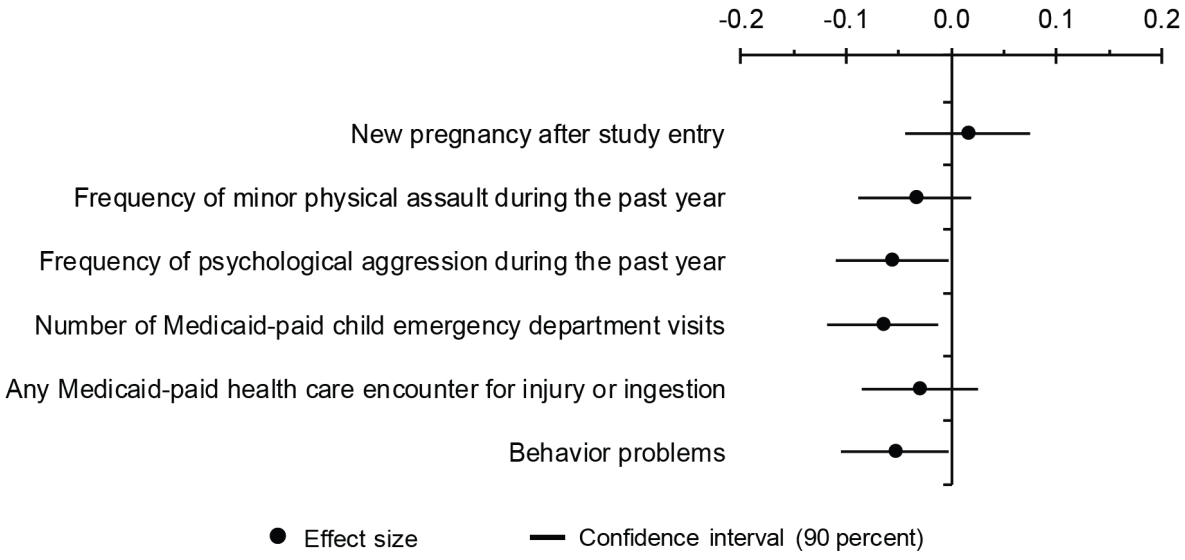
## Figure ES.1

## Estimated Effects on Confirmatory Outcomes at 15 Months

**Outcomes where positive effects mean improvements for families**




**Outcomes where negative effects mean improvements for families**




SOURCES: Calculations based on the MIHOPE 15-month follow-up survey, the in-home assessment, the parent-child videotaped interaction, and Medicaid enrollment and claims data.

NOTES: Effects are considered statistically significant if the 90 percent confidence interval does not intersect with 0. A statistical test of the number of outcomes for which estimated effects would be improvements for families resulted in a p-value of 0.096 for having 9 or more such findings out of 12.

- **Home visiting might reduce household aggression.** The results also suggest home visiting services reduce household aggression, which could have wide-ranging, long-term implications. For example, there are statistically significant effects on the frequency of psychological aggression toward children (a confirmatory outcome) as well as mothers' experience with intimate partner violence and mothers' use of domestic violence services (exploratory outcomes). This effect is consistent with other significant effects, such as those on exploratory outcomes such as parental depression (discussed above), parental stress, and parental discipline using gentle guidance. Reduced household aggression and improved parenting behaviors could also help explain observed reductions in child behavior problems (a confirmatory outcome). Because adverse childhood experiences such as child abuse and intimate partner violence have been shown to be associated with negative long-term outcomes, reducing household aggression could benefit children as they grow older.[18]

## How Effects Vary Across Subgroups of Families

Since home visiting services are intended to be tailored to family needs, an important question is whether its effects are larger among some groups of families than others. There is little reliable evidence on this question from previous studies because those studies often had small samples, which made it difficult to examine subgroups. In addition, different studies have examined different groups. MIHOPE's size and centralized data collection give it a chance to address the question.

After considering the existing evidence and the policy relevance of various characteristics, the study team chose to focus on seven prespecified subgroups based on (1) gestational age (how far into the pregnancy a mother was when she entered the study — or if she had already given birth), (2) whether or not the mother had older children, (3) maternal race and ethnicity, (4) the presence or absence of intimate partner violence, (5) the mother's level of emotional functioning, (6) maternal psychological

[18]Vincent J. Felitti, Robert F. Anda, Dale Nordenberg, David F. Williamson, Alison M. Spitz, Valerie Edwards, Mary P. Koss, and James S. Marks, "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study" (*American Journal of Preventive Medicine* 14, 4: 245-258, 1998).

resources,[19] and (7) mothers' demographic characteristics that put themselves or their children at risk of poor outcomes.

