



# The Role of Preschool Home-Visiting Programs in Improving Children's Developmental and Health Outcomes

Council on Community Pediatrics

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

## ABSTRACT

Child health and developmental outcomes depend to a large extent on the capabilities of families to provide a nurturing, safe environment for their infants and young children. Unfortunately, many families have insufficient knowledge about parenting skills and an inadequate support system of friends, extended family, or professionals to help with or advise them regarding child rearing. Home-visiting programs offer a mechanism for ensuring that at-risk families have social support, linkage with public and private community services, and ongoing health, developmental, and safety education. When these services are part of a system of high-quality well-child care linked or integrated with the pediatric medical home, they have the potential to mitigate health and developmental outcome disparities. This statement reviews the history of home visiting in the United States and reaffirms the support of the American Academy of Pediatrics for home-based parenting education and support. *Pediatrics* 2009;123:598–603

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### Key Words

child health, development, home visiting, preschool, education

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## INTRODUCTION AND HISTORY

Home visiting is not a single clearly defined methodology of providing service to children and families. The term “home visiting” is used differently in varied contexts. In this review, we limit our discussion to the use of preschool home-based parenting support to enhance developmental, health, and safety outcomes. Home visiting for parents is an early-intervention strategy in many industrialized nations outside of the United States. In many other countries, home health visiting is free, voluntary, and embedded in a comprehensive maternal and child health system. Although a causative link has not been demonstrated conclusively, countries with extensive home-visiting programs generally have lower infant mortality rates than does the United States, despite per capita health spending in the United States that far exceeds expenditures in other industrialized countries.<sup>1</sup>

Home visiting is deeply rooted in history, going back at least to Elizabethan times in England and endorsed as a strategy by Florence Nightingale in the 19th century.<sup>2,3</sup> Home visiting existed in the United States in the 1880s when public health nurses and social workers provided in-home education and health care to urban women and children. At the beginning of the 20th century, successful reductions in mortality from summer diarrhea in central New York City were demonstrated after using student nurses in the home to instruct mothers about hygiene and breastfeeding.<sup>4</sup> Denmark established home visiting in 1937 after a pilot program showed lower infant mortality rates associated with home visiting. France provides free prenatal care and home visits by midwives or nurses who educate families about smoking, nutrition, drug use, housing, and other health-related issues.<sup>5</sup> In some European countries, many traditional child health-promotion services of American pediatricians are provided by public health nurses, often within the home.<sup>6</sup>

In the last quarter of the 20th century, home visiting gained renewed attention as a strategy for prevention of child abuse and neglect, promotion of child development and parental effectiveness, and reduction of health disparities.<sup>7</sup> C. Henry Kempe, MD, called for a home visitor for every pregnant mother and preschool-aged child in his 1978 Abraham Jacobi Award address.<sup>8</sup> He suggested that integral to the provision of every child's right to comprehensive care is the assignment of a home health visitor who would work with the family until each child began school.<sup>9</sup> His call to action was reiterated by Cal Sia, MD, in the 1992 Jacobi Award address, in part on the basis of his experience with a pioneering initiative to take home visiting statewide as a tool for preventing child abuse and neglect in the

Hawaii Healthy Start effort.<sup>10</sup> Focusing on highly stressed families, this program has expanded and evolved into Healthy Families America and is one of the most rigorously studied of all the family-support initiatives in the United States.<sup>11</sup> Another pioneer in modern home visiting, David Olds, PhD, initiated the Nurse Home Visitation Program with families at risk in Elmira, New York, in 1978 and continues to study the effect of this intervention today. Within the education community, Parents as Teachers (PAT) has gained prominence as a program for promoting child development and school readiness after achieving promising results in Missouri.<sup>12</sup> In New Zealand, Scotland, and other countries, recent development of home-visiting efforts have replicated American models, thus indicating that the promise seen in this country with home visiting is envisioned beyond our shores.<sup>13,14</sup> Lisbeth Schorr, in her 1988 book *Within Our Reach: Breaking the Cycle of the Disadvantaged*, stated:

