



**Assessing the Evidence of Effectiveness  
of Home Visiting Program Models  
Implemented in Tribal Communities  
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Lauren Supplee, Project Officer  
Office of Planning, Research and  
Evaluation  
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Services

Submitted by:  
Project Director: Diane Paulsell  
Mathematica Policy Research  
P.O. Box 2393  
Princeton, NJ 08543-2393  
Telephone: (609) 799-3535  
Facsimile: (609) 799-0005

## **Assessing the Evidence of Effectiveness of Home Visiting Program Models Implemented in Tribal Communities**

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Patricia Del Grosso  
Rebecca Kleinman  
Andrea Mraz Esposito  
Emily Sama Martin  
Diane Paulsell

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## INTRODUCTION

In June 2010, the Administration for Children and Families (ACF), Office of Child Care, in partnership with the Health Resources and Services Administration (HRSA), announced the availability of funds and requested applications for the FY 2010 Affordable Care Act (ACA) Tribal Maternal, Infant, and Early Childhood Home Visiting Grant Program. The legislation set aside 3 percent of the total Maternal, Infant, and Early Childhood Home Visiting Program appropriation (authorized in Section 511(j)) for grants to federally recognized tribes (or a consortia of tribes), tribal organizations, or urban Indian organizations and required that the tribal grants, to the greatest extent practicable, be consistent with the requirements of the Maternal, Infant, and Early Childhood Home Visiting Program grants to states and territories (authorized in Section 511(c)).

The overall goals of the ACA Maternal, Infant, and Early Childhood Home Visiting Program grants to states and territories are to strengthen and improve maternal and child health programs; improve service coordination for at-risk communities; and identify and provide comprehensive home visiting services to families who reside in at-risk communities. The Maternal, Infant, and Early Childhood Home Visiting Program will enable states to utilize what is known about effective home visiting services to provide evidence-based program models that promote outcomes such as improvements in maternal and prenatal health, infant health, and child health and development; reduced child maltreatment; improved parenting practices related to child development outcomes; improved school readiness; improved family socioeconomic status; improved coordination of referrals to community resources and supports; and reduced incidence of injuries, crime, and domestic violence. The ACA Tribal Maternal, Infant, and Early Childhood Home Visiting Program mirrors the state program to the maximum extent practicable, with the goal of supporting the development of American Indian and Alaska Native (AIAN) children and families through a coordinated, high-quality, evidence-based home visiting strategy. The tribal program is designed to support the implementation of high-quality, culturally relevant home visiting programs using models that have demonstrated evidence of effectiveness.

In preparation for the federal home visiting initiative, the Office of Planning, Research, and Evaluation at the Administration for Children and Families/DHHS contracted with Mathematica Policy Research in fall 2009 to launch Home Visiting Evidence of Effectiveness (HomVEE), a systematic review of home visiting research. HomVEE reviewed the literature and assessed the evidence of effectiveness of home visiting program models that serve families with pregnant women and children from birth to age 5. The HomVEE review provides states and other stakeholders with information about which home visiting program models have shown evidence of effectiveness as required by the legislation as well as with detailed information about the samples of families who participated in the research, the outcomes measured in each study, and the implementation guidelines for each program model (detailed information and results available at: <http://www.acf.hhs.gov/programs/opre/homvee>). A summary of the review findings is available in the *Home Visiting Evidence of Effectiveness Review: Executive Summary* (Paulsell, Avellar, Sama Martin, & Del Grosso, 2010); detailed findings are available on the HomVEE website.

This report describes the review process and findings for a similar systematic review of home visiting program models implemented in tribal communities or evaluated with AIAN families and children. To assess the evidence of effectiveness of culturally relevant models that have been implemented in tribal communities, the HomVEE team conducted a systematic review focusing specifically on studies relevant to tribal communities.

Our search for relevant studies included consideration of research and evaluation conducted in indigenous communities outside of the United States. While there is tremendous variation between Native and indigenous communities within the United States and across the globe, they share similarities such as traditional culture, historical trauma from colonization, and health disparities. Lessons learned from the implementation and evaluation of culturally relevant home visiting in indigenous settings outside the United States can provide useful information to AIAN communities as they make decisions about home visiting and its evaluation in their own communities.

The HomVEE systematic review identified a limited body of research and few rigorous studies of tribal home visiting programs. Given the lack of models that have evidence of effectiveness with tribal populations, the HomVEE team, in partnership with ACF, sought to identify lessons learned from the existing literature. To make the most of the available information, HomVEE extracted descriptive information from each relevant study about the participant outcomes that were evaluated to gain a better understanding of the targeted domains that have and have not been studied. The HomVEE team also gathered descriptive information about home visiting program models that have been implemented with Native populations. With the understanding that additional research is needed on these models, Indian tribes (or a consortia of tribes), tribal organizations, or urban Indian organizations, including the ACA Tribal Maternal, Infant, and Early Childhood Home Visiting Program grantees, may find this information useful in determining whether these existing home visiting models would be a good fit for their communities and whether implementing the models in their communities would be feasible. Finally, the team summarized lessons learned across studies on three topics: (1) the adaptation of existing models and the development of new models culturally relevant to AIAN families and children, (2) the implementation challenges programs faced and their strategies for overcoming them, and (3) the challenges evaluators faced conducting studies of the program models.

This report describes the findings from the review of home visiting programs implemented in tribal communities or evaluated with American Indian or Alaska Native families and children. In Chapter I we describe the review process the HomVEE team used to identify, screen, and assess the research literature and the review results; we present descriptive information from the studies on participant outcome measures; and we provide descriptions of the home visiting model characteristics. In Chapter II, we describe the lessons learned across studies, with a focus on cultural relevance and implementation. We conclude by proposing considerations for building the research literature on tribal home visiting programs moving forward.

## **I. HOMVEE REVIEW PROCESS AND DESCRIPTIVE INFORMATION ABOUT HOME VISITING PROGRAM MODELS**

To carry out the HomVEE review of home visiting programs implemented in tribal communities (including indigenous communities outside the United States), Mathematica conducted a thorough search of the research literature on home visiting, issued a call for studies to identify additional research, reviewed the literature, assessed the quality of research studies, and evaluated the strength of evidence for specific home visiting program models. These activities mirror those conducted for the main HomVEE review. Information about the review process is available in the *Home Visiting Evidence of Effectiveness Review: Executive Summary* (Paulsell et al., 2010), which provides additional detail about the activities described below. This chapter describes the activities conducted as part of the review process and describes the findings from the review. We then describe the participant outcomes measured by the studies and provide detailed information about the home visiting program models evaluated across the studies.

### **A. Review Process**

To conduct a thorough and transparent review of the tribal home visiting research literature, the HomVEE team performed six main activities:

1. Conducted a broad literature search.
2. Screened studies for relevance.
3. Rated the quality of impact studies with eligible designs.
4. Assessed the evidence of effectiveness for each program model.
5. Reviewed implementation information for each program model.
6. Addressed potential conflicts of interest.

#### **1. Literature Search**

The HomVEE team conducted a broad search for literature on home visiting program models implemented in tribal communities or those with samples that included substantial proportions of AIAN participants. To increase the chance for identifying research that would be relevant to AIAN communities, literature on home visiting programs conducted in indigenous communities outside the United States was included. The target population included pregnant women or families with children from birth to age 5. The team limited the search to research on models that used home visiting as the primary service delivery strategy and offered home visits to most or all participants. Models that provide services primarily in centers and use only supplemental home visits were excluded. The search was also limited to research on home visiting models that aimed to improve outcomes in at least one of eight domains specified in the legislation:

1. Child health
2. Maternal health
3. Child development and school readiness
4. Family economic self-sufficiency
5. Linkages and referrals

6. Positive parenting practices
7. Reductions in child maltreatment
8. Reductions in juvenile delinquency, family violence, and crime

HomVEE's literature search included three main activities:

1. **Database Searches.** The HomVEE team searched on relevant keywords in a range of research databases. Keywords included terms related to the service delivery approach, target population, and outcome domains of interest. In addition to the key terms included in the main HomVEE literature search, this search included key words aimed at identifying studies conducted in tribal communities or with AIAN families and children, including tribe, tribal, Indian, Native American, aboriginal, indigenous, and Nation(s). The search was limited to studies published since 1989.
2. **Website Searches.** The HomVEE team used a custom Google engine to search more than 50 government, university, research, and nonprofit websites for unpublished reports and papers.
3. **Call for Studies.** In November 2010, HomVEE issued a call for studies for research on home visiting program models implemented in tribal communities or evaluated with AIAN families and children. The HomVEE team sent the call for studies to six relevant listservs and five additional groups for dissemination.

HomVEE identified 213 unduplicated studies of home visiting program models implemented in tribal communities, including 5 unduplicated studies through the call for studies.<sup>1</sup>

## 2. Screening Studies

The HomVEE review team used a two step screening process. First, all studies identified through the literature search were screened and all citations that were not studies or were completely off topic were screened out. During this process we screened out 157 of the 213 identified citations (Table II.1). The citations that were not studies included newspaper articles, literature reviews, and editorials. Many of the off-topic studies were medical interventions, such as home visiting programs to treat diabetes among older adults. Others were summaries of child maltreatment rates, but did not examine a specific intervention.

Then, the HomVEE team examined the remaining 56 citations for relevance and screened out studies for the following reasons; some studies were screened out for multiple reasons (Table I.1):

- The study did not have an eligible design.
- The study did not examine a named program.
- The program did not include an eligible target population (pregnant women and families with children from birth to age 5 from tribal or indigenous communities).

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<sup>1</sup> Of the 213 unduplicated studies identified through the literature search on tribal home visiting programs, 154 had been identified during the main HomVEE literature search conducted in 2009 and thus were already in the project database.

- Home visiting was not the primary service delivery strategy.
- The study did not examine at least one outcome from one of the eight eligible domains.
- The study was not published in English.
- The study was published before 1989.
- The citation was not a primary study.

At the conclusion of the screening process, nine causal studies and seven stand alone implementation studies were screened in and included in the review.

**Table I.1. Results of the Literature Search and Screening Process**

Screening Disposition	Number of studies
Total number of studies identified through the literature search	213
<b>Screening Step 1</b>	
Screened in	56
Screened out	
Non-studies	34
Off-topic studies <sup>a</sup>	123
<b>Screening Step 2</b>	
Screened in	16
Screened out <sup>b</sup>	
The study did not have an eligible design	7
The study did not examine a named program.	6
The program did not include an eligible target population (AIAN pregnant women and families with children from birth to age 5).	11
Home visiting was not the primary service delivery strategy.	8
The study did not examine any outcomes in the eight eligible domains listed above.	2
The study was not published in English.	1
The study was published before 1989.	3
The citation was not a primary study.	14

<sup>a</sup> Off-topic studies include medical studies unrelated to home visiting as well as other unrelated studies (e.g., education topics or elder care with a home visitation component).

<sup>b</sup> Some studies were screened out for multiple reasons.

### 3. Rating the Quality of Impact Studies

Assessing whether a model is effective requires a study design that can establish that a model caused the observed outcomes. A study's potential to establish causality and rule out other reasons for the observed outcomes is known as *internal validity*. To link a program model and outcomes, a study tries to establish the counterfactual: what would have happened in absence of the program. The ideal—and impossible—method for determining the counterfactual is to observe the same group simultaneously receiving and not receiving the program. Without the possibility of establishing the true counterfactual, studies use a comparison group or condition, which is intended to represent what would have happened to the treatment group in the absence of the program. A study has strong internal validity if the research groups that are compared to estimate program effects have very similar initial characteristics. If the groups are not similar initially, one cannot be certain whether differences in outcomes that emerge between the groups are due to the effect of the program or to these initial differences.

The HomVEE review rated studies on their ability to produce unbiased estimates of a program model's effect, which requires strong internal validity. The rating system helps distinguish between studies in which we have more confidence that the observed findings were caused by the program and studies in which they may be the result of other unobserved differences between the program and comparison conditions, such as participant motivation. Only study designs where the selection process for these conditions is completely known, including randomized controlled trials, single-case designs, and regression discontinuity designs, can receive the highest rating.

- A randomized controlled trial (RCT)—where participants are assigned to the treatment or comparison groups by chance—has the potential for strong internal validity. The primary advantage of randomly assigning participants is that the groups are balanced, on average, for characteristics that are known, such as race and ethnicity and education, and characteristics that may be unknown, such as patience or motivation. If the groups are the same before the program, any post-treatment differences between the groups that are too large to be due to chance are attributable to the program. However, certain factors—such as the number of participants who drop out of the study—can compromise the design and weaken the study's ability to draw causal conclusions. In the HomVEE review, an RCT could receive a high, moderate, or low study-quality rating depending on the presence of these factors.
- In a single case design (SCD), the same case, which can be an individual or group, serves as its own control. This differs from a pre/post design, however, because multiple measures of the outcome are taken before and after the program. Thus, a trend of performance can be established prior to, during, and/or after the program. Further, the demonstration of an effect can be replicated in various ways, for example, if the program is introduced, withdrawn, and then introduced again (known as an ABAB design, it is generally used if expected effects will not carry over when the program is withdrawn). To receive a high rating in the HomVEE review, a study had to include at least three attempts to demonstrate an effect, systematically manipulate the introduction and withdrawal of a program, establish inter-assessor agreement on the outcomes, and have at least five data points in each phase.
- Regression discontinuity (RD) is another design that can establish a strong causal link between a program and outcomes. In an RD design, the sample is assigned to treatment and comparison conditions based on the value of a continuous “scoring” variable. An example is an intervention in which children are given a pretest; those who score below a certain cutoff receive treatment and those above the cutoff are in the comparison condition. Because the selection process is known and can be perfectly measured the analysis can adjust for differences in selection to produce an unbiased estimate (Shadish, Cook, & Campbell, 2002). To receive the high rating, a study must meet certain criteria, such as maintaining the integrity of the scoring variable (that is, no manipulation of the selection process), meeting standards for attrition, and using an appropriate analysis. Studies that did not meet these criteria received a moderate or low rating.

Matched comparison quasi-experimental designs (QEDs), which use a nonrandom process for group assignment, could have received a moderate study-quality rating in the HomVEE review. The purposeful process of selecting groups can compromise the quality of the QED. If the groups are different at onset, the comparison group does not provide a good representation of what would have happened to the treatment group without the program. The HomVEE review standards required that QEDs establish baseline equivalence between the two groups on selected measures. These measures, such as pre-program outcomes, race, ethnicity, and socioeconomic status, were

determined to be key for composing a reasonable comparison. Regardless of how balanced the treatment and comparison groups are on measured characteristics, however, the weakness of a QED with a comparison group is that it can never rule out differences in unmeasured characteristics. Therefore, the conclusions from a QED are suggestive of an initiative's effectiveness but cannot definitely determine causality.

Trained reviewers assessed the research design and methodology of each study using a standard protocol. Each study was assigned a rating of “high,” “moderate,” or “low” to indicate the capacity of its design to provide unbiased estimates of program impacts. In brief, the *high* rating is reserved for random assignment studies with low attrition of sample members and no later reassignment, as well as for single-case and RD designs that meet the standards of the What Works Clearinghouse (WWC).<sup>2</sup> The *moderate* rating applies to (1) random assignment studies that, because of flaws in their design, execution, or analysis (for example, high sample attrition), do not meet all the criteria for the *high* rating; (2) matched comparison group designs that establish baseline equivalence on selected measures; and (3) single-case and RD designs that meet WWC design standards with reservations. Studies that do not meet all the criteria for either the *high* or the *moderate* rating are assigned the *low* rating. Additional information about the review criteria is available in the *Home Visiting Evidence of Effectiveness Review: Executive Summary* (Paulsell et al., 2010).

Of the nine causal studies identified in the HomVEE review, six were RCTs and three were matched comparison group designs. HomVEE did not identify any that utilized a SCD or RD design.

#### 4. Assessing Evidence of Effectiveness

After completing all impact study reviews for a program model, the HomVEE team evaluated the evidence across all studies of the program model that received a high or moderate rating and measured outcomes in at least one of the eligible domains. To meet the DHHS criteria for an “evidence-based early childhood home visiting service delivery model,” program models must meet at least one of the following criteria:

- At least one high- or moderate-quality impact study of the program model finds favorable, statistically significant impacts in two or more of the eight outcome domains.
- At least two high- or moderate-quality impact studies of the program model using non-overlapping analytic study samples find one or more favorable, statistically significant impacts in the same domain.

In both cases, the impacts considered must either (1) be found for the full sample or, if found for subgroups only, (2) be replicated in the same domain in two or more studies using non-overlapping analytic study samples. In addition, following the legislation, if the model meets the above criteria based on findings from RCTs only, then one or more favorable, statistically significant

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<sup>2</sup> The WWC, established by the Institute for Education Sciences in the U.S. Department of Education, reviews education research. The WWC standards are available at [http://ies.ed.gov/ncee/wwc/pdf/wwc\\_version1\\_standards.pdf](http://ies.ed.gov/ncee/wwc/pdf/wwc_version1_standards.pdf).



impacts must be sustained for at least one year after program enrollment, and one or more favorable, statistically significant impacts must be reported in a peer-reviewed journal.<sup>3</sup>

## **5. Implementation Reviews**

The HomVEE team collected information about implementation of the home visiting program models from the 19 studies that remained after initial screening for relevance. HomVEE aimed to collect information about model requirements, including information about prerequisites for implementation, materials and forms, and estimated costs. The team also extracted information about implementation experiences from the studies reviewed. For example, they collected information on lessons learned about hiring and training qualified staff, developing and/or adapting program models to be culturally relevant for tribal communities, and addressing implementation challenges.

