Home Visiting: Discovering what works for increasing referrals

Thornburg Early Childhood Education Grant 2016-2017 Report



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Introduction

The purpose of this work was to identify barriers providers may experience with regard to referring patients to home visiting (HV) programs and to determine potential intervention strategies that could be used to increase provider referrals, initially in Bernalillo County.

Research Background

Children born to economically disadvantaged families are more at risk for pre-term birth and low birth weight.¹⁻³ They are more exposed to poor parenting practices, negative mother-infant relationships, child maltreatment, and cognitive difficulties.⁴⁻⁹ They also have lower economic success as adults.¹⁰ Furthermore, they are more likely to have adverse childhood experiences (e.g. child abuse; housing instability) which in turn are risk factors for poor health behaviors and various chronic diseases.¹¹⁻¹² Other negative outcomes linked to adverse childhood experiences are illicit drug use, suicide, and early death in adulthood.^{11,13-15} Also, families with socioeconomic disadvantage often have non-married couple structures (e.g. single mother, skipped generation, etc.), which are then associated with having worse child outcomes related to behaviors, healthcare utilization, schooling, and cognitive performance.¹⁶⁻¹⁸

HV has been shown to mitigate the poor outcomes associated with socioeconomic disadvantage. 19-24 According to the Home Visiting Evidence of Effectiveness (HomVEE) Review team, there are currently 20 programs that meet the criteria for being evidence-based early childhood HV programs. Two program models (Healthy Families American and Nurse Family Partnership (NFP)) showed favorable impacts in child health; maternal health; school readiness and child development; reduction in child maltreatment; positive parenting practices; and facilitating family economic self-sufficiency. Reductions in juvenile delinquency, family violence, and crime were also seen in these two programs as secondary outcomes. The other programs had varying levels of effectiveness in the mentioned domains and in aiding linkages and referrals to other community-based health or social services. Home visits during the prenatal period were shown to significantly increase prenatal care utilization. In addition, a higher number of prenatal home visits were associated with reduced adverse pregnancy outcomes in high-risk, first-time mothers. Children who received prenatal and infancy home visits have better intellectual functioning, fewer behavioral problems, and decreased preventable causemortality. Significant, long-term effects were pronounced in high-risk populations, such as low-income mothers and those who have low psychological resources.

Experience in Bernalillo County

According to the New Mexico Department of Health's Indicator-Based Information System (NM-IBIS), in 2014, 31% of births in NM (N=7,967) took place in Bernalillo County. Of these births, 9.0% were low or very low birth weight infants, 34.1% received no prenatal care in the first trimester, and the birth rate among teens ages 15-19 was 25.7 per 1,000 people. In 2013, 27.1% of children under age 18 in Bernalillo County were living in poverty, and in 2014, the child abuse and neglect rate in the county was 15.5 per 1,000 people. Bernalillo County has nine HV programs, each with their own eligibility criteria. However, not all of the programs are being used to full capacity and some have been unsuccessful in retaining participants until program completion.

Two HV programs require participants to be first-time parents. Catholic Health Initiative's St. Joseph's Children Home Visiting Program (CHI St. Joseph's Children) works with both first-time mothers and fathers, starts visiting prenatally or when newborns are under two months of age, and continues visits until the children turn three. The NFP at UNM's Center for Development and Disability (CDD), which has income-based requirements, works with first-time mothers. It requires enrollment before the 28th week of pregnancy and nurses may continue visits until children are two years of age.

The other HV programs do not require first-time parenthood and do not have income requirements. UNM Hospital's Young Children's Health Center visits families with children from the prenatal period until two-and-a-half years of age. Southwest Pueblo Consultants specializes in working with parenting teenagers, though they serve other families as well, and they visit prenatally until the child is three years old. Peanut Butter & Jelly Therapeutic Family Services (PB & J) and the Parents as Teachers (PAT) Program of the UNM CDD can also start during the prenatal period, although not required, and visit families until the child is five. The Native American Professional Parent Resources (NAPPR) Tribal HV Program starts prenatally and visits until the child is five, but the parents must be Native American. Some of these programs also engage families outside Bernalillo County (for example, CHI St. Joseph's Children also serves Sandoval and Valencia Counties; PAT also serves Valencia County).

There are also three Early Head Start (EHS) programs in Bernalillo County that provide home-based services from the prenatal period until age three. One is provided by NAPPR. Unlike its tribal HV program that serves Native American families, NAPPR's EHS program is open to all eligible parents. Youth Development, Inc. EHS and City of Albuquerque's La Madrugada EHS programs provide both home-based and center-based services. All three EHS programs have income-based requirements.

In 2015, the PEW Charitable Trusts conducted research with HV participants in NM that uncovered important information about barriers and facilitators to program engagement by the participants.³² One such area was how and where they became aware of HV programs. Focus group participants stated that they preferred direct interactions promoting HV programs, not brochures or flyers. They also said that the doctor's office or clinic was the best place to reach them. Although there are a large number of families that could benefit from HV programs, the majority of them do not participate. What remains unanswered is how to increase participation in HV programs and to what extent healthcare provider referrals could influence participation.

Prior research on increasing provider referrals

Current national and international literature lacks specific research on whether provider referrals significantly influence patient behavior in using HV programs. Because of the lack of research evidence in this area, we looked at research related to the influence of provider referrals in other areas. Some studies show that patients most often rely on providers for guidance and information when deciding to participate in community-based programs and services, such as a weight management clinic or the Head Start program.³³⁻³⁷ Also, several

studies have assessed the barriers and facilitators of provider referrals to community-based programs or services, which may be useful in informing the development of strategies to increase provider referrals to HV programs in Bernalillo County.

Barriers to provider referrals to community-based programs/services identified in the research

literature: Providers who do not refer to community-based programs often do not know that these services are available and how they function. Some studies also found that the providers' personal beliefs and experiences, such as the perception that community programs are not locally relevant or appropriate for their patients, influence their decisions to refer. Furthermore, providers limit referrals when cultural perceptions or stigma are linked to certain services (e.g. palliative care).

Facilitators to provider referrals to community-based programs/services identified in the research

literature: Providers who have experienced referring and collaborating with community-based services tend to refer to these services more.^{38-39,43} Hence, education on available community services should be included while in residency training and after training.^{39, 43} Interventions such as placing reminders on patient charts and having structured training sessions led to increasing trends of provider behavior change resulting in more patients being referred to community services.⁴⁴⁻⁴⁵ Other methods of provider education were "lunch and learn" meetings, interdisciplinary discussions, or continuing education opportunities.^{39,46-47}

The research literature also relayed systems-level changes to the referral system's structure and processes that can help facilitate provider referrals. Revising referral forms for easier use and having all the information needed by providers in one resource (e.g. binder) are thought to be helpful.^{38,46} Having an advocate or provider from the community-based service physically present in the medical facility could facilitate seamless transitions between services.^{40,42,43,48} Providers also emphasized the need for periodic follow-up or post-referral communication from the community-based service (a feedback loop).^{38,40,46} And lastly, it is important to follow a model that can fully integrate local community resources and services into the healthcare system.^{45,47,49} Having a health team mindset does not only help assure that interventions from different services will complement each other, but it can also promote stronger partnerships across disciplines and organizations.⁴⁹



Study significance and contribution

HV programs have benefits at multiple levels. First, HV programs can better the lives of children by improving parenting skills and access to resources for new mothers. This also means that developmental issues can be identified and children referred for services at an earlier age, and improved parenting skills can reduce the likelihood of child maltreatment. Second, HV programs can benefit the mothers of young children by providing support, guidance, information, access to resources, and connections to necessary services beginning during the early stages of pregnancy, and continuing until the child is two to five years old. HV programs also benefit the larger community and society by leading to reduced healthcare costs, reduced need for remedial education, and increased family self-sufficiency.

By increasing referrals to HV programs at the provider level, more families will be aware of the programs and the opportunity to participate in them. This study aims 1) to ascertain barriers and facilitators related to provider referrals to HV programs in Bernalillo County, and 2) to develop strategies to encourage providers in Bernalillo County to refer to HV programs.

