Creating a National Home Visiting Research Network

abstract

Home visiting can play a key role in the early childhood system of services. For home visiting to achieve its potential, decision-makers must make informed choices regarding adoption, adaptation, coordination, scale-up, and sustainment. We need a coordinated, focused, and theory-based home visiting research infrastructure to inform such decisions.

The transdisciplinary Home Visiting Research Network (HVRN) was established in July 2012 with funding from the Health Resources and Services Administration. Its goal is to promote the translation of research findings into policy and practice. Its objectives are to (1) develop a national home visiting research agenda, (2) advance the use of innovative research methods; and (3) provide a research environment that is supportive of the professional development of emerging researchers interested in home visiting. A Management Team designs and directs activities to achieve these objectives through Work Teams. A Steering Committee of national leaders representing stakeholder groups oversees progress. HVRN’s Coordinating Center supports the Work Teams and HVRN’s Home visiting Applied Research Collaborative, a practice-based research network of home visiting programs. This article describes HVRN’s rationale, approach, and anticipated products. We use home visiting–primary care coordination as an illustration, noting potential roles for pediatric practices and pediatric researchers and research educators in HVRN activities.

HVRN creates the infrastructure for a rigorous program of research to inform policy and practice on home visiting as part of the system of services to improve family functioning, parenting, and child outcomes.

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ABBREVIATIONS
HARC—Home visiting Applied Research Collaborative
HVRN—Home Visiting Research Network
MIECHV—Maternal, Infant and Early Childhood Home Visiting Programs

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(Continued on last page)
Home visiting plays a crucial role in the early childhood system of services. Home visitors provide direct service and link families to needed health, education, and social services. They and other providers can, and should, facilitate and reinforce one another’s work.

Home-visiting scale-up and refinement call for a program of research to inform decision-making. Dissemination and implementation science can inform decisions on adoption and adaptation and promote achievement of fidelity and sustainment. The Home Visiting Research Network (HVRN) was established as part of Maternal, Infant and Early Childhood Home Visiting Programs (MIECHV) to promote such research. HVRN is funded as part of the MCH Research Program of the Maternal and Child Health Bureau, Health Resources and Services Administration (HRSA). MIECHV also supports several technical assistance projects aimed at states and tribal organizations. Its Technical Assistance Coordinating Center, for example, facilitates 2 communities of practice, 1 on centralized intake and the other on professional development.

This article has 3 objectives. First, it gives the rationale for a national home visiting research network. Second, it describes HVRN’s approach to building the infrastructure for a rigorous program of research. Third, it explains HVRN’s relevance for pediatrics.

**Rationale for a National Home Visiting Research Network**

The Home Visiting Research Base

The home visiting research base, although substantial,1 has gaps that limit its value for informing policy and practice. Informed decision-making requires an understanding of how innovations in home visiting are disseminated, how services are delivered, the reasons for unintended variation in service delivery, how the benefits of home visiting vary among family subgroups, and how models can be refined to broaden and strengthen impacts.

Fidelity moderates program impacts.2 Thus, information on fidelity is essential for interpreting the results of individual impact studies and for systematic reviews and meta-analyses to identify program features that moderate effect sizes. Reports of home visiting impacts are often silent on program characteristics, service delivery, fidelity, and threats to fidelity.3,4 For example, of the 25 studies in the Centers for Disease Control and Prevention Task Force systematic review of home visiting,5 only 3 compared actual services to service model standards.6-8 Sweet and Appelbaum’s meta-analysis9 could compare models only by broadly defined program attributes and could not assess study heterogeneity or the appropriateness of aggregating results across studies.10 Filene et al could not test many theoretically interesting and relevant program characteristics because too few studies reported on these.3

Circumstances Influencing the Home Visiting Research Base

Two features of home visiting’s evolution in the United States contribute to limitations in its research base. First, current home visiting models have their origins in 3 disciplines (health, early education, and family support), each with its own research traditions and venues for dissemination.11 Three approaches to home visiting became prominent in the United States in the 1960s: visits by public health nurses to promote child health in disadvantaged families; Head Start home visiting to promote school readiness in hard-to-reach families; and home-based family support to promote positive parenting and prevent child abuse in high-risk families. In all 3, the underlying premise is that intervening with parents at home to support and improve socialization, health, and education practices will promote children’s health and development. However, because programs arose in 3 disciplines, there have been 3 parallel but often separate paths in service-model development, research on impacts, and dissemination of models and research results.