## **6. Addressing Conflicts of Interest**

All members of the HomVEE team signed a conflict-of-interest statement in which they declared any financial or personal connections to developers, studies, or products being reviewed, and confirmed their understanding of the process by which they must inform the project director if such conflicts arise. The team's project director assembled signed conflict-of-interest forms for all project staff and subcontractors and monitored for possible conflicts over time. Any team member found to have a potential conflict of interest concerning a particular home visiting program model was excluded from the review process for the studies of that model.

## **B. Review Results**

Overall, the amount of research available on home visiting programs implemented in tribal communities was small. As noted above, HomVEE identified nine causal studies. In this section, we describe the study ratings of each of the nine studies received, as well as the evidence of effectiveness of the home visiting models included in the review.

### **1. Study Ratings**

Although six studies implemented randomized controlled designs, none of the studies received a high or moderate rating (Table I.2). These studies received a low rating because of high attrition among participants. In addition, HomVEE identified and reviewed three QEDs, all of which received a low rating because (1) the treatment and comparison groups differed on key baseline characteristics, or (2) information on baseline characteristics was not presented, and equivalence could not be determined. Without evidence of baseline equivalence, we cannot determine how well the comparison group represents the counterfactual.

### **2. Evidence of Effectiveness of the Home Visiting Models**

None of the home visiting program models included in this review met DHHS criteria for an “evidence-based early childhood home visiting service delivery model,” because there were no high- or moderate-quality impact studies of the program models.

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<sup>3</sup> Section 511(d)(3)(A)(i)(II)(aa).



**Table I.2. Overview of Causal Studies Included in the HomVEE Review**

Citation	Program Name	Study Design	Study Rating
Anand, S. S., Davis, A. D., Ahmed, R., Jacobs, R., Xie, C., Hill, A., Sowden, J., Atkinson, S., Blimkie, C., Brouwers, M., Morrison, K., de Koning, L., Gerstein, H., Yusuf, S., & SHARE-AP, A. I. (2007). A family-based intervention to promote healthy lifestyles in an aboriginal community in Canada. <i>Canadian Journal of Public Health. Revue Canadienne de Santé Publique</i> , 98(6), 447–452.	SHARE-ACTION	RCT	Low
Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., Cowboy, B., Fields, P., Hastings, R., Pan, W., Reid, R., Santosham, M., & Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics &amp; Adolescent Medicine</i> , 160(11), 1101–1107.	Family Spirit	RCT	Low
Coughlin, R. L., Kushman, E., Copeland, G., & Wilson, M. L. <i>Pregnancy and birth outcome improvements for American Indians in the Healthy Start project of the Inter-Tribal Council of Michigan, 1998-2008: An 11-year cohort study</i> . Unpublished manuscript.	The Inter-Tribal Council of Michigan's (ITCM) Healthy Start project	QED	Low
Harvey-Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. <i>Obesity Research</i> , 11(5), 606–611.	Obesity Prevention + Parenting Support	RCT	Low
Krysiak, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.	HealthyFamilies America/ Healthy Families Arizona	QED	Low
le Roux, I. M., le Roux, K., Comulada, W. S., Greco, E., Desmond, K. A., Mbewu, N., & Rotheram-Borus, M. J. <i>Home visits by neighborhood mentor mothers provide timely recovery from childhood malnutrition in South Africa: Results from a randomized controlled trial</i> . Unpublished manuscript.	Philani child health and nutrition	RCT	Low
le Roux, I. M., le Roux, K., Comulada, W. S., Mbeutu, K., Desmond, K. A., & Rotheram-Borus, M. J. <i>A randomized control trial of home visits by neighborhood mentor mothers to improve children's nutrition in South Africa</i> . Unpublished manuscript.	Philani child health and nutrition	RCT	Low
Pfannenstiel, J., Yarnell, V., & Seltzer, D. (2006). <i>Family and child education program (FACE): Impact study report</i> . Overland Park, KS: Research & Training Associates, Inc.	Family and Child Education program (FACE)	QED	Low
Walkup, J. T., Barlow, A., Mullany, B. C., Pan, W., Goklish, N., Hasting, R., Cowboy, B., Fields, P., Baker, E. V., Speakman, K., Ginsburg, G., & Reid, R. (2009). Randomized controlled trial of a paraprofessional-delivered in-home intervention for young reservation-based American Indian mothers. <i>Journal of the American Academy of Child &amp; Adolescent Psychiatry</i> , 48(6), 591–601.	Family Spirit	RCT	Low

## **C. Descriptive Information about Home Visiting Program Models**

Although limited information was available about program impacts, nearly all studies included some information about the home visiting program models being evaluated or documented lessons learned about implementation, and seven studies focused specifically on implementation. Much of the information the HomVEE team was able to extract about implementation can help inform tribes, communities, and states about what is needed to implement a given model. For example, how intensive are the services? What skills and educational levels must home visitors have to implement the model? What are the staff training and supervision requirements?

The HomVEE team gathered descriptive information from the nine causal studies and seven standalone implementation studies identified through the literature search and screening process. Because this review identified so few studies, the HomVEE team, in consultation with ACF, decided to include studies that had been screened out because they had ineligible designs, but that were otherwise relevant in the implementation review process. In the end, three otherwise relevant studies with ineligible designs were included in the implementation reviews. Table I.3 lists (1) the studies from which HomVEE extracted descriptive information, (2) the design of each study, and (3) the home visiting model being evaluated. Additional information about the characteristics of each study is in Appendix A.

We begin this section by describing the participant outcomes that the studies examined and the characteristics of the measures used. We then describe the home visiting program models that were evaluated across the studies.

### **1. Participant Outcomes Measures**

The studies included in this review measured outcomes in multiple domains and used a wide variety of measures to do so (Table I.4 and Appendix B, tables B.1 to B.7). Commonly, studies measured child health, maternal health, child development and school readiness, and positive parenting practices; very few or no studies included measures of family economic self-sufficiency, linkages and referrals, or child maltreatment.

Outcome measures should be reliable, producing similar results with the same level of accuracy each time they are administered, and valid, accurately representing the construct of interest. The studies included in this review depended on both primary and secondary measures as defined by the HomVEE review. HomVEE has more confidence in primary measures, which include direct assessments; direct observations; data extracted from medical, school, or administrative records; and parent and teacher reports based on standardized measures. When a measure is standardized, it is administered using a uniform set of procedures for administration and scoring and uses established scoring norms based on the performance of a norming sample. Across the studies included in this review, just over half of measures (31) were primary. Secondary measures are nonstandardized parent, teacher, or youth self-reports. Twenty-eight of the measures used across the studies included in this review were secondary measures.

### **2. Home Visiting Program Model Descriptions**

To learn about the home visiting program models that were evaluated, the HomVEE team gathered information about them across a number of topics, including prerequisites for

**Table I.3. List of Studies from Which Descriptive Information Was Extracted**

Citation	Study Design	Program Name
Anand, S. S., Davis, A. D., Ahmed, R., Jacobs, R., Xie, C., Hill, A., Sowden, J., Atkinson, S., Blimkie, C., Brouwers, M., Morrison, K., de Koning, L., Gerstein, H., Yusuf, S., & SHARE-AP, A. I. (2007). A family-based intervention to promote healthy lifestyles in an aboriginal community in Canada. <i>Canadian Journal of Public Health. Revue Canadienne de Santé Publique</i> , 98(6), 447–452.	RCT	SHARE-ACTION
Bailey, D., Applequist, K., & North, C. U. (1997). <i>Parent perceptions of home visitors: A comparative study of parents who are American Indian and non-Indian parents</i> . Washington, DC: U.S. Department of Education.	Correlational	Early intervention services
Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., Cowboy, B., Fields, P., Hastings, R., Pan, W., Reid, R., Santosham, M., & Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics &amp; Adolescent Medicine</i> , 160(11), 1101–1107.	RCT	Family Spirit
Burd, L., Peterson, M., Face, G. C., Face, F. C., Shervold, D., & Klug, M. G. (2007). Efficacy of A SIDS risk factor education methodology at a Native American and Caucasian site. <i>Maternal &amp; Child Health Journal</i> , 11(4), 365–371.	Pre-post	SIDS risk factor education program
Coughlin, R. L., Kushman, E., Copeland, G., & Wilson, M. L. <i>Pregnancy and birth outcome improvements for American Indians in the Healthy Start project of the Inter-Tribal Council of Michigan, 1998-2008: An 11-year cohort study</i> . Unpublished manuscript.	QED	The Inter-Tribal Council of Michigan's (ITCM) Healthy Start project
Davis, C. L., & Prater, S. L. (2001). A perinatal intervention program for urban American Indians part 1: Design, implementation, and outcomes. <i>Journal of Perinatal Education: An ASPO/Lamaze Publication</i> , 10(3), 9–19.	Implementation	Perinatal intervention program
Feres-Lewin, C. (2000). <i>An analysis of the governance and administrative elements of a public-private partnership approach to community-based education</i> . (Doctoral Dissertation, University of Nevada, Las Vegas, 2000; 0506 Advisor: Chair Teresa S. Jordan). <i>Dissertation Abstracts International</i> , 61 (05A), 247–1689.	Implementation	Healthy Families America
Fisher, P. A. & Ball, T. J. (2000). Indian Wellness Preventive Intervention Project. Eugene, OR: Oregon Social Learning Center.	Implementation	Indian Family Wellness Project
Gfeller, B. M., McLaren, L., & Metcalfe, A. (2008). The parent-child home program in Western Manitoba: A 20-year evaluation. <i>Child Welfare</i> , 87(5), 49–67.	Implementation	The Parent Child Home Program
Harvey Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. <i>Obesity Research</i> , 11(5), 606–611.	RCT	Obesity Prevention + Parenting Support

Citation	Study Design	Program Name
Krysik, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.	QED	Healthy Families America/ Healthy Families Arizona
Lambson, T., Yarnell, V., & Pfannenstiel, J. (2006). <i>BIA Baby Face program evaluation study: 2005 report</i> .	Implementation	Baby Family and Child Education program (Baby FACE)
le Roux, I. M., le Roux, K., Comulada, W. S., Greco, E., Desmond, K. A., Mbewu, N., & Rotheram-Borus, M. J. <i>Home visits by neighborhood mentor mothers provide timely recovery from childhood malnutrition in South Africa: Results from a randomized controlled trial</i> . Unpublished manuscript.	RCT	Philani child health and nutrition
le Roux, I. M., le Roux, K., Comulada, W. S., Mbeutu, K., Desmond, K. A., & Rotheram-Borus, M. J. <i>A randomized control trial of home visits by neighborhood mentor mothers to improve children's nutrition in South Africa</i> . Unpublished manuscript.	RCT	Philani child health and nutrition
Pfannenstiel, J., Yarnell, V., & Seltzer, D. (2006). <i>Family and child education program (FACE): Impact study report</i> . Overland Park, KS: Research & Training Associates, Inc.	QED	Family and Child Education program (FACE)
McLaren, L. (1988). Fostering mother-child relationships. <i>Child Welfare</i> , 67(4), 353–365.	Pre-post	The Parent-Child Home Program
Nevada State Department of Human Resources, Early Childhood Services. (1997). <i>HAPPY Rural Outreach Project. Final report</i> . Reno, NV: Author.	Implementation	Home Activity Program for Parents and Youngsters (HAPPY) Rural Outreach Project
Prater, S. L., & Davis, C. L. (2002). A perinatal intervention program for urban American Indians: Part 2: The story of a program and its implications for practice. <i>Journal of Perinatal Education</i> , 11(2), 23–32.	Implementation	Perinatal intervention program
Walkup, J. T., Barlow, A., Mullany, B. C., Pan, W., Goklish, N., Hasting, R., Cowboy, B., Fields, P., Baker, E. V., Speakman, K., Ginsburg, G., & Reid, R. (2009). Randomized controlled trial of a paraprofessional-delivered in-home intervention for young reservation-based American Indian mothers. <i>Journal of the American Academy of Child &amp; Adolescent Psychiatry</i> , 48(6), 591–601.	RCT	Family Spirit

**Table I.4. Number of Participant Outcomes Measured, by Domain**

	Participant Outcomes	
	Primary Outcome Measures	Secondary Outcome Measures
Child health	13	6
Maternal health	7	14
Child development and school readiness	7	0
Family economic self-sufficiency	0	1
Linkages and referrals	0	0
Positive parenting practices	3	5
Reductions in child maltreatment	1	0
Reductions in juvenile delinquency, family violence, and crime	0	2

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.

Note: **Primary outcome measures** refers to outcomes measured through direct observation, direct assessment, or administrative data; or self-reported data collected using a standardized (normed) instrument. **Secondary outcome measures** refers to most self-reported data, excluding self-reports based on a standardized (normed) instrument.

implementation; patterns, qualifications, and training of staff; the availability of curricular materials and program forms (such as intake forms, service tracking forms, and assessments delivered as part of the program); systems for monitoring fidelity; and estimated costs of program implementation. Very few studies included information on all these topics, and none reported on cost. In the next section, we provide an overview of the home visiting program models in the areas most commonly reported on in the studies.

**Target Outcome Domains.** Most program models targeted outcomes in three domains: child health, child development and school readiness, and positive parenting practices (Table I.5). Some were focused broadly on improving maternal and child outcomes across a number of domains (such as child health, child development and school readiness, and positive parenting practices) (see Appendix C, Table C.1). For example:

- Healthy Families America (HFA) aimed (1) to reduce child maltreatment, (2) to increase prenatal care, (3) to improve parent-child interactions and school readiness, (4) to ensure healthy child development, (5) to promote positive parenting, (6) to promote family self-sufficiency and decrease dependency on welfare and other social services, (7) to increase access to primary care medical services, and (8) to increase immunization rates.
- The Baby and Family Child Education (Baby FACE) program, which used the Parents as Teachers Born to Learn curriculum, was designed (1) to promote pre-literacy experiences for children from birth to age 5 with the support and involvement of their parents, and (2) to increase parenting skills and knowledge of child development.

Others were narrowly focused on improving outcomes in a specific domain. For example, the perinatal intervention program aimed to encourage earlier entry to prenatal care and change of health risk habits among American Indian women. Other interventions were focused specifically on child health, including Obesity Prevention + Parenting Support, the Philani child health and

nutrition program, SHARE-ACTION, and the sudden infant death syndrome (SIDS) risk factor program.

In addition to targeting goals related to family and child outcomes, four program models identified other types of goals. One program model specifically aimed to increase access to early intervention services among families living in remote, rural areas in Nevada. Three program models, the Family and Child Education (FACE) program, Family Sprit, and the Indian Wellness Project, explicitly described a targeted goal as providing cultural relevant services for American Indian families, in support of the ultimate goal of improving parent and child outcomes.

**Table I.5. Target Outcome Domains of the Home Visiting Program Models**

Target Outcome Domain	Number of Programs
Child health	8
Maternal health	3
Child development and school readiness	8
Positive parenting practices	8
Development of culturally relevant services	3
Family economic self-sufficiency	2
Increased access to services	1
Reductions in child maltreatment	1
Other	4

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.

**Service Delivery.** All home visiting program models used home visits as the primary mode of service delivery; eight program models also included parent group meetings, access to referral networks, and center-based options (Table I.6). The home visiting program models differed, however, in the frequency of service delivery and the duration of services (Table I.7). Of the studies that included information about program frequency, home visits ranged from twice per week to only two over the course of the entire intervention. Most commonly, however, programs offered home visits weekly to monthly. Similarly, the program models vary in duration from 16 weeks to 3 to 5 years.

**Table I.6. Home Visiting Program Model Components**

Goal	Number of Programs
Home visiting only	7
Home visiting plus other services	7

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.

**Table I.7. Program Frequency and Duration**

Model Name	Frequency and Length of Home Visits	Duration of the Program
Baby FACE	2 to 4 times per month (typically weekly or biweekly); 1-hour visits	Prenatally to age 5 years
Early intervention services	Not specified	Not specified
FACE	Not specified	Not specified
Family Spirit	25 home visits over 9 months; 1.5-hour visits	28 weeks' gestation to 6 months postpartum.
Healthy Families America/ Healthy Families Arizona	1 home visit per week until the child is 6 months old, then local programs determine the frequency of the visits; 1-hour visits	Prenatally or at birth to age 3 or 5 years
HAPPY Rural Outreach Project	1 home visit per month; length not specified	Not specified
Indian Family Wellness Project	Not specified	Not specified
Obesity Prevention + Parenting Support	Not specified	16 weeks
The Parent-Child Home Program	2 times per week; 30-minute visits	Age 2 to 3 years
Perinatal intervention program	The program offered two home visits: one prenatally and one postpartum; length not specified	Prenatally to age 1 year
Philani child health and nutrition program	Frequency not specified; 20-minute to 1-hour visits	1 year
SHARE-ACTION	Not specified	Not specified
ITCM Healthy Start project	Not specified	Not specified
SIDS risk factor program	Not specified	Not specified

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.