The findings of this analysis include the following:

- **Differences in estimated effects for the 12 confirmatory outcomes across subgroups of families are generally small and not statistically significant.** Of the 84 comparisons of effects that were made, only 8 differences were statistically significant at the 10 percent level. This pattern would be expected to occur by chance even if there were no real differences in effects across subgroups. Moreover, after applying an adjustment for conducting multiple tests, the only statistically significant difference in estimated effects is by race and ethnicity for a single outcome: the number of Medicaid paid well-child visits.

It is possible MIECHV-funded home visiting does benefit some types of families more than others in ways the study did not examine or could not detect. For example, home visitors might be able to assess changes in family needs over time, but the study was limited to examining the family's characteristics and needs when they entered the study. The findings do indicate that there are not large differences across the types of family characteristics that have been most commonly examined in prior studies of the four evidence-based models included in MIHOPE.

## How Effects Vary with Program Features and Services Received

MIHOPE was designed to provide an opportunity to learn about whether some aspects of service delivery and program implementation are associated with greater effects for families. The large number of local programs included allows the study to tie together effects and program implementation at the local program level to examine how much effects vary across local programs, whether some characteristics of local programs are associated with larger or smaller effects, and how the services that families receive are associated with program effects.

[19]The concept of "psychological resources" is taken from the Nurse-Family Partnership Memphis pilot test, which hypothesized that effects on maternal caregiving and childhood injuries would be greater among mothers with few psychological resources. It is based on a composite of (1) mental health, (2) mastery (the extent to which a person thinks life chances are under her control), and (3) verbal abstract reasoning. See Harriet Kitzman, David L. Olds, Charles R. Henderson Jr., Carole Hanks, Robert Cole, Robert Tatelbaum, Kenneth M. McConnochie, Kimberly Sidora, Dennis W. Luckey, and David Shaver, "Effect of Prenatal and Infancy Home Visitation by Nurses on Pregnancy Outcomes, Childhood Injuries, and Repeated Childbearing" (*Journal of the American Medical Association* 278, 8: 644-652, 1997).

Although randomly assigning families to the program and control group resulted in reliable estimates (presented above) of the effects of home visiting on family outcomes, the results presented in this section of the report do not necessarily represent causal relationships. That is, a finding that local programs whose home visitors have higher morale produce larger effects than other programs would not necessarily mean that home visitor morale is the cause of those larger effects. It could be the case that local programs whose home visitors have higher morale are better implemented in other ways that result in larger effects, or that they serve families whose lives are easier to influence through home visiting. Nevertheless, the results suggest ways programs might improve their effectiveness.

Findings on how effects vary with program features and services families received include:

- **Effects were generally consistent across local programs.** The first analysis in this section of the report examined how much effects varied across local programs, without trying to explain that variation. For 10 of the 12 confirmatory outcomes, the results indicate that local programs were generally equally effective at helping families. For two outcomes, however, there was statistically significant variation in effects across local programs. The two outcomes are the number of Medicaid-paid well-child visits and whether the child needed health care for an injury or ingestion.

- **There is little evidence that any distinctive features of local programs are associated with better family outcomes.** This finding is consistent with the finding that effects are similar across local programs. However, the finding does not mean that program implementation does not matter. The analysis could examine only the aspects of program implementation that varied substantially among local programs, and important aspects of implementation may have been in common use. Moreover, the MIHOPE design could detect only fairly large associations between program features and program effects.

- **There is not a strong association between additional home visiting services and larger effects.** The estimated effects were similar for local programs where families received more home visiting services and those where they received fewer services, and effects were not generally larger among families who received more home visiting services than they were among families who received fewer. This analysis

included the number of home visits families received, the number of times outcome-specific topics were discussed, and whether referrals were made for outcome-specific community services. This result is also consistent with the overall finding that effects were similar across local programs.

## Implications of the MIHOPE Impact Analysis Findings

Although the findings presented in this report indicate that families had better outcomes because of home visiting, the effects are somewhat smaller than those seen in earlier studies of the four evidence-based models included in MIHOPE. Many of the earlier studies were done before home visiting had been expanded to a national scale, and the smaller effects in MIHOPE might show that it is difficult to maintain high-quality services on such a large scale consistently. In addition, previous studies were of individual models and could focus on outcomes where those models were expected to have the largest effects, whereas MIHOPE examined a consistent set of outcomes across the four evidence-based models. Home visiting is also more widely available today than in the past, and observed effects could be smaller in MIHOPE because control group families sought out home visiting services on their own. In addition, during the period that home visiting was studied in MIHOPE, the evidence-based models and the local programs were just beginning to respond to the MIECHV program's expectation that they improve a broad set of family outcomes, and their effectiveness might have grown as they have adapted to meet those expectations.