Second, dissemination of home visiting models while the evidence base was still in formation forestalled trans-model research on core components. Strong endorsements by the US General Accounting Office12 and the US Advisory Board on Child Abuse and Neglect13 spurred investment in home visiting 2 decades ago. Developers of emerging models were urged and funded to disseminate nationally. Competition across models motivated model-specific research and research networks14 but hindered transmodel research. In 1999, The Future of Children’s issue on home visiting drew attention to the need for research to improve service fidelity and impacts; its editors recommended a cross-model research network of practitioners and researchers.15 The Packard Foundation funded such a network for several years, but its leaders could not sustain the effort. Thus, most home visiting research has focused on specific models rather than identifying core components and effective strategies for dissemination, implementation, and sustainment across models.

Opportunities to Strengthen Home Visiting Research

Advances in dissemination and implementation science and comparative effectiveness research can and should be applied to home visiting. These advances include conceptual frameworks,16-18 operationalization of framework components,19,20 approaches to match administrative data,21,22 and development of designs and analytic techniques to test multilevel factors for the dissemination, implementation, and sustainment of innovations.
Research is more likely to be translated into policy and practice if stakeholders collaborate in identifying priorities and in interpreting and disseminating results. Home-visiting stakeholder groups include funders; national, state, and local leaders in maternal and child health and early care and education; leadership and staff of home visiting programs and other community-based organizations; families; model developers; and home visiting researchers. Efforts to collaborate should build on existing resources, including the infrastructure of professional organizations and of MIECHV. Most implementation research requires multisite as well as multilevel designs. In health care, practice-based research networks are common. For example, within pediatrics alone, there are >70 such networks, several of them national in scope. The experience of these networks is a rich resource to guide development of a national, transmodel, home visiting practice-based research network.

In summary, a rigorous program of research is needed to advance the field of home visiting. Such a program should build on advances in implementation science, input from stakeholders, and the experience of practice-based research networks.

**APPROACH OF THE HOME VISITING RESEARCH NETWORK**

The Home Visiting Research Network (HVRN) was established in July 2012 to meet 3 objectives: (1) develop a national home visiting research agenda, (2) advance the use of innovative research methods to carry out this agenda, and (3) provide a research environment supportive of the professional development of emerging home visiting researchers. An overarching goal is to promote the translation of research into policy and practice.

HVRN aims to overcome the limitations of the home visiting research base by coordinating with other aspects of the MIECHV program, partnering with all stakeholders, and building on advances in dissemination and implementation science, comparative effectiveness research, and practice-based research networks.

**HVRN Research Framework**

HVRN’s research framework incorporates (1) a multilevel conceptual model of home visiting, (2) principles of implementation science, and (3) theories of behavior. Figure 1 shows the conceptual model. For a specific home visiting program site, influential organizations define the service model and implementation system by identifying available options and making decisions about which to adopt and whether to make adaptations. The service model is the formal statement of the intervention’s theory of change and the specification of intended outcomes, recipients, services and staff. The intended implementation system is the defined set of resources for “bringing the service model to life.” It includes staff development, clinical and administrative supports, and infrastructure to connect the program with other parts of the service system. Each aspect of the actual implementation system might mirror what is intended or might differ. The service model and the actual implementation system influence the characteristics of families and providers. Their characteristics influence how services are actually delivered. Service fidelity is the agreement between actual and intended services. Family outcomes are influenced by actual service delivery and families’ baseline characteristics.

Our overarching premise synthesizes key principles of implementation science. Influential organizations must work together to (1) define a clear, coherent service model and (2) ensure a strong implementation system that predisposes, enables, and reinforces...
participants to carry out their roles and to achieve each intended outcome. A service model is clear if each aspect is fully specified. Often, organizations fully specify the service model for some intended outcomes but not others. If services are to be tailored, the service model should specify how and why. A service model is coherent if each aspect “fits” with the others. Sometimes organizations enhance the service model to strengthen impacts for a particular outcome or subset of families. A service model is like a mobile; the pieces must be in balance. When adapting a service model, influential organizations must consider how this affects coherence.

A strong implementation system ensures that staff have the motivation, knowledge, and skills to carry out their roles; that they receive positive reinforcement to do so; and that the work environment enables them to perform expected behaviors. This applies to services for each intended outcome; an implementation system may be strong for some but not all outcomes. Theories of behavior can be used to test how service model and implementation system components influence participants’ behavior. Consider, for example, use of the theory of planned behavior to understand variation in home visitors’ screening for child developmental delay. This theory holds that a home visitor’s behavior is influenced by her intentions and that these, in turn, are influenced by her attitudes toward screening, her understanding of what the model requires, her perception of norms, and her perceived efficacy to screen in difficult situations. It is easy to see how the service model and implementation system would influence these factors. This is just 1 example of 1 theory applied to a single behavior. Home visiting research can and should apply a range of individual-, interpersonal-, and organizational-level theories to the spectrum of home visiting participant behaviors.