**Target Population.** The home visiting program models targeted participants based on the age of their children, as well as the presence of specific risk factors. Six of the 15 models began offering services to families at birth or in early infancy and continued to serve families with children up to age 2 to 5 years, with one program offering services up to age 8 (Table I.8). Five program models specifically targeted pregnant women, and one targeted women postnatally. One program targeted families with 2- and 3-year-olds, and another targeted families enrolled in Head Start (4- and 5-year-olds). Some program models were available to any family meeting the target age and living in a specific geographic location (such as rural reservations) or from a specific community (such as the Chippewa, Menominee, Oneida, Potawatomi, Stockbridge-Munsee, and Winnebago tribes in Wisconsin). Other program models, however, targeted families with specific risk factors. For example, Obesity Prevention + Parenting Support targeted mothers whose body mass index (BMI) was over 25. Family Spirit targeted adolescents and young women up to age 19 (another study of the same program included women up to age 22 at conception).



**Table I.8. Target Populations**

Model Name	Target Population
Baby FACE	American Indian families with children from birth to age 3 (some sites offer services up to age 5)
Early intervention services	Families with infants and toddlers enrolled in early intervention services and living in the Navajo Nation (in Arizona and New Mexico)
FACE	American Indian families with children from birth to age 8 located on rural reservations
Family Spirit	Pregnant American Indian adolescents aged 12 to 19 at conception and at 28 weeks' or earlier gestation. One study enrolled women up to age 22
Healthy Families America/ Healthy Families Arizona	Families with the following risk factors: single parenthood, low income, childhood history of substance abuse, mental health issues, or domestic violence
HAPPY Rural Outreach Project	Children from birth through age 2 and their families
Indian Family Wellness Project	AIAN families enrolled in tribal Head Start
Obesity Prevention + Parenting Support	Mother-child pairs who met the following criteria: (1) the family had a child between the ages of 9 months and 3 years, (2) the child was walking, (3) the mother had a BMI over 25, and (4) the mother agreed to keep all treatment appointments
The Parent-Child Home Program	Families with children aged 2 and 3 years with multiple risk factors, such as low levels of education, teen parents, low income, isolation, or single-parent households
Perinatal intervention program	American Indian women of childbearing age
Philani child health and nutrition program	Any family living in a target neighborhood in Xhosa townships surrounding Cape Town, South Africa, with a child aged 5 years or younger and classified as malnourished (defined as weighing less than 2 standard deviations below his or her weight-for-age norm, including all newborns weighing less than 2,500 grams at birth)
SHARE-ACTION	Aboriginal households from the Six Nations Reserve in Ohsweken, Canada, comprising a male and/or female parent with at least one child living in the same household
ITCM Healthy Start project	Pregnant American Indian women living in seven tribal locations, and one urban center in Michigan
SIDS risk factor program	Postnatal women from the Aberdeen Area of the Indian Health Service and a community hospital in North Dakota

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.



**Location of Services and Types of Implementing Agencies** Nearly all program models specifically targeted families and children living in tribal communities (12) (see Table I.8; Table I.9). One gave priority to implementing agencies with service areas that included Indian reservations. The HFA and Healthy Families Arizona programs in this review included American Indian participants (but did not specifically target tribal communities). All but four models were implemented and evaluated in the United States. Three program models were evaluated in Canada. One program, the Philani child health and nutrition program, was implemented and evaluated in South Africa. Across program models, services were delivered by a range of implementing agencies, such as health providers (including hospitals), social services agencies, elementary schools, and Head Start programs (Table I.9).

**Table I.9. Location of Services and Implementing Agency**

Model Name	Location of Services	Type of Implementing Agency
Baby FACE	28 reservations across the United States	Elementary schools
Early intervention services	Navajo Nation in New Mexico and Arizona	Not specified
FACE	Reservations across the United States, including locations in Cheyenne River, Chinle, Eastern Navajo, Fort Defiance, Minneapolis, Oklahoma, Pima, Portland, Shiprock, Southern Pueblos	Elementary schools
Family Spirit	Studies 1 and 2: Four American Indian health service catchment areas on the Navajo and White Mountain Apache reservations in New Mexico and Arizona	Not specified
Healthy Families America/ Healthy Families Arizona	Study 1: Walworth County in Wisconsin, Pottawatomie County in Oklahoma, and Las Vegas; Study 2: Arizona	Not specified
HAPPY Rural Outreach Project	Nevada	Nevada Department of Human Resources
Indian Family Wellness Project	Not specified	Head Start programs
Obesity Prevention + Parenting Support	St. Regis Mohawk community of Akwesasne located along the St. Lawrence River in northern New York State, and Ontario and Quebec, Canada	St. Regis Mohawk Health Services
The Parent-Child Home Program	Studies 1 and 2: Western Manitoba, Canada	Studies 1 and 2: Nonprofit organization that provides child and family services
Perinatal intervention program	Studies 1 and 2: Milwaukee, Wisconsin	Studies 1 and 2: Community health agency
Philani child health and nutrition program	Studies 1 and 2: Neighborhoods in three Xhosa townships surrounding Cape Town, South Africa (one study was based in 37 neighborhoods; the other was based in 65)	Not specified
SHARE-ACTION	Six Nations Reserve, Canada	Not specified
ITCM Healthy Start project	Seven tribal locations and one urban center in Michigan	Health and social services providers
SIDS risk factor program	The Aberdeen Area of the Indian Health Service and a community hospital in North Dakota	Community hospital

Source: 19 studies included in the HomVEE review of home visiting program implemented in tribal communities.

**Home Visitor Qualifications and Training.** The program models frequently employed paraprofessionals and did not set minimum education requirements (Table I.10). Rather, they sought home visitors who (1) were indigenous to the community being served, (2) had strong interpersonal and communication skills, (3) had experience working with families targeted by the programs, or (4) were themselves parents from the target community. Although few home visiting program models set guidelines for minimum education or experience, nearly all mandated that home visitors complete preservice and ongoing training (Table I.11), and some required intensive training. For example, home visitors implementing the Baby FACE program participated in a five-day initial training and three-day followup. Home visitors implementing Family Spirit participated in more than 500 hours of training, and those implementing the Obesity Prevention + Parenting Support program participated in 120. To support home visitors during service delivery, many programs offered ongoing consultation with program developers to ensure that staff implemented the model consistently over time.

**Table I.10. Home Visitor Qualifications**

Program Name	Education and Experience
Baby FACE	The minimum qualifications for the position of the parent include a high school degree or GED diploma, the ability to read and write in English, and working towards a Child Development Associates degree (CDA) or an Associate of Arts degree (AA)
Early intervention services	Not specified
FACE	Not specified
Family Spirit	Bilingual American Indian women who had a job history in tribal health and human services, passed a background screening, and had been teen mothers themselves or had a special interest in this population
Healthy Families America/ Healthy Families Arizona	Specific educational requirements for direct-service staff are not given. HFA recommends selecting staff based on their personal characteristics; willingness to work in, or experience working with, culturally diverse communities; experience working with families with multiple needs; and ability to maintain boundaries between personal and professional life
HAPPY Rural Outreach Project	Paraprofessionals
Indian Family Wellness Project	Tribal members
Obesity Prevention + Parenting Support	An indigenous peer educator
The Parent-Child Home Program	Home visitors must be able to write well enough to prepare a written report on each home visit and to administer certain assessments; the model developer encourages sites to hire former program parent-participants and/or community residents as home visitors
Perinatal intervention program	Culturally competent staff with knowledge and assessment skills to address infant mortality and a desire to interact with members of the targeted community
Philani child health and nutrition program	The program sought mentor mothers who (1) had children who were thriving, (2) demonstrated strong communication and interpersonal skills, (3) were committed to community service, and (4) showed an organized and disciplined approach to tasks
SHARE-ACTION	Not specified
ITCM Healthy Start project	Not specified
SIDS risk factor program	Not specified

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.

**Table I.11. Home Visitor Training and Technical Assistance**

Program Name	Training and Technical Assistance
Baby FACE	<p>New Baby FACE staff members were offered a five-day implementation training and a three-day follow-up. Parent educators were offered two or three training conferences a year on implementing the Baby FACE program</p> <p>Parent educators also had access to technical assistance offered by program technical assistance coordinators</p>
Early intervention services	Not specified
FACE	Not specified
Family Spirit	<p>The educators participated in more than 500 hours of training and were tested to ensure they had mastered lesson content and delivery strategies prior to service delivery</p> <p>Ongoing training occurred bimonthly throughout the study</p>
Healthy Families America/ Healthy Families Arizona	<p>Home visitors delivering Health Families Arizona were required to participate in an annual two-day statewide institute</p> <p>Problem areas identified through quarterly reports were followed up by targeted training and technical assistance</p>
HAPPY Rural Outreach Project	<p>Training for home visitors included training on HAPPY components and program adaptations. Staff at sites that utilized the Computerized Curriculum participated in hands-on training and were required to generate appropriate Home Activity Packages to demonstrate proficiency with the software</p> <p>Ongoing technical assistance was available to staff</p>
Indian Family Wellness Project	Staff attended a nine-month undergraduate-level research methods class for a full day twice a month, taught by the project methodologist
Obesity Prevention + Parenting Support	<p>The peer educator participated in an intensive 120-hour initial in-service education program conducted by the study's principal investigator and a family therapist/parenting consultant from the St. Regis Mohawk tribe</p> <p>After the initial training, monthly staff development sessions were conducted</p>
The Parent-Child Home Program	<p>Home visitors must participate in a 16-hour training workshop provided by the site coordinator</p> <p>In-service training for home visitors is provided by site coordinators during weekly supervision meetings</p>
Perinatal intervention program	Not specified
Philani child health and nutrition program	Mentor Mothers received four phases of training: (1) observing experienced mentor mothers, (2) attending a month of training, (3) learning how to help mothers bond with their children and improve the consistency of healthy daily routines, and (4) implementing their first round of home visits independently in their neighborhoods
SHARE-ACTION	Aboriginal health counselors were trained to assess and set dietary and physical activity goals for each household member
ITCM Healthy Start project	Not specified
SIDS risk factor program	Not specified

Source: 19 studies included in the HomVEE review of home visiting programs implemented in tribal communities.



## **II. LESSONS LEARNED AND RECOMMENDATIONS FOR FUTURE DIRECTIONS**

While the review cannot provide information about the effectiveness of program models, the studies offer important insights into program adaptation and development as well as implementation—insights that may be useful to the ACA Tribal Maternal, Infant, and Early Childhood Home Visiting Program grantees or other tribal organizations interested in implementing home visiting program models. In this section we describe lessons learned across studies in three areas: (1) the adaptation of existing models and the development of new models that are culturally relevant to AIAN families and children, (2) the implementation challenges programs faced and the strategies they used to address them, and (3) the challenges evaluators faced conducting studies of the program models. We conclude by providing recommendations for future research on home visiting programs implemented in tribal communities.

### **A. Adapting or Developing Culturally Relevant Home Visiting Program Models**

Research has found that evidence-based home visiting can be an effective tool to improve child outcomes (Bilukha et al., 2005; Gomby, 2005; Olds et al., 2004; Olds et al., 2007; Sweet & Appelbaum, 2004; Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009). However, few studies have been conducted on the effectiveness of home visiting models with families from tribal communities. The field of home visiting has begun to recognize the need to examine the impact of national home visiting program models on diverse populations and explore adapting evidence-based home visiting models to make them more culturally relevant for families from diverse backgrounds (Kumpfer, Alvarado, Smith, & Bellamy, 2002). The implementation component of this review examined how agencies developed or adapted home visiting program models to serve the needs of tribal communities.

Strategies used to develop culturally relevant programs fall along a continuum of adaptations (Castro et al., 2010). At one end of the spectrum lie programs that maintain the basic content of a standard program model but make some minor adjustments to peripheral components to make it more appealing to the target minority population. In contrast, programs on the opposite end of the continuum reject standard models in favor of developing, in conjunction with the target population, services that build upon the cultural traditions and knowledge of the community.

The approaches used by programs described in this review mirror this continuum of adaptation. The programs included both national home visiting models (two of which were adapted for AIAN participants) and local programs developed for tribal populations. The families and children served in the studies of the national models included AIAN families, but only two of the programs targeted this population exclusively (Coughlin, Kushman, Copeland, & Wilson, 2010; Harvey-Berino & Rourke, 2003; Lambson, Yarnell, & Pfannenstiel, 2006; Pfannenstiel, Yarnell, & Seltzer, 2006). The studies did not, however, describe the process they used to adapt the national models, and the characteristics of the adapted models were consistent with those of models developed specifically for tribal communities. Therefore, the rest of the discussion in this section combines the lessons learned across studies of both types of home visiting program models. Regarding the development of culturally relevant programs, the common approaches that emerged across studies included the involvement of tribal leaders, the use of native staff, and efforts to build upon a community's traditions and strengths.

## **Program Planners Involved Tribal Leaders in the Planning, Development, and Implementation of Home Visiting Programs**

Programs engaged tribal leaders throughout the development process to provide input on cultural appropriateness and to encourage tribal members to enroll once the program was implemented. For example, tribal leaders consulted on design issues, provided program content, assisted with recruitment, and provided endorsement at program events (Barlow et al., 2006; Davis & Prater, 2001; Fisher & Ball, 2002; Harvey-Berino & Rourke, 2003; Lambson et al., 2006). Two studies described the instrumental role tribal elders played in nurturing and promoting the program. One program established a collaborative partnership with the AIAN communities to develop and evaluate an intervention designed to strengthen parenting practices (Fisher & Ball, 2002). The tribal council was involved in all stages of the project, from conceptualization and drafting the grant proposal to the evaluation design. The tribe appointed a Cultural Oversight Committee to oversee development of the intervention.

A study of a perinatal intervention program described how the community health center planning the program consulted with local American Indian agencies and the region's tribes to develop an intervention to reduce the infant mortality rate among the local American Indian population (Davis & Prater, 2001). The planners sought the verbal support of the tribal communities and asked them to refer families to the program. The tribes' involvement and promotion of the program continued throughout the project from participation in a program dedication ceremony to attendance at a celebration of participants' program achievements.

Tribal leaders can play an important role in adapting the model to be culturally appropriate. For example, one of the articles discussed how the community health center went about designing a logo for the program (Davis & Prater, 2001): they commissioned an American Indian artist to create the logo and sought feedback from the tribes and tribal agencies on various drafts. One program used storytelling as the primary delivery mechanism (Fisher & Ball, 2002). The curriculum was based on six tribal stories that were narrated by tribal elders. As mentioned above, in another program, tribal elders participated in a program dedication and achievement ceremony (Davis & Prater, 2001). A medicine woman from one of the tribes also assisted with the first Lamaze series held. In the third site, elders were invited to speak at program events, and they offered prayers for new program families (Lambson et al., 2006). The final article described how a parenting consultant from the local tribe co-facilitated the preservice training of program staff (Harvey-Berino & Rourke, 2003).

## **Home Visiting Programs Employed Staff from Within the Community or Sought Culturally Competent Staff**

Some programs administrators felt that the families would be able to connect better with staff from their tribe than with an outside professional. Six hired staff members from the target community (Anand et al., 2007; Barlow et al., 2006; Fisher & Ball, 2002; Harvey-Berino & Rourke, 2003; le Roux et al., 2010a; Walkup et al., 2009). A goal of one of these programs was to use the home visitors to create an extended family support system (Fisher & Ball, 2002).

In two other programs, the home visitors included both tribal members and people not from the community (Bailey, Applequist, & North, 1997; Davis & Prater, 2001). The study of a perinatal intervention program describes the importance planners placed on cultural sensitivity training for all staff (Prater & Davis, 2002). The planners felt it was important for staff to understand the history of exploitation suffered by the AIAN communities and its implications for building a trusting relationship with a family.

One study that used both indigenous and outside home visitors explored the relationship between the racial/ethnic match of the family and provider and the family's satisfaction with the program (Bailey et al., 1997). The authors found that 96 percent of the families did not have a preference as to the racial/ethnic background of the provider. However, in the interviews some families did note the importance of having culturally competent home visiting providers and also mentioned the benefit of having providers or interpreters who could speak their native language.

### **Programs Built on the Cultural Strengths and Customs of the Communities Served**

A number of studies described building on the cultural strengths and customs of the target populations and incorporating traditional practices (Anand et al., 2007; Davis & Prater, 2001; Fisher & Ball, 2002; Lambson et al., 2006; Pfannenstiel et al., 2006; Prater & Davis, 2002). For example, the Indian Wellness Prevention Project developed a curriculum based on tribal legends and delivered it with a traditional storytelling approach (Fisher & Ball, 2002). The program they developed was designed to build on the community's cultural strengths and traditional child-rearing practices and wisdom. Another program's recruitment materials tried to emphasize their recognition of the value of traditional ways and the wisdom of tribal elders (Prater & Davis, 2002).

