OPRE Report #2020-165

Assessing the Research on Early Childhood Home Visiting Models Implemented with Tribal Populations Part 2: Lessons Learned about Implementation and Evaluation

Updated December 2020

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Contract Number:
GS-10F-0050L/HHSP23320150115G
Mathematica Reference Number:
50096.04.T15.152.000
Submitted to:
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Assessing the Research on Early Childhood Home Visiting Models Implemented with Tribal Populations

Part 2: Lessons Learned about Implementation and Evaluation

Original Report Published: February 2011

Updated August 2017 and December 2020

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I. INTRODUCTION

The statute authorizing the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program (Social Security Act, Title V, § 511 (42 U.S.C. § 711)) sets aside 3 percent of the total appropriation (authorized in § 511(j)) for grants to federally recognized tribes (or a consortia of tribes), tribal organizations, or urban Indian organizations. The statute requires the tribal grants, to the greatest extent practicable, to be consistent with the requirements of the MIECHV Program grants to states and territories (authorized in § 511(c)). The Tribal MIECHV Program aims to support the development of American Indian and Alaska Native (AIAN) children and families through the implementation of high quality, culturally relevant early childhood home visiting programs.

The Office of Planning, Research, and Evaluation in the Administration for Children and Families (ACF), U.S. Department of Health and Human Services (HHS), contracts with Mathematica to conduct the Home Visiting Evidence of Effectiveness (HomVEE) project, a systematic review of early childhood home visiting research (detailed information and results are available at https://homvee.acf.hhs.gov/). To assess the evidence of effectiveness of early childhood home visiting models of potential relevance to tribal communities, HomVEE conducted a systematic review focusing specifically on research relevant to tribal communities.[1] HomVEE's review of research with tribal populations includes manuscripts about studies in which at least 10 percent of the participants were AIAN participants.[2] Our definition of AIAN includes participants who identified as Native Hawaiians or other Pacific Islanders or who identified as members of indigenous groups in other countries.[3]

The findings from HomVEE's review of research with tribal populations are presented in two parts.[4] The review process and evidence of effectiveness findings are available in the report, *Assessing the Research on Early Childhood Home Visiting Models Implemented with Tribal Populations—Part 1: Evidence of Effectiveness*, which can be found on the HomVEE website (https://homvee.acf.hhs.gov/tribal).[5] This

[1] In this report, the term *model* refers to a model or version of a model, *version* refers to a model adaptation and/or enhancement, and *program* refers to a localized implementation of the model.

[2] *Manuscript* refers to a description of study results. A single study may produce one or many manuscripts. *Study* refers to an evaluation of a distinct implementation of an intervention (that is, with a distinct sample, enrolled into the research investigation at a defined time and place, by a specific researcher or research team).

[3] In this report, the terms *AIAN*, *tribal*, *tribe*, and *Native* refer inclusively to the broad and diverse groups of American Indian and Alaska Native tribes, villages, communities, corporations, and populations in the United States, acknowledging that each of these entities is unique with respect to language, culture, history, geography, political and legal structure or status, and contemporary context. HomVEE also uses the term *tribal* to refer to participants who identified as members of indigenous groups in other countries.

[4] HomVEE's original review of research with tribal populations was conducted in fall 2010, and the report was released in February 2011 as a single document. The report was updated annually through 2014 and again in 2017. This most recent revision updates the report to include manuscripts released through September 2018 or received through the HomVEE call for manuscripts that closed in early January 2019. The 2017 revision split the original report into two parts-effectiveness findings and lessons learned. Previously, the content of this report on lessons learned was a section of the unified report *Assessing the Evidence of Effectiveness of Home Visiting Models Implemented in Tribal Communities.* HomVEE made minor updates to this section with each release of the unified report. The 2017 revision represented the first substantial update to the lessons learned and it separated that section into its own volume.

[5] Coughlin, R., Argueta, I., Mraz Esposito, A., & Sama-Miller, E. (2020). *Assessing the research on early childhood home visiting models implemented with tribal populations—Part 1: Evidence of effectiveness*. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

volume, Part 2 of the report, discusses lessons learned related to implementing and evaluating early childhood home visiting models serving tribal populations.

This second volume begins by describing the strategies manuscripts reported for tailoring or developing culturally relevant early childhood home visiting models, the challenges experienced in delivering early childhood home visiting services to tribal populations, and lessons learned across the manuscripts identified in Part 1 of HomVEE's review of research with tribal populations (see Coughlin et al., 2020), with a focus on cultural relevance and implementation (see Box 1 in the next chapter). Then, it discusses strategies and challenges manuscripts reported to conducting evaluations with tribal populations. The volume closes with considerations for supporting the development of and strengthening research on early childhood home visiting models implemented with tribal populations.

II. EXPERIENCES DEVELOPING, TAILORING, AND IMPLEMENTING EARLY CHILDHOOD HOME VISITING MODELS STUDIED WITH TRIBAL POPULATIONS

The manuscripts included in HomVEE's review of research with tribal populations offer important insights into model development and implementation—insights that may be useful to the Tribal MIECHV Program grantees or other tribal organizations interested in implementing early childhood home visiting models. This section describes: (1) strategies for tailoring existing early childhood models and developing new models that are culturally relevant to AIAN families and children, (2) implementation challenges programs faced, (3) and implementation lessons learned across the research.

Box 1. Extracting lessons specific to working with tribal communities

Research on home visiting in tribal communities has grown over time, which affected how this report was produced. Very little relevant research was available at the time of the original version of this report in 2010, so that report described lessons across all identified manuscripts, including manuscripts about studies in which only a portion of the sample members were AIAN children and families. Thus, it included lessons that may not be specific to working with tribal populations. As of the 2017 update, HomVEE only added implementation and evaluation experiences drawn from manuscripts about studies in which the sample was primarily tribal or manuscripts about studies that clearly identify a lesson specific to working with a tribal population. That is, as of 2017, the updates (including this update) were designed to add only content that was highly specific to tribal communities, drawing from the growing body of research focused on tribal early childhood home visiting. Thus, this report includes lessons drawn from 52 of the 98 manuscripts reviewed in Part 1.

A. Strategies for tailoring, developing, and implementing culturally relevant early childhood home visiting models

Early childhood home visiting can be an effective tool to improve maternal and child outcomes.[6] The field of early childhood home visiting has begun to recognize the need to examine the impact home visiting models have on diverse populations and explore modifying evidence-based home visiting models to make them more culturally relevant for families from diverse backgrounds (Kumpfer et al., 2002). [7] HomVEE examined how agencies developed or tailored early childhood home visiting models to serve the needs of tribal communities.

Some programs may offer all participants, including AIAN families, the same early childhood home visiting model. Other programs may design or tailor their model to engage a specific population being served. Strategies used to develop culturally relevant programs fall along a continuum of modifications (Castro et al., 2010). At one end of the spectrum lie programs that offer a model designed for the general population with no modifications. Toward the middle are programs that maintain the basic content of an existing model but minorly adjust peripheral elements to make it more appealing to the focus minority population. Programs on the opposite end of the continuum reject existing models in favor of developing,

[6] Bilukha et al., 2005; Gomby, 2005; HomVEE, 2020; Olds et al., 2004, 2007; Prinz et al., 2009; Sweet & Appelbaum, 2004.

[7] For the purpose of the HomVEE review, the term *evidence-based model* refers to a model that meets the criteria developed by the U.S. Department of Health and Human Services. These criteria are based on statutory requirements in the authorizing legislation for the MIECHV Program. HomVEE recognizes that other systematic reviews may use different criteria to evaluate evidence of effectiveness. Thus, an *evidence-based model* in the context of HomVEE may or may not meet the requirements for evidence of effectiveness according to other systematic reviews.

in conjunction with the intended population, services that build upon the cultural traditions and knowledge of the community.

The approaches to providing culturally relevant services used by programs, as described by research included in this review, mirror this continuum of modifications. The programs included early childhood home visiting models delivered as they would be for a general population (with no modifications described by manuscript authors), those that were tailored to engage tribal communities, and programs developed specifically for tribal populations. Across the manuscripts included in HomVEE's review of research with tribal populations, the manuscripts describing studies of programs tailoring models not specifically created for tribal communities and the manuscripts describing studies of new models designed for tribal communities reported similar approaches to developing culturally relevant programs; therefore, the discussion below combines the approaches and lessons learned from this research across both types of early childhood home visiting models. The common approaches described in the research included the involvement of tribal leaders in model development and modification, the engagement of tribal leaders and community members in model implementation, the use of tribal staff, and efforts to build on a community's traditions and strengths.

