



## Home visiting programs (prenatal and postnatal)

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## **Synthesis on home visiting programs (prenatal and postnatal)**

*(Published online October 5, 2007)*

### **How important is it?**

Home visiting programs aim to [help families](#) support their children's healthy growth and development. These programs may target their services to families or caregivers who are at a particular disadvantage when it comes to establishing and maintaining such a supportive environment, or where the child is more vulnerable due to health or developmental concerns.

Many home visiting [programs across Canada](#) and elsewhere emerged out of pressing policy needs to prevent child maltreatment. There are a number of ways in which home visiting programs can identify and address issues of child maltreatment: home visits help service providers assess the [safety](#) of a child's living environment; service providers can also work individually with the parent to improve parent-child interactions.

Some researchers suggest that home visiting programs can reach out to families and caregivers who would not otherwise seek support services. These programs make clients feel more at ease and able to share their conditions, which gives service providers more opportunity to tailor their support and guidance to suit each client's real-life situation. All of this results in more satisfying provider-client relationships.

### **What do we know?**

Home visiting programs vary dramatically in their underlying theoretical models, the characteristics of target families, the number and intensity of visits prescribed, the duration of the program, the curriculum and approaches and the degree to which they are specifically described in a manual, the fidelity of program implementation, and the background and training of visitors.

With so many variables involved, it is no surprise that the effects of home visiting programs have also been variable. Several reviews have concluded that home visiting can be an [effective strategy](#) to promote health and development outcomes of children from socially disadvantaged families, while other studies have reported no impact. Even when parent behaviour is altered, improvements in child outcomes are not always seen.

According to available research, [better outcomes](#) are achieved when home visiting programs are based on theories of development and behaviour change, target empirically derived risk factors, employ more highly trained visitors (such as nurses) and follow a well-constructed curriculum across the series of visits.

For even greater effects, more intensive intervention directly with the child may be required.

The [effects of home visiting](#) programs can extend beyond child outcomes. Some programs have been shown to have positive outcomes on the following:

- Family planning – a reduction in closely spaced pregnancies and the total number of pregnancies;
- Prenatal health behaviour – an improved diet and reductions in tobacco and other substance abuse;
- Maternal functioning – a reduction in mothers’ impairment from substances; fewer arrests and convictions; an increased likelihood for the mother to be involved in a stable relationship; and greater use of formal and informal social supports;
- Family self-sufficiency – greater participation in the workforce and reduced time on government aid programs;
- Parenting – more positive parenting attitudes and mother-child interactions;
- Child safety – fewer hazards and fewer visits to emergency rooms; reductions in child hospitalizations for injuries and ingestions and for primary care for sensitive conditions; reduced child abuse and neglect.

A two-year follow-up to the Early Head Start National Demonstration Project shows that mothers involved in the study were more supportive, more sensitive, less detached and more likely to extend play to stimulate cognitive development, language and literacy. They also reported using spanking less often and using milder forms of discipline with their children. These [results](#) were more likely in families enrolled in programs that employed home visitation services as opposed to those enrolled in programs that relied exclusively on centre-based services. The most ideal situation, however, seemed to be programs that offered a combination of home and centre-based services; these showed the strongest gains.

Research indicates that home visiting programs can produce positive effects among youth. A study of a [prenatal and infancy](#) home visiting program showed long-term treatment-control differences in arrests, convictions/probation violations, emergent use of alcohol and tobacco and promiscuous sexual activity among 15-year-olds’ whose mother were identified as being at greater risk because they were low-income and unmarried at registration.

### **What can be done?**

In order to develop a comprehensive assessment of the efficacy and effectiveness of home visiting programs, it is important to collect enough information about participants to analyze the effects of the program on various types of subgroups. The assessment should also measure multiple child and family outcomes at various points in time.

In addition, there is still a need to determine which [program components](#) are essential and which produce the greatest long-term results. Evidence shows that multidimensional home visiting programs – those that address the life course development of the mother, family life, child caregiving and the child’s overall development – last long after the program ends.