Home visiting outcomes can be traced back to actual services, which in turn can be traced back to individual- and organizational-level factors. This conceptual model bridges the gap from theory-driven science to policy and practice, thereby promoting the translation of research to action. The role of multilevel factors underscores the need for multisite, multilevel research.

**HVRN’s Organizational Structure**

Figure 2 illustrates HVRN’s organizational framework. The Steering Committee provides input for planning and monitoring progress. Members are national leaders representing home visiting stakeholder groups. The committee draws on expertise from staff at the Maternal and Child Health Bureau at HRSA; advisors representing components of the MIECHV program; and consultants with expertise in substantive issues and innovative methods. The 7-member Management Team designs and directs HVRN activities. Members are seasoned scientists with complementary research experience and expertise. HVRN’s Coordinating Center manages day-to-day operations and supports activities of its components.

HVRN incorporates member networks organized in 3 ways: by stakeholder group, such as state maternal and child health leaders; by research issue, such as family engagement; and by methodologic issue, such as measurement of home visitor competence. Membership is open to all who are interested. Members can participate as individuals or as representatives of organizations. They receive tailored announcements and access to relevant information based on group membership and interests.

Work Teams carry out activities to meet HVRN objectives. Membership is open to all who are interested. Members can collaborate as individuals or as representatives of organizations.

The Home visiting Applied Research Collaborative (HARC) provides the infrastructure for multisite studies to address research agenda priorities. Eligible home visiting program sites, directors of regional or local program networks, and home visiting researchers...
are welcome to join. HARC’s Executive Committee solicits and offers guidance on candidate research proposals and ensures that studies are carried out in accordance with policy. The committee designates a Project Team for each study. The Project Team refines study methods, secures funding, conducts the study, and disseminates results.

Establishing a National Home Visiting Research Agenda

HVRN’s first task has been to develop a national home visiting research agenda. Our approach has drawn from the methods of other agenda-setting groups.26–30 We elicited research priority nominations from nearly 1800 home visiting stakeholders through a Web-based survey in late 2012. We identified themes in these nominations and drafted the agenda to reflect these in the context of the current scale up of home visiting, the recognized need to strengthen and broaden the benefits of home visiting across outcomes and population subgroups,31 and growing interest in identifying the core components of effective service models32 and implementation systems.4

The draft agenda was presented at the 2013 Quality in Home Visiting Summit33 It was taken to final with input from public comment in mid-2013. Table 1 lists the agenda’s 10 research priorities. The full agenda is available on the HVRN Web site (www.hvrn.org).

Innovative Approaches to Home Visiting Research

HVRN advances the research agenda by (1) establishing HARC; (2) identifying, developing, and promoting the use of innovative research designs, measures, and analytic techniques; and (3) promoting data sharing.

HARC

The current era calls for a practice-based research network that cuts across home visiting models. Such a network can bridge the gap between research and practice by promoting appreciation of the value of practitioners’ views by researchers and the value of research by practitioners. One way to increase program engagement in research is to address questions pertinent to home visiting leaders and practitioners; this was part of the rationale for using stakeholder input in setting the research agenda.

HARC is carrying out 3 tasks in its start-up phase. The first is to establish rules of governance. The second is to recruit the founding group of program sites and members of the Executive Committee. At the time of this writing, leaders from 7 states serve as HARC champions in this task. The third task is to launch a small agenda-driven project to demonstrate the feasibility and utility of HARC research. Current HVRN funding from HRSA provides for such a study; for subsequent HARC studies, member sites will collaborate with HVRN to seek support from other public and private funders.

Innovative Research Methods

A subgroup of the Innovative Methods Team is conducting a structured review to assess the methods and elements of studies in the existing home visiting research base for each stage of research in Fig 3.34 Elements include (1) research designs, (2) measurement of constructs, (3) strategies for ensuring that providers have the necessary knowledge and skills to deliver the intervention (such as format, length, and burden), (4) data collection and analysis methods, (5) use of cost analysis, and (6) use of system science techniques such as network analysis. Unlike the structured reviews of home visiting research discussed earlier, this review focuses on the methods used in each study and its placement within the stages and phases of research. The review will serve as the foundation for HVRN activities to promote innovative methods. It will identify exemplars of such research and aspects of the research agenda for which the need for innovative methods is most pronounced.