“[Home-visiting] programs that succeed in helping the children and families who live in the shadows are intensive and comprehensive, flexible, and staffed by professionals with the time and skills to establish solid relationships with their clients. Intensive medical care for fragile newborn or aged patients who are barely clinging to life, costly though it may be, encounters no general resistance. Intensive care for fragile families requires similar support.”<sup>15</sup>

In 1998, the American Academy of Pediatrics called for pediatricians to advocate for the inclusion of home visitors as part of the health care team and for the funding, development, and continued evaluation of home visiting in the promotion of children’s health outcomes.<sup>16</sup> Shortly thereafter, this sense of optimism about the promise of home visiting was dampened by new information indicating limitations in the effectiveness of existing models. As comprehensive studies and new reviews of old programs developed, it became apparent that, as in other forms of support for developing children, home visiting may not, in all cases, be as efficacious as its advocates had hoped.<sup>17</sup>

### HOME VISITING IS NOT A PANACEA

Although much energy, effort, and research have gone into the development of home-visiting programs, the extent of potential benefits is still inadequately delineated and understood. An ambitious evaluation in 1999 of a statewide home visiting program in Hawaii failed to demonstrate any substantial improvements in either maternal or child development and health outcomes.<sup>18</sup> Although these findings contradicted previous smaller studies and evaluations of earlier pilot programs, the comprehensiveness of this evaluation led to further examination of the evidence base for home visiting. In considering these apparent inconsistencies, it is best to remember that home-visiting programs are heterogeneous in their makeup, thereby compounding the difficulties associated with their evaluation. Programs vary in their approaches and are designed to achieve a variety of goals. Documentation that a home-visiting program design is effective in a particular setting may not support the use of other home-visiting models in that same

setting.<sup>19</sup> This heterogeneity cannot be avoided. It is doubtful that an optimal, cost-effective approach will be successful for all outcomes in a diverse array of situations.<sup>20</sup>

Some of the most studied home-visiting efforts have a primary focus on the prevention of child abuse and neglect. Other programs have a strong focus on child development and school readiness or an interest in parental lives, including encouraging mothers and helping them become self-sufficient through further schooling, employment, and delay of future pregnancies.<sup>17,21</sup> Direct provision of health care, enhancement of child development, and support of parenting and mother-child interaction are additional primary goals of some programs.<sup>21</sup>

Most programs provide families with social support and are built on the development of a trusting relationship between the home visitor and parents. These relationships are designed to promote parent effectiveness and help engender strong bonds between the adults and children within families. Case management, linkages to community-based services, skill building for parents, child development education, and improvement in maternal health are common components of programs.<sup>14</sup>

By focusing on families most at risk, programs seek to diminish disparities in health and developmental outcomes. Controversy exists as to whether to use a universal approach, designed to work with all families in a defined geographic area, versus a program focused on populations most at risk of poor outcomes. Most studies indicate that very high-risk groups are more likely to show benefit from home visiting,<sup>22</sup> yet programs focused just on these groups may suffer from stigmatization and lack of acceptance on the part of families being visited. Some risk factors may interfere with the effectiveness of home visitation. For example, substantial evidence exists that families most plagued by domestic violence are least likely to respond to home-visiting support.<sup>23</sup> Other factors that hamper success of home visiting include limited family resources, family mental illness, and families not motivated to participate in the programs.<sup>24</sup> Thus, the very risk factors that make children vulnerable interfere with the effectiveness of the programs that are designed to help them.

