



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)

Charles Michalopoulos, Kristen Faucetta, Anne Warren,
and Robert Mitchell

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Overview

Introduction

Children from low-income families are more likely than those from higher-income families to have poor social, emotional, cognitive, behavioral, and health outcomes. One approach that has helped parents and their young children is home visiting, which provides information, resources, and support to expectant parents and families with young children. This brief summarizes evidence from existing studies on the impact of early childhood home visiting on children 5 and older for four national models of home visiting.

Primary Research Questions

The primary research questions of the brief include the following:

- What are the effects of home visiting programs for families as children get older?
- How do the monetary benefits of home visiting compare with their costs?

Purpose

The information in this brief will inform the design of a study to assess the long-term effects of home visiting. It will suggest where this long-term follow-up study can seek to replicate prior results, where it can try to fill gaps in current knowledge, and which outcomes are important to measure in order to assess the benefits and costs of home visiting.

Key Findings

Key findings include the following:

- Evidence-based home visiting has improved outcomes for parents and children across a wide range of child ages, outcome areas, and national models.
- Evidence-based home visiting appears to be cost-effective in the long term.
- The largest benefits from evidence-based home visiting come through reduced spending on government programs and increased individual earnings.

Methods

The brief summarizes prior evidence on the effects of four evidence-based models of home visiting using information from seven studies of families with children from 5 to 21 years old. It also summarizes published benefit-cost analyses of these four models.

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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)

Children from low-income families are more likely than those from higher-income families to have poor social, emotional, cognitive, behavioral, and health outcomes. One approach that has helped parents and their young children is home visiting, which provides information, resources, and support to expectant parents and families with young children.

Established in 2010, the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program has expanded home visiting services across the country through federal grants to states, territories, and tribal entities. Grant awardees can use MIECHV funds to implement evidence-based home visiting models or promising approaches that address the areas of greatest need in their communities.¹

A number of studies of home visiting have found benefits for families as children grow older, and some analyses have found that the programs' long-term benefits exceed their costs. This brief summarizes evidence from existing studies on the effects of early childhood home visiting on children 5 and older,² focusing on the four models included in the Mother and Infant Home Visiting Program Evaluation (MIHOPE) because they were initially chosen for MIECHV funding by 10 or more states: Early Head Start—Home-based option, Healthy Families America, the Nurse-Family Partnership, and Parents as Teachers.

This information has been assembled as part of a study to assess the long-term effects of MIECHV-funded home visiting services and to compare their benefits and costs (see Box 1). Evidence on the effects of home visiting from previous studies provides information on where the long-term follow-up study can seek to replicate prior results and where it can try to fill gaps in current knowledge. Information on the outcomes that have benefited society can guide data collection for the study's benefit-cost analysis.

The following is a summary of findings from previous studies:

- **Early childhood home visiting has improved outcomes for parents and children across a wide range of child ages, outcome areas, and national models.** Statistically significant estimated effects have been found for families after they no longer are receiving home visiting services, with evidence of effectiveness for families with children up to 21 years old. Studies have found effects in many of the outcome areas that MIECHV aimed to influence, including maternal and child health, parenting, child development, family eco-

1 To determine which home visiting models are defined as evidence-based, the U.S. Department of Health and Human Services (HHS) commissioned the Home Visiting Evidence of Effectiveness (HomVEE) review. For more information about the criteria and the models that have met them, see U.S. Department of Health and Human Services (2017).

2 One study summarized in this brief included both 4-year-old and 5-year-old children, but the brief excluded studies where all children were 4 and younger at follow-up.

BOX 1 MIHOPE AND MIHOPE-LT

The legislation that created MIECHV required an evaluation of the program, which became the Mother and Infant Home Visiting Program Evaluation (MIHOPE). MIHOPE was launched in 2011 by the Administration for Children and Families (ACF) within the Department of Health and Human Services (HHS), in collaboration with the Health Resources and Services Administration (HRSA). MDRC is leading MIHOPE in partnership with James Bell Associates, Johns Hopkins University, Mathematica Policy Research, the University of Georgia, and Columbia University.