Because home visiting continues to evolve, researchers and practitioners continue to look for ways to make the services more effective. This is seen in the provision of the MIECHV statute that allows states to use MIECHV funds to implement and study promising practices. It is also reflected in the extensive time, effort, and funding that HRSA and ACF have put into providing technical resources to home visiting programs to improve their effectiveness. The Innovation Toward Home Visiting national research and development platform and the Home Visiting Collaborative Improvement and Innovation Network (HV CoIIN) are likewise working to identify ways to strengthen the impact of home visiting.[20]

[20] For more information on the research and development platform, see funding opportunity number HRSA-17-101 at U.S. Department of Health and Human Services, "MCHB Funding Opportunities" (https://mchb.hrsa.gov/fundingopportunities) and the Home Visiting Applied Research Collaborative (www.hvresearch.org). For information on HV CoIIN, see http://hv-coiin.edc.org.

Implementation research conducted as part of MIHOPE suggested several areas where home visiting implementation could be improved.[21] These areas include providing more opportunities for home visitors to practice and reinforce the skills they learn, providing training to home visitors in working with families on sensitive topics such as substance use and intimate partner violence, having supervisors observe home visitors more often, and developing better ties to community service providers.

The finding that the effects observed in MIHOPE varied across the four evidence-based models in ways that roughly align with the models' historical emphases suggests that evidence-based models have different strengths. A mix of evidence-based models within a community could consequently have more wide-ranging effects than any single model.

This report presents effects when children are 15 months old, which may be too early to see the full effects of the MIECHV-funded programs that participated in MIHOPE, particularly when it comes to child development. For that reason, families who enrolled in the study are responding to brief surveys when children are 2.5 and 3.5 years old, and extensive information on family outcomes is being collected when children are in kindergarten.[22] Longer-term follow-up data collection is important because previous studies suggest that the benefits of home visiting have persisted as children have grown older, and that the long-term benefits have eventually exceeded the short-term costs.[23]

[21]Duggan, Anne, Ximena A. Portilla, Jill H. Filene, Sarah Shea Crowne, Carolyn J. Hill, Helen Lee, and Virginia Knox, *Implementation of Evidence-Based Early Childhood Home Visiting: Results from the Mother and Infant Home Visiting Evaluation*, OPRE Report 2018-76 (Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2018).

[22]See www.acf.hhs.gov/opre/research/project/mother-and-infant-home-visiting-program-evaluation-long-term-follow-up.

[23]Charles Michalopoulos, Kristen Faucetta, Anne Warren, and Robert Mitchell, *Evidence on the Long-Term Effects of Home Visiting Programs: Laying the Groundwork for Long-Term Follow-Up in the Mother and Infant Home Visiting Program Evaluation (MIHOPE)*, OPRE Report 2017-73 (Washington, DC. Office of Planning, Research, and Evaluation, Administration for Children and Families, US Department of Health and Human Services, 2017).

# Earlier MDRC Publications on the Mother and Infant Home Visiting Program Evaluation

*Implementation of Evidence-Based Early Childhood Home Visiting*
*Results from the Mother and Infant Home Visiting Program Evaluation*
2018. Anne Duggan, Ximena A. Portilla, Jill H. Filene, Sarah Shea Crowne, Carolyn J. Hill, Helen Lee, Virginia Knox

*Evidence on the Long-Term Effects of Home Visiting Programs*
*Laying the Groundwork for Long-Term Follow-Up in the Mother and Infant Home Visiting Program Evaluation (MIHOPE)*
2017. Charles Michalopoulos, Kristen Faucetta, Anne Warren, Robert Mitchell

*The Mother and Infant Home Visiting Program Evaluation*
*Early Findings on the Maternal, Infant, and Early Childhood Home Visiting Program — A Report to Congress*
2015. Charles Michalopoulos, Helen Lee, Anne Duggan, Erika Lundquist, Ada Tso, Sarah Crowne, Lori Burrell, Jennifer Somers, Jill H. Filene, Virginia Knox

*Revised Design for the Mother and Infant Home Visiting Program Evaluation*
2013. Charles Michalopoulos, Anne Duggan, Virginia Knox, Jill H. Filene, Helen Lee, Emily K. Snell, Sarah Crowne, Erika Lundquist, Phaedra S. Corso, Justin B. Ingels

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NOTE: A complete publications list is available from MDRC and on its website (www.mdrc.org), from which copies of reports can also be downloaded. This report and other reports sponsored by the Office of Planning, Research, and Evaluation are available at www.acf.hhs.gov/programs/opre.