Methods

The University of New Mexico Prevention Research Center (UNM PRC) research team collected background HV system and program information to provide a better understanding of the home visiting programs, and how they functioned, and to develop the interview guide for use with providers. This consisted of unstructured interviews at the beginning of the data collection phase of the research study with members of the HV community in Bernalillo County who are trained in prevention and promote HV as a strategy to increase positive outcomes for children and families. These systems-focused HV community members provided names of HV program managers and a preliminary list of providers (e.g., pediatricians, OB/GYNs, family practice physicians and nurse midwives) recommended for inclusion in the study as well as background information that informed the interview guides and interviews. The research team also contacted program managers from each HV program for interviews. Interviews were scheduled with all program managers, but one was ultimately not able to keep the interview appointment. All program managers were also asked if the research team could interview home visitors from their programs as well. Five of the nine HV programs provided names of home visitors willing to be interviewed about their programs.

Study Population

Providers in the research study included a purposeful sample of physicians, nurse midwives, and nurse practitioners working with pregnant women, infants, and young children. The UNM PRC research team recruited providers for interviews through email and telephone calls using a recruitment script, and through snowball sampling during the interview process.

Instruments

The UNM PRC research team developed semi-structured interview guides for use with HV program managers and home visitors. HV program manager and home visitor interviews provided background information about the structure, programming, and referral and recruitment processes of the HV programs in Bernalillo County.

A semi-structured interview guide was developed for use with providers. Provider interviews included provider demographics, (e.g., clinical specialty, practice affiliation, gender, number of years practicing), and questions about familiarity with HV, both as a concept and with specific programs in Bernalillo County. The interview guide also engendered discussion of provider experiences with referrals to HV programs (e.g., if they referred, what their referral process was, and whether they received feedback from HV programs regarding their referrals). Additional questions focused on whom providers believed would benefit from HV programs, and their perceptions of why providers do not refer. The provider interview guide concluded by asking for suggestions of systemic changes that could increase provider referrals.

The research team obtained informed consent prior to each provider interview. The interviews were approved by the UNM Human Research Protections Office.

Data Analysis

Two research team members reviewed HV program manager and home visitor interviews and identified common themes, barriers and suggestions for intervention strategies related to provider referrals.

Provider interviews were recorded, transcribed and analyzed using NVivo data analysis software. The research team developed a coding tree using inductive (i.e., emerging from the data) and deductive (i.e., a priori) themes. Two members of the research team separately coded provider interview data and resolved any coding discrepancies, with final coding decisions made by the Principal Investigator.

Results

Between September 2016 and June 2017, the UNM PRC HV research team interviewed 4 members of the HV community in Bernalillo County that focus on broader, systems-level strategies, including HV, to improve early childhood outcomes, 8 HV program managers, 11 home visitors, and 17 healthcare providers in Bernalillo County. Initially an interview conducted with staff from a pregnancy support program located in an area hospital was conceptualized as a provider interview. However, after completing the interview, the research team determined the two Community Health Worker interviewees provided information more aligned with HV program manager interviews. Their interview was therefore grouped with program manager interviews for analysis (see Table 1).

Table 1. Interview Subjects

Type of Person Interviewed	Definition	Number Interviewed
System-focused HV community members	Members of the HV community knowledgeable about HV programs and the referral system in Bernalillo County	4
HV program managers	Managers or coordinators of the nine HV programs in Bernalillo County	8
Community Health Workers (CHWs)	CHWs that work in close collaboration with HV programs and facilitate referrals to HV programs	2
Home visitors	Home visitors working in any of the nine HV programs in Bernalillo County	9
Healthcare providers	Physicians, nurse practitioners, or nurse midwives in Bernalillo County with training in any of the following specialties: family medicine, midwifery, obstetrics/gynecology, pediatrics, and preventive medicine	17

The four members of the HV community with prevention training and a broader, systems-level focus represented a range of experience with early childhood development and HV in Bernalillo County. In addition to other professional activities associated with improving outcomes for children and families through prevention and systems change strategies, they were all active participants in the Bernalillo County Home Visiting Work Group (BCHVWG), and have provided leadership in its development and structure. The research team also attempted to interview HV staff from within the Children Youth and Families Department (CYFD) to provide additional context to the overall HV system, but was ultimately unsuccessful.

Table 2. HV program capacity and status

Program Name	Enrollment Capacity	Status of Enrollment at Interview
Native American Professional Parent Resources (NAPPR)	60	Full capacity
Nurse Family Partnership (NFP)	125	90% capacity
Parents as Teachers (PAT)	80 (in Bernalillo County)	126
Peanut Butter & Jelly (PB & J)	103	77 — contractually required to maintain at least 75% capacity (77)
Southwest Pueblo Consultants and Counseling Services (SWPCC)	30	37
CHI St. Joseph's Children	505	445
Young Children's Health Center (YCHC)	53	70
Youth Development, Inc. (YDI) Early Head Start	36	Funding requires enrollment plus 20% resulting in 1-2 month waiting list
City of Albuquerque's La Madrugada Early Head Start		Did not participate in study

Table 3. Frequency distribution of interviewed providers by type of provider, gender, and affiliation (n=17)

Gender	Number	Percentage
Female	12	70.59%
Male	5	29.41%
Type of Provider	Number	Percentage
Family practice physician	7	41.18%
Pediatrician	7	41.18%
Nurse midwife	2	11.76%
Obstetrician	1	5.88%
Affiliation	Number	Percentage
Community clinic	8	47.06%
University of New Mexico Health System	6	35.29%
Presbyterian Healthcare Services	1	5.88%
Private Practice	1	5.88%
Retired, previously in Lovelace and UNM systems	1	5.88%

The research team interviewed program managers from eight of nine HV programs located within Bernalillo County. At the time of the interview, programs were asked about their enrollment capacity and current enrollment status (see Table 2).

Home visitors usually had no HV experience prior to their positions in the programs in Bernalillo County. The least experienced person had been working for only 1 month. The most experienced had been in their position for 4 ½ years. The average time employed as a home visitor was just under 2 years. All home visitors expressed a great deal of satisfaction with their position, although all acknowledged it could also be very challenging.

Of the 17 providers interviewed, 12 were female and five were male. The response rate to interview requests was 52%. Seven were family practice physicians, seven were pediatricians, two were nurse midwives, and one was an obstetrician. Eight practiced in community clinics, seven practiced in the two main hospitals (UNM and Presbyterian), one worked in private practice and one was a retired pediatrician (see Table 3). The time in practice (post-residency for physicians) among providers interviewed ranged from 2 to 42 years.

Data from systems-focused HV community member, program manager, home visitor, and provider interviews identified several barriers as well as potential intervention strategies. There was substantial overlap in responses from the groups of interviewees, although providers had more specific suggestions for intervention strategies. A summary of the interview results, including barriers and facilitators, from each of the interview groups is discussed below.

Systems-focused Members of the HV Community

The interviews with the systems-focused HV community members provided helpful background information about the growth of HV in Bernalillo County since 2010, when Albuquerque Public Schools (APS), through the federal Safe Schools Healthy Student (SSHS) grant, conducted a HV capacity assessment to look at recruitment and retention within the county. Development of the BCHVWG was one outcome of the assessment, and has contributed to a more cohesive HV provider network with a strong emphasis on ongoing professional development for home visitors and other early childhood service providers. Other significant contributions of the BCHVWG include an improved referral process, increased awareness of HV and its benefits, and improved trust and stronger relationships among HV programs, early childhood service providers, and other BCHVWG participants.