In 2016, ACF and HRSA launched the MIHOPE Long-Term Follow-Up project (MIHOPE-LT) to investigate the effects of MIECHV-funded home visiting on children and families as children enter and go through school and to compare the longer-term benefits from home visiting with the short-term costs of providing families with early childhood home visiting services. MDRC is leading MIHOPE-LT in partnership with Mathematica Policy Research and researchers from the University of Georgia.

MIHOPE and MIHOPE-LT are using a rigorous design to assess the effectiveness of home visiting services overall as well as variations in service delivery and effectiveness across programs and populations. To provide unbiased estimates of the effects of home visiting programs, 4,229 families recruited into the study were randomly assigned either to a MIECHV-funded local home visiting program or to a control group that was referred to non-home visiting services available in the community.

The studies include the four evidence-based models of home visiting that were chosen by 10 or more states in their initial plans for MIECHV funds. The studies include 88 local home visiting programs operating one of the four models in 12 states: California, Georgia, Illinois, Iowa, Kansas, Michigan, Nevada, New Jersey, Pennsylvania, South Carolina, Washington, and Wisconsin.

The studies include women who were at least 15 years old and were either pregnant or had a child no more than 6 months old when they entered the study. The first follow-up data collection was conducted around the time the child was 15 months old. In addition, brief surveys are being conducted with study participants around the time the child is 2.5 and 3.5 years old. The study is collecting information directly from families along with state and federal administrative data on health care covered by Medicaid, birth records, child welfare, and maternal employment and earnings.

conomic self-sufficiency, child maltreatment, and intimate partner violence. In addition, all four national models included in this summary have had sustained effects as children get older. Although effects have been found for many ages, outcome areas, and models, statistically significant findings are the exception rather than the rule.

- **Evidence-based early childhood home visiting appears to be cost-effective in the long term.** Home visiting programs incur costs right away, but participating parents and children can see improved outcomes over their lifetimes. As a result, benefits generally exceed costs over longer periods of time. For example, over an individual's lifetime, benefits appear to exceed costs by amounts ranging from 20 percent to more than 200 percent.
- **The largest benefits from evidence-based early childhood home visiting come through reduced spending on government programs and increases in individual earnings.** Home visiting can increase parents' earnings in the longer term by reducing maternal alcohol abuse and increasing parents' high school graduation rates. Home visiting can increase children's earnings in the long term by reducing child maltreatment. Home visiting programs appear to reduce government spending in the longer term by reducing families' need for public assistance programs such as Temporary Assistance for Needy Families (TANF), the Supplemental Nutrition Assistance Program (SNAP), and Medicaid. Government

savings have also stemmed from reductions in child abuse and neglect, use of special education services, and crime.

The sections below provide more detail on these findings.

Evidence of the Long-Term Effects of Home Visiting

This section summarizes evidence on the long-term effects of the four evidence-based models of home visiting included in MIHOPE. The effects described here and summarized in Figure 1 were measured among families with children ages 5 to 21.³ Results come from seven studies of the four models, including a national study of Early Head Start—Home-based option; studies of Healthy Families America in Oahu, Hawaii and three counties in New York (Erie, Rensselaer, and Ulster); studies of the Nurse-Family Partnership in Elmira, New York, Memphis, Tennessee, and Denver, Colorado; and a study of Parents as Teachers in Binghamton, New York.⁴

Information is provided for seven broad outcome areas that correspond to the outcome areas specified in the MIECHV legislation:

- Child development and school performance
- Family economic self-sufficiency
- Juvenile delinquency, family violence, and crime
- Maternal health
- Child maltreatment
- Child health
- Parenting

Across the studies, 17 percent of the 407 estimated effects are statistically significant and indicate improved outcomes for families. Given this many findings, about 5 percent of estimated effects would be expected to be statistically significant even if home visiting had no benefits for families. Using this standard, the evidence reviewed here suggests that home visiting has had positive effects on families and children. These effects can be seen among all ages of children, in each of the seven outcome areas, and for each national model.