Strategy 1: Program planners involved tribal leaders and members of the tribal community in the planning, development, and modification of early childhood home visiting models

Programs engaged tribal leaders and members of the tribal community throughout the development and modification process to provide input on cultural appropriateness (Box 2).[8]

Box 2. Tribal elders and community members played a direct role in developing new early childhood models and tailoring existing models

Some ways programs involved the tribal community:

- Members of the tribal community were included in program boards and oversight committees.
- A Native artist designed the program logo.
- Tribal communities recommended modifications that aligned with their cultural practices.

Manuscripts described how programs consulted and collaborated with the tribal community to develop and evaluate new early childhood home visiting models, including developing oversight boards and cultural oversight committees (Davis & Prater, 2001; Fergusson et al., 2005; Fisher & Ball, 2002). For example, one program collaborated with the tribal council on 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 model (Fisher & Ball, 2002). Another program commissioned a Native artist to create the logo and sought feedback from the tribes and tribal agencies on various drafts (Davis & Prater, 2001).

A research team tailoring an early childhood home visiting model for tribal populations conducted focus groups with tribal home visitors, tribal elders, and women with children to discuss tribal values and needs. The participants suggested ways to tailor the model to enhance its cultural relevance. The research team implemented the suggestions that maintained the core elements of the model. For example, one suggestion was to lengthen the home visiting sessions to allow home visitors extra time for informal conversations about participants' personal lives and other topics not related to the content of the model.

[8] Booth-La Force & Oxford, 2018; Chomos et al., 2018a; Davis & Prater, 2001; Fergusson et al., 2005; Fisher & Ball, 2002; Karanja et al., 2010; McCalman et al., 2014, 2015; Munns et al., 2018; Oxford et al., 2018; Tomayko et al., 2016.

Beginning the home visit by discussing official business would be considered impolite by members of the participating tribal communities. Another modification was to have the home visitors bring a small gift to children during the visits. The participants recommended these modifications to align with cultural norms about interpersonal relationships and appropriate gestures (Oxford et al., 2018).

Strategy 2: Programs involved tribal leaders and members of the tribal community in the implementation of early childhood home visiting models

Several manuscripts described the direct role that tribal leaders and community members played in implementing the models (for example, see Box 3).[9] In one program, 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 (Davis & Prater, 2001). A medicine woman from one of the tribes assisted with the first Lamaze® series the program held. Another 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. In a third program, elders spoke at program events and offered prayers for newly enrolled families (Lambson et al., 2006). In another example, a parenting consultant from the local tribe co-facilitated the preservice training of program staff (Harvey-Berino & Rourke, 2003).

Box 3. Tribal elders and community members played a direct role in implementing models

Some ways programs involved the tribal community:

- Elders narrated tribal stories that served as the foundation for the curriculum.
- The tribal community helped recruit families and endorsed program events.
- Elders offered prayers for families who were new to the program.◢

Strategy 3: Home visiting programs employed staff from within the community or sought culturally competent staff

Several manuscripts described ways that programs sought to ensure staff were culturally competent (for example, see Box 4). Multiple manuscripts reported that programs hired staff members primarily from the community the program was hoping to serve.[10] Some program administrators believed that the families would be able to connect better with staff from the family's own tribe than with an outside professional. A goal of one program was to use the tribal home visitors to create an extended family support system (Fisher & Ball, 2002). Another program noted the importance of the tribal home visitors' ability to relate to participants through shared experiences and an understanding of the local community's needs. For example, the tribal home visitors

[9] Barlow et al., 2006; Booth-La Force & Oxford, 2018; Davis & Prater, 2001; Fisher & Ball, 2002; Harvey-Berino & Rourke, 2003; Karanja et al., 2010; Lambson et al., 2006; McCalman et al., 2014, 2015; Munns et al., 2018; Nguyen et al., 2018.

[10] Anand et al., 2007; Barlow et al., 2006, 2013, 2015; Booth-LaForce & Oxford, 2018; Campbell et al., 2018; Chomos et al., 2018a; Fatti et al., 2013; Fisher & Ball, 2002; Grimwood et al., 2012; Harvey-Berino & Rourke, 2003; Karanja et al., 2010, 2012; le Roux et al., 2010, 2013, 2014; Levin et al., 1997; Munns et al., 2016, 2017, 2018; Oxford et al., 2018; Pfannenstiel, 2015; Rotheram-Borus et al., 2014; Runciman, 2016; Sawyer et al., 2014; Walkup et al., 2009; Yarnell et al., 2008; Zarnowiecki et al., 2018.

knew which supportive service agencies provided culturally appropriate services and would thus refer participants to those agencies, which the authors noted was important because participants had prior negative experiences with some supportive services (Munns et al., 2016). In a third example, a program employed tribal community members to help foster the tribal community's acceptance of the program and to encourage participation (Booth-LaForce & Oxford, 2018).

Box 4. Programs strove to employ culturally competent staff

Efforts some programs made to employ culturally competent staff included:

- Hiring home visitors primarily from the community the program hoped to serve
- Hiring members of the tribal community to serve as liaisons between the program and the tribal community
- Providing cultural competency training
- Providing cultural sensitivity training. ◢

One manuscript described a program's strategy to recruit staff from the tribal community. The program's hiring protocol included posting job openings within the community before announcing them to the public and indicating a preference for candidates with cultural knowledge and the ability to speak the community's Native language (Levin et al., 1997).

In several programs, the staff included tribal members and people not from the community.[11] For example, programs hired members of the tribal community to serve as liaisons between the program and the community (Davis & Prater, 2001; Nguyen et al., 2018). One program tailoring an early childhood home visiting model hired tribal community workers to advise the program on cultural issues and to foster support for the program. For example, the tribal community workers accompanied the non-tribal nurse home visitors on the first visit to families to facilitate introductions. The tribal community workers also helped maintain contact with families, which was instrumental in retaining the highly mobile families in the program (Nguyen et al., 2018). A manuscript reporting on an older 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. In the interviews, however, some families did note the importance of having culturally competent home visiting providers and mentioned the benefit of having providers or interpreters who could speak their Native language.

Programs that did not hire tribal community members as home visitors provided training for the home visitors on American Indian culture and cultural competency (Chaffin et al., 2012; Prater & Davis, 2002). For example, a manuscript reporting on the study of one program described the importance planners placed on cultural competency training for all staff (Prater & Davis, 2002). The planners thought it was important for staff to understand the history of exploitation suffered by the American Indian community and its implications for building a trusting relationship with a family.

[11] Bailey et al., 1997; Culp et al., 2004, 2007; Davis & Prater, 2001; Fergusson et al., 2005; McCalman et al., 2014, 2015; Nguyen et al., 2018; Pfannenstiel & Lente-Jojola, 2011; Prater & Davis, 2002; Tomayko et al., 2016.

Strategy 4: Programs built on the cultural strengths and customs of the communities served

A number of manuscripts described building on the cultural strengths and customs of the focus populations and incorporating traditional practices.[12] For example, one program developed a curriculum based on tribal legends and delivered it with a traditional storytelling approach (Fisher & Ball, 2002). The curriculum was designed to build on the community's cultural strengths and traditional child-rearing practices and wisdom. Similarly, another manuscript described how researchers worked with the tribal community to develop a curriculum based on the American Indian model of elders teaching life skills to the next generation and that was designed to reinforce cultural values (Tomayko et al., 2016). In a third example, a program's recruitment materials acknowledged the value of traditional ways and the wisdom of tribal elders (Prater & Davis, 2002).

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. Another program encouraged home visitors to use Native language during their visits with families (Pfannenstiel, 2015). In a third example, the tribal community developed a set of cultural supplements to an early childhood home visiting model (Chomos et al., 2018a). The goal of the cultural supplements was to teach parents about traditional cultural practices such as smudging (purifying the home with smoke from lit grass), sharing traditional cultural stories, and providing information on traditional food, medicine, language, and community cultural events. The home visitors tailored the set of cultural supplements to each family based on the home visitor's assessment of the family's interest in and familiarity with the cultural practice.

B. Challenges to delivering early childhood home visiting services

Several manuscripts described how programs fared and the challenges they faced reaching the intended focus population, maintaining enrollment, providing adequate levels of service, implementing the program in remote areas, and delivering model content. The challenges HomVEE presents in this section are similar to those commonly identified in the early childhood home visiting implementation research.

Challenge 1: Although some programs struggled to achieve enrollment targets, especially in rural areas, other programs were successful in recruiting participants from their intended population

One program could only recruit 43 percent of the focus population (Widdup et al., 2012). In another program, recruitment took longer than expected, and, in one site, recruitment targets were not met (Walker et al., 2015). Notably, another program faced barriers establishing the model in smaller, more rural locations where less programmatic infrastructure existed, and training staff and coordinating across towns 200 to 300 miles apart was a challenge (Nevada State Department of Human Resources, 1997). However, other programs stated their success in meeting a specified enrollment target. [13] For example, two programs enrolled 75 to more than 80 percent of the focus population (Fisher & Ball, 2002; Karanja et al., 2010).