[Implementing](#) home visiting programs carries its own set of difficulties. Families may not always accept enrolment in the program or they may leave the program before the scheduled end date, thus missing out on the full number of planned visits in the

program. Recent research suggests that participation rates can be greatly improved by integrating home visiting programs into a broad, diversified system. When intensive home visiting services are partnered with a group- or community-based service program, the proportion of new parents who use prevention services can increase dramatically.

As with any publicly funded service, cost is an important aspect of these programs. Even though the professional level of service provided may vary greatly among home visiting programs, there is little variation in the cost of programs themselves. However, the benefit-cost ratio does differ from one program to the next, depending on the duration of the impact. Programs with a lifetime impact have a higher benefit-cost ratio than those with a limited short-lived impact.

The social cost of major societal problems should not be underplayed. Child abuse costs Canada an estimated \$15 billion per year. When viewed in this context, current public investments in home visiting and other early childhood development (ECD) programs are relatively minor.

When it comes to [policy development](#), there is a demand-supply imbalance. There will never be enough service providers available to reach every family in need through one-on-one home-visiting programs. Targeted home-visiting programs cannot address all families at risk for child maltreatment. This fact highlights the need to reduce the size of the population that requires one-on-one targeted and clinical services through effective universal and targeted programs that reach larger groups of families at a population level.

There is a growing consensus that Canada needs a comprehensive ECD system. We need to [evaluate public policy](#) at the system level, placing the effectiveness of home visiting programs within the larger context of other ECD programs. There is also a recognized need for a national resource network to support rigorous longitudinal evaluation of ECD investments.



## **Prenatal/Postnatal Home Visiting Programs and Their Impact on the Social and Emotional Development of Young Children (0-5)**

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*(Published online July 9, 2004)*

### **Topic**

*Home visiting programs (prenatal and postnatal)*

### **Introduction**

Social and emotional problems in young children can be traced to mothers' prenatal health,<sup>1,2</sup> parents' caregiving<sup>3,4</sup> and their life-course (such as the timing of subsequent pregnancies, employment, welfare dependence).<sup>5,6</sup> Home visiting programs that address these antecedent risks and protective factors may reduce social and emotional problems in children.

### **Subject**

Home visiting has a long history in Western societies of being used to deliver services to vulnerable populations. In many European countries, home visiting is a routine part of maternal and child health care, although the practice is less established in Canada and the United States.<sup>7</sup>

Home visiting programs vary in their targeted populations, program models and those who deliver the services. Most operate on the assumption, however, that parents' prenatal health behaviours, care of their children and life-course affect their children's social, emotional and cognitive development.<sup>8</sup>

### **Problems**

Prenatal tobacco exposure and obstetrical complications have both been implicated in the development of externalizing behaviour problems in children;<sup>1,2</sup> there is now evidence that the impact of prenatal tobacco exposure is greatest in the presence of a specific genetic vulnerability.<sup>9</sup>

Child abuse, neglect and excessively harsh treatment of children are associated with both internalizing and externalizing behaviour problems and later violent behaviour,<sup>3,4,10</sup> but again, the impact of child maltreatment on severe antisocial behaviour appears to be greatest in the presence of genetic vulnerability.<sup>11</sup>

Family dependence on welfare, large families with closely spaced births, and single parenthood are all associated with compromised social and emotional development in children.<sup>5,6</sup>

### **Research Context**

While some meta-analyses of home visiting programs suggest that many types of home visiting programs can make a difference in reducing adverse outcomes such as child maltreatment and childhood injuries,<sup>12,13</sup> meta-analyses can produce misleading results if there are insufficient numbers of trials of programs represented in the cross-classification of home visiting target populations, program models and visitors' backgrounds.