Use of Administrative Data and Data Sharing

Administrative data are useful for assessing service coordination and outcomes and for constructing comparison groups. For example, birth records can be used to assess program success in birth spacing. Temporary Assistance for Needy Families (TANF) records can be used to assess family achievement of economic self-sufficiency, and medical assistance data can be used to assess child health. HVRN’s administrative data work team is surveying home visiting researchers to assess their knowledge and use of administrative data sources and barriers to use. The team is also consulting with MIECHV technical assistance providers to describe states’ experience using administrative data for home visiting monitoring and evaluation. It will synthesize this information in a manuscript on the state of the art of administrative data use in home visiting research and recommendations to promote use. The team will then act on these recommendations through written briefs, distance-learning presentations, and

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<th>Table 1: Home Visiting Research Priorities</th>
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<td>1. Strengthen and broaden home visiting effectiveness</td>
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<td>2. Identify core elements of home visiting</td>
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<td>3. Promote successful adoption of home visiting innovations</td>
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<td>4. Promote successful adaptation of home visiting innovations</td>
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<td>5. Promote fidelity in implementing home visiting innovations</td>
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<td>6. Build a stable, competent home visiting workforce</td>
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<td>7. Promote family engagement in home visiting</td>
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<td>8. Promote home visiting coordination with other services for families</td>
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<td>9. Promote the sustainment of effective home visiting</td>
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<td>10. Build home visiting research infrastructure</td>
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Advancing the Professional Development of Emerging Home Visiting Researchers

HVRN aims to advance the development of emerging researchers in 3 ways. First, it provides a supportive research environment through mentoring to involve early career investigators to advance their understanding of home visiting research priorities, innovative methods, and strategies for collaboration. Such mentoring is provided in coordination with the Pew National Summit on Quality in Home Visiting, which offers a forum to network with stakeholder groups across the disciplines of health, early education, and family support.35

HVRN is collaborating with partners in securing additional extramural support for 2 activities that complement this mentoring and networking. The first is to define the competencies needed to carry out the home visiting research agenda and identify existing training opportunities to achieve these competencies. The second is to develop online training and a summer institute to address identified training gaps.

RELEVANCE FOR PEDIATRICS

Home visiting research is relevant for pediatrics because pediatric and home visiting providers serve the same families and aim to achieve many of the same outcomes. Home visiting and pediatric services can and should be complementary.

Consider early childhood development. Both pediatric and home visiting providers aim to promote child development. Both sets of providers screen for developmental delay, refer for assessment of positive screens, and follow-up on referrals. Guidelines, protocols, and benchmarks for these activities have been put forth by national groups, such as the American Academy of Pediatrics,36,37 home visiting model developers,38–42 and HRSA.43,44

This creates opportunities for coordinated, synergistic care but also for counterproductive messages to families. A system of care in which pediatric and home visiting providers are aware and respectful of one another’s work promotes clarity and reinforces messages to families. In contrast, providers who are unaware of one another’s work run the risk of unintentionally duplicating services; worse yet, they might give families confusing or mixed messages about their children’s developmental status and the need for follow up.

The foregoing scenario, coordination of developmental screening activities, will not happen without higher-level action. Coordination requires a system-level service model that specifies which provider carries out which activities and when, how to share information, and how to reinforce one another’s messages to families, including recognizing and reconciling differences of opinion. Coordination also requires an implementation system that predisposes, reinforces, and enables providers to adhere to such a service model.

This scenario focused on developmental screening, but it is easy to see the importance of coordination in other areas. Examples include addressing parental behavioral health issues that adversely affect the quality of parenting, promoting positive parent-child interaction, helping families address basic social needs, and ensuring home safety.

The importance of coordinating home visiting and pediatric care is clear.45 Implementation science and theories of behavior provide the foundation for research to promote coordination. Innovative methods and data sharing across home visiting and pediatric care can facilitate such research.

Opportunities for Involvement in HVRN

National leaders in pediatrics play important roles in HVRN as Management Team and Steering Committee members, advisors, and consultants. Going forward, HVRN needs others with expertise in pediatric practice, policy, research and...
research education, and an interest in the intersection of home visiting with pediatrics to step forward.

The simplest way to become involved is to become a network member via HVRN’s Web site, www.hvrn.org. Another opportunity is Work Team membership. As noted earlier, teams promote research opportunities related to the home visiting research agenda, the use of innovative methods, the use of administrative data sets and data sharing, and the professional development of the next generation of home visiting researchers. These teams need the perspectives of pediatrics experts if their work is to be relevant to pediatrics. A third way to play a role is by joining HARC or proposing a study to be carried out in HARC sites.

REFERENCES


CONCLUSIONS

This is an exciting time to use research to strengthen home visiting and transform our early childhood system of care. HVRN promotes interdisciplinary research that brings together the expertise and perspectives of all parts of the early childhood services system: health, early education, and family support.


33. Duggan A. A research agenda and research network for home visiting. Invited Concurrent Session, Pew Home Visiting Summit; February 13, 2013; Washington, DC


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