A couple of programs also sought to foster participants' connection to the traditional ways of their community. For example, one program integrated traditional arts and crafts, food, and music into the curriculum (Lambson et al., 2006). The program also participated in special tribal events such as the annual harvest dance.

## **B. Delivering Home Visiting Services**

During HomVEE's review of the studies, the team sought to identify lessons learned about delivering home visiting services in tribal communities. Several studies described how programs fared and the challenges they faced reaching the intended target population, maintaining enrollment, and providing adequate levels of service. The HomVEE team also identified some lessons learned about possible ways to address these challenges. The challenges and lessons we present in this section are similar to those commonly identified in the home visiting implementation research. However, some of the lessons learned about how program staff attempted to overcome challenges are unique to the cultural traditions and expectations of AIAN participants.

### **Programs Were Able to Recruit Participants, but Nearly All Faced Attrition**

Programs were generally able to recruit from their targeted population, but some had a hard time achieving enrollment targets, especially in rural areas. Only four of the studies stated their success in meeting a specified enrollment target. One of the programs was able to enroll over 80 percent of the target population, and another enrolled slightly less (76 percent). In a survey of providers, the third study found that recruitment was rated as a strength in 85 percent of the programs by the end of the year. Notably, another program faced barriers establishing the intervention in smaller, more rural locations where less programmatic infrastructure existed, and training staff and coordinating across towns 200 to 300 miles apart was a burden.

Once participants were enrolled, the majority remained in the program through completion, though almost all the programs faced attrition. One study was successful in retaining all the families from the first year into the second year (Fisher & Ball, 2000). For the remaining three studies that provided this information, between 10 percent and roughly half of participants withdrew from the program early or elected not to enroll in subsequent years (Walkup et al., 2009; Lambson et al., 2006;



Barlow et al., 2006). A study that followed a program for four years found that attrition consistently improved over the period, which could indicate that the longer a program is implemented, the more attrition rates improve (Krysik & Lecroy, 2007).

### **Some Home Visiting Program Models Included Systems for Measuring Fidelity, but Most Studies Only Reported Dosage**

The best test of the effectiveness of an intervention occurs when the program model is implemented with a high degree of fidelity to the original design. This ensures that the program model being evaluated was actually implemented as intended by the developer (Dane & Schneider, 1998; O'Donnell, 2008). Although consensus on a single definition does not exist, five elements are common to many definitions of implementation fidelity: (1) adherence to the program model as described by the developer, (2) exposure or dosage, (3) quality of service delivery, (4) participant responsiveness, and (5) understanding of the essential program model elements that cannot be subject to adaptation (Dunsenbury, Brannigan, Falco, & Hansen, 2003; Carroll et al., 2007).

Four of the 19 studies included in this review provided information about program model fidelity standards or systems for monitoring fidelity (Lambson et al., 2006; le Roux et al., 2010a; le Roux et al., 2010b; Krysik & Lecroy, 2007; Pfannenstiel et al., 2006).

- The Baby FACE program tracked data on the number of home visits received by children and families; the number of parent group meetings attended by adults; the length of participation in the program; the number and type of screenings received by children and the results of those screenings; and the quality of family participation as assessed by parent educators (Lambson et al., 2006). In addition, parents completed annual questionnaires on the services they received and their perceptions of the results of those services for their family.
- In the study of the FACE model, the authors indicate that the evaluation team maintained a database that recorded information on participation of families in program activities.
- The evaluators and program administrators of the HFA/Health Families Arizona program combined their efforts to ensure that quality assurance data were available and accessible to program staff (Krysik & Lecroy, 2007). The evaluator provided program administrators with site-level data on a quarterly basis. The reports included information on a range of issues, including the percentage of assessments completed, compliance with the required number of home visits and supervision standards, and worker retention and training. In addition, the reasons eligible families provided for declining the program were tracked. Program administrators conducted a minimum of two quality assurance visits to each site per year to provide followup on concerns highlighted in the quarterly evaluation reports.
- To ensure that the Philani child health and nutrition program was delivered as planned, supervisors accompanied each home visitor, known as Mentor Mothers, at least one day a month on a random schedule (le Roux et al., 2010a; le Roux et al., 2010b). The evaluators of the program monitored fidelity to the model by reviewing the forms completed at each home visit, monitoring visitation patterns, collecting observations by supervisors, and examining brief ratings of home visits by the supervisors.



Several studies reported on exposure, or dosage (Barlow et al., 2006; Walkup et al., 2009; Lambson et al., 2006; Pfannenstiel et al., 2006; Harvey-Berino & Rourke, 2003). Across these studies, almost all the programs had difficulty delivering planned levels of services. In one program, only 30 to 40 percent of participants received a full-service dosage (Lambson et al., 2006). Others fared better, providing participants with around 80 to 100 percent of expected home visits or lessons (Barlow et al., 2006; Walkup et al., 2009; Lambson et al., 2006).

Only one study reported on how well programs adhered to aspects of fidelity beyond dosage (Lambson et al., 2006). The study found that between 70 and 85 percent of children received the screenings as intended (with variation by the type of screening). In addition, nearly half of families received at least one referral during the program year. The study also described the results of parent satisfaction surveys. Overall, parents were very satisfied with the program; in particular, parents reported high satisfaction with their home visitors (known as parent educators).

### **Implementing Programs in Remote Areas Complicates Service Delivery, as Does a Lack of Coordination among Service Providers**

For program staff in rural communities, traveling long distances to visit participants and coordinate with one another was a barrier to service delivery. Socioeconomic disadvantages, including illiteracy and lack of telephones, made it difficult to communicate with participants (Bailey et al., 1997). Furthermore, a lack of coordination among service providers created obstacles to service delivery. For example, in one study, providers and caregivers who were surveyed reported that professionals implementing the program were territorial and imposed differing agendas, which resulted in a poor group dynamic that inhibited team efforts. Providers also reported that the various service agencies had different agendas and followed administrative policies that (1) precluded the creation of a service system responsive to client needs, and (2) resulted in a duplication of effort in some areas. Additional bureaucratic challenges, including a lack of clearly defined roles, low funding levels, excessive caseloads, and time constraints, were also criticisms (Bailey et al., 1997). Similarly, researchers in a second study found that maintaining teamwork among staff, obtaining community acceptance, and developing a network of collaborative relationships with community agencies and programs that provide needed services for participants were considered problems early on, but improved in the second year (Lambson et al., 2006). Resource constraints hindered programs in their attempts to achieve desired outcomes. In a health intervention among rural Aboriginals in Canada, the tribal health committee identified a lack of affordable, fresh produce on the reserve as a barrier to increasing produce consumption (Anand et al., 2007).

### **Home Visitors Struggled to Deliver Content amidst Families' Immediate Needs**

Families' day-to-day needs often made it difficult for home visitors to deliver the content as intended. For example, staff in one study discovered that participants failed to attend scheduled appointments in the community partly because they were struggling daily for food, shelter, and safety. To address the issue, the program began addressing clients' day-to-day needs and found that some clients became more open to services (Davis & Prater, 2001). An intervention implemented by a child welfare agency anticipated the day-to-day hardships of participants and took them into account from the onset by envisioning the home visiting program as working in conjunction with other agency services. As a private community-based organization with a mandate to provide protective and preventive services, the child welfare agency has the infrastructure to offer a more holistic set of services, which perhaps eases coordination. They ensured that social workers were available for counseling and offered a number of supplemental services, including homemakers, support groups, day care, and a preschool enrichment program for children with special needs. This

approach was considered a positive attribute of the program by the researcher who said, “The importance of always viewing the family in its totality and being aware of all its interrelated needs was underlined many times throughout the program” (McLaren, 1988).

### **Overcoming Implementation Challenges Required That Programs Remain Flexible, Seek Community Buy-in, and Hire Culturally Sensitive Staff**

To be flexible and responsive to challenges or unexpected circumstances, program staff modified program models to better align them with the needs and constraints of both participants and the home visitors delivering the services. To modify services, programs collected feedback from participants and program staff midcourse, consistent with a process of continuous quality improvement.

- In attempting to replicate and scale up a piloted model, one study discovered early, for example, that the new sites lacked the capacity to adopt the model in its entirety (Nevada State Department of Human Resources, 2007). Consequently, they trained sites to implement those portions of the model they felt they needed and could integrate into their existing structures. Staff also added a new training module for working with children with disabilities in inclusive settings after programs requested it.
- Administrators of the HFA/Health Families Arizona program used evaluation data on fidelity to inform quality assurance visits to sites implementing the programs (Krysiak & Lecroy, 2007). During the visits, staff worked with sites on concerns identified in quarterly reports. According to the study, this allowed program administrators to identify problems with retention in the first few years of operation and focus on that area in subsequent years. As a result, retention rates improved over time and, according to authors, were comparable relative to those of other voluntary home visitation programs.
- Staff from different agencies delivering the perinatal intervention program adapted to the specific needs of the group and coordinated closely. Based on ongoing input from home visitors and other staff who worked closely with participants, program staff began attending medical appointments with participants who considered appointments to be threatening and held one-on-one makeup classes after participants began to frequently miss scheduled group classes. While nurses initially resisted makeup classes, citing their inefficiency, they found that teaching one-on-one was productive (Davis & Prater, 2001).

While these modifications may have allowed program staff to overcome implementation challenges, these changes may have compromised the integrity of the program models. As described above, maintaining fidelity to program models is key when testing the effectiveness of a model. When considering modifications, program staff working in partnership with model developers is likely to best assure program integrity. The developers can help programs ensure that the changes are acceptable and do not interfere with core elements of the models.

Programs reported few challenges to maintaining participation over time if they (1) collaborated with the tribal communities from the onset and throughout implementation, involving them or collaborating in the pre-implementation phases; and (2) gained approval from community leaders and members, as well as paraprofessionals from the community, to deliver services. For example, the community health center that delivered the perinatal intervention program for urban American Indians discussed the program with the 16 local American Indian agencies and the reservations of Wisconsin’s six tribes, conducted a needs assessment, and asked for both verbal support of the program and referrals of American Indian women. The program then kicked off with a dedication

ceremony to be consistent with the local tribal tradition. To maintain participation, they embraced cultural traditions and elicited feedback throughout. They planned several activities to facilitate a closer bond to patients' cultures, including a celebration in which family members and community members were invited to participate. Between the communal activities, the home visits kept staff connected with clients (Davis & Prater, 2001; Prater & Davis, 2002). Two studies indicated that the attributes of staff, including their personalities, experience, cultural sensitivity, competence, teaching skills, general helpfulness, and dedication, played a role in maintaining enrollment (Prater & Davis, 2002; Bailey et al., 1997).

## **C. Challenges to Conducting Research in Tribal Communities**

From the studies reviewed, the HomVEE team was also able to identify three key challenges evaluators faced while conducting research in tribal communities. Although these challenges are not unique to research conducted with the AIAN population, they may serve as considerations for future evaluations of home visiting programs for tribal communities.

### **Achieving High Response Rates Was an Issue across Studies**

The ability of any evaluation to detect real improvements hinges on the ability of the researchers to collect solid data. Obtaining full information from all participants to use in the evaluation (in other words, having high response rates) was a challenge across studies. Indeed, low response rates were a main limitation of the impact studies reviewed by the HomVEE team. One reason studies faced low response rates was because when participants dropped out of a program, they often dropped out of the evaluation as well and did not want to participate in follow-up data collection. Thus, programs that faced high attrition rates also had low response rates among treatment group members (for example, see Barlow et al., 2006 and Walkup et al., 2009). Sample members in the comparison group may have either refused to participate in follow-up data collection or researchers were unable to locate them. A similar challenge faced by researchers of the Philani child health and nutrition program was collecting data from sample members at multiple points in time (le Roux et al., 2010a; le Roux et al., 2010b).

### **The Cultural Relevance of Measures May Have Influenced Findings**

One study noted that cultural and language differences might have influenced interview responses. Navajo caregivers and providers who were asked to rate services—a behavior in conflict with cultural norms—gave responses possibly meant to satisfy the interviewer rather than to reflect their genuine impressions. Furthermore, some interviews were translated into a native language, which could have created differences in meaning from the English version (Bailey et al., 1997).

### **There Were Conflicts between Community Preferences and Research Design Elements**

For example, to allow participants to become familiar with visitors, one study postponed collecting baseline data until after a few home visits had been completed (McLaren, 1988). In another study, the evaluation was developed by a committee-appointed working group, which decided on a pre/post design rather than an RCT, because the latter had the potential to create controversy and concern in tribal communities (Fisher & Ball, 2000). One study addressed this issue by randomizing participants to treatment or an “active control” condition. In other words, the comparison group received a highly valued level of services rather than “usual care” (Walkup et al., 2009). While this approach may have increased community buy-in of and participation in the evaluation, the study authors acknowledged that it resulted in an evaluation with weaker internal

validity since the contrast between the treatment and control condition was reduced. Researchers testing the Philani child health and nutrition program discovered that in both RCTs children in the intervention arm were significantly more at risk; the researchers concluded that the local paraprofessionals who conducted random assignment intentionally steered the needier children into the group that received services and thus compromised the internal validity of the research design (le Roux et al., 2010a; le Roux et al., 2010b). Concerns about such issues as baseline data collection and random assignment are not unique to tribal communities. It is possible that additional dialogue and knowledge-building activities about the study designs and alternative data collection approaches could address community concerns without weakening the study designs.

## **D. Moving Forward**

The research literature on home visiting models for tribal communities is in its infancy. Much more work is needed to develop well-specified home visiting program models for tribal communities and to test their effectiveness. The ACA Tribal Maternal, Infant, and Early Childhood Home Visiting grant program allows grantees to fill these gaps in the research literature. Collaborative efforts to plan for, adopt, implement, and sustain home visiting programs, along with rigorous local evaluations, will provide opportunities to build the evidence base. We recommend that these efforts include research to support model development and implementation as well as to test the effectiveness of program models. In this section, we elaborate on recommendations for research in these two areas.

### **Research to Support Model Development and Implementation**

As grantees undertake collaborative planning efforts to plan for, adopt, and implement home visiting programs, and as the provision of services progresses, detailed information about the program models and grantees' implementation experiences can be documented. This information will increase the feasibility that models can be sustained and replicated over time.

**Model Specification and Documentation.** Detailed information is needed about model specifications and minimum requirements. As demonstrated by the program descriptions provided in this report, most studies included information about minimum requirements but few studies provided detailed information about the program models. To replicate models, programs need operations manuals, training manuals, information about qualified trainers, documentation of curriculum or program content, and forms and assessments for service delivery. In addition, developers should identify core elements of the program models, meaning those elements of the models that programs must implement with integrity to achieve outcomes. Without this documentation, programs will not have the information they need to implement the models in the way the developers intended.

**Fidelity Standards and Measures.** In addition, model developers should create fidelity standards for core model elements. Measures of implementation fidelity assess the degree to which the initiative is implemented as planned. Only four studies (examining three program models) included in this review presented information about fidelity standards for service delivery or methods and measures for assessing fidelity. Such standards should include measures of both structural components of the models (such as the proper frequency of service delivery; the minimum staff qualifications, training, and supervision requirements; and the content to be delivered) and the manner in which content should be delivered.

**Feasibility of Implementation.** More research is needed to understand the challenges of implementation and whether and how they can be met. As demonstrated by the studies in this review that contained information about the dosage families received on average, implementing models at the intensity intended by developers is difficult. However, completing visits at the frequency and for the length of time the developers intended may be necessary to produce desired outcomes. Research on this topic can help identify both the levels of service delivery that are feasible and the strategies program staff can use to achieve acceptable dosages. Furthermore, more information is needed about challenges programs face funding and sustaining models, recruiting and retaining staff, recruiting and enrolling families, and delivering model content, as well how programs attempted to overcome these challenges. This information can help inform future efforts to implement these models.

**Model Adaptation.** Detailed information is needed about the process that programs use for making adaptations to national home visiting models, including how they engage with home visiting model developers to design, implement, and test adaptations. The studies the HomVEE team examined provided some lessons learned about the process for developing program models in tribal communities, program content relevant to participants, and staff preferences. However, additional information is needed about these topics, as is information from program participants about their preferences. There is an inherent tension between maintaining fidelity to core elements of the program model yet making culturally relevant adaptations.

## **Research to Test Effectiveness of Program Models**

The HomVEE team identified few studies of program models implemented in tribal communities with designs that had the capacity to provide unbiased estimates of program impacts. As discussed above, some evaluators faced challenges implementing research designs with strong internal validity. Of the studies that had rigorous designs, a common issue was high attrition among sample members. To address these issues, evaluators may benefit from applying a lesson learned among program implementers, namely engaging tribal elders, program providers, and other community stakeholders early on in the planning process to establish buy in among tribal members and design culturally relevant program models.