In making policy decisions about what types of home visiting programs show greatest promise, it makes sense to focus on programs that have produced replicated effects on socially and clinically significant outcomes in at least two separate randomized trials with different populations,<sup>14,15</sup> as this provides the strongest evidentiary foundation upon which to base social policy and practice.

### **Key Research Questions**

Since few trials of home visiting programs have examined children's social and emotional development with any consistent set of outcomes,<sup>16</sup> it makes sense to ask whether programs have affected antecedent risk and protective factors in addition to social and emotional outcomes per se. Specifically, what home visiting program models show the greatest promise for improving pregnancy outcomes, reducing child abuse and neglect, improving parents' life-course and children's social and emotional development?

### **Recent Research Results**

**Improvement of Pregnancy Outcomes.** Most trials of prenatal home visiting have produced disappointing effects on pregnancy outcomes,<sup>16,17</sup> although one program of prenatal and infancy home visiting by nurses has reduced prenatal tobacco use in two trials<sup>18,19</sup> and has reduced pregnancy-induced hypertension in a large sample of African-Americans,<sup>20</sup> an effect that was loosely corroborated by a non-significant reduction in hypertensive disorders of pregnancy in the first trial of the program with European-Americans.<sup>19</sup>

**Reducing Child Abuse and Neglect and Injuries to Children.** The program of prenatal and infancy home visiting by nurses, tested with a primarily white sample, produced a 46% treatment-control difference in the overall rates of substantiated rates of child abuse and neglect (irrespective of risk) and an 80% difference for families in which the mothers were low-income and unmarried at registration.<sup>21</sup> Corresponding rates of child maltreatment were too low to serve as a viable outcome in a subsequent trial of the program in a large sample of urban blacks,<sup>20</sup> but program effects on children's health-care encounters for serious injuries and ingestions were consistent with the prevention of abuse and neglect.<sup>20</sup>

**Maternal Life-Course.** The effect of home visiting programs on mothers' life-course (subsequent pregnancies, education, employment and use of welfare) is disappointing overall.<sup>8</sup>

In the trial of the nurse home visitor program described above, there were enduring effects of the program 15 years after birth of the first child on maternal life-course outcomes (e.g. inter-pregnancy intervals, use of welfare, behavioural problems due to women's use of drugs and alcohol, and arrests among women who were low-income and unmarried at registration).<sup>21</sup> The effects of this program on maternal life-course have been replicated in separate trials with urban blacks<sup>20,22</sup> and with Hispanics.<sup>18</sup>

### **Children's Social and Emotional Problems**

An increasing number of home visiting programs have found beneficial program effects on infants' attachment behaviours and classifications of attachment security.<sup>23-28</sup> Attachment security is considered a reflection of the quality of parental caregiving and is associated with subsequent behavioural adaptation with peers.<sup>29</sup>

The program of prenatal and infancy home visiting by nurses described above produced treatment-control differences in 15-year-olds' arrests, convictions/probation violations, emergent use of alcohol and tobacco and promiscuous sexual activity among youth whose mothers were at greater risk by virtue of their being low-income and unmarried at registration.<sup>30</sup> These findings have not been replicated in subsequent trials because children in later trials of this program have not yet reached the ages where such problems emerge. There are some indications, however, that the program affects early social and emotional development.

In the third trial of the nurse home visitor program, nurse-visited six-month-old infants born to mothers with low psychological resources displayed fewer aberrant emotional expressions (e.g. low levels of affect and lack of social referencing of mother) associated with child maltreatment.<sup>18</sup>

A Finnish trial of universal home visiting by nurses found significant effects on a number of important child behavioural problems.<sup>31</sup>

### **Conclusions**

Few home visiting programs have improved pregnancy outcomes or parental life-course or reduced child abuse and neglect, compromised caregiving and children's social and emotional problems. The programs with the greatest promise in affecting these outcomes have employed professional home visitors, with the strongest evidence coming from trials of programs using nurses. In a trial that included separate treatment groups of nurse and paraprofessional home visitors, the nurses produced effects that were twice as large as the paraprofessionals.<sup>18</sup>

The program of prenatal and infancy home visiting by nurses has produced consistent effects on clinically significant outcomes in three separate trials with different populations living in different contexts, and at different points in U.S. social and

economic history. This increases the likelihood that these findings will have applicability to a wide range of different populations within the U.S. today. A significant challenge for evidence-based programs is to find ways of effectively transporting such programs from research settings into community practice.