The following is a summary of results in each major outcome area:

- **All four evidence-based models have found improvements in child development and school performance among children up to age 7.** These improvements are related to language development, school performance and attendance, gross motor delays, and social and emotional competence. Although studies have investigated the effects of home visiting on child development and school performance among children as old as 15, few statistically significant effects have been found among children older than 7.
- **Home visiting programs have had fairly consistent effects on family economic self-sufficiency.** These effects have included increased parental employment, reduced

3 Results in Figure 1 come from the following publications: Bair-Merritt et al. (2010); Chazan-Cohen, Raikes, and Vogel (2013); Drazen and Haust (1993); DuMont et al. (2010); Eckenrode et al. (2010); Eckenrode et al. (2001); Hanks et al. (2011); Holmberg, Lucky, and Olds (2011); Jones-Harden et al. (2012); Kirkland and Mitchell-Herzfeld (2012); Kitzman et al. (2010); Olds et al. (1997); Olds et al. (1998); Olds et al. (2004); Olds et al. (2007); Olds et al. (2010); Olds, Holmberg, et al. (2014); Olds, Kitzman, et al. (2014); Sidora-Arcoleo et al. (2010); Vogel et al. (2010); and Zielinski, Eckenrode, and Olds (2009).

4 With one exception, results were taken from reports and papers that were listed on the HomVEE website (<http://homvee.acf.hhs.gov>) as being of either high or moderate quality. The fifth-grade follow-up of the national Early Head Start evaluation is not listed on the HomVEE site. In addition, the four models' developers confirmed that there were no other published studies with long-term impact findings. Finally, existing studies of Parents as Teachers with children older than 5 are not considered to be of high or moderate quality by the HomVEE review and are not included in this brief.

FIGURE 1

EVIDENCE FROM PRIOR HOME VISITING STUDIES (FOLLOW-UPS AT AGES 5 TO 21)

		AGE GROUP							
		5 YEARS AND KINDERGARTEN	6 YEARS	7 - 9 YEARS	9 YEARS	5TH GRADE	12 YEARS	15 YEARS	19-21 YEARS
DOMAIN	CHILD DEVELOPMENT AND SCHOOL PERFORMANCE	PPPPPPPPPP PPPPPPPPPP EEEEEEEEEE EEEE	NNNNNN NNNNNN NNNNN	HHHHHHHH HHHHHHHH HHHHHHHH HHHH	NNNNN NNNNN NNNNN NNNNN NNNN	EEEEEE EEEEEE EEEEEE EEEEEE	NNNNNN NNNNN NNN	N	N
	FAMILY ECONOMIC SELF-SUFFICIENCY	PPP EEE	NNNNN NNNNN NNNN		NNNNN NNNNN NNNNN NNNN	EEEEEEE	NNNNNNN NNNNNNN NNNNNNN	N NNNN	NNNN
	JUVENILE DELINQUENCY, FAMILY VIOLENCE, AND CRIME	E	N	HHHHHH HHHH	NNN	EE	NNN	NNNNNN NNNNNN NNNNNN NNN	NNNNNNNN NNNNNNNN
	MATERNAL HEALTH	EE	NNNNN NNNNN		NNNNN NNNNN	EEE	NNNNNNN	NNNN	NNN
	CHILD MALTREATMENT	PPP E		HHH HHHHH HHHHHHHH HHHHHHHH			N	NNNN NNN	
	CHILD HEALTH		NN	HHH	NNN	EEEE	NNN	NNNNN NNN	NNNNNNNN NNN
	PARENTING	EEEEEEE		HHHH		EEEEEE EEEEEE			

E = Early Head Start H = Healthy Families America N = Nurse-Family Partnership P = Parents as Teachers

ROMAN = Outcome examined, not significant. **Bold** = Outcome examined, significant. **Red** indicates the result was negatively significant.

receipt of public assistance, and increased family stability (for example, longer marriages and romantic relationships for mothers). Most of the studies that have examined this outcome area were of the Nurse-Family Partnership.