[12] Anand et al., 2007; Chaffin et al., 2012; Chomos et al., 2018a; Davis & Prater, 2001; Fergusson et al., 2005; Fisher & Ball, 2002; Lambson et al., 2006; McCalman et al., 2015; Pfannenstiel & Lente-Jojola, 2011; Pfannenstiel, 2015; Pfannenstiel et al., 2006; Prater & Davis, 2002; Tomayko et al., 2016; Yarnell et al., 2008.
[13] Chomos et al., 2018b; Fisher & Ball, 2002; Karanja et al., 2010; Lambson et al., 2006.

Challenge 2: Several programs struggled with participants dropping out, which means participants did not get the level of planned program services, but others were successful in retaining participants

Of the manuscripts that provided information on participant retention, more than one-quarter of study participants withdrew from the program early or elected not to enroll in subsequent years.[14] Many of these manuscripts reported that almost one-third to more than half of participants did not complete the program.[15] For example, in one of these programs, only 30 to 40 percent of participants received a full dosage of services (Lambson et al., 2006). In another program, more than 25 percent of participants did not complete the program, and completing the program was defined as having participated in at least 50 percent of the lessons (Barlow et al., 2015). Reasons cited for participants' dropping out included competing commitments such as other family responsibilities, new jobs, or other obligations (Booth-LaForce & Oxford, 2018) and the challenge of building trust with new home visitors each time there was home visitor turnover (Tomayko et al., 2016).

However, some manuscripts reported that programs were successful in retaining participants.[16] For example, one manuscript reported that a study successfully retained all families from the first year into the second year (Fisher & Ball, 2002). A manuscript about a study of two sites reported that 80 percent of families from one site were still participating after three years (Levin et al., 1997). Other manuscripts reported that programs were able to deliver most of the intended number of visits, providing 80 to 100 percent of expected home visits or lessons (Barlow et al., 2006; Rotheram-Borus et al., 2014; Walkup et al., 2009).[17]

Challenge 3: Implementing programs in remote areas complicates service delivery, as does a lack of coordination among service providers

Programs in rural communities faced challenges hiring and retaining home visitors (Pfannenstiel, 2015). For program staff, traveling long distances to visit participants and coordinate with one another was a barrier to service delivery (Karanja et al., 2010; Levin et al., 1997; Pfannenstiel, 2015).

Socioeconomic disadvantages, including illiteracy, lack of telephones, and limited computer and technology skills, made it difficult to communicate with participants (Bailey et al., 1997; Karanja et al., 2010; Widdup et al., 2012). The absence of needed resources in the area and the substantial geographic distances that participants had to travel to access existing resources was also a challenge (Anand et al., 2007; McCalman et al., 2015; Pfannenstiel, 2015). For example, program participants living in remote areas had difficulty adopting recommendations because of resource constraints. A program discussed how remoteness affected families' ability to make healthy choices due to limited access to pregnancy and baby goods such as breast pads, baby grooming kits, and first aid kits, and to affordable fruits and vegetables (McCalman et al., 2015). Similarly, in another program, the tribal health committee identified a lack of

[14] Barlow et al., 2006, 2015; Booth-LaForce & Oxford, 2018; Karanja et al., 2010; Krysik & LeCroy, 2007; Lambson et al., 2006; Pfannenstiel, 2015; Sawyer et al., 2013, 2014; Tomayko et al., 2016; Walkup et al., 2009.
[15] Barlow et al., 2006; Booth-LaForce & Oxford, 2018; Karanja et al., 2010; Lambson et al., 2006; Tomayko et al., 2016; Walkup et al., 2009.
[16] Barlow et al., 2006; Fisher & Ball, 2002; Levin et al., 1997; Rotheram-Borus et al., 2014; Walker et al., 2015; Walkup et al., 2009.
[17] Barlow et al. (2006) and Walkup et al. (2009) reported that programs had high levels of attrition and that participants completed 80 to 85 percent of intended visits. It is unclear whether the dosage calculation includes all participants or only those who completed the program.

affordable, fresh produce on the reserve as a barrier to increasing produce consumption, one of the goals of the model (Anand et al., 2007).

Furthermore, a lack of coordination among local service providers created obstacles to service delivery. For example, in one manuscript about a study, providers and caregivers who were surveyed reported that professionals from different agencies involved in implementing the program were territorial and imposed differing agendas, which resulted in a poor group dynamic that inhibited team efforts to coordinate services for families across the different agencies. 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, a manuscript about a second study reported that researchers 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).

Challenge 4: Home visitors struggled to deliver content amid 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 program 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 attending to clients' day-to-day needs and found that some clients became more open to services (Davis & Prater, 2001). Many participants in another program experienced unstable housing and had low educational attainment and low literacy, which affected delivery of the model because of the uncertainty about where to schedule the visit and the reduced usefulness of providing written materials to participants (Zarnowiecki et al., 2018).

A model implemented by a child welfare agency anticipated and considered from the onset the day-to-day hardships of participants 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 had the infrastructure to offer a more holistic set of services, which perhaps facilitated coordination. The agency 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. The researcher considered this approach a positive attribute of the program, saying, "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). Another program noted hardships related to accessing community services and developed a network of collaborative relationships to connect participants with agencies and programs that provide basic services such as social, health, housing, and law enforcement services (Yarnell et al., 2008).

C. Lessons learned about implementing early childhood home visiting models with tribal populations

During the review of the manuscripts, HomVEE sought to identify lessons learned about delivering home visiting services with tribal populations. Although the challenges identified in the previous section are similar to those commonly identified in the early childhood home visiting implementation research, some

of the lessons learned about how program staff attempted to overcome challenges are unique to the cultural traditions and expectations of tribal participants.

Lesson 1: Collaborate with the tribal communities from the onset, involving them or collaborating in the pre-implementation phases and throughout service delivery

Partnering with the tribal community in all aspects of model design and implementation may increase the acceptance of the model and retention of participants. For example, manuscripts about one program described the pre-implementation steps the program took to tailor an early childhood home visiting model in a manner that aligned with the needs of the community and was respectful of the tribal population's culture. The program hosted two focus groups that included tribal elders, health care and program staff, and child and family service providers. During the focus groups, stakeholders discussed ways to modify the model to increase its cultural relevance. For example, the focus group recommended hiring community members and extending the length of each home visiting session to allow time for building relationships. The authors believe this collaboration enhanced the acceptance of the program and might increase its sustainability (Booth-LaForce & Oxford, 2018; Oxford et al., 2018). Likewise, the authors of other manuscripts suggested that involving the tribal community in the development and implementation of the program (Fisher & Ball, 2002) and hiring home visitors from the tribal community (Levin et al., 1997) appeared to support participant retention.

One manuscript discussed the consequences of not involving tribal communities from the onset of program development. The program was designed to serve different populations, tribal and non-tribal, but program planners did not consult with tribal communities during the early stages of the program; this led to language and cultural barriers and limited acceptance by the tribal populations (Durning, 1997).

Lesson 2: Recruit culturally competent staff

Manuscripts indicated that the attributes of staff, including their personalities, experience, cultural competence, proficiency, teaching skills, general helpfulness, and dedication, played a role in maintaining enrollment.[18] For example, some manuscripts noted that the Aboriginal home visitors' ability to "yarn"—a culturally safe method of indigenous conversation and a way of talking informally with someone to share information—was advantageous because it facilitated trust between the parents and the home visitors (Munns et al., 2016, 2017, 2018; Munns & Walker, 2018).

However, manuscripts detailed challenges programs faced when trying to hire staff from the tribal community (Durning, 1997; Oxford et al., 2018). For example, one program received few initial applications from tribal members, and only one candidate met the appropriate qualifications (Durning, 1997). Even after the required qualifications were lowered, the number of tribal applicants who met the criteria was still insufficient to staff the program. In response, the program created positions referred to as "liaison personnel" to ensure the program reflected participants' multicultural backgrounds. The liaisons, who were members of the tribal community, helped the parent educators connect with the community.

Lesson 3: Use data to inform quality improvement

Reviewing program data can help identify the strengths a program could replicate and areas of weakness for the program to address. Administrators of one program used evaluation data on fidelity to inform

[18] Bailey et al., 1997; Booth-LaForce & Oxford, 2018; Munns et al., 2016, 2017, 2018; Munns & Walker, 2018; Nguyen et al., 2018; Oxford et al., 2018; Prater & Davis, 2002.

quality assurance visits to sites implementing the model (Krysik & LeCroy, 2007). During the visits, staff worked with sites on concerns identified in quarterly reports. According to the manuscript, 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 to those of other voluntary home visitation programs. Another manuscript described how a program examined successful sites' strategies to increase participation and shared those strategies with other sites (Pfannenstiel, 2015).