### **Implications**

If policy-makers and practitioners decide to invest in home visiting services during pregnancy and the early years of the child's life, they should examine carefully the evidentiary foundations of the program in which they invest. Programs vary considerably in their underlying theoretical and empirical foundations, the quality of the program guidelines and their likelihood of success. Before investments are made outside the United States in the program of prenatal and infancy home visiting by nurses, the program should be tested in separate trials in those contexts to determine whether it produces corresponding effects when health and social systems, cultures and populations differ from those examined in the U.S. Investments in trials of the program are likely to represent modest costs compared to investing public resources in relatively expensive programs that may have limited impact beyond the contexts in which they were originally tested.

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## **Effective Early Childhood Development Programs for Low-Income Families: Home Visiting Interventions During Pregnancy and Early Childhood**

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*(Published online February 5, 2004)*

### **Topic**

*Home visiting programs (prenatal and postnatal)*

*Low income and pregnancy*

### **Introduction**

Concern for the health and well-being of young children, particularly children from low-income, socially disadvantaged families, has resulted in the exploration of alternative approaches to delivering services to young families. Home visiting is one venue through which a variety of services can be provided. In this paper, we focus on the impact of services provided in home visiting programs to low-income families with children under 5 years of age.

### **Subject**

Despite the emphasis on prevention in traditional primary health care and family services, individual office/center-based care requires clients to take initiative to seek out services on their own. Generally, the services provided are limited to health guidance and the treatment of health and illness problems related to the conditions and concerns disclosed (one way or another) by the client to the provider. It has been proposed that home visiting can

- a) reach out to those who do not seek services
- b) enhance clients' comfort and ability to reveal their conditions,
- c) provide opportunities for providers to tailor their support and guidance to clients' real-life situations
- d) result in satisfying provider–client relationships.

Despite a broad range of services, home visiting services are expected to augment, rather than replace, center-based health and human services. Visits to families begin during pregnancy or from the time of birth and last until children are between 2 and 5 years of age. Home visiting programs vary dramatically. Differences exist in their underlying theoretical models, characteristics of target families, number and intensity of visits, duration, curriculum, approaches to services, degree of manualization, fidelity of implementation, and background, and training of the visitors.

## **Problems**

Although the history of home visiting spans more than a century, it emerged with renewed force in the 1970s as a promising strategy to promote child health and development, and reduce abuse and neglect in vulnerable, at-risk families. Some of the recently developed home visiting programs have proliferated, encouraged by federal, state/provincial, local, and private support. Despite this encouragement, typically funding for programs has been commonly sought from budgets where funds have not previously been allocated. As a result, policy makers have turned to researchers for answers to questions regarding the relative merits of home visiting programs, and their impact on outcomes. Particular attention has been paid to the outcomes of programs that target families at risk because of low income levels and other adverse social circumstances.

## **Research Context**

Most of the research to date has been designed to determine whether the health and development of children and their families are better as a result of home visit services. Research reports have provided limited information about the programs and their implementation. But apart from some exceptions,<sup>1</sup> investigators have generally not attempted to vary program features and systematically study them.

## **Key Research Questions**

This review is designed to respond to two key questions:

1. What are the outcomes of home visiting programs for low-income families?
2. Do program outcomes differ based on program characteristics?