- **Among adolescents, the Nurse-Family Partnership's Elmira study found statistically significant reductions in involvement with the criminal justice system (for example, having been arrested).** These results are for children 15 and 19 years old, and have not been examined for the other three models of home visiting included in MIHOPE.
- **Home visiting has resulted in long-term improvements in maternal health.** Home visiting has improved maternal mental health and had effects on the timing of subsequent pregnancies. Nearly all research in this area has been of the Nurse-Family Partnership, which is the only model for which statistically significant improvements in this area have been found.
- **Home visiting has reduced the prevalence of child maltreatment.** Most of the evidence in this outcome area concerns children ranging from 5 to 15 years old. Outcome measures include parents' reports of minor physical aggression and substantiated reports of child abuse and neglect reported to child protective services agencies.
- **In the area of children's long-term health, studies of home visiting have found reductions in substance use among young adolescents and reductions in mortality by age 20.** There have not been statistically significant effects on aspects of adolescents' reproductive behavior (such as having had sexual intercourse or having been pregnant at age 15 or 19), although this behavior has been examined several times.
- **Parenting has been examined less often than other outcome areas in families with school-aged children, and there is little evidence of improved parenting in families with school-aged children.** Only studies of Early Head Start—Home-based option and Healthy Families America have examined the effects of home visiting on the parenting of children who are in school, and the programs appear to have affected parenting through age 7. The lack of research in this area is consistent with the logic models underlying the four national models included in this summary. These models all aim to improve parenting early in a child's life in order to make a difference in the child's life course.

Benefit-Cost Findings

Another way to examine the effects of an intervention such as home visiting is to determine whether the benefits it provides to families, the government, and society outweigh the cost of providing services. This section summarizes benefit-cost findings on the four home visiting models mentioned earlier. These analyses fall into two categories:

- **Estimates over defined follow-up periods.** Some analyses calculated benefits to society or the government using information collected during a particular follow-up period (see Table 1).⁵
- **Lifetime projections.** Other analyses used the short-term effects of home visiting to project the benefits to society over an individual's lifetime (see Table 2).⁶

5 The benefits shown in Table 1 could have accrued either to the government or to society. Benefits that accrue to the government include reduced spending on public assistance, increased tax revenues, and any other outcome that might affect government budgets, such as reduced spending on cases of child maltreatment. For the most part, these benefits are naturally expressed in financial terms or can be relatively easily converted to dollar amounts by using, for example, information on the costs of an additional case in the child welfare system.

6 Most of the findings presented in Table 2 are from the Washington State Institute of Public Policy (WSIPP), which conducted these analyses to inform the state's policy decisions. To make these projections, WSIPP used estimated effects on outcomes such as child maltreatment, alcohol use, and high school graduation to project benefits to society from increased maternal employment, reduced use of public assistance, and reduced involvement with the criminal justice system over the lifetime of family members who received home visiting.

TABLE 1

DIRECTLY MEASURED RETURNS ON INVESTMENT IN HOME VISITING, BY EVIDENCE-BASED MODEL

MODEL	FOLLOW-UP PERIOD^a	BENEFIT-COST RATIO^b	STAKEHOLDER PERSPECTIVE	MAIN SOURCE OF BENEFITS (IN DESCENDING ORDER, AS CALCULATED BY AUTHORS)^c
Healthy Families America				
Oregon: Green, Tarte, Sanders, and Waller (2016)	2 years	-0.17	Society	Not applicable
New York: DuMont et al. (2010)	7 years	0.15	Government	Medicaid delivery and hospitalizations, public assistance
Nurse-Family Partnership				
Elmira: Olds et al. (1993)	4 years	0.55	Government	Not available
Denver: Glazner, Bondy, Luckey, and Olds (2004)	4 years	0.29	Government	Tax revenue, subsidized child care, Medicaid, food stamps
Memphis: Glazner, Bondy, Luckey, and Olds (2004)	4.5 years	0.26	Government	Food stamps, foster care, AFDC
Denver: Miller et al. (2011)	9 years	3.05	Society	Maternal earnings and employer-paid supplements, maternal depression
Memphis: Olds et al. (2010)	12 years	1.07	Government	Food stamps, Medicaid, AFDC/TANF
Elmira: Glazner, Bondy, Luckey, and Olds (2004)	15 years	3.93	Government	Food stamps, AFDC, tax revenue, Medicaid

SOURCE: Summaries and calculations based on results from the four evidence-based models included in MIHOPE.