The APS-SSHS grant also provided an opportunity for HV programs in Bernalillo County to collaboratively develop a common referral form and list of HV programs that were used by HV programs for organizational purposes, marketing, and relationship building. The BCHVWG continues to coordinate an informal HV referral process, originally organized under the APS-SSHS grant, using the referral form and updated HV program list. The informal referral process has been successfully used to match potential HV participants with appropriate HV services. Additionally, HV programs receiving referrals directly from providers have made concerted efforts to promote and assist with enrollment in other HV programs when referred clients do not meet their specific enrollment criteria. Systems-focused HV community member interviewees, as well as some HV program managers, promote use of the informal referral process through HV presentations to providers, clinics and medical students. However, the interviewees believed that many healthcare providers working with pregnant women, infants and young children may still be unaware of the common referral form and the collaborative efforts among HV programs and the BCHVWG to serve potential HV clients. They recommended ongoing provider education regarding the referral process and HV programs as a potential way to increase provider referrals.

Systems-focused HV community members also discussed the more direct role CYFD has taken in HV referrals. As part of their recently launched "Pull Together Campaign," aimed at improving health and social outcomes for New Mexico children, CYFD expanded their childcare resource and referral center to include HV resources

and referrals. The CYFD HV referral process did not initially include coordination with the BCHVWG, SHARE NM or the UNM Center for Development and Disabilities Information Network, which were existing collaborations that provided database and referral sources. More recently, the interviewees reported that CYFD is making efforts to work with these resources to improve their HV referral and resource component and overall coordination of efforts.

Systems-focused members of the HV community also provided background information regarding the multiple, but limited, funding streams that support HV services in Bernalillo County and across the state. CYFD supports many of the programs through distribution of federal funds. Other federal funds support services for tribal members (e.g., NAPPR). Private and state funding support other programs (e.g., CHI St. Joseph's Children, UNM's Young Children's Health Center). The New Mexico Home Visiting Collaborative, with funding from the LANL Foundation, mapped federal, state and privately funded HV slots as part of a statewide HV capacity assessment. The map is accessible on the UNM Center for Education Policy Research website (https://tinyurl.com/y8vk8hor). In their 2016 New Mexico Home Visiting Annual Outcomes Report, CYFD acknowledged the importance of these mapping efforts to better understand service gaps and the overall HV landscape in NM.

In 2017, CYFD collaborated with the New Mexico Legislative Finance Committee and the New Mexico Human Services Department to develop a report, *Results First*, ⁵² which examines the children's behavioral health system in New Mexico. The collaborating entities recognized the limited behavioral health funding available in New Mexico, and made investment recommendations for programs and practices based on a return on investment analysis. Along with other prevention and intervention strategies, the report promoted investment in evidenced-based HV as a way to reduce trauma-related behavioral health outcomes, and recognized the need for rigorous evaluation of non-evidenced-based programs to discern if they could become promising or evidence-based practices. While this discussion with systems-focused HV community members provided useful contextual information for the researchers related to the overall HV funding structure, systems change strategies in the area of program funding were outside the focus of the UNM PRC's HV research. However, the systems-focused HV community members believed that the *Results First* and other HV reports could be useful to the UNM PRC research team for promoting awareness of HV programs and their potential for preventing early childhood trauma.

Further discussion with systems-focused HV community members centered on perceived stigma of families referred to HV programs. Systems-focused members of the HV community acknowledged that, because healthcare providers in Bernalillo County do not currently participate in a universal referral system, families may perceive that a provider referral indicates a lack of confidence in their parenting competency. This can be a particular issue when being referred to a CYFD-funded HV program, since CYFD also investigates allegations of child abuse and neglect. The CYFD "Pull Together Campaign" is, in part, an effort by CYFD to educate the public about their efforts and available resources that contribute to positive early childhood development. The interviewees recommended that the UNM PRC also work to address these concerns through healthcare provider education and HV promotion.

And finally, the UNM PRC and the systems-focused HV community interviewees discussed access to data necessary for research outcome evaluation, primarily in the areas of healthcare provider use of the BCHVWG referral form and documentation of HV referral sources prior to and following intervention implementation. CYFD collects data from their funded HV programs (e.g., numbers served, breastfeeding initiation, pre- and post-developmental screening results, etc.), and publishes their findings in an annual outcomes report. Non-CYFD funded programs adhere to other data collection requirements. However, the interviewees recommended that the UNM PRC collaborate with CYFD and state and privately funded programs directly to access outcome data relevant to the research study, specifically related to provider referrals.

HV Program Managers

HV program managers identified a general lack of knowledge among providers about HV programs as one of the primary barriers to provider referrals. They described this broadly, including an overall lack of understanding of the structure and benefits of HV programs, how to determine who should be referred, and how the referral process works. There was also a sense that because providers do not have a good understanding of HV, they are unable to communicate its benefits to potential clients.

Program managers also acknowledged how the structure of managed care systems and time constraints placed on providers inhibit their ability to make referrals. As one program manager described it, providers are not able to spend time "social working."

Others felt that providers are not always educated about social determinants of health. This limits their ability to conceptualize how HV may be a factor in improved circumstances for the whole family through facilitating connections to community and social resources. Some felt that a lack of screening tools to assist providers in identifying families with significant social needs also contributes to lower numbers of referrals.

Several program managers suggested that providers might not want their patients to feel stigmatized by a referral to a HV program. They believed that providers might feel concerned about inadvertently conveying to clients that they are "bad parents," or that the purpose of the home visitor would be to scrutinize parenting abilities and family circumstances.

HV program managers had a variety of suggestions for how to increase provider referrals. These included addressing the lack of knowledge among providers about HV programs by meeting with providers to describe HV services and curricula, emphasizing home visitor training and workforce development, being present at clinics so providers can initiate a warm hand-off to program staff, and making a HV resource guide available to provider clinics.

Several suggestions were for systemic improvements. These included instituting a universal referral system, incorporating referrals into electronic medical records (EMR), enlisting all WIC clinics to make referrals, and revising the informal HV referral form to be more user-friendly. Additional suggestions included establishing trauma-informed care as part of provider practices, and developing a system of HV "champions" among medical providers that could promote HV to colleagues.

Home Visitors



Home visitors expressed similar barriers to provider referrals. They cited provider misperceptions or lack of knowledge about HV programs as a primary barrier, as well as an inability among providers to promote programs effectively. They said eligibility criteria is confusing and restrictive. Additionally, because providers and clinic staff change frequently, there is a constant need for more education about HV programs at clinical settings. Some home visitors indicated that even when sites seem interested in HV programs that does not translate into actual referrals.

Like program managers, home visitors had concerns about providers being too busy to either comprehensively assess client needs or make referrals. They also recognized that the association between HV and CYFD is a barrier and may cause concerns about stigmatizing families.

Home visitor suggestions for improving provider referrals were very similar to the HV program managers. Recommendations included meeting with providers to inform them about what programs entail, integrating themselves into provider clinics, and providing informational packets about HV for provision to every pregnant woman and new mother. They also recommended that referrals to HV programs become a common practice among providers so that it was "just what you do," and eliminating the link between HV programs and CYFD. They believed that developing HV "champions" among providers could lead to increased provider referrals.

Providers

In addition to questions about barriers and facilitators to HV referrals, provider interviews included questions about familiarity with HV programs as a concept, and with programs specific to Bernalillo County. Providers were also asked about provider perceptions of who should be referred to HV programs.

Familiarity with the concept of HV: Overall, healthcare providers reported being fairly knowledgeable about HV as a concept, but less sure about the particulars.

As one family practice physician stated:

I think as a concept, I'm familiar with it. I definitely got to go on some home visits during med school and residency. I think in terms of the practical like what options are available, practicing here in Albuquerque, I don't know very much.

Interviewees tended to describe HV as a nurse or other professionally trained individual working with pregnant women in their home setting to offer support throughout pregnancy, and then working postnatally to assist parents in understanding normal infant developmental milestones. Some indicated that case management could also be part of the services.

One pediatrician described it this way:

So I mean, my idea, I don't know if this is correct. But that like a professional that's kind of trained in childhood development and sometimes a nurse and sometimes maybe a social worker, would go into the home and teach parents or talk with them about normal childhood development. And parent-child interaction and how parents are kind of the first teachers of their children. That's my idea of what it is. And that they kind of build a relationship that lasts over time. And so with frequent visits, they can kind of get to know the family and help them with anything that kind of comes up with their children's health or development.