## **Recent Research Results**

### *1. What are the effects of home visiting programs?*

Several reviews have concluded that home visiting can be an effective strategy to improve the health and developmental outcomes of children from socially disadvantaged families.<sup>2-4</sup> However, effects have not been found consistently and some studies have reported no impact. When effects have been found, they are generally not as large as originally predicted. In addition, effects have not been consistently identified in the same outcome areas. As might be expected, different programs and different levels of program implementation have resulted in different outcomes. Some programs achieve effects while the program is in operation but the effects dissipate after the program ends, while others have reported delayed effects, year(s) after the program ends. In some instances, effects are apparent early on and are sustained for many years after the program ends.<sup>5</sup>

- **Maternal Outcomes**

Some programs that have included mother and family development strategies have demonstrated reductions in closely spaced pregnancies and reductions in total number of pregnancies. Prenatal health behaviours, including reductions in tobacco and other substance abuse, have been reported but have not been consistently associated with improved pregnancy outcomes. More positive parenting attitudes and mother-child interactions have been found. Mothers who were home visited have reported less impairment from substances than those not visited. One long-term follow-up study demonstrated fewer arrests and convictions in the home-visited group 15 years after the

birth of a child.<sup>6</sup> Home visited mothers also have been found more likely to be involved in stable relationships.

- **Child Health and Development**

Although some studies have demonstrated improvement in immunization rates, others have found no improvement in rates of immunization or other preventive services. Of the two major studies reporting a reduction of abuse and neglect as a major outcome, reductions were found in one but not in the other. Although not consistent, some studies have demonstrated reductions in child hospitalizations for injuries and ingestions and for primary care for sensitive conditions. Cognitive testing has resulted in inconsistent findings across studies. Differences between children in families home visited and those not visited tend to be minimal or not sustained.

## *2. Do program outcomes differ according to program characteristics?*

- **Characteristics of the Participants**

Debate about universal versus targeted services continues.<sup>7</sup> However, to date, most programs target those at risk. Programs often focus on adolescents, on socially disadvantaged mothers with their first child, on medically/developmentally at-risk children, or on families with characteristics that place them at risk for abuse and neglect. Evidence is accumulating that mothers with the fewest personal and social resources, including low income, benefit more from the service, at least in the areas assessed, than do those with more resources.<sup>2</sup>

- **Intensity of the program**

Regardless of the number of visits suggested in program manuals, only about half of the recommended visits actually occur. Although an optimal number of visits have not been determined, there is evidence that more visits are better and a threshold may be required to produce effects. In addition to lower than expected rates of visits, programs are reporting higher than anticipated drop-out rates.<sup>8</sup> The rates vary from less than half of families remaining active after one year to nearly all being active after two years.<sup>9</sup> Often the reason for attrition is unknown. Nevertheless, there is now preliminary evidence about what keeps families engaged and invested in visits.

- **Importance of the Visitor-Family Relationship**

Most programs emphasize the importance of a positive visitor–family relationship since programs are voluntary, and visiting depends on the willingness of the family to invest.<sup>10</sup> Indeed, evidence suggests that the quality of the relationship is a predictor of program outcomes. Nevertheless, programs vary in their criteria for defining a satisfactory relationship: some focus on a constructed friendship, others on a teacher–learner relationship, and still others on a therapeutic alliance. Increasingly, evidence suggests that a constructed friendship alone is not sufficient to produce the anticipated outcomes. Such a friendship may provide temporary relief from isolation and despair but may not be sufficient to build the resources necessary to be effective in establishing lasting family, mother, and child outcomes.

- **Uni-dimensional vs. Multi-Dimensional Programs**

Some programs focus heavily on teaching child development and parent–child interaction strategies, others focus on friendship and providing a supportive presence, still others focus on the activities suggested by the family. Some programs are multi-dimensional and address the life course development of the mother, family life, child caregiving, and the fostering of overall development.<sup>11</sup> These programs, which consider both program and individual client goals, attempt to balance the management of current strains with building strengths in the multiple areas necessary to meet future challenges. Evidence is emerging that the impact of multi-dimensional home visiting programs lasts long after the intervention ends. Families set a different life trajectory with fewer closely spaced children, less reliance on public assistance, and greater health and well-being among the children.<sup>12</sup> We know little about how programs work to produce their long-term impact. For example, it is unclear whether children do better because of improved caregiving, increased maternal personal resources, improved family functioning, expanded economic resources, or all of the above.