Lesson 4: Consider modifying the model to meet community and individual needs

To be flexible and responsive to challenges or unexpected circumstances, program staff may need to modify models to better align them with the needs and constraints of both participants and the home visitors delivering the services. In attempting to replicate and scale up a piloted model, one manuscript about a study reported that the new sites lacked the capacity to adopt the model in its entirety (Nevada State Department of Human Resources, 1997). Consequently, the project team trained sites to implement the portions of the model they thought 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.

Based on ongoing input from home visitors and other staff who worked closely with participants, another manuscript reported that program staff began attending medical appointments with participants who considered appointments to be threatening or condescending because they did not understand the medical language that the providers used. In addition, staff held one-on-one makeup classes after participants began to frequently miss scheduled group classes. Although nurses initially resisted makeup classes, citing their inefficiency, they found that one-on-one teaching was productive (Davis & Prater, 2001). Other manuscripts described how providing alternative sites and times for home visits helped increase the programs' ability to serve participants (Munns et al., 2016; Oxford et al., 2018).

Although these modifications may have allowed program staff to overcome implementation challenges, these changes may have compromised the integrity of the model. Maintaining fidelity to models is key when testing the effectiveness of a model. Model developers could identify the core elements of the model and areas where implementing agencies can tailor the model to meet local needs. When considering modifications, program staff working in partnership with model developers is likely to best assure model integrity. The developers can help programs ensure that the changes are acceptable and do not interfere with core elements of the models. Additional considerations related to model development are discussed in Chapter IV.

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III. EXPERIENCES CONDUCTING EVALUATION RESEARCH WITH TRIBAL POPULATIONS

The manuscripts included in HomVEE's review of research with tribal populations also described researchers' experiences conducting evaluation research with tribal populations. The manuscripts included strategies researchers used to conduct culturally appropriate evaluations and the challenges they experienced. These experiences may be informative to tribal organizations and researchers evaluating early childhood home visiting models implemented with tribal populations.

A. Strategies for conducting culturally appropriate evaluation research with tribal populations

HomVEE examined how researchers approached evaluating home visiting models implemented with tribal populations. From the manuscripts reviewed, two strategies emerged from evaluators' experiences evaluating home visiting models with tribal populations.

Strategy 1: Evaluators involved the tribal community in designing and implementing evaluations focusing on tribal home visiting

Researchers sought the input of the tribal community on the design and implementation of the evaluations of the early childhood home visiting models.[19] For example, a non-Aboriginal researcher described the process undertaken to develop and evaluate a home visiting parent support model within an Aboriginal community (Munns et al., 2016, 2017, 2018). Together with the researcher, the Aboriginal home visitors, an Aboriginal steering group, potential clients, and local community agency staff decided to use the Participatory Action Research (PAR) methodology to develop and assess the model. Participants in the PAR activities reported that the approach was a culturally acceptable and accessible way for them to provide input on the design and evaluation of the home visiting model. One of the reasons cited for their acceptance of this approach included the incorporation of yarning (see Chapter II, Section C), which provided a safe way for participants to share their views.

Strategy 2: Evaluators used an independent tribal liaison to encourage two-way dialogue between researchers and tribal communities

A manuscript about a randomized controlled trial (RCT) of a version of an early childhood home visiting model described how the researchers hired two American Indian researchers to serve as tribal liaisons (Oxford et al., 2018). The authors cited the importance of the ongoing consultation provided by the tribal liaisons. The liaisons helped (1) the researchers understand the cultural norms and practices of the tribal communities and (2) the tribal communities understand the distinction between the service delivery and evaluation components of the process as well as the rationale for conducting an RCT of the version of the model.

B. Challenges to conducting evaluation research with tribal populations

From the manuscripts reviewed, HomVEE identified four key challenges evaluators faced while conducting research with tribal populations. Although these challenges are not unique to research

[19] Chomos et al., 2018a, 2018b; Munns et al., 2016, 2017, 2018; Oxford et al., 2018.

conducted with tribal populations, they might serve as considerations for future evaluations of home visiting models for tribal communities.

Challenge 1: Achieving high response rates was difficult due to participants dropping out of the program and evaluation

The ability of any evaluation to detect real improvements hinges on the ability of 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. Indeed, low response rates were a main limitation of the manuscripts about impact studies reviewed by HomVEE, as reported in *Assessing the Research on Early Childhood Home Visiting Models Implemented with Tribal Populations—Part 1: Evidence of Effectiveness* (Coughlin et al., 2020). 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 intervention group members (for example, see Barlow et al., 2006). 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 one program was collecting data from sample members at multiple points in time (for example, see le Roux et al., 2010, 2011).

Researchers with limited resources to invest in participant retention efforts might choose to study a smaller sample, perhaps with a single-case design, or use a series of studies. This approach is less resource intensive, but comes with its own challenges that researchers will have to anticipate and mitigate. For example, one manuscript described how researchers tried to address the challenge of conducting culturally acceptable rigorous evaluations with small samples by using single-case design studies in two tribal communities. The authors noted that this design presented a challenge, however, because it was difficult to set a stable baseline, which affected their ability to draw valid conclusions (Chomos et al., 2018a, 2018b).

Challenge 2: The diversity of cultural and traditional tenets across tribal communities makes it difficult to generalize the cultural acceptability of a model and the applicability of findings

Obtaining a study sample that accurately represents various tribal communities is challenging for researchers. For example, one group of researchers described dual aims of examining the acceptability of delivering a general home visiting model to tribal populations and determining if the findings from previous studies would be replicated with this population. Despite conducting a large study, the researchers noted that achieving a sample reflective of the entire tribal population within the study area was infeasible because of the large number of federally recognized American Indian tribes in the area. Therefore, the researchers could not analyze the model's cultural relevance or the applicability of findings to each tribal population; rather, they could present only a broad overview of the model's cultural acceptability and effectiveness with a diverse tribal population (Chaffin et al., 2012).

Challenge 3: The unknown cultural relevance of measures can make it difficult to interpret the findings

Manuscripts noted that cultural and language differences might have influenced interview responses (Bailey et al., 1997; Daro et al., 1998). For example, in one study, researchers asked tribal caregivers and providers to rate services—a behavior conflicting with cultural norms. Those respondents 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).

Challenge 4: Aligning community values and research design elements can be difficult

Some researchers found that baseline data collection and study designs that randomly assigned participants to an intervention or comparison condition were difficult to implement because of the communities' needs and values. Changes made to the research protocols affected the studies' ability to attribute changes in outcomes to the models. For example, to allow participants to become familiar with home visitors, researchers postponed collecting baseline data until after a few home visits had been completed (McLaren, 1988).[20]

Other researchers reported that the tribal community did not want community members assigned to a study group that did not receive services (Fisher & Ball, 2002; Walkup et al., 2009). One manuscript described how a committee-appointed working group addressed the issue by choosing a pre/post design instead of an RCT, because the latter had the potential to create controversy and concern in tribal communities (Fisher & Ball, 2002). Other researchers addressed this issue by randomly assigning participants to an intervention or active comparison condition. In other words, the comparison group received a highly valued level of services rather than usual care (Walkup et al., 2009). Although this approach might have increased community buy-in of and participation in the evaluation, the researchers acknowledged that it also reduced the contrast between the intervention and comparison conditions, making it harder to detect program effects.

Some researchers reported implementing an RCT study design, but the rigor of the design diminished when researchers made accommodations in response to study participants' needs and the community's preferences (le Roux et al., 2010, 2011; Tomayko et al., 2016). For example, in one study, some of the participants in the intervention group could not attend their home visiting sessions and were reassigned from the intervention group to the comparison group after random assignment. The tribal community and study program officer supported the decision because they preferred that the participants receive some services rather than removing the participants completely from the study (Tomayko et al., 2016).[21]

Researchers might choose to conduct a single-case design study to address the issue of equity in service receipt while maintaining a rigorous design. In this approach all study participants receive services, however as mentioned earlier, it comes with its own challenges that researchers would have to consider.

Concerns about such issues as baseline data collection and random assignment are not unique to tribal communities. For all evaluations (including those conducted with tribal populations), it is possible that additional dialogue and knowledge-building activities with stakeholders about study designs and alternative data collection approaches could address some of these challenges.

[20] Delaying collection of baseline data until services have already begun could reduce the ability of a manuscript about an impact study to receive the highest possible rating from HomVEE, which requires that researchers demonstrate study groups are equivalent at baseline (that is, before services begin) for some study designs.
[21] By HomVEE standards, moving members assigned to the intervention group of an RCT over to the comparison group would reduce the internal validity of the study.

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IV. CONSIDERATIONS FOR DEVELOPING AND RESEARCHING EARLY CHILDHOOD HOME VISITING MODELS IMPLEMENTED WITH TRIBAL POPULATIONS

The research literature on early childhood home visiting models for tribal communities is growing, but more work is needed to develop detailed, well-operationalized home visiting models for tribal communities and to test their effectiveness. The Tribal MIECHV Program allows grantees to fill these gaps in the research literature (Box 5). Collaborative efforts to plan for, adopt, implement, and sustain home visiting programs, along with rigorous local evaluations, provide opportunities to build the evidence base. HomVEE suggests that these efforts include research to support model development and implementation. In this section, HomVEE proposes considerations specifically related to issues identified in the manuscripts reviewed for HomVEE's review of research with tribal populations, and highlights some suggestions for future research from the general HomVEE review.