Some were familiar with HV being a valuable resource for all parents, while other responses suggested it was conceptualized as being beneficial mainly for high-risk, first time, or young parents.

One pediatrician said:

It doesn't work with enough kids. Last I knew, it was somewhere around five to ten percent of the newborns were visited. So, there should be more. It works to reinforce parents' best parenting practices I think. And I think it's a really good support particularly for young parents and for parents

raising children by themselves or single mothers primarily. I think often times, grandparents aren't as available as they might be and even if they were, that their children don't want to listen to them. So, having an outside adult who knows something about parenting is really important I think.

The only person who described their familiarity with the concept of HV as "not very" said their understanding of HV had recently changed.

This pediatrician stated:

My previous understanding, which has changed now, was that [HV] really is for families who are struggling or at-risk kids. But now I understand more that it really is for really anybody. You don't necessarily have to have risk factors to qualify or to benefit from home visiting.

"...I understand more that it really is for really anybody. You don't necessarily have to have risk factors to qualify or to benefit from home visiting."

Pediatrician

Familiarity with HV programs in Bernalillo County: When questioned about programs specifically offered in Bernalillo County, the program most familiar (mentioned in 12 interviews) was the Nurse Family Partnership (NFP), although one pediatrician referred to it as "[Program Manager's] program...," and another family practice physician realized he was familiar with it only after the interviewer described the services: "This is the Nurse Family Partnership? Okay I guess I do know about that."

More than half of providers interviewed were familiar with CHI St. Joseph's Children (10), but most were not as familiar with the other HV programs: Parents as Teachers (4), NAPPR Tribal Home Visiting (4), Peanut Butter & Jelly (3), Youth Development, Inc. (2), Young Children's Health Center (1), and City of Albuquerque's La Madrugada (1). No one was familiar with the newest HV program in Bernalillo County, Southwest Pueblo Consultants and Counseling Services (SWPCC), and one interviewee was not familiar with any of the programs.

Most provider interviewees who had received feedback from either participants or home visitors after making referrals said they had positive impressions of the programs in Bernalillo County.

One pediatrician reported:

I mean, I've heard positive things. I haven't heard really any negative comments at all. I have a couple of patients, I mean to be honest I don't have a ton of patients that are using HV. But the few patients that I do ... have had good experiences. I have one family that's with Parents as Teachers and another family that's with Nurse Family Partnership and they've always reported positive experiences. And being actually kind of bonded to the person that comes to their home.

Even though the overall understanding of each program's eligibility criteria was vague, interviewees indicated they were willing to refer to HV programs in Bernalillo County.

One midwife said:

And so we do have some [Native] patients who come through here that see us throughout their pregnancy. And for those patients, we would be fine to refer them [to the programs that see Native clients]. But we would do the same that we do with the other programs though, which is to invite them to our meeting and meet them and learn more about them.

Who should be referred: The majority of providers interviewed felt that HV should be available to every pregnant woman and family with a newborn in NM.

One pediatrician stated:

Everybody would benefit from the program. I think it's such an ideal way to provide education and training for the parents. To do developmental evaluations. To see or have somebody identify if the family has needs that are not being met or if they need assistance.

However, six of the interviewees stated that prioritizing whom to refer is necessary in New Mexico. One pediatrician said, "I think in a scarcely resourced scenario that we're in... I think that just like with any resource, you do have to do some level of triage."

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Pediatrician

Many providers identified specific population groups that could be prioritized and whom they felt should be offered HV based on their specific circumstances. Nine providers thought that families who are new to parenting in general or who are young parents should receive HV. One of the nurse midwives interviewed said, "I really think that especially first-time parents or parents where this is the first child they are parenting. Maybe they've had babies before but other family members have raised them or they've been put in the foster care system."



The majority of the providers stated that parents with medical issues, such as postpartum depression or substance abuse, should be referred to HV programs. Others were of the opinion that babies who are medically ill and/or are in the gray zone of their expected development should receive HV.

A family practice physician stated:

I often think about it more when I have a child in front of me and I have concerns about parenting or meeting developmental milestones. I think about oh, it would be nice to have somebody go and do an assessment on this child in the home.

"I often think about it more when I have a child in front of me and I have concerns about parenting or meeting developmental milestones."

Family Practice Physician

Nine providers believed that families of low socioeconomic status should be referred to HV programs, stating that poverty often comes with many other negative social factors, such as low educational attainment and exposure to violence. A pediatrician said, "[Babies] who are born under Medicaid would benefit. I mean, so we're looking at families who already have been screened as having a factor of poverty. That creates challenges in terms of the long-term well-being of their children."

However, four providers also mentioned that non-income-realted indicators should also be considered. One of these providers, a pediatrician, stated that, "A clinic in Rio Rancho or like Northesast Heights might still, they are still seeing families that are experienceing divorce or intimate partner violence. Or there are going to be other risks [aside from income]."

Barriers

The providers identified multiple barriers related to referring to HV programs. These included lack of knowledge, not having an internal referral process, time limitations, concerns about stigmatizing clients, lack of trust for the programs, concerns that funding for programs was insufficient, uncertainty about how to promote HV to potential clients, and not receiving feedback from programs when clients had been referred.

Lack of knowledge: All 17 providers mentioned lack of knowledge as a barrier to making referrals. They described lack of knowledge in a variety of ways. Four interviewees believed that many providers do not refer because they do not understand that the social environment of a patient is as important as their medical condition. One pediatrician stated, "You have to kind of convince people that the health of the whole family is our business. Not just the health of your particular patient." Others felt that providers might know about HV as a concept, but lack of knowledge about specifics of programs in Bernalillo County, such as eligibility criteria, inhibits referrals. A comment by one pediatrician exemplified this: "... there is just lack of knowledge about how the whole system works. And feeling that they've missed one deadline [for enrollment], the door is closed. When in fact, it may not be." A few stated that not knowing what home visitors actually do during visits made them uncomfortable with referring patients. Several providers discussed that having a HV program located in their own clinic has contributed to having little knowledge of HV models other than their own.

"You have to kind of convince people that the health of the whole family is our business. Not just the health of your particular patient."

Pediatrician

One pediatrician said:

It's hard to say that if we didn't have our own program, would I know more about other models? Probably, because I would want to know where I'm sending people. But, I know ours best and haven't needed to know too much else.

No internal referral process: The majority of interviewees (14) stated that not having an internal referral process at the medical facility was a barrier. A few providers said they refer as part of their practice, but did not know whether their colleagues in the facility did the same. One commonly stated issue was inadequate support staff to facilitate referrals. Another related theme was the absence of screening tools to assess social needs. One pediatrician responded, "I think [a barrier is] not having screening tools in place to identify families that we know are higher-risk and would benefit from home visitation." A few interviewees also highlighted the importance of having a standard process and regular reminders to prompt referrals.

A family practice physician stated:

I mean, we haven't put in place a system to remind us. And there's so many things to think about at every visit that unless it's like in front of you, sometimes you don't think about it unless there's a glaring issue.

However, another interviewee cautioned against having too many point-of-care reminders, implying that this may lead to reminder fatigue.



Time limitations: Ten interviewees said that provider time limitations are a significant barrier to making referrals. A family practice physician illustrated this by saying that some providers "... just rush through their 70 patients a day and don't have time." Another pediatrician said that "... if that's not already kind of part of your spiel or kind of your checkbox thing, then it gets forgotten about until you have a high-risk family." A family practice physician also explained, "...it'd be nice if we just knew at this visit at X number of weeks in every pregnant woman's pregnancy, we talk about... home visitation."

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Family Practice Physician

Feedback: Eight providers mentioned that not receiving feedback about the status of their referrals from HV programs contributed to not referring. A pediatrician that practices at a facility that has an internal HV program said, "When it's not, when it's outside of our home visitation program, I don't ever kind of know unless a family brings it up or I already know that they're in a program." The providers who referred frequently mentioned the lack of consistent feedback as detrimental.