Some programs use professional nurses or masters-prepared personnel as their home visitors; others use trained paraprofessionals who are often members of the target community and culturally linked with the families they visit. Although paraprofessionals usually are associated with lower salary costs,<sup>25</sup> the efficacy of the professional-based model is better established. Families may perceive nurse home visitors as more valuable because of their ability to identify and intervene with medical issues. Nurse-based home-visiting programs tend to have better staff retention compared with those that employ paraprofessionals, perhaps contributing to program effectiveness.<sup>26,27</sup> Likewise, programs in which paraprofessionals remained involved over a 2-year time period were more likely to demonstrate effectiveness than those with shorter durations of involvement.<sup>28</sup>

Additional barriers measuring the effectiveness of home-visiting services include variable effects noted at

different program sites, the need to tailor programs to the community, retention of families receiving services, maintaining program intensity, turnover in home visitors, and a drift over time in program focus. Other differences include the intensity of service, the duration of service, the caseloads of the home visitors, the population targeted for services, and training level of the visitors. To be successful, programs must focus on the risk factors that result in disparities in child outcomes, and misidentification of these factors is likely to result in poor program effectiveness.<sup>29</sup>

Within the context of the great heterogeneity of home-visiting programs, generalizations as to their effectiveness have been elusive and difficult to interpret. Frequently, pilot projects have shown positive effects, but many of the studies involving these small initiatives have methodologic flaws. Evaluations of home-visiting programs taken to scale have been mixed and sometimes disappointing in their findings. By itself, home visiting may be insufficient to result in satisfactory improvements in health and social outcomes.<sup>30</sup> It is clear that home-visiting programs are not a panacea for solving the problems of delayed child development and child abuse prevention but one of many tools to be used in a careful and thoughtful manner. Expectations for home visiting need to be tempered by realistic examinations of the current understanding of program effectiveness. Deanna Gomby, in a comprehensive review published in *The Future of Children*, noted

“that no home visiting model produces impressive or consistent benefits in child development or child health. Several models produce some benefits in parenting and perhaps in the prevention of child abuse and neglect, but only on some of the measures used to assess these outcomes. . . these research results should not dissuade us from action. Children continue to grow, and their families continue to want and need support and services. It is up to us to strengthen existing services and craft new approaches to meet the needs of families and children.”<sup>17</sup>

### **BENEFITS OF HOME-VISITING PROGRAMS**

The wide-ranging nature of home-visiting programs and evaluations makes it difficult to draw definitive conclusions about potential benefits. A number of recent meta-analyses have made the task less arduous. Several large literature reviews, including those conducted by the US Task Force on Community Preventive Services,<sup>20,28</sup> one conducted by a British Task Force,<sup>30</sup> and a 2000 study by the Canadian Task Force on Preventive Care,<sup>31</sup> revealed strong evidence to support the effectiveness of perinatal and early childhood programs in preventing child abuse and neglect but no effect when paraprofessionals were used as visitors. A report from the US Surgeon General concluded that nurse home visiting has shown significant effects on the incidence of violence, delinquency, and other related risk factors.<sup>32</sup> Benefits in child development and child health are less clear, and the evidence for their support is inconsistent. Meta-analyses of home visiting published both in the United States and Europe report sufficient evidence that home visiting, when appropriately provided, can:

- improve parenting skills and the quality of the home environment<sup>21,30,33</sup>;
- ameliorate several child behavioral problems, including sleep problems<sup>21</sup>;
- improve intellectual development among children, especially among those with a low birth weight or failure to thrive<sup>30,34</sup>;
- enhance maternal life course such as employment and education<sup>17,21,30</sup>;
- reduce the frequency of unintentional injury and the prevalence of home hazards<sup>30</sup>;
- improve detection and management of postpartum depression<sup>34</sup>;
- possibly improve the attachment between infants and their parents<sup>34</sup>;
- enhance the quality of social supports to mothers<sup>30</sup>; and
- improve rates of breastfeeding.<sup>30</sup>

Existing meta-analyses include the following characteristics of successful home-visiting programs:

- Socially deprived mothers show the greatest benefits from home visiting.<sup>34</sup>
- Professional or nurse-based home visiting is generally advantageous for clients.<sup>35</sup> The role of lay paraprofessional home visitors is less known, but paraprofessionals may be helpful depending on the goals and objectives of the home-visiting program and the length of engagement with the home visitor. An advantage of lay home visitors may be the notable cultural bond between the home visitor and mother. Paraprofessional home visitors require more intensive guidance, training, supervision, and support from professionals. Families with significant or complex difficulties require the support of professional home visiting.<sup>36</sup>
- Home visits may be useful for children born preterm or with low birth weight and may result in positive effects on child development. Without sustained support, these positive effects may fade as children grow older.<sup>30,34</sup>
- Services of longer duration and greater intensity correlate with higher degrees of effectiveness.<sup>30,34</sup>
- Generally, the more risk factors present in a child's life, the more likely that developmental outcomes will be affected. However, those families with the poorest functioning are often unresponsive to engagement and intervention. The relationship between benefit and risk status is also not linear. It seems that those at the greatest risk and those at the least risk of poor outcomes are less likely to benefit from home visiting than others.<sup>37</sup>

### **COST-EFFECTIVENESS OF HOME VISITING**

Successful home-visiting programs involve extensive staff development and supervision, the creation of appropriate protocols, adequate supervision, and quality

assurance. Adequate funding is of paramount importance for home visiting to be successful. Cost-sharing issues among local, state, and national funding sources as well as the political nature of funding are major obstacles to program development. These programs are expensive, and their costs are a significant impediment to implementation.

Limited data exist to support the notion that home visiting is cost-effective. Successful programs are associated with reduced emergency department visits, decreases in foster care assignments, fewer hospitalizations, and savings in child protective services expenditures. Home visiting for the purpose of support and observation of newborns with low birth weight who are sent home early has been shown to be cost-effective by saving significant costs for the health insurer while improving overall health status.<sup>38</sup> Unfortunately, the savings from home-visiting efforts often accrue at some point in the future to entities other than the payer of the initial program. Home-visiting programs focused on social issues, child abuse, domestic violence, or child development, even if cost-effective, are unlikely to save costs in the health care sector. However, in all likelihood, the long-term financial savings to the community are substantial, as is the reduction of human suffering.<sup>7,39</sup> Cost savings in these instances will accrue to a variety of educational and social programs that are usually government funded. For these reasons, mechanisms for funding home visiting may be more appropriate from sources other than traditional third-party health care insurance. Payment sources will have to be tailored to the individual goals of each home-visiting program.

### LINKING HOME VISITING TO THE PEDIATRIC MEDICAL HOME

Pediatric primary care continues to evolve in an increasingly complex world with shifting morbidities and mortalities and expanding responsibilities for the child health care professional. Recently, Perrin noted:

*"Primary care clinicians face . . . problems where teamwork in practice can greatly improve the services families receive. Especially in high risk communities, many families need access to a wide range of social and other supportive services. . . services that pediatricians know relatively little about."<sup>40</sup>*

A 2006 Commonwealth Fund publication reiterated this suggestion with a call for a team approach as key to high-performing systems of well-child care. Such systems require graduated levels of services to fit the acuity and range of need for individual patients and families.<sup>41</sup>

Home visitors may well be essential members of these teams and augment the services of the traditional medical home.<sup>34</sup> Home visitors can be health care advocates and improve access to providers of health care. They can be partners with pediatricians and other clinicians, working in the home setting to provide essential education and supportive services to at-risk children and families and to improve adherence to medical preventive and treatment regimens. They can enhance developmentally oriented anticipatory guidance with individualized content that meets families' individual needs.<sup>42</sup> Home-visiting programs include a

*"degree of social support that is difficult to provide in most clinical settings; outreach and liaison between the pediatrician, the family, and the community; involvement with socioeconomic issues that directly affect the well-being of the child and family; reinforcement and follow-up of preventive care, peer helper support, as well as encouragement by the home health visitor who has the advantage of being with the family in its own home, a more accepting, less threatening setting for the family."<sup>7</sup>*

Thus, home-visiting services should not be seen as replacing the contribution of the pediatric health care team but as a complementary service that enhances children's health and developmental trajectories.