Using a utilization-focused participatory evaluation approach, evaluators and stakeholders may be able to work jointly to overcome these issues by defining an evaluation that is useful to both groups (the evaluators and the stakeholders). This approach is intended to create joint ownership of the evaluation among evaluators and stakeholders and to maximize the usefulness of evaluation data for both evaluation and program purposes (Cousins & Earl, 1995a). Researchers have found that in utilization-focused participatory evaluations (1) stakeholders may derive a powerful sense of satisfaction and professional development from their participation, (2) data are used in program decision-making and implementation, and (3) evaluation may be established as an organizational learning system (Cousins & Earl, 1995b). Despite these benefits, evaluators and stakeholders should also consider possible drawbacks, including how political influences may affect the evaluation and, in particular, the interpretation of findings.

In the remainder of this section we provide three recommendations specifically related to issues identified in the studies reviewed. At the end of this section, we also highlight some suggestions for future research from the main HomVEE review.

**Carefully Plan and Implement Research Designs with Strong Internal Validity.** Six studies included in this review were RCTs; however, none of these studies received a high or moderate rating, mainly due to high rates of attrition. Similarly, the three studies with matched comparison QEDs received low ratings because they did not establish baseline equivalence. The HomVEE team did not identify any studies using SCDs or RDs designs. HomVEE and other reviews, including Pregnancy Prevention Research Evidence Review, the WWC, the Substance Abuse and Mental Health Services Administration's (SAMHSA) National Registry of Evidence-Based Programs, Campbell Collaboration, and Blueprints, offer guidelines on constructing and implementing rigorously designed studies.<sup>4</sup> Here we highlight the two main reasons that the RCTs and QEDs included in this review did not receive high or moderate ratings.

- **High Sample Attrition.** The main reason the RCTs of home visiting program models implemented in tribal communities were rated low was their high levels of sample attrition, which weaken the validity of the study findings. From the onset, evaluators should pay particular attention to the need to maintain the study sample. One strategy that may help evaluators overcome this issue is working closely with tribal elders, service providers, and other stakeholders that remain in close contact with study participants to communicate the importance of retaining families in the study. Evaluators and program stakeholders should encourage participants to continue to participate in the research even if they do not stay involved with the program.
- **No Information to Establish Baseline Equivalence.** Matched comparison QEDs, which use a nonrandom process for group assignment, could have received a moderate study-quality rating in the HomVEE review. If the program and comparison groups are different at onset, the comparison group does not provide a good representation of what would have happened to the treatment group in the absence of program services. The HomVEE review standards required that QEDs establish baseline equivalence between the two groups on selected measures. These measures, such as pre-program outcomes, race, ethnicity, and socioeconomic status, were determined to be key for composing a reasonable comparison group. In this review, none of the QEDs with matched comparison groups received a moderate quality rating; all received a low rating. Studies received a low rating because (1) the treatment and comparison groups differed on key baseline characteristics or (2) information on baseline characteristics was not presented and equivalence could not be determined. Future evaluators should aim to achieve baseline equivalence and report on information about baseline characteristics.

**Use the Highest-Quality Measure Feasible.** Researchers should use primary measures when feasible, especially for key outcomes, but may need to use secondary measures when challenges prevent the use of primary measures. For example, some evaluators may rely on parent reports when collecting direct observation measures is too costly. Similarly, researchers may encounter limitations in the availability of culturally relevant measures which may require them to develop or use new measures that are not yet standardized.

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<sup>4</sup> More information is available about the Pregnancy Prevention Evidence Review at <http://www.hhs.gov/ash/oah/prevention/research/index.html>; the WWC at <http://ies.ed.gov/ncee/wwc/>; SAMSHA's National Registry of Evidence-Based Programs at <http://nrepp.samhsa.gov/>; the Campbell Collaboration at <http://www.campbellcollaboration.org/>; and Blueprints at <http://www.colorado.edu/cspv/blueprints/index.html>.



**Use Culturally Relevant Measures, When Available.** One issue that arose was limited availability of measures that were culturally relevant for study participants. Evaluators should assess measures for cultural appropriateness and seek to identify those that best fit the target population included in the evaluation. To overcome measurement limitations, additional research may be needed to develop measures that are culturally relevant as well as reliable. When developing these measures, researchers should consider ways to engage researchers from tribal communities as well as other stakeholders in the community in the measure development process.

**Consider Applying Lessons from the Main HomVEE Review to Future Research on Home Visiting Programs Implemented in Tribal Communities.** Many of these recommendations will be important for evaluators to consider when planning and implementing rigorous evaluations of models implemented in tribal communities. We provide a brief summary of some key findings below; detailed information about these recommendations is available on the HomVEE website in a report called *Lessons Learned from the Home Visiting Evidence of Effectiveness Review* (Avellar & Paulsell, 2011).

- **Conduct studies with multiple study samples that seek to replicate the findings of initial efficacy trials.** As the body of research on home visiting models implemented in tribal communities grows, evaluators should consider the importance of conducting replication studies of promising models. Replication is important for confirming findings from earlier studies. Replication studies should be based on a different analytic sample than was the original but should use the same outcome measures to the extent feasible to allow for comparisons across studies.
- **Select a focused set of outcome measures that are closely aligned to the program model's targets of change, have strong validity and reliability, are appropriate for the study population, and allow for cross-study comparisons.** Home visiting studies typically measure outcomes in a wide range of domains and use multiple measures within domains. Using a more focused set of measures with strong validity and reliability can increase confidence in measurement accuracy and make patterns of findings more apparent. Studies can be strengthened by selecting measures that are closely aligned to the program model's theory of change and hypothesized outcomes.
- **Take steps to reduce the risk of finding statistically significant findings by chance when conducting multiple comparisons.** Especially because most home visiting studies measure outcomes in multiple domains, steps should be taken to reduce the likelihood of finding statistically significant findings by chance. Corrections can be made, such as Bonferroni, which adjust the alpha levels to account for multiple tests. Another possibility for addressing this issue is selecting key or confirmatory variables of interest that are the focus of the program. Thus if the model targets the reduction of child maltreatment, this could be considered a primary outcome, whereas other outcomes, such as family self-sufficiency, may be less important. Multiple comparison corrections are then only applied to key outcomes (for example, multiple indicators of child maltreatment).
- **Determine the appropriate sample size to detect statistically significant findings of interest.** Whereas multiple comparisons increase the risk of mistakenly finding statistically significant associations, there is also a risk of missing associations that should be statistically significant. This type of error occurs when a study is underpowered and the analysis cannot identify relationships that exist in the population. Determining whether a study is adequately powered requires a number of considerations, such as the

expected effect size of the program, but many computer programs can estimate the power of a sample using these assumptions.

- **Report effect sizes.** Because effect sizes show the size of the impact relative to the standard deviation of the measure and are independent of the units in which the outcome is measured, they facilitate comparisons of results across outcomes and studies.
- **Measure longer-term effects of promising program models.** If a home visiting model intends to have sustained impacts that last after program services end, these effects should be measured. Researchers and developers will need to carefully consider what length of follow-up is reasonable. The program model's theory of change and expectations about longer-term effects can be used as a guide for making this decision.
- **Select study samples with external validity in mind.** Researchers and practitioners generally are interested in the program's effectiveness beyond any given study sample. An externally valid sample is representative of a population, such as all those eligible for services in a tribe, a state, or a region, which requires taking a random sample so that every member of a population has a chance of being included in the study. External validity also may apply to the types of providers delivering the services, community context, or other factors. When designing a study, researchers may want to think carefully about the population of interest and try to construct a study that represents that population.
- **Continue to test the effectiveness of the program model periodically, as earlier results may be less applicable to today's families and context.** Both the program model and the counterfactual are likely to evolve and change over time. Program model developers may modify components based on lessons learned from past evaluations or feedback from practitioners. Further, as successful approaches to service delivery are disseminated and replicated, the counterfactual—what would happen in absence of program services—changes. Therefore, ideally, research on a model should continue, not just to replicate past results but also to ensure that the results reflect the current environment and needs of children and families.



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**APPENDIX A**

**STUDY CHARACTERISTICS**



WWHV#	WWHV008363
Citation	Anand, S. S., Davis, A. D., Ahmed, R., Jacobs, R., Xie, C., Hill, A., Sowden, J., Atkinson, S., Blimkie, C., Brouwers, M., Morrison, K., de Koning, L., Gerstein, H., Yusuf, S., & SHARE-AP, Action Investigators. (2007). A family-based intervention to promote healthy lifestyles in an aboriginal community in Canada. <i>Canadian Journal of Public Health. Revue Canadienne De Santé Publique</i> , 98(6), 447–452.
<b>Study Characteristics</b>	
Study participants	Aboriginal households were recruited between May 2004 and April 2005 from the Six Nations Reserve in Ohsweken, Canada. Eligible households were composed of a male and/or female parent with at least one child living in the same household. Fifty-seven households involving 174 individuals, or roughly three members each, were randomized to intervention or usual care. Adults and children in the treatment group were on average 41.3 years old and 10.9 years old, respectively, compared to mean ages of 37.2 and 9.9 in the control group. More than half of the participants were female (62.5 percent of the treatment group, 60.5 percent of the control group). Most adults over age 18 were employed (70.7 percent treatment, 75 percent control), and roughly three-fourths had a high school education (78 percent treatment, 72.5 percent control). All children aged 5 to 10 were still enrolled in school, while among 5-to 18-year-olds, 42.6 percent of the treatment group and 60.9% of the control group were still enrolled. Over one-third of adults were smokers and had a body mass index of 34.8 and 32.7 in the treatment and control groups, respectively. Body mass index was lower for teens (25.6 treatment, 23.9 control) and even lower for children (22.8 treatment, 20.6 control). At follow-up, 28 families remained in the intervention group and 23 families remained in the control condition.
Setting	Aboriginal households were recruited between May 2004 and April 2005 from the Six Nations Reserve in Ohsweken, Canada.
Home visiting services	The SHARE-ACTION program was designed to reduce energy intake and increase physical activity among Aboriginal families by influencing participants' health behavior, modeling health behaviors, and reinforcing healthy lifestyle changes. To achieve its goals, the program includes regular home visits by Aboriginal health counselors trained to assess and set dietary and physical activity goals for each household member. In addition, families received weekly deliveries of spring water.
Comparison condition	Control group families received Canada's Food Guide to Healthy Eating and Canada's Physical Activity Guide to Healthy Active Living.
Funding source	The study was supported by a grant from the Canadian Institutes of Health Research (CIHR).
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV017112
Citation	Bailey, D., Applequist, K., & North, C. U. (1997). <i>Parent perceptions of home visitors: A comparative study of parents who are American Indian and non-Indian parents</i> . Washington, DC: U.S. Department of Education.
<b>Study Characteristics</b>	
Study participants	Caregivers receiving home visiting services under Part H of the Individuals with Disabilities Education Act (IDEA) were eligible to participate. A total of 52 caregivers in the Navajo Nation (71 percent Arizona and 29 percent New Mexico) were interviewed over an 8-month period from November 1993 through July 1994. Due to recruitment challenges, the sample is largely one of convenience. Sixteen of the caregivers were Navajo, 8 were non-Indian. Over half completed high school (59.6 percent), almost one-third continued beyond eighth grade but did not finish high school (32.7 percent), and 82.7 percent had income levels between under \$10,000 and \$20,000. Among the children of caregivers, 31 percent were judged to be mildly delayed or disabled.
Setting	The study took place in the Navajo Nation. Caregivers and providers were located in Arizona and New Mexico.
Home visiting services	The Individuals with Disabilities Education Act (IDEA) includes a program for infants and toddlers with disabilities (the study refers to this as Part H of IDEA; in current legislation this is Part C). The program for infants and toddlers with disabilities is a federal grant program that assists states in operating a comprehensive statewide program of early intervention services for infants and toddlers with disabilities, from birth through age 2 years, and their families. For a state to participate in the program, it must assure that early intervention will be available to every eligible child and its family.
Comparison condition	Not applicable.
Funding source	The Office of Special Education Programs, U.S. Department of Education, sponsored the study.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.



WWHV#	WWHV003768
Citation	Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., Cowboy, B., Fields, P., Hastings, R., Pan, W., Reid, R., Santosham, M., & Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics &amp; Adolescent Medicine</i> , 160(11), 1101–1107.
<b>Study Characteristics</b>	
Study participants	All expectant American Indian adolescents aged 12 to 19 years at conception and at 28 weeks' or earlier gestation were potentially eligible for participation. Participants ranged in age from 14 to 20 years (median age = 17.1 years). Fifty-one (96 percent) had never married, 23 percent completed high school, and 68 percent lived with their parents. Forty mothers (75 percent) were pregnant with their first child, and 13 percent had one previous child.
Setting	The program was implemented in four American Indian health service catchment areas on the Navajo and White Mountain Apache reservations in New Mexico and Arizona.
Home visiting services	The Family Spirit program was developed to address newborn care and maternal life skills among young American Indian pregnant and parenting mothers living on reservations. The program's goals were to increase mothers' parenting knowledge and involvement, infants' social and emotional behavior, and the quality of the home environment; and reduce stress, depression, and substance use among mothers. Families participating in Family Spirit participated in home visits. The program was modeled on Healthy Families America (HFA), a national program founded on 12 research-based principles to ensure quality of home visiting interventions for at-risk families. The content of the home-visiting intervention was derived from extensive community input on what teen parents needed to learn and was based on the American Academy of Pediatrics Guide to Baby Care: Caring for Your Baby and Young Child: Birth to Age. Cultural adaptations—including style, graphics, delivery, and content—were achieved through a community-based participatory process.
Comparison condition	Control participants received a breastfeeding/nutrition education intervention over the course of 23 visits from paraprofessionals.
Funding source	Support for this research was provided by the Substance Abuse Mental Health Services Administration, the Ford Foundation, the Annie E. Casey Foundation, and the C. S. Mott Foundation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV003656
Citation	Burd, L., Peterson, M., Face, G. C., Face, F. C., Shervold, D., & Klug, M. G. (2007). Efficacy of a SIDS risk factor education methodology at a Native American and Caucasian site. <i>Maternal &amp; Child Health Journal</i> , 11(4), 365–371.
<b>Study Characteristics</b>	
Study participants	This study utilizes two community sites to test a SIDS risk reduction methodology: (1) a Native American home visiting program for pregnant and young mothers; and (2) an obstetrics department in a community hospital in North Dakota. Women in the home visiting sites (n = 89) were from the Aberdeen Area of the Indian Health Service (AAIHS). The reservation's median income is \$20,916, unemployment rates exceed 50 percent, and high school graduation rates are below 50 percent. The community hospital cohort (n = 252) sits in a county that is over 90 percent Caucasian, the median income is \$34,194, the high school graduation rate is 94 percent, and unemployment rates are below 4 percent.
Setting	Women in the home visiting sites were from the Aberdeen Area of the Indian Health Service (AAIHS). The community hospital is located in North Dakota.
Home visiting services	This intervention aims to improve parental knowledge of SIDS risk factors and thus reduce child deaths from SIDS. To achieve its goals, program developers created baby blankets with nine risk factors for SIDS printed on them. Nursing or home visiting staff distributed the blankets to families and reviewed the information on the blankets either during the routine discharge planning process in a community hospital or through a home visiting program for Native American mothers and families.
Comparison condition	Not applicable.
Funding source	This study was supported in part by Altru Health Foundation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV026011
Citation	Coughlin, R. L., Kushman, E., Copeland, G., & Wilson, M. L. (2010). <i>Pregnancy and birth outcome improvements for American Indians in the Healthy Start project of the Inter-Tribal Council of Michigan, 1998-2008: An 11-year cohort study</i> . Unpublished manuscript.
<b>Study Characteristics</b>	
Study participants	<p>Pregnant American Indian women in eight sites were recruited for Healthy Start through community events, word of mouth, and referrals, and in some cases were targeted for enrollment at any point before giving birth. The study sample included 966 infants in the Healthy Start enrollment records from 1998 to 2008. The comparison group was composed of all 4,149 singleton American Indians births that occurred during the same time period to women who resided in counties where at least 5 percent of all American Indian births were to Healthy Start participants. Of these, 872 births were to women who enrolled prenatally in Healthy Start. "American Indian" was defined as any individual with American Indian listed as the primary race or bridged race for the infant, mother, and/or father, or any individual enrolled in Healthy Start.</p> <p>Healthy Start mothers were slightly younger (mean = 24.5 years old) than nonparticipants (mean = 25.1). Both groups attended an average of 11.5 years of school. Participating mothers had a greater number of risk factors than non-participants. More participants than non-participants lived in rural counties, while higher percentages of non-participants lived in urban and semi-urban counties. Proportionally more participants lived in counties with median household incomes below \$34,000 but had higher levels of private insurance or self-funded delivery costs, while non-participants had higher levels of Medicaid.</p>
Setting	The program has been implemented in seven tribal locations in Michigan since 1998, and since 2001 through one urban center.
Home visiting services	Healthy Start-Home Visiting is authorized under Title III, Part D, Section 330H of the Public Health Service Act; (42 USC 254 c-8). The Healthy Start Initiative provides program funds to local agencies committed to community-driven strategies to mitigate the causes of infant mortality, low birth weight, and other poor perinatal outcomes. The purpose of Healthy Start-Home Visiting is to address significant disparities in perinatal health, especially disparities experienced by at-risk populations. The program also aims to enhance the capacity of a community's perinatal and women's health service system. The Inter-Tribal Council of Michigan's (ITCM) Healthy Start project has been working since 1998 to improve birth outcomes among American Indians living in Michigan. During visits with families, staff referred clients to appropriate services, and then followed up with clients and providers to ensure that adequate care was provided.
Comparison condition	The study did not provide any information about the comparison condition.
Funding source	This study was funded partly by a grant from the U.S. Department of Health and Human Services Administration for Children and Families, Administration for Native Americans, and the Office of Public Health Practice at the University of Michigan.
Author affiliation	None of the study authors are developers of this program model.