One pediatrician saw it as a missed opportunity to provide better care:

I'd like to know from their perspective what the barriers to care are at home. And if there's anything that I can address in the office. I mean, we do a lot of preventive talking but if there are specific things that I can reinforce. If a home visitor has a concern, I'm in a good position to reinforce those concerns or to address those concerns.

Stigma: Nearly half of the providers perceived stigma as another barrier to provider referrals. Many were concerned that being referred to HV programs is highly stigmatizing to patients. They doubted their patients' willingness to participate and feared the referral's potential negative impact on the provider-patient relationship. One pediatrician described provider reluctance as: "Maybe feeling like it's a clinician based profiling or assumption about a family and that you might offend someone by making them feel like they're poorly parenting." A family medicine practitioner also explained that, for many families, being referred is "... a negative comment about their situation... So, I think there's that sense of defensiveness about that."

A nurse midwife said, "... it's a lovely, helpful, supportive thing but because it's cross-threaded with CYFD services, people are scared of it. And there's a lot of really justified distrust, I guess, of these systems." A pediatrician also said, "If there's anything that says CYFD on that paper, it's like no. I'm not going to do this. 'Cause it just seems like you know, invasive at that point if it's connected to CYFD."

"...it's a lovely, helpful, supportive thing but because it's cross-threaded with CYFD services, people are scared of it."

Nurse Midwife

Trust: Eight providers mentioned that not being able to trust HV programs could be a barrier to referring. They mentioned not always being able to trust the model used in HV curricula, what the programs do exactly, and what qualifies someone to be a home visitor. One pediatrician said that providers might hesitate to refer because of "... maybe not knowing enough about what a program does to be able to protect your relationship with your patient and send them off to somewhere that turns out... it wasn't a benefit to them." Another interviewee said that many recent prenatal patients seen in the clinic spoke a language other than English, hence she was concerned that "... if I were to refer them, would there be appropriate interpretation? I just don't know." While many providers stated they have heard good feedback about HV programs in Bernalillo County, a few reported hearing negative feedback from parents and colleagues. These providers stated that such feedback adversely affected their trust in these programs.

Funding: Six providers mentioned that the perception of insufficient funding or resources for HV programs is a barrier to making referrals.

One pediatrician said:

I think in the back of my mind, I always have this thought that okay, there's only certain people that will qualify and there's only a certain amount of spaces for home visiting. So unfortunately, that kind of dictates how I make my referrals.

A family practice physician felt that if the state had the resources for everyone to receive HV, it could make a significant impact on reducing the stigma attached to HV programs. "I mean, I think everybody should have the chance. That would be something that, if we had the resources, I think that could change the culture."

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Family Practice Physician

Promotional skills: Six providers believed they lacked skills to effectively promote HV programs, especially to certain persons or groups, and that limited their ability to refer. One pediatrician said that she has, "... the most difficulty fumbling around [with] the way that I present it" to teen parents, and so has not been consistently successful in persuading clients from that demographic to participate in HV programs.

A family practice physician stated that:

...often, how we do it is we just give them the pamphlet which I feel like I'm not really sure if that's the right way of doing it. And then, it's like up to the patient to do it and patients don't ever do it.

One of the pediatricians interviewed would like to see an "every parent of a newborn kind of spiel." Two providers, a nurse midwife and a family practice physician, emphasized that promotion of HV programs should use non-threatening language. The nurse midwife explained, "I think the language piece is really important. And so, I think that helping [the providers] learn how to talk about these services in positive, non-threatening ways is really key."

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Nurse Midwife

Recommendations

Providers recommended several ways to increase provider referrals to HV programs. These included: educating providers about HV programs; simplifying the referral process; standardizing the referral process; integrating home visitors into clinical settings; integrating referral prompts into EMRs or other charting systems; displaying visual messaging prompts to make referrals in clinics or offices; developing legislation and legislative champions to support HV programs; receiving follow-up from HV programs on referrals; and ensuring that home visitors received adequate training.

Education: All interviewees provided recommendations for increasing provider referrals through education (e.g., what the programs are, what do they do, what the eligibility criteria is, how to make a referral). The mechanisms for education included in-person and electronic.

In-person education spanned multiple venues. The most widely recommended (14) was through provider meetings, grand rounds and clinic/provider retreats.

A family practice physician said:

For the clinic system, I know we have the one place that would definitely get all the practitioners is usually there's a retreat, like an annual retreat. And all of the practitioners are there and even if it were 10 to 15 minutes where you just want to say this information and disseminate that amongst the clinics. That would be the one time to get it for our clinic system. I don't know if all clinic systems have that. But that would be the way to do it.

The second most recommended way of providing in-person education (11) was as part of medical school and residency training.

A pediatrician suggested:

I think residency training would be a good spot to present and kind of do it yearly. So they are there for three years so every year they're getting reminded. And then kind of reinforcing it in their continuity clinics where they practice general medicine. Or even like newborn nursery. Every resident does newborn nursery at least once in their three years. So, teaching about it like at a didactic session and then also reinforcing it in the clinical setting because then it will become part of their "this is what we do" type of mentality.

"So, teaching about it like at a didactic session and then also reinforcing it in the clinical setting because then it will become part of their 'this is what we do' type of mentality."

Pediatrician

Nearly half (7) thought professional conferences were also a practical way to disseminate information.

Several providers interviewed thought it was important to educate multiple types of providers, especially those in rural communities.

One pediatrician stated:

And I also think we need to offer this type of education not just to physicians and pediatricians but all practitioners who care for children, which is again an ever growing field in NM. Particularly outside of the metro area, primary care providers for kids often are not pediatricians. It's family doctors and it's nurse practitioners and it's physician's assistants.

Additionally, there were several recommendations for providing education in non-traditional settings.

One pediatrician stated:

But there's a whole host of other areas in the community where people connect. So, even the schools. I mean, sadly probably even the detention centers. You know, making sure we're covering all of our bases for finding families that would benefit from support. Obviously, I think the medical community is a very sensible first-line. But there's other ways to skin that cat.

In addition to educating providers on HV programs, there were also recommendations to provide a contextual understanding of the benefits of HV programs, and the impact of the social determinants of health and adverse childhood experiences on health outcomes, through resident and physician participation in home visits. One pediatrician said, "You almost have to get the doctors out in the homes to see what's going on there for the families to understand what it is that home visiting could do to improve the overall condition of the family system."



There were also suggestions for educating providers about HV programs electronically. These included through emails, professional newsletters and websites (6), and through electronic training opportunities such as Telehealth, WebX, Envision, and PedX (3).

However, there are limitations to this type of education, as a family practice physician noted:

I think one of the challenges in family medicine is that providers have very different places where they look to for information. There's not sort of one newsletter or website or something where everybody goes for information. It would be challenging to catch like a large percentage of family medicine providers with one or two simple advertising locations.

Several interviewees (4) recommended assisting providers with how to talk to potential HV recipients about the benefits of participation.

One pediatrician stated:

I think... so for me, I think what would be helpful is, what is the best way to promote it? Like what is the message that you want to get across? And how should we identify the people that go to the house? Are they, should we say child development specialists? Should we say community helper? I mean, what's the best phrase that gets across to people and that can kind of... So if there is some way I could get the message across in a more useful way, I think that would be helpful. So, a couple of talking points wouldn't hurt for us to have.

Another interviewee recommended developing provider champions to help educate other providers about HV programs:

I mean, you also need champions. I mean, I think certainly what I've learned from the stuff that I try to do is that if you get champions, it's easier. I would totally champion this and I know that our midwifery division would too.

Follow-up: The majority of interviewees (14) discussed a desire to know the outcome of their HV referrals. Several indicated that they did not need a great deal of feedback, but that it was important both for continuity of care, and in the event that there was a need for additional family support. One family practice physician said, "Well, I like the idea of the follow-up. I think that makes sense and once you have some positive experiences, then that makes you feel like you want to do more."

Simple referral process: Most interviewees (14) also felt that having a simple referral process was key to increasing provider referrals. They liked the idea of having one centralized form and one intake point so that they did not have to be fully familiar with every program or discern which program was appropriate for each client.