Box 5. Tribal MIECHV research

Tribal MIECHV grantees are expected to conduct rigorous evaluations of their programs to the extent practicable (Social Security Act, Title V, § 511(d)(3)(A)(i)(II)). Many of the lessons emerging from these evaluations are reported in a special issue (volume 39, issue 3) of the *Infant Mental Health Journal* released in 2018. Only one of the manuscripts was eligible for HomVEE's review of research with tribal populations. The other manuscripts in the issue were not eligible for HomVEE's review of research with tribal populations because they were not studies of individual models. ◢

A. Considerations for supporting model implementation

Across the manuscripts reviewed, collaboration between model developers and the tribal communities they want their model to serve emerged as an important theme in designing culturally relevant models (see Chapter II, Section C). As Tribal MIECHV grantees undertake collaborative efforts to plan for, adopt, and implement home visiting models in their local programs, and as the provision of services progresses, detailed information about the models and grantees' implementation experiences could be documented. This information will increase the feasibility of sustaining and replicating models over time.

Consideration 1: Developers could provide detailed information about model specifications and minimum requirements

As demonstrated by the descriptions of the models provided in the companion report, Assessing the Research on Early Childhood Home Visiting Models Implemented with Tribal Populations—Part 1: Evidence of Effectiveness,[22] most manuscripts included information about minimum requirements, but few manuscripts provided detailed information about the models. To replicate models, programs require operations and training manuals, information about qualified trainers, documentation of curricula or model content, and forms and assessments for service delivery. In addition, developers could identify core elements of the models, meaning 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 and to tailor the models without compromising fidelity to the core elements.

[22] Available on the HomVEE website (https://homvee.acf.hhs.gov/tribal).

Consideration 2: Model developers could create fidelity standards for core model elements

Measures of implementation fidelity assess the degree to which a model is implemented as planned. Few manuscripts presented information about methods and measures for assessing fidelity or fidelity standards for service delivery. Such standards could include measures of both structural features of the model (such as the proper frequency of service delivery; the minimum staff qualifications, training, and supervision requirements; and the content to be delivered) and process features (the manner in which content should be delivered). Model developers might have documented standards, but those standards were not listed in the manuscripts that HomVEE reviewed.

Consideration 3: Researchers could examine the challenges of implementation and whether and how to meet them

As demonstrated by the manuscripts in HomVEE's review of research with tribal populations that contained information about the average dosage families received, 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. More information is needed about challenges programs face with funding and sustaining models, recruiting and retaining staff, recruiting and enrolling families, and delivering model content, as well as how programs attempted to overcome these challenges. This information can help inform future efforts to implement these models.

Consideration 4: Programs could provide detailed information about how they tailor early childhood home visiting models, including how they engage with the model developers to design, implement, and evaluate modifications

As documented earlier, the manuscripts HomVEE examined provided some lessons learned about the process for tailoring early childhood home visiting models for tribal communities, model content relevant to participants, and staffing 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 model and making culturally relevant modifications.

B. Considerations for strengthening research

Additional culturally appropriate research using designs that provide unbiased estimates of impacts is necessary for models implemented in tribal communities. HomVEE's review of research with tribal populations found that 22 manuscripts across nine home visiting models used a study design rigorous enough to estimate program impacts without bias (see Coughlin et al., 2020). Only 8 of these manuscripts described studies in which tribal members were the full sample, or reported impacts for a tribal subgroup. Four of those manuscripts examined the same model, so five of the nine models with rigorous, unbiased impact research also had manuscripts that focused entirely on a tribal population or reported impacts for a tribal subgroup, and only one model meets the HHS criteria for an "evidence-based model" for tribal populations. Next, HomVEE proposes considerations based on lessons learned from the tribal and general HomVEE reviews to strengthen the research base for early childhood home visiting models used in tribal communities.

Consideration 1: Conduct a utilization-focused participatory evaluation

Evaluators and stakeholders can work together to define 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; Tribal Evaluation Workgroup, 2013). 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). Additionally, a participatory approach may result in a higher quality evaluation. Of the manuscripts included in HomVEE's review that discussed studies that used a design that was rigorous enough to estimate program impacts without bias and had tribal members as the full sample, more than half used a participatory evaluation approach. ACF's Tribal Evaluation Workgroup offers guidelines for conducting culturally appropriate evaluations.[23] Despite these benefits, evaluators and stakeholders should also consider possible drawbacks, including the increased amount of time involved in a participatory process and how political influences may affect the evaluation.

Consideration 2: Carefully plan and implement research designs with strong internal validity

HomVEE's review of research with tribal populations identified 57 manuscripts about impact studies as of this update, of which 39 percent (22 manuscripts) used a rigorous enough study design to provide unbiased estimates of model impacts.[24] Among the 57 manuscripts about impact studies, 39 used an RCT design, 2 used a single-case design,[25] and the remaining 16 used a non-experimental comparison group design (NED). Nineteen of the 39 manuscripts reporting on RCTs received a high or moderate rating, and 20 received a low rating, mainly because of high rates of attrition and lack of baseline equivalence (HomVEE's standards for assessing equivalence are described briefly in suggestion #2 below).[26] Of the two manuscripts reporting on single-case designs, one received a high rating, and one received a low rating because the design did not have the required number of phases. Only 2 of the 16 manuscripts reporting on NEDs received a moderate rating. The remaining 14 received low ratings because they did not establish baseline equivalence. HomVEE and other reviews offer guidelines on constructing and implementing rigorously designed studies.[27] Here, HomVEE offers suggestions for addressing the two

[23] The workgroup's *Roadmap for Collaborative and Effective Evaluation in Tribal Communities* is available at https://www.acf.hhs.gov/sites/default/files/cb/tribal_roadmap.pdf. Accessed 10/5/2020.

[24] This update of HomVEE's review of research with tribal populations relies on HomVEE's original standards for identifying well-designed impact research. For more information see https://homvee.acf.hhs.gov/publications/methods-standards.

[25] Studies with a single-case design can provide unbiased estimates of a model's impact. But, because of small sample sizes in studies with this design, the ability to generalize these findings is more limited than with other impact designs. That is, readers can be confident of whether the model improved outcomes for one or a small number of people but have limited confidence the model would work again elsewhere. For this reason, HomVEE standards set a threshold for the number of studies and combined number of study participants that must be part of single-case design studies in order for manuscripts reporting on those studies to contribute to the evidence base for a model. For more information, see https://homvee.acf.hhs.gov/publications/methods-standards.

[26] HomVEE rates the effectiveness of manuscripts about impact studies as high, moderate, or low based on their ability to produce unbiased estimates of the model's impacts.

[27] More information is available at the websites for various reviews, including HomVEE at https://homvee.acf.hhs.gov/Publications/HomVEE-Summary; the Teen Pregnancy Prevention Evidence Review at http://tppevidencereview.aspe.hhs.gov/; the What Works Clearinghouse at http://ies.ed.gov/ncee/wwc/; the Campbell Collaboration at http://www.campbellcollaboration.org/; and Blueprints at https://www.blueprintsprograms.org/.

main reasons that the manuscripts reporting on RCTs and NEDs included in this review did not receive high or moderate ratings—high sample attrition and lack of baseline equivalence:

1. **Evaluators could encourage all study participants to remain in the evaluation to minimize high sample attrition.** The main reason the manuscripts reporting on RCTs of home visiting models implemented with tribal populations received a low rating 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 (Box 6).

   Evaluators and program stakeholders could encourage participants to continue to participate in the research even if the participants do not stay involved with the program. Engaging tribal members as home visitors and data collectors may help foster ongoing participation in the study.

Box 6. Engage stakeholders to facilitate ongoing study participation

One strategy that may help evaluators overcome sample attrition is working closely with tribal elders, service providers, and other community stakeholders early in the planning process to establish buy-in among tribal members and design culturally relevant models. This early work can help throughout the study as individuals who remain in close contact with study participants can communicate the importance of retaining families in the study. ◢

2. **Evaluators could report information about baseline characteristics to establish baseline equivalence.** To receive a moderate rating in the HomVEE review, manuscripts reporting on NEDs (which use a nonrandom process for group assignment) and RCTs with high attrition or compromised randomization must demonstrate baseline equivalence between the intervention and comparison groups (Box 7). If the intervention and comparison groups are (statistically significantly) different at onset, the comparison group does not provide a good representation of what would have happened to the intervention group in the absence of program services. A couple of additional points to consider:

   - The HomVEE review standards require manuscripts reporting on RCTs with high attrition or compromised randomization and NEDs to demonstrate baseline equivalence between the two groups on three types of measures: (1) pre-program outcomes, (2) race and ethnicity, and (3) socioeconomic status. These measures were determined to be key for composing a reasonable comparison group.
   - Manuscripts about impact studies receive a low rating if (1) the intervention and comparison groups differed on key baseline characteristics or (2) information on baseline characteristics was not presented and equivalence could not be determined.[28] Many manuscripts did not provide sufficient data for HomVEE to establish equivalence between the two groups on these measures.