WWHV#	WWHV014312
Citation	Davis, C. L., & Prater, S. L. (2001). A perinatal intervention program for urban American Indians part 1: Design, implementation, and outcomes. <i>Journal of Perinatal Education</i> , 10(3), 9–19.
<b>Study Characteristics</b>	
Study participants	The American Indian mothers who had contact with the program were from all six Wisconsin tribes (Chippewa, Menominee, Oneida, Potawatomi, Stockbridge–Munsee, and Winnebago), as well as from out-of-state tribes. The women were primarily in their twenties, with an age range of 16 to 42 years. Most mothers had not completed high school. Approximately 85 percent were single at the time of conception.
Setting	Milwaukee, Wisconsin
Home visiting services	The perinatal intervention program was designed to encourage earlier entry to prenatal care and change of health risk habits among American Indian women. Program objectives included the need (1) to identify pregnancies early, (2) to decrease the interval between diagnosis of pregnancy and initial maternity care visit, (3) to increase the numbers of prenatal visits per patient, (4) to provide health education (including topics on pregnancy, nutrition, preterm labor, smoking cessation, prepared childbirth, breastfeeding, immunizations, well-child checks, and infant safety), and (5) to develop a system to ensure uninterrupted prenatal care when traveling between city and reservation. Women participating in the program received two home visits (one prior to delivery and one post-partum). Additional contact occurred by telephone, during drop-in or scheduled visits to the nurse's or outreach worker's offices, through outreach programs such as WIC, during medical appointments, and during program offerings to the community (such as Lamaze childbirth education classes).
Comparison condition	Not applicable.
Funding source	The community health center procured funding for the perinatal intervention program from two private sources: the Robert Wood Johnson Foundation and the W. K. Kellogg Foundation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV015985
Citation	Feres-Lewin, C. (2000). An analysis of the governance and administrative elements of a public-private partnership approach to community-based education. (Doctoral Dissertation, University of Nevada, Las Vegas, 2000). <i>Dissertation Abstracts International</i> , 61 (05A), 247-1689.
<b>Study Characteristics</b>	
Study participants	The three pilot sites each targeted a different population for Healthy Families America (HFA). In Las Vegas, Nevada, the pilot targeted disenfranchised families in three zip code areas in the Las Vegas metropolitan area. This area, the fastest growing urban area in the country, has experienced a 65 percent population growth in the past five years. Many families moving into the area experience a lack of employment opportunities, depletion of their savings, few social networks to rely on or to access, and the absence of necessary information to access the assistance needed. In Pottawatomie County in Oklahoma, the pilot targeted Native American families, represented by approximately five Indian Nations. The third pilot location, Walworth County, Wisconsin, is a predominantly rural area. The HFA program targeted the largely hidden community of Latin families who come to the county to perform seasonal work in the tourism and agricultural industries.
Setting	The study was pilot-tested in Walworth County in Wisconsin, Pottawatomie County in Oklahoma, and Las Vegas.
Home visiting services	HFA is based upon a set of critical elements that serve as the framework for program development and implementation. HFA program components are theoretically rooted in a strength-based approach that recognizes that all families have strengths and that programs should build on these strengths rather than focus on correcting weaknesses. HFA aims (1) to reduce child maltreatment; (2) to increase utilization of prenatal care; (3) to improve parent-child interactions and school readiness; (4) to ensure healthy child development; (5) to promote positive parenting; (6) to promote family self-sufficiency and decrease dependency on welfare and other social services; (7) to increase access to primary care medical services; and (8) to increase immunization rates. To achieve its goals, enrolled families participate in home visits that including screenings and assessments. Healthy Families Arizona is a state-based program that is guided by six community-based statewide steering committees (focused on training, policies and procedures, credentialing, excellence, community partnerships, and advocacy).
Comparison condition	Not applicable.
Funding source	No information was available in the study about the funding source.
Author affiliation	None of the study authors are developers of this program model.

WWHV#	WWHV003807
Citation	Fisher, P. A., & Ball, T. J. (2000). Indian Wellness Preventive Intervention Project. Eugene OR: Oregon Social Learning Center.
<b>Study Characteristics</b>	
Study participants	Study participants are from American Indian and Alaskan Native (AIAN) communities. Families enrolled in tribal Head Start are targeted for the intervention.
Setting	The intervention takes place in American Indian and Alaskan Native (AIAN) communities.
Home visiting services	The Indian Wellness Project was a federally funded research project with the dual goals of developing a culturally-grounded, family-centered preventive intervention and facilitating the development of tribal research infrastructure. The intervention had two components: home visitation and parent/child curricula. The program, delivered through Head Start centers, includes a classroom component designed to build relationships among intervention staff, Head Start staff, and families. Families then participate in parent group meetings and home visits. The curricula for parents and children are based on six tribal stories/legends and focus on reintroducing the practice of storytelling. The stories selected for the intervention were made into brief videos (narrated by tribal elders), in which footage interposes scenes of stories being told with historical photographs, tribal artwork, and scenes of cultural events.
Comparison condition	Not applicable.
Funding source	Support for this research was provided by the National Institute of Drug Abuse, U.S. Public Health Service; and by the National Institute of Mental Health, and Office of Research on Minority Health, U.S. Public Health Service.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV004236
Citation	Gfeller, B. M., McLaren, L., & Metcalfe, A. (2008). The parent-child home program in Western Manitoba: A 20-year evaluation. <i>Child Welfare</i> , 87(5), 49–67.
<b>Study Characteristics</b>	
Study participants	The program serves a diverse population, including rural, Aboriginal, and non-Aboriginal families. Between 1984 and 2005, 185 families were enrolled in the PCHP; most were client referrals from Child Family Services caseworkers followed by referrals through family services resource centers. Mothers ranged in age from 18 to 43 years (median = 25 years). One-third of the group was Aboriginal; 58 percent was Caucasian; and 1 percent was of Asian descent. Children ranged from 15 to 56 months old at program onset (median = 24 months). Mothers' education ranged from grade five to university graduate (median = grade 10.5). Fathers' education ranged from grade three to university graduate (median = grade 11). One-half of the mothers indicated they were not living with the child's father. This was greater for Aboriginal than non-Aboriginal families. The majority (61.1 percent) of families were receiving some form of government assistance; this was greater among Aboriginal families.
Setting	Western Manitoba, Canada
Home visiting services	The Parent-Child Home Program focuses on (1) promoting positive parenting skills and building positive parent-child interaction, (2) enhancing the child's conceptual and social-emotional development, and (3) developing early literacy skills. The Parent-Child Home Program home visitors use a "light touch" approach that is non-didactic and empowers parents. The program aims to enhance the quality (including enhanced vocabulary, a reduction in discouragements, and an increase in encouragements used by the parent) and quantity of parent-child interaction to promote children's cognitive and social-emotional development and language and early literacy skills. Enrolled families participate in home visits and receive toys and books, referrals to community services, and assistance with transition to the next educational step for the child.
Comparison condition	Not applicable.
Funding source	No information was available in the study about the funding source.
Author affiliation	None of the study authors are developers of this program model.

WWHV#	WWHV012518
Citation	Harvey-Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. <i>Obesity Research</i> , 11(5), 606–611.
<b>Study Characteristics</b>	
Study participants	Mother-child pairs who met the following criteria were accepted into the study: (a) the family had a child between the ages of 9 months and 3 years, (b) the child was walking, (c) the mother had a body mass index over 25 kg/m <sup>2</sup> , and (d) the mother agreed to keep all treatment appointments. Forty-three Native American mother-child pairs were assigned to the intervention or control group. Children were an average of 21 months old, and just under half (46 percent) were female. Mothers were, on average, 26.5 years old and had 13 years of education. Forty-two percent of mothers were employed full or part time. Seventy-nine percent of children had been breast-fed for an average time of 6 months, and 48 percent were enrolled in day care at least part time.
Setting	The program was implemented in the St. Regis Mohawk community of Akwesasne, located along the St. Lawrence River in northern New York State and Ontario and Quebec, Canada.
Home visiting services	The intervention was designed to promote parenting skills that facilitate healthy attitudes and interactions around eating and activity and ultimately to promote short- and long-term weight regulation for children. The curriculum, delivered in the home, emphasized the child's psychological and behavioral goals, logical and natural consequences, mutual respect, and encouragement techniques, as well as specifically targeted how improved parenting skills could facilitate the development of appropriate eating and exercise behaviors in children.
Comparison condition	All mothers participated in a core parenting program based on the Active Parenting curriculum. For mothers in the control group, the peer educator was instructed to refrain from discussing child or parent eating and exercise behavior and to limit conversation if these issues came up.
Funding source	This work was supported by a grant from the National Institutes of Health (NIH).
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.



WWHV#	WWHV004209
Citation	Krysik, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.
<b>Study Characteristics</b>	
Study participants	Among the 800 families who enrolled in the program during the 9-month period beginning January 1, 2004, the typical participant was a low-income single mother. Fifty-six percent of the mothers were Hispanic; 25 percent were white non-Hispanic; 10 percent were American Indian; 6 percent were African American; and 3 percent were another race or ethnicity. Almost one-third (31 percent) of the participants were teenagers when their babies were born. Almost half (49 percent) had from one to seven children prior to her most recent birth. Mothers ranged in age from 13 to 43 years, and 18 percent were married or cohabitating. The majority of mothers (61 percent) and fathers (53 percent) had less than a high school education. Only 15 percent of mothers were employed, and the annual median income was \$6,000 (in 2004). Almost all mothers (97 percent) had health insurance. Income level and pregnancy status qualified the majority (90 percent) of program mothers for the state-sponsored health insurance program. Still, a substantial percentage, 35 percent, received late, if any, prenatal care. Some 13 percent of mothers gave birth prematurely, and 12 percent of the babies were considered low birth weight. Around 58 percent of mothers and 37 percent of the 575 fathers reported a history of severe childhood abuse. A comparison group of 302 at-risk families was recruited from hospitals located in areas demographically similar to those of the program sites: those with relatively high rates of poverty and substantiated child abuse and neglect.
Setting	Healthy Families Arizona is administered throughout Arizona in communities with high rates of child abuse and neglect and of poverty. The program began in 1991 in two counties and by 2000 had grown to 23 sites located in urban, suburban, rural, and tribal regions of the state. The program was expected to serve 4,324 families in calendar year 2005.
Home visiting services	Healthy Families America (HFA) is based upon a set of critical elements that serve as the framework for program development and implementation. HFA program components are theoretically rooted in a strength-based approach that recognizes that all families have strengths and that programs should build on these strengths rather than focus on correcting weaknesses. To achieve its goals, enrolled families participate in home visits that including screenings and assessments. Healthy Families Arizona is a state-based program that is guided by six community-based statewide steering committees (focused on training, policies and procedures, credentialing, excellence, community partnerships, and advocacy).
Comparison condition	The study did not provide any information about the comparison condition.
Funding source	The Arizona Department of Economic Security (ADES) administers the program and funds an annual evaluation.
Author affiliation	None of the study authors are developers of this program model.

WWHV#	WWHV026013
Citation	Lambson, T., Yarnell, V., & Pfannenstiel, J. (2006). <i>BIA Baby Face program evaluation study: 2005 report.</i>
<b>Study Characteristics</b>	
Study participants	The primary target for services is families with children from birth to 3 years of age, but some families with children 3 to 5 years of age were also served by the Baby FACE program. Thirty-two percent of children were 1 year or younger, 30 percent were 1 to 2 years old, 27 percent were 2 to 3, and 11 percent were older than three. Almost 80 percent of the participating adults were female. On 55 percent of the reservations served by the Baby FACE program, approximately one-half to two-thirds of children live in poverty. On almost 40 percent of the Baby FACE reservations, approximately one-fourth to one-third of children live in poverty. With poverty rates at about 60 percent of children or higher, five of the reservations are among the poorest communities in the nation. Overall, 17 percent of children in the Baby FACE schools have an Individual Education Plan (IEP) because of special needs, ranging from none to 39 percent of students among the schools. A second language is spoken in 68 percent of homes. Sixty-four percent of the students have been identified as having limited English proficiency.
Setting	The program was implemented in 28 reservations across the United States. Reservations with Baby FACE programs include Acoma Pueblo, Cheyenne River, Crow Creek, Duckwater Shoshone, Eastern Cherokee, Fort Apache, Fort Berthold, Gila River, Havasupai, Hopi, Jemez Pueblo, Lower Brule, Menominee, Mississippi Choctaw, Navajo Nation, Northern Cheyenne, Pine Ridge, Quileute, Sac and Fox/Meskwaki, Santa Clara Pueblo, Spirit Lake Sioux, Standing Rock, Taos Pueblo, Tesuque Pueblo, Tohono O'odham, Ute Mountain, Wind River, and Zia Pueblo. All but one of the Baby FACE programs are in schools located on these 28 reservations.
Home visiting services	The Baby FACE program was developed to expand opportunities for American Indian families to learn about early childhood development and support children, including infants and toddlers with special needs, during their first years of life. The goals of the program are (1) to promote pre-literacy experiences for children from birth to age 5 with the support and involvement of their parents, and (2) to increase parenting skills and knowledge of child development. To achieve these goals, families enrolled in the Baby FACE program participate in home visits that include screenings of children's development and group parent meetings and receive referrals through a resource network. The program implements the Parents as Teachers Born to Learn curriculum, which has been adapted to each tribal community's culture.
Comparison condition	Not applicable.
Funding source	The Bureau of Indian Affairs, Bureau of Indian Education within the U.S. Department of the Interior funds this program and evaluation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV026010
Citation	le Roux, I. M., le Roux, K., Comulada, W. S., Greco, E., Desmond, K. A., Mbewu, N., & Rotheram-Borus, M. J. (2010a). <i>Home visits by neighborhood mentor mothers provide timely recovery from childhood malnutrition in South Africa: Results from a randomized controlled trial</i> . Unpublished manuscript.
<b>Study Characteristics</b>	
Study participants	Mother-child participants were selected from 65 neighborhoods in 3 Xhosa townships surrounding Cape Town, South Africa. A local Mentor Mother visited every home in her assigned neighborhood (typically based on proximity), identifying and weighing each child aged 5 or younger. Any child weighing less than 2 standard deviations below his or her weight-for-age norm was classified as malnourished; this included all newborns weighing less than 2,500 grams at birth. Two of three mother-child dyads were randomly assigned to the Philani intervention condition (n=536) or the control group (n=252). Children in the treatment group were aged 17.3 months on average, and control group children were 21.2 months. A little less than a fifth of all children were supported by a nutrition program (19 percent), and half the children were of low birth weight (53 percent). Children in the intervention arm of the study were significantly younger and more underweight. Half the dyads lived in informal housing (52 percent) and had access to a flush toilet (55 percent). Mentor Mothers reported living conditions of the dyads to have a pleasant or neutral smell (92 percent), but less than a third of homes were thought to have good hygiene (32 percent).
Setting	The study was conducted within 65 neighborhoods in 3 Xhosa townships surrounding Cape Town, South Africa.
Home visiting services	The Philani child health and nutrition program aimed to build community relationships and encourage mothers to engage in healthy practices to improve nutrition and health outcomes for young children. To achieve its goals, families participated in regular home visits. During visits, the home visitor (known as a Mentor Mother) weighed the participating child and discussed his progress with the mother. The Mentor Mother also made sure that the mother had the social grants she might be entitled to and that she understood proper nutrition and hygiene. Mentor Mothers stressed the importance of breastfeeding, the proper time to introduce solids, frequent feeding, and a mixed diet including vegetables and fruit. She checked to see if immunizations were up to date and that the child was dewormed.
Comparison condition	Control participants did not receive any services during the one-year data collection period. After the final weighing, dyads in the control condition were given the option to receive the Philani nutrition intervention program.
Funding source	This research was supported by funding from the World Childhood Foundation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV026009
Citation	le Roux, I. M., le Roux, K., Comulada, W. S., Mbeutu, K., Desmond, K. A., & Rotheram-Borus, M. J. (2010b). <i>A randomized control trial of home visits by neighborhood mentor mothers to improve children's nutrition in South Africa</i> . Unpublished manuscript.
<b>Study Characteristics</b>	
Study participants	Mother-child participants were selected from 37 neighborhoods in Xhosa townships surrounding Cape Town, South Africa. A local Mentor Mother visited every home in her assigned neighborhood (typically based on proximity), identifying and weighing each child under 6 years of age. Any child weighing less than 2 standard deviations below his or her weight-for-age norm was classified as malnourished; this included all newborns weighing less than 2,500 grams at birth. Two of three mother-child dyads were randomly assigned to the Philani intervention condition (n=500) or the control group (n=184). Five dyads initially assigned to the control condition were removed from the analysis and provided services for ethical reasons, reducing the final sample size to 179. At recruitment, mothers were 29.4 years old, on average, and most were married (70 percent). Children across both groups were aged 26.2 months, on average, and half were male. A little less than a quarter of the children were supported by a nutrition program (24 percent), and 41 percent of children were of low birth weight, defined as less than 2,500 grams at birth. Children in the intervention arm of the study were nearly significantly more underweight. Half the dyads lived in informal housing (48 percent). A majority of interviewers reported living conditions of the dyads to have a pleasant or neutral smell (87 percent) and to have at least average hygiene (78 percent). The loss to followup was significantly greater in the control condition (n=159) compared to the intervention condition (n=481).
Setting	The study was conducted within 37 neighborhoods in Xhosa townships surrounding Cape Town, South Africa.
Home visiting services	The Philani child health and nutrition program aimed to build community relationships and encourage mothers to engage in healthy practices to improve nutrition and health outcomes for young children. To achieve its goals, families participated in regular home visits. During visits, the home visitor (known as a Mentor Mother) weighed the participating child and discussed his progress with the mother. The Mentor Mother also made sure that the mother had the social grants she might be entitled to and that she understood proper nutrition and hygiene. Mentor Mothers stressed the importance of breastfeeding, the proper time to introduce solids, frequent feeding, and a mixed diet including vegetables and fruit. She checked to see if immunizations were up to date and that the child was dewormed.
Comparison condition	Control participants did not receive any services during the one-year data collection period. After the final weighing, dyads in the control condition were given the option to receive the Philani nutrition intervention program.
Funding source	This research was supported by funding from the Centre for Health and Wellbeing through Professor Christina Paxon at the Woodrow Wilson School, Princeton University.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV015883
Citation	McLaren, L. (1988). Fostering mother-child relationships. <i>Child Welfare</i> , 67(4), 353-365.
<b>Study Characteristics</b>	
Study participants	The mothers were all referrals from the family service division of Child and Family Services of Western Manitoba; all mothers were considered neglectful. The majority (7 of 13) were of Canadian Indian background. At enrollment, mothers ranged from 20 to 30 years of age and were 25.5 years old on average. Children were between the ages of 17 to 53 months and 27.5 months on average. Information about the fathers, as reported by the mothers, indicated a mean age of 28 years old. Education of mothers ranged from no formal schooling to grade 11, with a mean education of 8.5 years. Mean education level of fathers, as reported by the mothers, was 8.8 years. Eleven of the 13 families were receiving assistance from income security, and the other two families were within the low-income range. Eleven (85 percent) were single and raising their children themselves. There was one stable marriage.
Setting	Western Manitoba, Canada
Home visiting services	The Parent-Child Home Program focuses on (1) promoting positive parenting skills and building positive parent-child interaction, (2) enhancing the child's conceptual and social-emotional development, and (3) developing early literacy skills. The Parent-Child Home Program home visitors use a "light touch" approach that is non-didactic and empowers parents. The program aims to enhance the quality (including enhanced vocabulary, a reduction in discouragements, and an increase in encouragements used by the parent) and quantity of parent-child interaction to promote children's cognitive and social-emotional development and language and early literacy skills. Enrolled families participate in home visits and receive toys and books, referrals to community services, and assistance with transition to the next educational step for the child.
Comparison condition	Not applicable.
Funding source	No information was available in the study about the funding source.
Author affiliation	None of the study authors are developers of this program model.