In this context, appeals for home visiting linked to well-child care have been frequent, but the "how" and "why" of these linkages are poorly defined and require additional investigation. Little investigative work has been performed in the area of using home visiting linked to the pediatric medical home. One Colorado study showed that paraprofessional home visiting, when combined with an early-intervention program focused on children with developmental delays, resulted in improved involvement with the program.<sup>25</sup> In North Carolina, the combination of a public health department's home-visiting program with links into private physician's offices was helpful in overcoming personal and structural barriers to care.<sup>43</sup> The Commonwealth Fund's Healthy Steps intervention included home visiting by masters-level healthy development specialists with significant gains in the quality of well-child care, although the multifactorial nature of this intervention made it difficult to evaluate the effectiveness of the home-visiting component.<sup>44-46</sup> A South Carolina study showed that a program that linked school-based home visitors to group well-child visits resulted in greater retention of anticipatory guidance and improved satisfaction with care.<sup>47</sup>

These initiatives provide a glimpse into the potential of linking home visitors with the pediatric medical home. A working partnership between home visitors and pediatricians providing well-child care may provide, for those families most at risk, an intensive level of support resulting in better health outcomes. Home-visiting programs should be integrated into a community's existing health care system, expanding the effectiveness of private health care professionals, health maintenance organizations, and public health nurses. Such integration should be undertaken cautiously with the knowledge that little is yet known to guide the optimal relationships between pediatric medical homes and home-based parenting support. The development of these relationships requires an ongoing evaluation to determine their effectiveness in the enhancement of optimal health and developmental outcomes for all of our children.

### RECOMMENDATIONS

1. Sufficient evidence exists to endorse home-visiting services by nurses to prevent child abuse and neglect for at-risk families. Programs that are comprehensive in scope, are intensive in the visit schedule, involve

- positive interactions with parents, target high-risk families, and are performed by professionally trained home visitors are known to be successful. Pediatricians should encourage the further expansion and development of programs for the prevention of child abuse and neglect.
2. Substantial evidence exists to support the use of home visiting as a strategy for addressing inequities in children's health status, school readiness, and development. Pediatricians should advocate for additional research and work to define the critical elements of such programs. Pediatricians should work with policy makers to ensure that elements found to be critical for success are applied to home-visiting practice.
  3. Home-visiting programs should be comprehensive in nature but have clear primary goals and objectives supported by evidence-based strategies.
  4. Pediatricians and others interested in the welfare of children should recognize the limitations of data supporting home-visiting efforts and the need to balance expenditures against the unsupported possible promise of such programs. Further investigative work needs to be performed to define the elements of cost-effective home visiting.
  5. Little research has been performed on the linkage of home visitors to pediatric medical homes, which is an area that deserves attention. There is ample reason to believe that the synergy of home visitors working with pediatric clinicians could have positive effects on child health and development. Home visitors should be considered to be a complementary collaborative partner in the provision of developmental assessment and other components of well-child services, especially for at-risk populations. Communication between home visitors and pediatricians ideally should be free flowing while adhering to privacy regulations.
  6. As experts in child development, pediatricians should become aware of and participate in development of home-visiting programs in their communities. They should be willing to participate in the planning, implementation, and evaluation of home-visiting programs and work to ensure that the methodologic contents of programs are evidence based.
  7. Home-visiting services may have effects that are wide ranging and important to the health and welfare of young children but beyond the scope of traditional pediatric health care. As such, funding streams should be developed that do not rely solely on health insurance mechanisms. Home-visiting services can be cost-effective. Those sectors of society that are most likely to accrue benefit in future cost savings from the social and educational effects of home visiting should contribute to the funding of programs.

#### NATIONAL HOME-VISITING MODELS

- Early Head Start: [www.ehsnrc.org](http://www.ehsnrc.org)
- Healthy Families America: [www.healthyfamiliesamerica.org](http://www.healthyfamiliesamerica.org)

- Home Instruction for Parents of Preschool Youngsters: [www.hippyusa.org](http://www.hippyusa.org)
- Nurse Family Partnership: [www.nursefamilypartnership.org](http://www.nursefamilypartnership.org)
- The Parent-Child Home Program: [www.parent-child.org](http://www.parent-child.org)
- Parents as Teachers: [www.parentsasteachers.org](http://www.parentsasteachers.org)

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Council on Community Pediatrics

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