Box 7. Evaluators could report baseline equivalence

Future evaluators should aim to achieve baseline equivalence between their intervention and comparison groups and report information about baseline characteristics in their manuscripts. ◢

[28] Other reasons, such as the lack of validity or reliability of outcome measures and the presence of a confounding factor, can also result in a low rating, according to HomVEE's standards. More details on the procedures and standards are available here: https://homvee.acf.hhs.gov/publications/methods-standards.

Consideration 3: Use culturally relevant measures when available

As previously mentioned, one issue that arose was limited availability of measures that were culturally relevant for study participants. Before data collection begins, evaluators could assess measures for cultural appropriateness and identify those that best fit the focus 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 assessing measures for cultural appropriateness or developing new measures, researchers should consider ways to engage researchers and other stakeholders from tribal communities (Box 8).

Box 8. Seek input from tribal community on measures

Researchers and stakeholders from the community may be a resource to recommend alternatives to measures, assist in identifying groups with whom to pilot test new measures, and collect and/or provide feedback on new measures. ◢

Consideration 4: Collect and report more information about how the early childhood home visiting models were delivered to inform study findings

The best test of the impact of a model can be made when the model is implemented with a high degree of fidelity to the original design. This ensures that the model being evaluated was actually implemented as the developer intended it to be (Dane & Schneider, 1998; O'Donnell, 2008). Although consensus on a single definition does not exist, at least four elements are common to many definitions of implementation fidelity: (1) adherence to the model as described by the developer, (2) exposure or dosage, (3) quality of service delivery, and (4) understanding of the essential model elements that cannot be subject to modification (Carroll et al., 2007; Dunsenbury et al., 2003).

Many manuscripts included in HomVEE's review of research with tribal populations reported on implementation fidelity, but most of those manuscripts discussed only one of the four elements of fidelity. Reporting additional information on implementation fidelity could provide context for and facilitate interpretation of evaluation findings. Examples of how manuscripts reported on implementation fidelity follow:

1. **Adherence to the model.** A few manuscripts reported on how well programs adhered to elements of the intervention other than dosage (Lambson et al., 2006; Pfannenstiel, 2015; Yarnell et al., 2008). For example, two manuscripts reported that 60 to 85 percent of children received developmental screenings as intended (with variation by the type of screening assessment) (Lambson et al., 2006; Yarnell et al., 2008).
2. **Exposure or dosage.** Many of the manuscripts reported on exposure or dosage.[29] Across these manuscripts, many reported that programs had difficulty delivering planned levels of services (see Chapter II, Section B).
3. **Quality of service delivery.** Some manuscripts discussed the quality of service delivery as measured by parent satisfaction surveys or interviews.[30] For example, one manuscript reported that 60 percent of participants expressed high confidence in their ability to implement the program's

[29] Barlow et al., 2006, 2015; Booth-LaForce & Oxford, 2018; Fisher & Ball, 2002; Harvey-Berino & Rourke, 2003; Karanja et al., 2010; Krysik & LeCroy, 2007; Lambson et al., 2006; le Roux et al., 2013, 2014; Levin et al., 1997; Pfannenstiel, 2015; Pfannenstiel et al., 2006; Rotheram-Borus et al., 2014; Sawyer et al., 2013, 2014; Tomayko et al., 2016; Walker et al., 2015; Walkup et al., 2009; Yarnell et al., 2008.

[30] Bailey et al., 1997; Campbell et al., 2018; Chaffin et al., 2012; Karanja et al., 2010; Lambson et al., 2006; McCalman et al., 2014, 2015; Nevada State Department of Human Resources, 1997; Yarnell et al., 2008.

recommendations to help prevent tooth decay and prevent children from becoming overweight (Karanja et al., 2010). Another manuscript reported that, overall, parents were very satisfied with the program; in particular, parents reported high satisfaction with their home visitors (known as parent educators) (Lambson et al., 2006). Interviews with participants in another program revealed that the women appreciated the home visiting approach to care; home visits alleviated the stress of having to arrange for transportation to the clinic (McCalman et al., 2014, 2015).

4. **Acceptable modifications.** Discussion on the need to balance cultural modification and fidelity to essential model elements was rare. Researchers tailoring a home visiting model solicited input from the tribal community on potential modifications to increase the cultural relevance of the model, but they only implemented those modifications that did not affect the model's core elements (Booth-LaForce & Oxford, 2018; Oxford et al., 2018).

Consideration 5: Apply lessons from the general HomVEE review to future research on early childhood home visiting implemented with tribal populations

Many of these suggestions will be important for evaluators to consider when planning and implementing rigorous evaluations of early childhood home visiting models implemented with tribal populations. HomVEE provides a brief summary of some key findings below; detailed information about these considerations is available on the HomVEE website in a report called *Lessons Learned from the Home Visiting Evidence of Effectiveness Review.*[31,32]

- **Conduct studies with multiple samples that seek to replicate the findings of initial impact trials.** As the body of research on early childhood home visiting models implemented with tribal populations grows, evaluators should consider the importance of conducting replication studies of promising models. Replication is important for confirming findings reported in manuscripts about earlier studies. Replication studies should be based on a different (that is, non-overlapping) analytic sample than the original but should use the same outcome measures, if possible, to allow for comparison of measures across studies. In replication studies, researchers may also want to consider replicating subgroup analyses conducted in earlier trials.
- **Select a focused set of outcome measures that (1) closely align to the model's theory of change, (2) have strong validity and reliability, (3) are appropriate for the study population, and (4) allow for cross-study comparisons.** Early childhood 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 closely align to the model's theory of change and hypothesized outcomes. In fact, HomVEE's Version 2 standards, which are being released simultaneously with this report, require that researchers in impact studies use valid and reliable measures wherever possible.[33]
- **Adjust for multiple comparisons to reduce the risk of identifying statistically significant findings by chance.** Especially because most early childhood home visiting studies measure outcomes in multiple domains, steps could be taken to reduce the likelihood of identifying statistically

[31] Available on the HomVEE website at https://homvee.acf.hhs.gov/Publications/HomVEE-Summary.
[32] These lessons are drawn from the first year of the HomVEE review, completed in 2010. Considering findings from subsequent reviews, HomVEE believes these lessons may still apply. However, HomVEE has not systematically examined whether these lessons are relevant to more recent literature.
[33] Both versions of the standards are available at https://homvee.acf.hhs.gov/publications/methods-standards.

significant findings by chance. Evaluators can make corrections during the analysis, such as the Bonferroni or Benjamini-Hochberg corrections, each of which adjust the alpha levels to account for multiple tests. Another possibility for addressing this issue is to select key or confirmatory variables of interest that are the focus of the model. Evaluators then apply multiple comparison corrections only to key outcomes. For example, if the model seeks to reduce child maltreatment, this could be considered a primary outcome, whereas other outcomes, such as family self-sufficiency, may be less important. The analysis would adjust for multiple indicators of child maltreatment but not for multiple indicators of other outcomes.

- **Determine the appropriate sample size to detect statistically significant findings of interest.** Whereas multiple comparisons increase the risk of mistakenly identifying 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—the sample size is too small to be able to detect an effect of an interesting size—and the analysis cannot identify relationships that exist in the population. Determining whether a study is adequately powered (has a large enough sample size) requires a number of considerations, such as the expected effect size of the program. Many computer programs can estimate the power of a sample using these assumptions and help identify the required sample size for a study.
- **Report effect sizes.** 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. Reporting effect sizes facilitates comparisons of results across outcomes and studies.
- **Measure longer-term impacts of promising models.** If an early childhood home visiting model intends to have sustained impacts that last after program services end, evaluators could measure these effects. Researchers and developers will need to carefully consider what length of follow-up is reasonable. The model's theory of change and expectations about longer-term impacts can serve as a guide for making this decision.
- **Select study samples with external validity in mind.** When selecting a model, Tribal and State MIECHV Program administrators and awardees and other organizations interested in implementing early childhood home visiting models with tribal communities will want to know whether a model will be effective in their population and whether the study results are generalizable beyond the study sample. An externally valid study sample is representative of a population, such as all those eligible for services in a tribe, state, or region. The best way to achieve external validity is to take a random sample so that every member of a population has an equal 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 should think carefully about the population of interest and try to construct a study that represents that population. When reporting their results, researchers could include a statement about the representativeness of their study sample to a larger population, and to which populations the results are or are not generalizable. This statement could be supported by showing that demographic variables for the study sample are similar to those for the population to which results are being generalized. Given the uniqueness of each tribal community, HomVEE recognizes that achieving external validity is a challenge. Researchers could provide as much information about the study sample as is culturally appropriate so program administrators can assess whether the study's population is comparable to their own community in important ways.
- **Continue to test the effectiveness of the model periodically, as earlier results might be less applicable to today's families and context.** Models are likely to evolve and change over time.