WWHV#	WWHV004717
Citation	Nevada State Department of Human Resources, Early Childhood Services. (1997). <i>HAPPY Rural Outreach Project. Final report</i> . Reno, NV: Author.
<b>Study Characteristics</b>	
Study participants	Sites that work with underserved groups of children who have developmental delays and are members of cultural or racial minority groups, including Native Americans and Hispanics, were selected for the intervention. Most of the children at the replication sites were between the ages of 3 and 6, a small number were under 3.
Setting	The intervention is designed for rural areas of Nevada.
Home visiting services	The Home Activity Program for Parents and Youngsters (HAPPY) Rural Outreach Program was designed to meet the needs of families with children with developmental delays that live in remote, rural areas of Nevada where daily home- or center-based services are not practical. The outreach project was a collaborative effort of the Nevada Departments of Education and Human Resources, colleges within the University of Nevada, Reno, rural Nevada Inter-Tribal Council Head Starts, rural Nevada Head Starts, rural community service providers, and rural local education agencies. Families participating in HAPPY received monthly home visits, quarterly progress reviews, and semi-annual assessments by a child development specialist; initial in-home evaluations, and regular video and telephone consultation with speech, physical, occupational therapists, and other related service personnel; and recommendations of individualized early intervention and therapeutic activities to be done by the parents with their child in the home.
Comparison condition	Not applicable.
Funding source	The Office of Special Education Programs, U.S. Department of Education, sponsored the study.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.

WWHV#	WWHV026012
Citation	Pfannenstiel, J., Yarnell, V., & Seltzer, D. (2006). <i>Family and child education program (FACE): Impact study report</i> . Overland Park, KS: Research & Training Associates, Inc.
<b>Study Characteristics</b>	
Study participants	The Family and Child Education (FACE) program serves American Indian families with children from prebirth to 8 years of age from rural reservations. Only one-third of children entering school at the FACE sites in the 2004-2005 school year participated in the program. Fewer than 10 percent of children had participated in the full home- and center-based FACE model. More than one-third of FACE children are born to mothers with less than a high school education. Data on three risk factors—mothers with less than high school education, single-parent household, and primary language in the home is not English—reveal that almost 90 percent of families who participate in FACE have one or more of these potential risk characteristics. For the majority of the reservations on which FACE programs are located, almost half the children live in poverty—more than three times the U.S. poverty rate of 16 percent. Approximately 60 percent of children live in poverty on reservations that are home to three FACE schools, rendering them the poorest communities in the nation. One in three children on these reservations live in a single-parent household, compared to one in four children nationally. Seventy percent of children in FACE communities and 80 percent of FACE children live in dual-language households. For more than 20 percent of FACE children, the Native language is the primary language spoken in the home. About 25 percent of K-3 children who participated in FACE were identified for Early Childhood Special Education services prior to kindergarten entry. The kindergarten sample was 5.5 years old, on average.
Setting	The program was implemented in rural reservations across the United States, including Cheyenne River, Chinle, Eastern Navajo, Fort Defiance, Minneapolis, Oklahoma, Pima, Portland, Shiprock, and Southern Pueblos.
Home visiting services	The FACE program was designed to address the achievement gap for American Indian children, particularly those living on rural reservations, and to better prepare American Indian children for school. The goals of the program are (1) to support parents in their role as their child's first teacher; (2) to increase family literacy; (3) to strengthen connections among family, school, and community; (4) to promote the early identification of children with special needs; (5) to increase parent participation in their child's learning and expectations for academic achievement; (6) to support and celebrate the unique cultural and linguistic diversity of each American Indian community served by the program; and (7) to promote lifelong learning. To achieve these goals, families enrolled in the FACE program participate in home visits and a center-based component delivered through elementary schools. THE FACE program is a modification of three national models to explicitly include the language and culture of the tribal communities' served.
Comparison condition	The study employed three sources of comparison: (1) within FACE sites, comparisons between students who participated in FACE prior to school entry and students who did not; (2) comparisons of FACE and non-FACE students at FACE sites with students attending comparison schools; and (3) comparisons of FACE, non-FACE, and comparison students with national norms.
Funding source	The Bureau of Indian Affairs (BIA) Early Childhood Development Program within the U.S. Department of the Interior provides funds to deliver and assess program performance.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.



WWHV#	WWHV009049
Citation	Prater, S. L., & Davis, C. L. (2002). A perinatal intervention program for urban American Indians: Part 2: The story of a program and its implications for practice. <i>Journal of Perinatal Education</i> , 11(2), 23-32.
<b>Study Characteristics</b>	
Study participants	All study participants were enrolled in the perinatal intervention program and from all six Wisconsin tribes (Chippewa, Menominee, Oneida, Potawatomi, Stockbridge-Munsee, and Winnebago), as well as from out-of-state tribes. Forty-three American Indian mothers participated in client interviews, and 11 people from one Lamaze class completed a questionnaire. See Davis & Prater for additional information about program participants.
Setting	Milwaukee, Wisconsin
Home visiting services	The perinatal intervention program was designed to encourage earlier entry to prenatal care and change of health risk habits among American Indian women. Program objectives included the need (1) to identify pregnancies early, (2) to decrease the interval between diagnosis of pregnancy and initial maternity care visit, (3) to increase the numbers of prenatal visits per patient, (4) to provide health education (including topics on pregnancy, nutrition, preterm labor, smoking cessation, prepared childbirth, breastfeeding, immunizations, well-child checks, and infant safety), and (5) to develop a system to ensure uninterrupted prenatal care when traveling between city and reservation. Women participating in the program received two home visits (one prior to delivery and one post-partum). Additional contact occurred by telephone, during drop-in or scheduled visits to the nurse's or outreach worker's offices, through outreach programs such as WIC, during medical appointments, and during program offerings to the community (such as Lamaze childbirth education classes).
Comparison condition	Not applicable.
Funding source	The community health center procured funding for the perinatal intervention program from two private sources: the Robert Wood Johnson Foundation and the W. K. Kellogg Foundation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.



WWHV#	WWHV004065
Citation	Walkup, J. T., Barlow, A., Mullany, B. C., Pan, W., Goklish, N., Hasting, R., Cowboy, B., Fields, P., Baker, E. V., Speakman, K., Ginsburg, G., & Reid, R. (2009). Randomized controlled trial of a paraprofessional-delivered in-home intervention for young reservation-based American Indian mothers. <i>Journal of the American Academy of Child &amp; Adolescent Psychiatry</i> , 48(6), 591–601.
<b>Study Characteristics</b>	
Study participants	Expectant reservation-based American Indian mothers aged 12 to 22 years with 28 weeks or less of gestation were eligible for participation. Randomized participants ranged in age from 14 to 22 years, with a median age of 18. All were American Indian, primarily Navajo (65 percent), White Mountain Apache (18 percent), or from mixed tribes. At enrollment, 8 percent were married, and 10 percent had one or more children. Slightly more than a third (39 percent) of the sample completed high school, a general equivalency diploma, or some college, and 12 percent were employed. Sixty-eight percent of the participants were living with their male partners, and 72 percent were living with their parents or the baby's father's parents.
Setting	The program was implemented in four American Indian health service catchment areas on the Navajo and White Mountain Apache reservations in New Mexico and Arizona.
Home visiting services	The Family Spirit program was developed to address newborn care and maternal life skills among young American Indian pregnant and parenting mothers living on reservations. The program's goals were (1) to increase mothers' parenting knowledge and involvement, infants' social and emotional behavior, and the quality of the home environment; and (2) to reduce stress, depression, and substance use among mothers. Families in Family Spirit participated in home visits. The program was modeled on Healthy Families America (HFA), a national program founded on 12 research-based principles to ensure quality of home visiting interventions for at-risk families. The content of the home-visiting intervention was derived from extensive community input on what teen parents needed to learn and was based on the American Academy of Pediatrics Guide to Baby Care: Caring for Your Baby and Young Child: Birth to Age. Cultural adaptations—including style, graphics, delivery, and content—were achieved through a community-based participatory process.
Comparison condition	Control participants received a breastfeeding/nutrition education intervention over the course of 23 visits from paraprofessionals.
Funding source	Support for this research was provided by the Substance Abuse Mental Health Services Administration, the Ford Foundation, the Annie E. Casey Foundation, and the C.S. Mott Foundation.
Author affiliation	Because information about who developed the program is not available, we could not assess author affiliation.



## **APPENDIX B**

### **PARTICIPANT OUTCOME MEASURES, BY DOMAIN AND STUDY**



Table B.1. Child Health Outcome Measures, by Study

Citation	Measure	Primary or Secondary
Anand, S. S., Davis, A. D., Ahmed, R., Jacobs, R., Xie, C., Hill, A., Sowden, J., Atkinson, S., Blimkie, C., Brouwers, M., Morrison, K., de Koning, L., Gerstein, H., Yusuf, S., & SHARE-AP, A. I. (2007). A family-based intervention to promote healthy lifestyles in an aboriginal community in Canada. <i>Canadian Journal of Public Health. Revue Canadienne de Santé Publique</i> , 98(6), 447–452.	Physical measures including height, weight, waist and hip circumference, bioelectrical impedance, and blood pressure, as well as a fasting blood sample, were collected using standardized methods. A subset of households were also invited to attend McMaster University to undergo DEXA evaluation using the Cyprus body composition analysis machine in 77 subjects.	Primary
	Energy and nutrient intake was measured using a 24-hour recall.	Secondary
	The ESHA Food Processor was used for nutrient analysis.	Secondary
	Children were asked to report 24-hour physical activity recall.	Secondary
	Knowledge and attitudes about healthy dietary practices were assessed using a modified PATHWAYS KAB questionnaire.	Secondary
Coughlin, R. L., Kushman, E., Copeland, G., & Wilson, M. L. <i>Pregnancy and birth outcome improvements for American Indians in the Healthy Start project of the Inter-Tribal Council of Michigan, 1998-2008: An 11-year cohort study</i> . Unpublished manuscript.	Birth data records on birth weight (grams) and gestational age (weeks).	Primary
Harvey-Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. <i>Obesity Research</i> , 11(5), 606–611.	Weight was measured to the nearest 0.25 kg using a portable digital scale. Height or length was measured to the nearest 0.25 cm using a stadiometer and recumbent length board.	Primary
	Physical activity was measured using TriTrac accelerometers (TriTrac-R3D Research Ergometer; Hemokinetics, Inc., Madison, WI).	Primary
	Parents were asked to complete separate 3-day food records (2 weekdays and 1 weekend day) to document their own and their child's food intake.	Secondary
Krysiak, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.	Parents are routinely asked questions on immunizations and linkage to a medical doctor.	Secondary
le Roux, I. M., le Roux, K., Comulada, W. S., Greco, E., Desmond, K. A., Mbewu, N., & Rotheram-Borus, M. J. <i>Home visits by neighborhood mentor mothers provide timely recovery from childhood malnutrition in South Africa: Results from a randomized controlled trial</i> . Unpublished manuscript.	Weight. All children were weighed.	Primary
le Roux, I. M., le Roux, K., Comulada, W. S., Mbeutu, K., Desmond, K. A., & Rotheram-Borus, M. J. <i>A randomized control trial of home visits by neighborhood mentor mothers to improve children's nutrition in South Africa</i> . Unpublished manuscript.	Weight. All children were weighed.	Primary

**Table B.2. Maternal Health Outcome Measures, by Study**

Citation	Measure	Primary or Secondary
Anand, S. S., Davis, A. D., Ahmed, R., Jacobs, R., Xie, C., Hill, A., Sowden, J., Atkinson, S., Blimkie, C., Brouwers, M., Morrison, K., de Koning, L., Gerstein, H., Yusuf, S., & SHARE-AP, A. I. (2007). A family-based intervention to promote healthy lifestyles in an aboriginal community in Canada. <i>Canadian Journal of Public Health. Revue Canadienne de Santé Publique</i> , 98(6), 447–452.	Physical measures including height, weight, waist and hip circumference, bioelectrical impedance, and blood pressure, as well as a fasting blood sample, were collected using standardized methods. A subset of households were also invited to attend McMaster University to undergo DEXA evaluation using the Cyprus body composition analysis machine in 77 subjects.	Primary
	Energy and nutrient intake was measured using a 24-hour recall.	Secondary
	The ESHA Food Processor was used for nutrient analysis.	Secondary
	Physical activity was measured using a standardized set of previously validated questions in adults and adolescents.	Secondary
	Knowledge and attitudes about healthy dietary practices were assessed using a modified PATHWAYS KAB questionnaire.	Secondary
	Depression. A 20-item self-report scored on a 4-point scale with a possible score of 0 to 60; higher scores are worse.	Secondary
	Drug use. Eight self-report items scored on a 4-point scale with a possible score of 8 to 32.	Secondary
	Social support. A 10-item self-report scored on a 5-point scale with a possible score of 10 to 50.	Secondary
	Self-esteem. A 10-item self-report scored on a 4-point scale with a possible score of 10 to 40.	Secondary
	Locus of control. A 7-item self-report scored on a 4-point scale with a possible score of 7 to 28.	Secondary
Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., Cowboy, B., Fields, P., Hastings, R., Pan, W., Reid, R., Santosham, M., & Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics &amp; Adolescent Medicine</i> , 160(11), 1101–1107.	Birth data records on number of prenatal care visits	Primary
	Birth data records on Adequacy of Prenatal Care (Kessner Index)	Primary
Coughlin, R. L., Kushman, E., Copeland, G., & Wilson, M. L. <i>Pregnancy and birth outcome improvements for American Indians in the Healthy Start project of the Inter-Tribal Council of Michigan, 1998-2008: An 11-year cohort study</i> . Unpublished manuscript.		