One nurse midwife stated:

I don't have five minutes really even to look into something for somebody. I really just need it to be simple and standardized and everyone can have it and here's how you make it happen. Do you know? Like that's the thing that needs to happen really.

"I really just need it to be simple and standardized and everyone can have it and here's how you make it happen."

Nurse Midwife

Standardization: Thirteen interviewees believed that provider referrals would increase if referrals to HV programs became a standardized practice within their medical setting. Three providers attributed their success in making HV referrals to having already standardized the practice.

One nurse midwife described it:

The other way that we've standardized it is that in every new OB chart, when we get a new OB, there are certain number of papers that go in there. And so, one of them is the new OB intake and it's the, you get your various billing sheets. And then, you get all your teaching materials and tucked in and with referral stuff. And in that is also the referral sheet for home visiting. And so that's put into every chart. And then, it's offered.

Several mentioned that the referral process was or could potentially be more successful if others in the clinic had roles contributing to implementation of standardized procedures.

One family practice physician stated:

Well, when we want to make a systems change, we often times don't change the provider. We change the intake or something like that. So, it might be something that the nurses would do. Nurses or medical assistants, as part of the first prenatal, here's your folder of information to turn to and here included in that is this referral if it's something that you're interested in or whatever. So, actually sometimes changing provider behavior is actually changing the support system for the provider.

Integration: The majority of providers (12) mentioned the benefit of having HV programs integrated into clinic settings as it made the referral process easier. They felt that if HV could be co-located in prenatal care facilities in the same way that case managers, social workers, and other types of providers sometimes are, then home visitors would become accessible partners of the patient's care team.

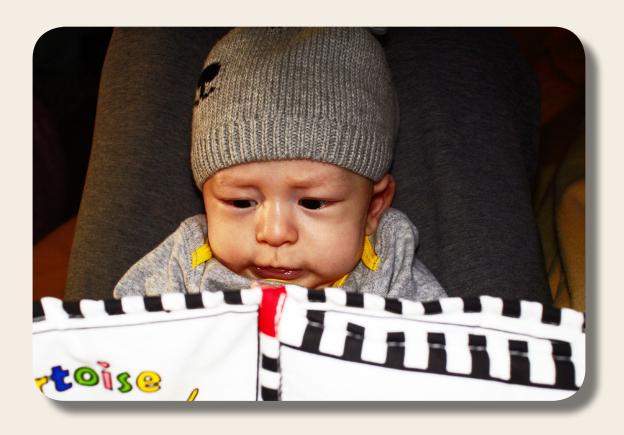
One pediatrician stated:

I think honestly the best way to promote referrals is having a very integrated primary care clinic, right? Where you do have integrated behavioral health and case management and if that community needs social work, then maybe kind of rounding out your services that way. There's just such a huge benefit to having them in our own house. You know? And then, like our patients running down the hall to see their home visitor and then coming back into their visit or just having that really nice link, direct link to services.

Integration was also seen as a way to reduce the burden of determining an appropriate fit for patients, and support continuity of care and communication about participating families.

EMR referral prompts: Approximately half of the interviewees (9) indicated that a routine prompt to discuss HV during a patient visit would help increase provider referrals. Some thought that an EMR prompt would be helpful, as one pediatrician said: "Yeah. I mean, it could be incorporated in say, into an EMR prompt. Or if it was just worked right into the fabric of a visit."

Visual messaging prompts: Several (6) interviewees suggested that non-electronic visual prompts reminding providers about HV programs might be an effective way to increase provider referrals. These prompts could be things like posters in provider offices, reminder cards from HV programs, etc. One family practice physician suggested, "Just like little laminated cards I think are the best with color stuff on them. And that just say, don't forget about visitation services available to you or something."



Legislation and legislative champions: Some interviewees (4) brought up the role of legislation and developing legislative champions as a way to expand HV. They viewed the federal Medicaid match as a way to expand HV programs, which could increase the ability to offer HV to every family.

One pediatrician stated:

I would like to think that as popular or as well-received as HV is in the legislature that there would be legislative initiatives or policy that could support that. I'm not sure that I could envision exactly how but is it, is the evidence base so substantial for home visiting that it is something that it should be compulsory. That every family is offered at some point. Can you get some legislative teeth in it so then it'd improve funding support for the programs too?

Another pediatrician suggested that "forming a league with a politician or two" could be a way to encourage more government investment in expanding HV in NM.

Home visitor training: Two providers discussed the importance of training home visitors. There was a concern that home visitors may be too focused on implementing their specific curriculum at the expense of addressing the family as a system and that they are not trained to work with the family as a whole.

One pediatrician stated:

What we currently have are home visiting models that are based on a curriculum that assumes it's a one-way transfer of information. I have information. You need the information. I'm going to give you the information. And not only that, I'm going to give it to you in a sequence that fits what our program says is replication needs for data purposes. Not because I understand what your crisis is. Not because I understand what your current needs are. But because I have to fulfill this goal. People don't see it that way. That's how they experience it.



Rural communities: Although the focus of these interviews was HV programs in Bernalillo County, more than half the providers also discussed implementation of HV programs outside of Bernalillo County and in rural areas of NM. Three discussed that mid-level practitioners and doctors practicing in non-traditional settings are more common in these communities, so should be the ones reached in order to increase referrals to rurally-based HV programs. In order to reach these providers, one pediatrician suggested utilizing the UNM Department of Emergency Medicine's Child Ready Program to disseminate information. She also brought up collaborating with Envision NM through their telehealth services. A few interviewees volunteered that they were already practicing in rural counties, including Valencia, Torrance, and Sandoval Counties.

While education disseminated through statewide pediatric and family practice physician associations would reach most of the providers, some providers also mentioned certain conferences or meetings that could reach many non-Bernalillo County providers. A family practice physician stated that the Indian Health Service (IHS) holds a winter meeting in Telluride, Colorado for providers in the Four Corners area. He also mentioned that Presbyterian Healthcare Services provides services in many rural communities. Another family practice physician said that the Amazing Newborn Conference is another broad venue for information dissemination. One pediatrician said, "there's usually maybe five to ten from outside of Bernalillo" who come to the NM Pediatric Society's Wylder Lecture Series.

One pediatrician's suggestion was potentially collaborating with the local community to ensure funding for home visitors:

In smaller communities where I think home visiting has a much bigger potential impact where they do have their practices, I think figuring out a way for mutually co-funding a position might have or might be a way of getting the kind of buy-in at the community level.

One pediatrician who practices in a clinic with an in-house HV program said that First Choice Community Healthcare (FCCH) would be "a great place to kind of scale and scope our programs to" because they "are located in communities where the needs are greater in terms of high stressor, kind of low-income neighborhoods." In addition to Bernalillo County, FCCH also has community health centers in Valencia and Torrance Counties.

Discussion

Most providers interviewed for this study had some degree of familiarity with the concept of HV. Their overall perception of HV was positive, and while most did not currently refer to HV programs, there was a general openness to incorporating it into their practices as long as the process was simple and easy to implement. Though many assumed that the intent of HV was to support young, first time, or parents identified as high-risk, most providers believed that it should be offered universally. This may indicate a readiness among Bernalillo County providers to participate in HV programs that could improve HV participation, and ultimately health and social outcomes among NM's infants and children.

Though providers discussed a broader range of recommendations than either HV program managers or home visitors, many barriers and recommendations were consistent across all type of interviews. All recognized that lack of knowledge of HV programs among providers, provider time constraints, provider inability to promote HV to potential clients, and provider fear of stigmatizing families were barriers to provider referrals. All had similar recommendations for addressing barriers. These included providing more education about HV to providers through personal connections, written and electronic information. They also included reducing stigma by making the referral process universal. Providing a more integrated, simplified and standardized referral system, including integration of home visitors into clinical settings and referral prompts into EMRs, where feasible, were other considerations. Finally, providers recommended developing champions among providers to improve the sustainability of the provider referral process.