NOTES: This table includes results from benefit-cost analyses of the four evidence-based home visiting models included in MIHOPE. It includes original benefit-cost evaluations by model developers and independent evaluators. It does not include subgroup findings or analyses that include studies of models implemented outside the United States.

AFDC = Aid to Families with Dependent Children.

^aThe benefit-cost ratios presented were calculated by the original study authors, with the exceptions of Healthy Families Oregon, the Nurse-Family Partnership Elmira 4-year study, and the Nurse-Family Partnership Memphis 12-year study. In these cases MDRC calculated the ratios based on authors' benefits and costs to avoid presenting results in different annual dollar amounts.

^b"Government" means the benefit-cost calculations considered only government expenditures and revenues. "Society" indicates a wider perspective, including outcomes such as those related to intimate partner violence or the earning of high school diplomas or equivalents.

^cDefined as the largest benefits that, taken together, comprise at least 75 percent of total benefits.

TABLE 2

LIFETIME PROJECTIONS OF RETURNS ON INVESTMENT IN HOME VISITING, BY EVIDENCE-BASED MODEL

MODEL	FOLLOW-UP PERIOD^a	LIFETIME BENEFIT-COST RATIO^b	PROBABILITY BENEFITS WILL EXCEED COSTS^c	MAIN SOURCE OF BENEFITS (IN DESCENDING ORDER, AS CALCULATED BY AUTHORS)^d
Healthy Families America				
Oregon: Green, Tarte, Sanders, and Waller (2016)	2 years	-4.20	Not calculated	Not applicable
WSIPP (2016)	7 years	1.25	51%	Child earnings due to reduced child maltreatment, maternal earnings due to reduced alcohol use, child K-12 special education
Nurse-Family Partnership				
WSIPP (2016)	19 years	1.88	61%	Child crime, maternal earnings due to high school graduation, child earnings due to reduced child maltreatment
Parents as Teachers				
WSIPP (2016)	3 years	3.44	67%	Child earnings due to reduced child maltreatment, reduced child maltreatment

SOURCE: Summaries and calculations based on results for the four evidence-based models included in MIHOPE.

NOTES: This table includes results from benefit-cost analyses of the four evidence-based home visiting models included in MIHOPE. It includes original benefit-cost evaluations for Healthy Families Oregon and secondary evaluations by WSIPP. It does not include subgroup findings or analyses that include studies of models implemented outside the United States. All analyses shown in this table are from the perspective of society.

^aLifetime projections are based on outcomes measured during the follow-up periods indicated. The follow-up periods shown are the maximum ones possible, and some outcomes were measured earlier.

^bThe benefit-cost ratios presented are those calculated by the study authors, except for Healthy Families Oregon, where MDRC calculated the ratio based on authors' benefits and costs in order to avoid presenting results in different annual dollar amounts.

^cTo account for the uncertainty of each benefit and cost estimate, WSIPP estimated the likelihood that benefits would exceed costs.

^dDefined as the largest benefits that, taken together, comprise at least 75 percent of total benefits.

Estimates Over Defined Follow-Up Periods

The studies of benefits and costs that used defined follow-up periods found:

- **Home visiting's benefits generally exceed its costs over longer periods.** For example, while the Nurse-Family Partnership study in Elmira found a benefit-cost ratio of 0.55 (indicating that benefits are 45 percent lower than costs) over a 4-year follow-up period, the benefit-cost ratio grew to 3.93 (indicating benefits were nearly four times as great as costs) over a 15-year follow-up period. Other studies of the Nurse-Family Partnership and of Healthy Families America that measured benefits using follow-up periods less than 7 years found that neither model produced benefits that exceeded costs. In comparison, in the Nurse-Family Partnership studies in Elmira, Memphis, and Denver, benefits exceeded costs when families were followed for 9 or more years. It should be noted that all of the longer-term benefit-cost findings presented in Table 1 are for the Nurse-Family Partnership.
- **Benefits exceed costs by a greater amount for more disadvantaged families.** Although this finding is not shown in the table, benefits exceed costs by even more in the Nurse-Family Partnership study in Elmira for parents who were considered to have lower socioeconomic status than other study participants.⁷ For this group, benefits over a 15-year follow-up period were five times as great as costs. Benefits also exceeded costs for other families who were of slightly higher socioeconomic status (for example, clerical and sales workers), but only by 50 percent (that is, a benefit-cost ratio of 1.5).
- **Benefits to government entities generally come from higher parental earnings and reduced spending on public assistance programs.** In the longer-term studies of the Nurse-Family Partnership in three locations, home visiting resulted in higher parental earnings, which in turn increased government tax revenues. Increased earnings also reduced families' need to participate in public assistance programs such as Medicaid, TANF, and SNAP, which meant the government spent less on them.⁸
- **Society benefits from improved parent and child well-being.** In the Nurse-Family Partnership study in Denver, benefits to society came from outcomes such as increased maternal employment and reduced maternal depression.

It is important to note that even when outcomes are directly measured over a specific time, benefits have to be estimated, which introduces some uncertainty into the results. In addition, the lack of statistical significance for many of the effects on important family outcomes (Figure 1) increases the uncertainty in these results. Although the results presented in Table 1 are the best evidence on the short-term relationship between benefits and costs in home visiting, these sources of uncertainty mean that benefits might actually exceed costs by more or less than shown in the table.

Lifetime Projections

This section summarizes findings about the benefits for and costs to society of home visiting, from studies that used lifetime projections of benefits (Table 2). Benefits for society primarily represent improved outcomes for families such as improved maternal and child well-being, increased maternal earnings, and projected increased earnings for a child over his or her lifetime. Members of society other than the families served also benefit from some outcomes such as reduced crime.

- **Home visiting's lifetime benefits generally exceed its costs.** For Healthy Families America and the Nurse-Family Partnership, analyses from the Washington State Institute for

7 Glazner, Bondy, Luckey, and Olds (2004). Individuals were classified as having lower socioeconomic status if they were considered to be low-skilled or semiskilled laborers in the Hollingshead index of socioeconomic status. The remainder of the sample fell into other labor categories, such as clerical and sales workers or skilled laborers.

8 For the older studies, the public assistance programs were called Aid to Families with Dependent Children or the Food Stamp Program.

Public Policy (WSIPP) indicate benefits exceed costs by 25 percent and 88 percent, respectively (benefit-cost ratios of 1.25 and 1.88). For Parents as Teachers, WSIPP projects that benefits would be 244 percent more than program costs over an individual's lifetime (a benefit-cost ratio of 3.44, which indicates that benefits are more than three times costs). In one Healthy Families America study in Oregon the benefit-cost ratio is negative, which means that the program made family outcomes worse than they otherwise would have been, though those lifetime benefits were derived from estimated effects that were not statistically significant.⁹