Model developers may modify elements 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 the absence of program services—changes. Therefore, 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.

HomVEE acknowledges that acting on some of these considerations will not be feasible in all settings, and that studies with strong internal validity can still be conducted even when following these suggestions is not possible. To the extent they can be adopted, evaluations will be stronger and provide a richer evidence base from which to select models that are appropriate for one's communities and settings.

REFERENCES

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. (2007). A family-based intervention to promote healthy lifestyles in an Aboriginal community in Canada. *Canadian Journal of Public Health. Revue Canadienne de Santé Publique*, *98*(6), 447–452.

Bailey, D., Applequist, K., & North, C. U. (1997). *Parent perceptions of home visitors: A comparative study of parents who are American Indian and non-Indian parents*. Washington, DC: U.S. Department of Education.

Barlow, A., Mullany, B., Neault, N., Compton, S., Carter, A., Hastings, R., Billy, T., Coho-Mescal, V., Lorenzo, S., & Walkup, J. (2013). Effect of a paraprofessional home visiting intervention on American Indian teen mothers' and infants behavioral risks: A randomized controlled trial. *American Journal of Psychiatry*, *170*(1), 83–93.

Barlow, A., Mullany, B., Neault, N., Goklish, N., Billy, T., Hastings, R., Lorenzo, S., Kee, C., Lake, K., Redmond, C., Carter, A., & Walkup, J. (2015). Paraprofessional-delivered home-visiting intervention for American Indian teen mothers and children: 3-Year outcomes from a randomized controlled trial. *American Journal of Psychiatry*, *172*(2), 154–162.

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. *Archives of Pediatrics & Adolescent Medicine, 160*(11), 1101–1107.

Bilukha, O., Hahn, R. A., Crosby, A., Fullilove, M. T., Liberman, A., Moscicki, E., Synder, S., Tuma, F., Corso, P., Schofield, A., & Briss, P. A. (2005). The effectiveness of early childhood home visitation in preventing violence: A systematic review. *American Journal of Preventive Medicine*, *28*, 11–39.

Booth-LaForce, C., & Oxford, M. L. (2018). *Randomized controlled trial of the Promoting First Relationships® preventive intervention for primary caregivers and toddlers in an American Indian community.* Unpublished manuscript submitted to HomVEE.

Campbell, S., McCalman, J., Redman-MacLaren, M., Canuto, K., Vine, K., Sewter, J., & McDonald, M. (2018). Implementing the Baby One Program: A qualitative evaluation of family-centred child health promotion in remote Australian Aboriginal communities. *BMC Pregnancy and Childbirth*, *18*(1), 73.

Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, *2*(40). Retrieved December 16, 2010, from http://www.implementationscience.com/content/2/1/40.

Castro, F. G., Barrera, M., & Holleran Steiker, L. K. (2010). Issues and challenges in the design of culturally adapted evidence-based interventions. *Annual Review of Clinical Psychology*, *6*, 213–239.

Chaffin, M., Bard, D., Bigfoot, D. S., & Maher, E. J. (2012). Is a structured, manualized, evidence-based treatment protocol culturally competent and equivalently effective among American Indian parents in child welfare? *Child Maltreatment, 17*(3), 242–252.

Chomos, J. C., Evans, W. P., Bolan, M., Merritt, L., Meyer, A., & Novins, D. K. (2018a). Using single-case designs to evaluate components of tribal home-visitation programs: Tribal community one. *Infant Mental Health Journal*, *39*(3), 335–346.

Chomos, J. C., Evans, W. P., Bolan, M., Merritt, L., Meyer, A., & Novins, D. K. (2018b). Using single-case designs to evaluate components of tribal home-visitation programs: Tribal community two. *Infant Mental Health Journal*, *39*(3), 335–346.

Coughlin, R., Argueta, I., Mraz Esposito, A., & Sama-Miller, E. (2020). *Assessing the research on early childhood home visiting models implemented with tribal populations—Part 1: Evidence of effectiveness*. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Cousins, J. B., & Earl, L. M. (1995a). Participatory evaluation: Enhancing evaluation use and organizational learning capacity. *The Evaluation Exchange*, *1*(3 & 4). Retrieved January 14, 2011, from http://www.hfrp.org/evaluation/the-evaluation-exchange/issue-archive/participatory-evaluation.

Cousins, J. B., & Earl, L. M. (Eds.). (1995b). *Participatory evaluation in education: Studies in evaluation use and organizational learning.* London: Falmer Press.

Culp, A. M., Culp, R. E., Anderson, J. W., & Carter, S. (2007). Health and safety intervention with first-time mothers. *Health Education Research*, *22*(2), 285–294.

Culp, A. M., Culp, R. E., Hechtner-Galvin, T., Howell, C. S., Saathoff-Wells, T., & Marr, P. (2004). First-time mothers in home visitation services utilizing child development specialists. *Infant Mental Health Journal*, *25*(1), 1–15. doi:10.1002/imhj.10086

Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clinical Psychology Review*, *18*(1), 23–45.

Daro, D., McCurdy, K., & Harding, K. (1998). *The role of home visitation in preventing child abuse: An evaluation of the Hawaii Healthy Start project*. Unpublished manuscript.

Davis, C. L., & Prater, S. L. (2001). A perinatal intervention program for urban American Indians part 1: Design, implementation, and outcomes. *Journal of Perinatal Education: An ASPO/Lamaze Publication*, *10*(3), 9–19.

Dunsenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, *18*(2), 237–256.

Durning, P. (1997). *Parents as First Teachers [Ko Nga Matua Hei Kaiako Tuatahi]: Pilot PAFT process report*. Wellington, New Zealand: Royal New Zealand Plunket Society.

Fatti, G., Shaikh, N., Eley, B., & Grimwood, A. (2013). Improved virological suppression in children on antiretroviral treatment receiving community-based adherence support: A multicentre cohort study from South Africa. *AIDS Care*. Advance online publication.

Fergusson, D. M., Horwood, L. J., Grant, H., & Ridder, E. M. (2005). *Early Start evaluation report*. Christchurch, New Zealand: Early Start Project Ltd.

Fisher, P. A. & Ball, T. J. (2002). The Indian Family Wellness Project: An application of the tribal participatory research model. *Prevention Science*, *3*(3), 235–240.

Gomby, D. S. (2005). *Home visitation in 2005: Outcomes for children and parents* (Invest in Kids Working Paper No. 7). Washington, DC: Committee on Economic Development.

Grimwood, A., Fatti, G., Mothibi, E., Malahlela, M., Shea, J., & Eley, B. (2012). Community adherence support improves programme retention in children on antiretroviral treatment: A multicentre cohort study in South Africa. *Journal of the International AIDS Society*, *15*(2), 17381.

Harvey-Berino, J., & Rourke, J. (2003). Obesity prevention in preschool Native-American children: A pilot study using home visiting. *Obesity Research*, *11*(5), 606–611.

Home Visiting Evidence of Effectiveness review. (2020). Early childhood home visiting models: Reviewing evidence of effectiveness. U.S. Department of Health and Human Services, Administration on Children and Families, Office of Planning, Research, and Evaluation. OPRE report number 2020-126. https://homvee.acf.hhs.gov/sites/default/files/2020-09/homvee_execsum_brief_9_2020_final.pdf. Accessed 10/5/2020.

Karanja, N., Aickin, M., Lutz, T., Mist, S., Jobe, J. B., Maupome, G., & Ritenbaugh, C. (2012). A community-based intervention to prevent obesity beginning at birth among American Indian children: Study design and rationale for the PTOTS study. *Journal of Primary Prevention*, *33*(4), 161–174.

Karanja, N., Lutz, T., Ritenbaugh, C., Maupome, G., Jones, J., Becker, T., & Aickin, M. (2010). The TOTS community intervention to prevent overweight in American Indian toddlers beginning at birth: A feasibility and efficacy study. *Journal of Community Health, 35*(6), 667–675.

Krysik, J., & LeCroy, C. W. (2007). The evaluation of Healthy Families Arizona: A multisite home visitation program. *Journal of Prevention & Intervention in the Community*, *34*(1), 109–127.

Kumpfer, K. L., Alvarado, R., Smith, P., & Bellamy, N. (2002). Cultural sensitivity and adaptation in family-based prevention interventions. *Prevention Science*, *3*(3), 241–246.