Several findings were aligned with the research team's expectations, based on a review of the literature, about barriers to provider referrals, particularly lack of knowledge of HV programs, provider time constraints, and stigma associated with home visiting participation. The other barriers of not having an internal referral process, not receiving feedback from HV programs, lack of trust for home visiting programs, concerns about adequate funding to support increased HV referrals, and not having skills to promote HV programs to clients were new research findings.

Based on the results, the UNM PRC proposes to work with partners to initiate implementation of systems changes for providers in four areas:

Education: Adding HV information to UNM medical school and residency program curricula; presenting at grand rounds and provider meetings; and presenting at provider conferences in NM.

Messaging: Developing a tip sheet with talking points that uses de-stigmatizing language for providers to use when referring families; encouraging a culture of universal referral for pregnant women and new parents;

creating short video clips demonstrating HV encounters; examining the current referral form for opportunities to improve it; and, using a variety of channels to get messages out.

Engagement: Cultivating champions within practices who will encourage others to refer patients to HV; encouraging HV programs to work within clinics; and, collaborating with HV programs to determine the practicality of providing feedback to providers.

Technology: Determining the feasibility of including HV referrals in electronic medical records.

Limitations

This research does have some limitations. Due to the purposive sampling, the generalizability is limited. However, the purpose of the research was to better understand why providers were not referring patients to HV programs and to better understand how to overcome some of these barriers. These questions are appropriate for qualitative interviewing. Interviews were conducted until saturation was reached and it was thought that further interviews would not provide additional information on barriers or solutions.

Another potential limitation is the fact that not all providers who were invited to participate in the study responded. As a result, there may be response bias that could affect the results, although those effects are unknown.

Future Directions

Further research is needed to understand the feasibility and extent to which these recommendations can be implemented and how implementation of these recommendations will affect home visiting referrals.

Conclusion

Several barriers to provider referrals for HV and intervention strategies were identified that can be used to develop a comprehensive intervention to increase provider referrals to HV programs in Bernalillo County. Many of the strategies are systems level (e.g., incorporating the HV referral process into medical student and resident education). The UNM PRC, in collaboration with partners such as the BCHVWG, CYFD, the Early Childhood Accountability Partnership, and others who have invested in and contributed to the development of HV systems and infrastructure in the county, is uniquely positioned to engage with providers and initiate implementation of many of the suggested strategies.



References

- 1. **Gavin AR, Hill KG, Hawkins JD, Maas C.** The role of maternal early-life and later-life risk factors on offspring low birth weight: findings from a three-generational study. *J Adolesc Health*. 2011 Aug;49(2):166-171. doi: 10.1016/j.jadohealth.2010.11.246.
- 2. **Leonard SA, Crespi CM, Gee DC, Zhu Y, Whaley SE.** Prepregnancy risk factors for preterm birth and the role of maternal nativity in a low-income, Hispanic population. *Matern Child Health J.* 2015 Oct;19(10): 2295-2302. doi: 10.1007/s10995-015-1748-4.
- 3. **Giurgescu C, Zenk SN, Templin TN, Engeland CG, Kavanaugh K, Misra DP.** The impact of neighborhood conditions and psychological distress on preterm birth in African-American women. *Public Health Nurs.* 2017 May;34(3): 256-266. **doi: 10.1111/phn.12305.**
- 4. **Ronan KR, Canoy DF, Burke KJ.** Child maltreatment: Prevalence, risk, solutions, obstacles. *Australian Psychologist*. 2009 Sep;44(3): 195-213. doi: 10.1080/00050060903148560
- 5. **Nikulina V, Widom CS, Czaja S.** The Role of Childhood Neglect and Childhood Poverty in Predicting Mental Health, Academic Achievement and Crime in Adulthood. *Am J Community Psychol.* 2011 Dec;48(3-4): 309-321. doi: 10.1007/s10464-010-9385-y.
- 6. **McFadden KE, Tamis-Lemonda CS.** Maternal Responsiveness, Intrusiveness, and Negativity During Play with Infants: Contextual Associations and Infant Cognitive Status in a Low-Income Sample. *Infant Mental Health Journal.* 2012;34(1): 80-92.
- 7. **McManus BM, Poehlmann J.** Parent-child interaction, maternal depressive symptoms and preterm infant cognitive function. *Infant Behav Dev.* 2012 Jun;35(3): 489-498. **doi: 10.1016/j. nfbeh.2012.04.005.**
- 8. **Shonkoff JP, Fisher PA.** Rethinking evidence-based practice and two-generation programs to create the future of early childhood policy. *Dev Psychopathol.* 2013 Nov;25(4 0 2): 1635-1653. **doi:** 10.1017/S0954579413000813.
- 9. **Kim P, Capistrano CG, Erhart A, et al.** Socioeconomic disadvantage, neural responses to infant emotions, and emotional availability among first-time new mothers. *Behav Brain Res.* 2017 May 15;325(Pt B): 188-196. **doi: 10.1016/j.bbr.2017.02.001.**
- 10. **Heckman JJ.** Skill formation and the economics of investing in disadvantaged children. *Science*. 2006 Jun 30;312(5782): 1900-1902. **doi: 10.1126/science.1128898**
- 11. **Felitti VJ, Anda RF, Nordenberg D, et al.** Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *AmJPrev Med.* 1998;14(4): 245-258. http://www.theannainstitute.org/ACE%20folder%20for%20 website/4RCH.pdf
- 12. **Dube SR, Felitti VJ, Dong M, Giles WH, Anda RF.** The impact of adverse childhood experiences on health problems: evidence from four birth cohorts dating back to 1900. *Preventive Medicine*. 2003a;37: 268-277. http://www.theannainstitute.org/ACE%20folder%20for%20website/7IAHP.pdf
- 13. **Dube SR, Anda RF, Felitti VJ, Chapman DP, Williamson DF, Giles WH.** Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: findings from the Adverse Childhood Experiences Study. *JAMA*. 2001 Dec 26;286(24):3089-3096. https://jamanetwork.com/journals/jama/fullarticle/vol/286/pg/3089
- 14. **Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF.** Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics.* 2003b;111(3): 564-572. http://pediatrics.aappublications.org/content/111/3/564.long

- 15. **Björkenstam E, Burström B, Brännström L, Vinnerljung B, Björkenstam C, Pebley AR.** Cumulative exposure to childhood stressors and subsequent psychological distress. An analysis of US panel data. *Soc Sci Med.* 2015 Oct;142: 109-117. doi: 10.1016/j.socscimed.2015.08.006.
- 16. **Waldfogel J, Craigie TA, Brooks-Gunn J.** Fragile families and child wellbeing. *Future Child.* 2010 Fall;20(2): 87-112. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3074431/
- 17. **Krueger PM, Jutte DP, Franzini L, et al.** Family structure and multiple domains of child well-being in the United States: a cross-sectional study. *Popul Health Metr.* 2015 Feb 21;13: 6. **doi: 10.1186/s12963-015-0038-0.**
- 18. **Mikkonen HM, Salonen MK, Häkkinen A, et al.** The lifelong socioeconomic disadvantage of single-mother background the Helsinki Birth Cohort Study 1934-1944. *BMC Public Health.* 2016 Aug 18;16(1): 817. **doi: 10.1186/s12889-016-3485-z.**
- 19. **Wagner MM, Clayton SL.** The Parents as Teachers Program: Results from Two Demonstrations. *The Future of Children Home Visiting: Recent Program Evaluations.* 1999;9(1): 91-115.
- 20. **Olds D, Kitzman H, Cole R, et al.** Effects of nurse home-visiting on maternal life course and child development: age 6 follow-up results of a randomized trial. *Pediatrics*. 2004 Dec;114(6): 1550-1559. http://pediatrics.aappublications.org/content/114/6/1550.long
- 21. **Lee E, Mitchell-Herzfeld SD, Lowenfels AA, Greene R, Dorabawila V, DuMont KA.** Reducing Low Birth Weight Through Home Visitation: A Randomized Controlled Trial. *Am J Prev Med.* 2009 Feb;36(2): 154-160. **doi: 10.1016/j.amepre.2008.09.029.**
- de la Rosa IA, Perry J, Johnson V. Benefits of Increased Home-Visitation Services: Exploring a Case Management Model. *Fam Community Health*. 2009 Jan-Mar;32(1): 58-75. doi: 10.1097/01. FCH.0000342817.95390.7e.
- 23. **Minkovitz CS, O'Neill KM, Duggan AK.** Home Visiting: A Service Strategy to Reduce Poverty and Mitigate Its Consequences. *Acad Pediatr.* 2016 Apr;16(3 Suppl): S105-111. **doi: 10.1016/j.** acap.2016.01.005.
- 24. Sama-Miller E, Akers L, Mraz-Esposito A, et al. Home Visiting Evidence of Effectiveness Review:

 Executive Summary. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services; 2016. Available at: https://homvee.acf.hhs.gov/HomVEE_Executive_Summary_Summary_03162017.pdf. Accessed July 10, 2017.
- 25. **Issel LM, Forrestal SG, Slaughter J, Wiencrot A, Handler A.** A review of prenatal home-visiting effectiveness for improving birth outcomes. **J Obstet Gynecol Neonatal Nurs.** 2011 Mar-Apr;40(2): 157-165. **doi: 10.1111/j.1552-6909.2011.01219.x.**
- 26. **Goyal NK, Hall ES, Meinzen-Derr JK, et al.** Dosage effect of prenatal home visiting on pregnancy outcomes in at-risk, first-time mothers. *Pediatrics.* 2013 Nov;132 Suppl 2: S118-125. **doi: 10.1542/peds.2013-1021J.**
- 27. **Ichikawa K, Fujiwara T, Nakayama T.** Effectiveness of home visits in pregnancy as a public health measure to improve birth outcomes. *PLoS One.* 2015 Sep;10(9): e0137307. **doi: 10.1371/journal. pone.0137307.**
- 28. **Olds D, Kitzman H, Knudtson MD, Anson E, Smith JA, Cole R**. Effect of home visiting by nurses on maternal and child mortality. *JAMA Pediatr.* 2014a Sep;168(9): 800-806. **doi: 10.1001/jamapediatrics.2014.472**
- 29. **Olds DL, Holmberg JR, Donelan-McCall N, Luckey DW, Knudtson MD, Robinson J.** Effects of home visits by paraprofessionals and by nurses on children: follow-up of a randomized trial at ages 6 and 9 years. *JAMA Pediatr.* 2014b Feb;168(2): 114-121. **doi: 10.1001/jamapediatrics.2013.3817.**

- 30. Morris AS, Robinson LR, Hays-Grudo A, Claussen AH, Hartwig SA, Treat AE. Targeting Parenting in Early Childhood: A Public Health Approach to Improve Outcomes for Children Living in Poverty. *Child Dev.* 2017 Mar;88(2): 388-397. doi: 10.1111/cdev.12743
- 31. **New Mexico Department of Health [NM DOH].** *New Mexico's Indicator-Based Information System [NM-IBIS].* **https://ibis.health.state.nm.us.** Updated February 13, 2017. Accessed July 11, 2017.
- 32. **Bloomfield M, McInturff B, McCleskey N.** *New Mexico Home Visiting Research Summary.* The Pew Charitable Trusts: January 2015.
- 33. **Silverstein M, Mack C, Reavis N, Koepsell TD, Gross GS, Grossman DC.** Effect of a Clinic-Based Referral System to Head Start: A Randomized Controlled Trial. *JAMA*. 2004;292(8): 968-971.
- 34. **Ackermann RT, Deyo RA, LoGerfo JP.** Prompting Primary Providers to Increase Community Exercise Referrals for Older Adults: A Randomized Trial. *J American Geriatrics Society.* 2005;53: 283-289.
- 35. **Brook E, Cohen L, Hakendorf P, Wittert G, Thompson C.** Predictors of attendance at an obesity clinic and subsequent weight change. *BMC Health Serv Res.* 2014;14: 78.
- 36. **Reder S, Hedrick S, Guihan M, Miller S.** Barriers to Home and Community-Based Service Referrals: The Physician's Role. *Gerontology & Geriatrics Education*. 2009;30(1): 21-33.
- 37. **Woolford SJ, Sallinen BJ, Clark SJ, IglayReger HB, Gordon PM.** Association between Physician Recommendation for Adolescents to Join a Weight Loss Program and BMI Change. *Journal of Primary Care and Community Health.* 2012; 3(2): 83-87.
- 38. **Burn D, May S, Edwards L.** General Practitioners' Views About an Orthopaedic Clinical Assessment Service. *Physiother Res Int.* 2014;19: 176-185.
- 39. **Peng J, Chiu T, Hu W, Lin C, Chen C, Hung S.** What influences the willingness of community physicians to provide palliative care for patients with terminal cancer? Evidence from a nationwide survey. *Jpn J Clin Oncol.* 2013;43(3): 278-285.
- 40. **Le BH, Mileshkin L, Doan K, et al.** Acceptability of early integration of palliative care in patients with incurable lung cancer. *Journal of Palliative Medicine*. May 2014;17(5): 553-558. **doi:10.1089/jpm.2013.0473.**
- 41. Walshe C, Chew-Graham C, Todd C, Caress A. What influences referrals within community palliative care services? A qualitative case study. *Soc Sci Med.* Jul 2008: 67: 1: 137-146. doi: 10.1016/j. socscimed.2008.03.027. Epub 2008 Apr 21.
- 42. **Gucciardi E, Chan VW, Fortugno M, Khan S, Horodezny S, Swartzack SJ.** Primary Care Physician Referral Patterns to Diabetes Education Programs in Southern Ontario, Canada. *Canadian Journal of Diabetes*. 2011;35(3): 262-268.
- 43. **McColgan MD, Cruz M, McKee J, et al.** Results of a multifaceted Intimate Partner Violence training program for pediatric residents. *Child Abuse & Neglect.* 2010;34: 275-283.
- 44. **Chang HC, Zimmerman LH, Beck JH.** Impact of Chart Reminders on Smoking Cessation Practices of Pulmonary Physicians. *Am J Respir Crit Care Med.* 1995;152: 984-987.
- 45. **Ackermann RT, Deyo RA, LoGerfo JP.** Prompting Primary Providers to Increase Community Exercise Referrals for Older Adults: A Randomized Trial. *J American Geriatrics Society.* 2005;53: 283-289.
- 46. **Macy GB, Shearer DL, Hanshaw C.** Assessment of Barriers Associated with Provider Referrals to a Diabetes Education Program. *Kentucky Nurse.* July, August, September 2014: 5-6.
- 47. **Finello KM, Terteryan A, Riewerts RJ.** Home Visiting Programs: What the Primary Care Clinician Should Know. *Curr Probl Pediatr Adolesc Health Care*. 2016;46: 101-125.

- 48. Li SA, Jack SM, Gonzalez A, Duku E, MacMillan HL. Health care and social service professionals' perceptions of a home visit program for young, first-time mothers. *Health Promot Chronic Dis Prev Can.* 2015;35(8-9): 160-167. Available from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4911137/
- 49. **Council on Community Pediatrics.** The Role of Preschool Home-Visiting Programs in Improving Children's Developmental and Health Outcomes. *Pediatrics*. 2009;123: 598-603.
- 50. **New Mexico Home Visiting Collaborative.** *Statewide Home Visiting Capacity/New Mexico.* November 1, 2016. Available at: https://public.tableau.com/profile/center.for.education.policy.research.university. of.new.mexico#!/vizhome/StatewideHomeVisitingCapacity_0/Dashboard1. Accessed 10/5/17.
- 51. University of New Mexico Center for Education Policy Research and the Division of Community Behavioral Health. New Mexico Home Visiting Annual Outcomes Report, Fiscal Year 2016. Santa Fe: New Mexico Children Youth and Families Department; 2017:30. Accessed 10/5/17.
- 52. New Mexico Legislative Finance Committee, New Mexico Human Services Department, and New Mexico Children Youth and Families Department. Results First: Children's Behavioral Health. Santa Fe: n.p.; 2017. Accessed 10/5/17.