- **Lifetime benefits exceed costs by more for more disadvantaged families.** In addition to the results shown in the table, researchers from RAND projected lifetime benefits for a group of unmarried mothers with low socioeconomic status in the Nurse-Family Partnership Elmira study. According to the RAND estimates, the program produced more than \$5 of benefits to the government for each dollar in program costs for this group of families, compared with \$1.10 in benefits for other families in the Elmira sample.¹⁰
- **Lifetime benefits generally take the form of increased earnings for mothers and children.** Studies of Healthy Families America project maternal earnings to improve due to reduced alcohol use. Studies of the Nurse-Family Partnership project increased maternal earnings due to increased high school graduation rates. Home visiting is projected to increase children's earnings in adulthood by reducing child abuse and neglect and improving school performance.
- **Projecting benefits over an individual's lifetime introduces considerable uncertainty into these findings. Projections based on shorter follow-up periods are more uncertain than those based on longer periods.** To project lifetime benefits for Healthy Families America and the Nurse-Family Partnership, WSIPP used follow-up periods of 7 and 19 years. In contrast, benefits of the Healthy Families Oregon program are based on only 2 years of actual data and benefits for Parents as Teachers are based on 3 years of data. There is greater uncertainty in projecting benefits from shorter follow-up periods than from longer ones, which might be why these two benefit-cost ratios are the most extreme: -4.20 for Healthy Families Oregon (as discussed in footnote 9) and 3.44 for Parents as Teachers. To provide a measure of the uncertainty in its projections, WSIPP's results include both its best estimate of the benefit-cost ratio and an estimate of the probability that benefits will exceed costs. For example, for Healthy Families America, WSIPP's best estimate is that lifetime benefits exceed costs by 25 percent. The actual benefit-cost ratio for Healthy Families America could be smaller or larger than the number presented, however, and WSIPP estimates there is a 51 percent probability that the lifetime benefits of Healthy Families America exceed its costs (and a corresponding 49 percent probability they do not). For the Nurse-Family Partnership, WSIPP's best estimate is that lifetime benefits exceed costs by 88 percent and there is a 61 percent probability that the lifetime benefits exceed costs. For Parents as Teachers, the best estimate is that lifetime benefits exceed costs by 244 percent, and there is a 67 percent chance that benefits exceed costs.¹¹

9 This study found that program group mothers were slightly less likely than control group mothers to have graduated from high school or to have received General Educational Development (GED) certificates, and that program group children were slightly more likely than control group children to have been subject to maltreatment. Although these differences were not statistically significant — and were therefore unlikely to represent a true effect of home visiting — they resulted in substantially smaller lifetime benefits for program group families than for control group families.

10 Karoly et al. (1998).

11 The probability that benefits exceed costs is related both to the projected benefit-cost ratio and the uncertainty in that estimate. Although the estimated benefit-cost ratio is much higher for Parents as Teachers than for the Nurse-Family Partnership (3.44 compared with 1.88), the estimate for Parents as Teachers is only slightly more likely to be positive than the one for the Nurse-Family Partnership (67 percent compared with 61 percent).

Implications for Long-Term Follow-Up in MIHOPE

The research summarized in this brief has several implications for the data that could be collected in the MIHOPE long-term follow-up study.

- **The long-term follow-up study could seek to confirm the effects of home visiting where they have been found most consistently.** The areas where effects have been found consistently include child development before age 7, parental employment and public assistance receipt through age 12, older adolescents' involvement with the criminal justice system, and the time between a mother's pregnancies. Even in these areas, there is some uncertainty in how effective home visiting has been, and effects are often available for only one or two of the national models participating in MIHOPE. Long-term follow-up in MIHOPE could therefore confirm findings from previous studies with a larger sample and examine whether findings are consistent across the four evidence-based models.
- **The long-term follow-up study could seek to fill gaps in knowledge by examining outcomes that have not been examined often in the past.** These outcomes include ones related to child development, maternal educational attainment, maternal mental health, maternal substance use, and maternal and child mortality. In addition, relatively little information is available from past studies on child physical and mental health, on parenting, and on intimate partner violence. MIHOPE could provide valuable information on the effects of home visiting in these areas.
- **The long-term follow-up study could measure outcomes that are likely to produce evidence of monetary benefits, to be used in a benefit-cost analysis.** Since the benefit-cost study will compare the monetary benefits of MIECHV with the costs of running the programs, it will be important to measure outcomes such as earnings, income, and receipt of public assistance benefits, all of which are already expressed in dollar terms and all of which have contributed to the positive benefit-cost findings in prior studies. In addition, improvements in outcomes such as child maltreatment, test scores, and involvement with the criminal justice system can produce important monetary benefits for families, society, and the government over the long term.

This information will inform the final design of the MIHOPE long-term follow-up study, as will the suggestions of stakeholders and other experts on home visiting programs. A final design report will be released in 2018.

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