Citation	Measure	Primary or Secondary
Harvey-Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. <i>Obesity Research</i> , 11(5), 606-611.	Weight was measured to the nearest 0.25 kg using a portable digital scale. Height or length was measured to the nearest 0.25 cm using a stadiometer and recumbent length board.	Primary
	Physical activity was measured using TriTrac accelerometers (TriTrac-R3D Research Ergometer; Hemokinetics, Inc., Madison, WI).	Primary
	Parents were asked to complete separate 3-day food records (2 weekdays and 1 weekend day) to document their own and their child's food intake.	Secondary
Krysik, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109-127.	The Parental Stress Index (PSI) is a reliable and validated measure that asks parents to rate the stress they are experiencing in 11 areas: sense of competence, parental attachment, feeling restricted in role, depression, relationship with spouse, social isolation, health, parental distress, difficult child, social support, and parental self-efficacy.	Primary
	The CAGE, a standardized alcohol-screening instrument, plus some additional questions to detect drug problems, was administered to screen for alcohol use.	Secondary
	The Parental Stress Index (PSI) is a reliable and validated measure that asks parents to rate the stress they are experiencing in 11 areas: sense of competence, parental attachment, feeling restricted in role, depression, relationship with spouse, social isolation, health, parental distress, difficult child, social support, and parental self-efficacy.	Primary
Walkup, J. T., Barlow, A., Mullany, B. C., Pan, W., Goklish, N., Hasting, R., Cowboy, B., Fields, P., Baker, E. V., Speakman, K., Ginsburg, G., & Reid, R. (2009). Randomized controlled trial of a paraprofessional-delivered in-home intervention for young reservation-based American Indian mothers. <i>Journal of the American Academy of Child &amp; Adolescent Psychiatry</i> , 48(6), 591-601.	A 20-item self-report scored on a 5-point scale designed to measure participants' perceived support from family, friends, and community.	Secondary
	The Center for Epidemiological Studies Depression is a 20-item self-report scored on a 4-point scale to measure participants' level of depressive symptoms.	Secondary
	Three self-report items developed by the Substance Abuse and Mental Health Services Administration regarding participants' use of alcohol, cigarettes, or illegal substances in the previous month.	Secondary

**Table B.3. Child Development and School Readiness Outcome Measures, by Study**

Citation	Measure	Primary or Secondary
Krysiak, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.	Early identification of developmental delays is measured through the administration of the Ages and Stages Questionnaire (Squires, Bricker, & Potter, 1997), a developmental screening instrument.	<b>Primary</b>
McLaren, L. (1988). Fostering mother-child relationships. <i>Child Welfare</i> , 67(4), 353–365.	Child's socioemotional competence was measured using the Child Behavior Test (CBT), a tool completed by home visitors.	Primary
Pfannenstiel, J., Yarnell, V., & Seltzer, D. (2006). <i>Family and child education program (FACE): Impact study report</i> . Overland Park, KS: Research & Training Associates, Inc.	Stanford Achievement Tests, Tenth Edition (SAT 10)	Primary
	Stanford Early School Achievement Test (SESAT)	Primary
	Meisel's Work Sampling System (WSS) employs teacher observational rating checklists on domains that include language and literacy, mathematics, personal and social, art, social studies, science, and physical development.	Primary
	A third measure of kindergarten readiness was added to the WSS—the domain of conventional knowledge. Conventional knowledge items included the following: tells first and last name, knows how to contact an adult family member, knows age, knows birth date, identifies basic colors, recognizes some basic shapes, counts by rote to 10, recognizes and names some numbers to 10, recognizes and names letters of the alphabet, and expresses self clearly through competent use of language.	Primary
Walkup, J. T., Barlow, A., Mullany, B. C., Pan, W., Goklish, N., Hasting, R., Cowboy, B., Fields, P., Baker, E. V., Speakman, K., Ginsburg, G., & Reid, R. (2009). Randomized controlled trial of a paraprofessional-delivered in-home intervention for young reservation-based American Indian mothers. <i>Journal of the American Academy of Child &amp; Adolescent Psychiatry</i> , 48(6), 591–601.	Infant Toddler Social Emotional Assessment (ITSEA), a 126-item parent report that assesses four primary domains of child behavior for ages 12 to 36 months including externalizing, internalizing, dysregulation, and competence.	Primary



**Table B.4. Family Economic Self- Sufficiency Outcome Measures, by Study**

Citation	Measure	Primary or Secondary
Krysiak, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.	Parent self-report measures of life course outcomes include the amount of time between pregnancies and gains in education and employment.	Secondary

**Table B.5. Positive Parenting Practices Outcome Measures, by Study**

Citation	Measure	Primary or Secondary
Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., Cowboy, B., Fields, P., Hastings, R., Pan, W., Reid, R., Santosham, M., & Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics &amp; Adolescent Medicine</i> , 160(11), 1101–1107.	Educators asked participants to complete 9 exercises to demonstrate infant care skills, using dolls at baseline and their own infants at 2 and 6 months postpartum. Educators scored the results. Possible scores ranged from 0 percent to 100 percent.	Primary
	A 51-item multiple-choice test developed by the study team with a possible score of 0 percent to 100 percent.	Secondary
	Five selected self-report items scored on a 4-point scale with a possible score of 5 to 20.	Secondary
Burd, L., Peterson, M., Face, G. C., Face, F. C., Shervold, D., & Klug, M. G. (2007). Efficacy of A SIDS risk factor education methodology at a Native American and Caucasian site. <i>Maternal &amp; Child Health Journal</i> , 11(4), 365–371.	A questionnaire was administered that asked about risk factors for SIDS, including drinking and smoking during pregnancy, smoking around newborns, sleep position, and conditions while child is sleeping (temperature, clothing).	Secondary
McLaren, L. (1988). Fostering mother-child relationships. <i>Child Welfare</i> , 67(4), 353–365.	Parent and Child Together Scale (PACT)	Primary
Walkup, J. T., Barlow, A., Mullany, B. C., Pan, W., Goklish, N., Hasting, R., Cowboy, B., Fields, P., Baker, E. V., Speakman, K., Ginsburg, G., & Reid, R. (2009). Randomized controlled trial of a paraprofessional-delivered in-home intervention for young reservation-based American Indian mothers. <i>Journal of the American Academy of Child &amp; Adolescent Psychiatry</i> , 48(6), 591–601.	Home Observation for Measurement of the Environment (HOME) is a 45-item observational checklist that assesses parent support and stimulation of the child in the home environment. Six subscales include maternal responsiveness, acceptance, organization of the home, learning materials, maternal involvement, and variety.	Primary
	A 76-item multiple-choice self-report test designed by the study team to assess participants' general knowledge on pregnancy, infant care, and parenting skills.	Secondary
	A 5-item self report scored on a 4-point scale adapted from Substance Abuse and Mental Health Services Administration measure to assess participants' level of direct involvement in infant care and support.	Secondary

**Table B.6. Outcome Measures of Reductions in Child Maltreatment, by Study**

Citation	Measure	Primary or Secondary
Krysiak, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. <i>Journal of Prevention &amp; Intervention in the Community</i> , 34(1), 109–127.	Child abuse and neglect was measured via an annual match of participant and comparison group names (both past and current) with the Arizona Child Protective Services Registry (CHILDS).	Primary

**Table B.7. Outcome Measures of Reductions in Juvenile Delinquency, Family Violence, and Crime, by Study**

Citation	Measure	Primary or Secondary
Barlow, A., Varipatis-Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N., Cowboy, B., Fields, P., Hastings, R., Pan, W., Reid, R., Santosham, M., & Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics &amp; Adolescent Medicine</i> , 160(11), 1101–1107.	Family conflict. Five self-report items scored on a 4-point scale with a possible score of 5 to 20; higher scores are worse.	Secondary
	Family cohesion. Three self-report items scored on a 4-point scale with a possible score of 3 to 12.	Secondary

## **APPENDIX C**

### **OVERVIEW OF HOME VISITING PROGRAM MODELS**



**Appendix C, Table C.1. Overview of Home Visiting Program Models**

Program Model Name	Goals	Model Components	Content
Baby FACE	The Baby FACE program was developed to expand opportunities for American Indian families to learn about early childhood development and support children, including infants and toddlers with special needs, during their first years of life. The goals of the program are (1) to promote pre-literacy experiences for children from birth to age 5 with the support and involvement of their parents, and (2) to increase parenting skills and knowledge of child development.	To achieve these goals, families enrolled in the Baby FACE program participate in home visits that include screenings of children's development and group parent meetings and receive referrals through a resource network.	The program implements the Parents as Teachers Born to Learn curriculum, which has been adapted to each tribal community's culture.
Early intervention services	The Individuals with Disabilities Education Act (IDEA) includes a program for infants and toddlers with disabilities (the study refers to this as Part H of IDEA; in current legislation this is Part C). The program for infants and toddlers with disabilities is a federal grant program that assists states in operating a comprehensive statewide program of early intervention services for infants and toddlers with disabilities, birth through age 2 years, and their families. In order for a state to participate in the program, it must assure that early intervention will be available to every eligible child and its family.	Families enrolled in the early intervention services received home visits.	Not specified

Program Model Name	Goals	Model Components	Content
FACE	The FACE program was designed to address the achievement gap for American Indian children, particularly those living on rural reservations, and to better prepare American Indian children for school. The goals of the program are (1) to support parents in their role as their child's first teacher; (2) to increase family literacy; (3) to strengthen connections among family, school, and community; (4) to promote the early identification of children with special needs; (5) to increase parent participation in their child's learning and expectations for academic achievement; (6) to support and celebrate the unique cultural and linguistic diversity of each American Indian community served by the program; and (7) to promote lifelong learning.	To achieve these goals, families enrolled in the FACE program participate in home visits and a center-based component delivered through elementary schools.	THE FACE program is a modification of three national models to explicitly include the language and culture of the tribal communities served.
Family Spirit	The Family Spirit program was developed to address newborn care and maternal life skills among young American Indian pregnant and parenting mothers living on reservations. The program's goals were (1) to increase mothers' parenting knowledge and involvement, infants' social and emotional behavior, and the quality of the home environment; and (2) to reduce stress, depression, and substance use among mothers.	Families participating in Family Spirit participated in home visits.	The program was modeled on Healthy Families America (HFA), a national program founded on 12 research-based principles to ensure quality of home visiting interventions for at-risk families. The content of the home-visiting intervention was derived from extensive community input on what teen parents needed to learn and was based on the <i>American Academy of Pediatrics Guide to Baby Care: Caring for Your Baby and Young Child: Birth to Age</i> . Cultural adaptations—including style, graphics, delivery, and content—were achieved through a community-based participatory process.

Program Model Name	Goals	Model Components	Content
Healthy Families America/Healthy Families Arizona	HFA aims (1) to reduce child maltreatment; (2) to increase utilization of prenatal care; (3) to improve parent-child interactions and school readiness; (4) to ensure healthy child development; (5) to promote positive parenting; (6) to promote family self-sufficiency and decrease dependency on welfare and other social services; (7) to increase access to primary care medical services; and (8) to increase immunization rates. Healthy Families Arizona is a state-based program that is guided by six community-based statewide steering committees (focused on training, policies and procedures, credentialing, excellence, community partnerships, and advocacy).	To achieve its goals, enrolled families participate in home visits that including screenings and assessments.	HFA is based upon a set of critical elements that serve as the framework for program development and implementation. HFA program components are theoretically rooted in a strength-based approach that recognizes that all families have strengths and that programs should build on these strengths rather than focus on correcting weaknesses.
HAPPY Rural Outreach Project	The HAPPY Rural Outreach Program was designed to meet the needs of families with children with developmental delays that live in remote, rural areas of Nevada where daily home- or center-based services are not practical. The outreach project was a collaborative effort of the Nevada Departments of Education and Human Resources, colleges within the University of Nevada, Reno, rural Nevada Inter-Tribal Council Head Starts, rural Nevada Head Starts, rural community service providers, and rural local education agencies.	Families participating in HAPPY received monthly home visits, quarterly progress reviews, and semi-annual assessments by a child development specialist; initial in-home evaluations, and regular video and telephone consultation with speech, physical, occupational therapists and other related service personnel; and recommendations of individualized early intervention and therapeutic activities to be done by the parents with their child in the home.	Not specified.

Program Model Name	Goals	Model Components	Content
Indian Family Wellness Project	The Indian Wellness Project was a federally funded research project with the dual goals of developing a culturally grounded, family-centered preventive intervention and facilitating the development of tribal research infrastructure.	The intervention had two components: home visitation and parent/child curricula. The program, delivered through Head Start centers, includes a classroom component designed to build relationships among intervention staff, Head Start staff, and families. Families then participate in parent group meetings and home visits.	The curricula for parents and children are based on six tribal stories/legends and focus on reintroducing the practice of storytelling. The stories selected for the intervention were made into brief videos (narrated by tribal elders), in which footage interposes scenes of stories being told with historical photographs, tribal artwork, and scenes of cultural events.
Obesity Prevention + Parenting Support	The intervention was designed to promote parenting skills that facilitate healthy attitudes and interactions around eating and activity and ultimately to promote short- and long-term weight regulation for children.	To achieve its goals, enrolled families participate in home visits.	The curriculum emphasized the child's psychological and behavioral goals, logical and natural consequences, mutual respect, and encouragement techniques, as well as specifically targeted how improved parenting skills could facilitate the development of appropriate eating and exercise behaviors in children.
The Parent-Child Home Program	The Parent-Child Home Program focuses on (1) promoting positive parenting skills and building positive parent-child interaction, (2) enhancing the child's conceptual and social-emotional development, and (3) developing early literacy skills. The Parent-Child Home Program home visitors use a "light touch" approach that is non-didactic and empowers parents. The program aims to enhance the quality (including enhanced vocabulary, a reduction in discouragements, and an increase in encouragements used by the parent) and quantity of parent-child interaction to promote children's cognitive and social-emotional development and language and early literacy skills.	Enrolled families participate in home visits and receive toys and books, referrals to community services, and assistance with transition to the next educational step for the child.	Not specified



Program Model Name	Goals	Model Components	Content
Perinatal intervention program	The perinatal intervention program was designed to encourage earlier entry to prenatal care and change of health risk habits among American Indian women. Program objectives included the need (1) to identify pregnancies early, (2) to decrease the interval between diagnosis of pregnancy and initial maternity care visit, (3) to increase the numbers of prenatal visits per patient, (4) to provide health education (including topics on pregnancy, nutrition, preterm labor, smoking cessation, prepared childbirth, breastfeeding, immunizations, well-child checks, and infant safety), and (5) to develop a system to ensure uninterrupted prenatal care when traveling between city and reservation.	Women participating in the program received two home visits (one prior to delivery and one postpartum). Additional contact occurred by telephone, during drop-in or scheduled visits to the nurse's or outreach worker's offices, through outreach programs such as WIC, during medical appointments, and during program offerings to the community (such as Lamaze childbirth education classes).	Not specified
Philani child health and nutrition program	The Philani child health and nutrition program aimed to build community relationships and encourage mothers to engage in healthy practices to improve nutrition and health outcomes for young children.	To achieve its goals, families participated in regular home visits.	During visits, the home visitor (known as a Mentor Mother) weighed the participating child and discussed his/her progress with the mother. The Mentor Mother also made sure that the mother had the social grants she might be entitled to and that she understood proper nutrition and hygiene. Mentor Mothers stressed the importance of breastfeeding, the proper time to introduce solids, frequent feeding, and a mixed diet including vegetables and fruit. She checked to see if immunizations were up to date and that the child was dewormed.
SHARE-ACTION	The SHARE-ACTION program was designed to reduce energy intake and increase physical activity among Aboriginal families by influencing participants' health behavior, modeling health behaviors, and reinforcing healthy lifestyle changes.	To achieve its goals, the program includes regular home visit by Aboriginal health counselors who was trained to assess and set dietary and physical activity goals for each household member. In addition, families received weekly deliveries of spring water.	Not specified

Program Model Name	Goals	Model Components	Content
ITCM Healthy Start project	Healthy Start-Home Visiting is authorized under Title III, Part D, Section 330H of the Public Health Service Act; (42 USC 254 c-8). The Healthy Start Initiative provides program funds to local agencies committed to community-driven strategies to mitigate the causes of infant mortality, low birth weight, and other poor perinatal outcomes. The purpose of Healthy Start-Home Visiting is to address significant disparities in perinatal health, especially disparities experienced by at-risk populations. The program also aims to enhance the capacity of a community's perinatal and women's health service system. The Inter-Tribal Council of Michigan's (ITCM) Healthy Start project has been working since 1998 to improve birth outcomes among American Indians living in Michigan.	During visits with families, staff referred clients to appropriate services, and then followed up with clients and providers to ensure that adequate care was provided.	Not specified
SIDS risk factor program	This intervention aims to improve parental knowledge of SIDS risk factors and thus reduce child deaths from SIDS. To achieve its goals, program developers created baby blankets with nine risk factors for SIDS printed on them.	Services were delivered through a home visiting program for American Indian mothers and families.	Nursing or home visiting staff distributed the blankets to families and reviewed the information on the blankets



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