Lambson, T., Yarnell, V., & Pfannenstiel, J. (2006). *BIA Baby Face program evaluation study: 2005 report.* Overland Park, KS: Research and Training Associates, Inc.

le Roux, I. M., le Roux, K., Comulada, W. S., Greco, E. M., Desmond, K. A., Mbewu, N., & Rotheram-Borus, M. J. (2010). Home visits by neighborhood mentor mothers provide timely recovery from childhood malnutrition in South Africa: Results from a randomized controlled trial. *Nutrition Journal*, *9*(56).

le Roux, I. M., le Roux, K., Mbeutu, K., Comulada, W. S., Desmond, K. A., & Rotheram-Borus, M. (2011). A randomized controlled trial of home visits by neighborhood mentor mothers to improve children's nutrition in South Africa. *Vulnerable Children & Youth Studies*, *6*(2), 91–102.

le Roux, I. M., Tomlinson, M., Harwood, J. M., O'Connor, M. J., Worthman, C. M., Mbewu, N., Stewart, J., Hartley, M., Swendeman, D., Comulada, W. S., Weiss, R. E., & Rotheram-Borus, M. J. (2013). Outcomes of home visits for pregnant mothers and their infants in South Africa: A cluster randomized controlled trial. *AIDS*, 27(9), 1461–1471.

le Roux, I. M., Rotheram-Borus, M., Stein, J., & Tomlinson, M. (2014). The impact of paraprofessional home visitors on infants' growth and health at 18 months. *Vulnerable Children and Youth Studies*, *9*(4), 291–304.

Levin, M., Moss, M., Swartz, J., Khan, S., & Tarr, H. (1997). *National evaluation of the Even Start Family Literacy program: Report on Even Start projects for Indian tribes and tribal organizations.* Bethesda, MD: Abt Associates and Fu Associates.

McCalman, J., Searles, A., Bainbridge, R., Ham, R., Mein, J., Neville, J., Campbell, S., & Tsey, K. (2015). Empowering families by engaging and relating Murri way: A grounded theory study of the implementation of the Cape York Baby Basket program. *BMC Pregnancy & Childbirth*, *15*(1), 1.

McCalman, J., Searles, A., Edmunds, K., Jongens, C., Wargent, R., Bainbridge, R., Ling, R., Tsey, K., & Doran, C. (2014). *Evaluating the Baby Basket program in North Queensland: As delivered by Apunipima Cape York Health Council, 2009 to 2013, qualitative and quantitative evaluation.* Victoria, Australia: Lowitja Institute.

McLaren, L. (1988). Fostering mother-child relationships. *Child Welfare*, *67*(4), 353–365.

Munns, A., Toye, C., Hegney, D., Kickett, M., Marriott, R., & Walker, R. (2016). The emerging role of the urban-based Aboriginal peer support worker: A Western Australian study. *Collegian*, *23*(4), 355–361.

Munns, A., Toye, C., Hegney, D., Kickett, M., Marriott, R., & Walker, R. (2017). Peer-led Aboriginal parent support: Program development for vulnerable populations with participatory action research. *Contemporary Nurse*, *53*(5), 558–575.

Munns, A., Toye, C., Hegney, D., Kickett, M., Marriott, R., & Walker, R. (2018). Aboriginal parent support: A partnership approach. *Journal of Clinical Nursing*, *27*(3-4), e437–e450.

Munns, A., & Walker, R. (2018). The relevance of Aboriginal peer-led parent support: Strengthening the child environment in remote areas. *Comprehensive Child and Adolescent Nursing*, *41*(3), 199–212.

Nevada State Department of Human Resources, Early Childhood Services. (1997). *HAPPY Rural Outreach Project. Final report*. Reno, NV: Author.

Nguyen, H., Zarnowiecki, D., Segal, L., Gent, D., Silver, B., & Boffa, J. (2018). Feasibility of implementing infant home visiting in a Central Australian Aboriginal community. *Prevention Science*, *19*(7), 966–976.

O'Donnell, C. L. (2008). Defining, conceptualizing, and measuring fidelity of implementation and its relationship to outcomes in K–12 curriculum intervention research. *Review of Educational Research*, *78*(1), 33–84.

Olds, D., Kitzman, H., Hanks, C., Cole, R., Anson, E., Sidora-Arcoleo, K., Luckey, D. W., Henderson, Jr.,, C. R., Holmberg, J., Tutt, R. A., Stevenson, A. J., & Bondy, J. (2007). Effects of nurse home visiting on maternal and child functioning: Age 9 follow-up of a randomized trial. *Pediatrics*, *120,* e832–e845.

Olds, D. L., Robinson, J., Pettitt, L., Luckey, D. W., Holmberg, J., Ng, R. K., Isacks, K., Sheff, K., & Henderson, Jr., C. R. (2004). Effects of home visits by para-professionals and by nurses: Age 4 follow-up results of a randomized trial. *Pediatrics*, *114*(6), 1560–1568.

Oxford, M., Booth-LaForce, C., Echo-Hawk, A., Lallemand, O., Parrish, L., Widner, M., Petras, A., . . . the CATCH Project Team. (2018). *Promoting First Relationships®: Implementing a home visiting research program in two tribal communities*. Unpublished manuscript submitted to HomVEE.

Pfannenstiel, J. (2015). *Evaluation of the i3 validation of improving education outcomes for American Indian children.* Unpublished manuscript.

Pfannenstiel, J., & Lente-Jojola, D. (2011). The Family and Child Education (FACE) Program and school readiness: A structural model approach in an American Indian reservation context. *Journal of American Indian Education*, *50*(2), 84–96.

Pfannenstiel, J., Yarnell, V., & Seltzer, D. (2006). *Family and Child Education Program (FACE): Impact study report.* Overland Park, KS: Research & Training Associates, Inc.

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. *Journal of Perinatal Education*, *11*(2), 23–32.

Prinz, R. J., Sanders, M. R., Shapiro, C. J., Whitaker, D. J., & Lutzker, J. R. (2009). Population-based prevention of child maltreatment: The U.S. Triple P System population trial. *Prevention Science*, *10,* 1–12.

Rotheram-Borus, M., Tomlinson, M., le Roux, I. M., Harwood, J. M., Comulada, S., O'Connor, M. J., . . . Worthman, C. M. (2014). A cluster randomised controlled effectiveness trial evaluating perinatal home visiting among South African mothers/infants. *PLOS ONE 9*(1): e105934.

Runciman, C. (2016). Implementing the nurse-family partnership with Aboriginal and Torres Strait Islander clients. *International Journal of Birth & Parent Education, 3*(2), 37–41.

Sawyer, M. G., Frost, L., Bowering, K., & Lynch, J. (2013). Effectiveness of nurse home-visiting for disadvantaged families: Results of a natural experiment. *BMJ Open, 3*(4), e002720. doi:10.1136/bmjopen-2013-002720

Sawyer, M. G., Pfeiffer, S., Sawyer, A., Bowering, K., Jeffs, D., & Lynch, J. (2014). Effectiveness of nurse home visiting for families in rural South Australia. *Journal of Paediatrics and Child Health*, *50*(12), 1013–1022.

Sweet, M., & Appelbaum, M. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development*, *75,* 1435–1456.

Tomayko, E. J., Prince, R. J., Cronin, K. A., & Adams, A. K. (2016). The Healthy Children, Strong Families intervention promotes improvements in nutrition, activity and body weight in American Indian families with young children. *Public Health Nutrition*, *19*(15), 2850–2859.

Tribal Evaluation Workgroup. (2013). *A roadmap for collaborative and effective evaluation in tribal communities.* Washington, DC: Children's Bureau.

Walker, N., Johnston, V., Glover, M., Bullen, C., Trenholme, A., Chang, A., Morris, P., Segan, C., Brown, N., Fenton, D., Hawthorne, E., Borland, R., Parag, V., Blaramberg, T., Westphal, D., & Thomas, D. (2014). Effect of a family-centered, secondhand smoke intervention to reduce respiratory illness in indigenous infants in Australia and New Zealand: a randomized controlled trial. *Nicotine & Tobacco Research*, *17*(1), 48-57.

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. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*(6), 591–601.

Widdup, J., Comino, E. J., Webster, V., & Knight, J. (2012). Universal for whom? Evaluating an urban Aboriginal population's access to a mainstream universal health home visiting program. *Australian Health Review*, *36*(1), 27–33.

Yarnell, V., Lambson, T., & Pfannenstiel, J. C. (2008). *BIE Family and Child Education Program.* Overland Park, KS: Research & Training Associates, Inc.

Zarnowiecki, D., Nguyen, H., Hampton, C., Boffa, J., & Segal, L. (2018). The Australian Nurse-Family Partnership Program for Aboriginal mothers and babies: Describing client complexity and implications for program delivery. *Midwifery, 65,* 72–81.

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