### **Conclusions**

A broad range of studies have confirmed better health and development in children and more positive environments in home-visit households, and give us reason to hope that home visiting is a strategy that can improve the lives of children at risk.

Not all home visiting services designed to promote the health of families with infants and young children yield comparable outcomes for all children. Although some programs have produced evidence of enduring, long-term family, maternal, and child outcomes, other broadly disseminated programs have not demonstrated detectable effects. Within programs there is evidence that those at higher risk make greater gains with home visiting than do those with less risk. This difference in program outcomes should not be surprising, given that programs differ dramatically in their clientele profiles, the backgrounds of providers, their explicit and implicit theoretical models, and how well those models have been translated into program content/processes, and subsequently implemented. There is still a need to determine what components of home visiting programs are essential and which produce the greatest long-term impact. Programs vary little in cost per year of service regardless of the professional level of the provider.<sup>13</sup> However, programs that have a lifetime impact have a higher benefit/cost ratio than do those with limited and short-lived impact.

### **Implications**

Just as programs vary, so do their outcomes. Although some of the enthusiasm for home visiting has waned in the past decades as reports of some large randomized trials have failed to demonstrate program effects, evidence from other programs targeted for families at risk (eg, low-income families) has shown enough promise to build on program development momentum. Gomby and colleagues have hailed the scrutiny to which home visiting as a human-service strategy has been subjected, and have concluded that new home visiting program expansion should take advantage of what has been learned to date. They specifically recommend improving the quality and implementation of services and projecting a modest view of program effects.<sup>4</sup>

Interventions that have demonstrated a broad range of effects require significant resources and there will be ongoing pressure to use established program models while reducing the resources involved in their implementation. Caution should be exercised in this area. Preliminary evidence from descriptive studies within programs and meta-analyses of randomized trials (comparing programs with different characteristics) suggest that it will be important to adhere to established program models until there is sufficient evidence to support revisions.<sup>14</sup> Although the scientific literature provides some comparison of effects for programs with different constellations of characteristics, the field of home visits is still in its infancy as far as determining the relative importance of any specific characteristic is concerned.

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## Home Visiting Programs and Their Impact on Young Children

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### **Topic**

*Home visiting programs (prenatal and postnatal)*

### **Introduction**

Family and home life constitutes the primary context for the development of infants and young children. Within the setting of family and home, caregivers provide the nurturance, supervision and interactions with the social and physical world that infants and young children require to grow and thrive. Many factors can influence the ability of caregivers to meet these basic needs. The age and maturity of the caregivers, their mental and physical health, level of educational attainment and economic status will shape the environment that children experience. Sometimes, the health or development of the child poses caregiving challenges – for instance, when the child has significant health problems or a compromised birth history (e.g. born at low birth weight) or has a developmental delay or disability. Home visiting programs are designed and implemented to support families in providing an environment that promotes the healthy growth and development of their children. Programs may target their services to families and caregivers who are at a particular disadvantage when it comes to establishing and maintaining such an environment. They may also focus on families in which the child is more vulnerable than the typical child because of health or developmental concerns.

### **Subject**

Home visitation is a type of service-delivery model that can be used to provide many different kinds of interventions to target participants.<sup>1</sup> Home visiting programs can vary widely in their goals, clients, providers, activities, schedules and administrative structure. They share some common elements, however. Home visiting programs provide structured services: 1) in a home setting; 2) from a trained service provider; 3) in order to alter the knowledge, beliefs and/or behaviour of children, caregivers or others in the caregiving environment and to provide parenting support.<sup>2</sup>

Home visits are structured in some way to provide consistency across participants, providers and visits and to link program practices with intended outcomes. A visit protocol, a formal curriculum, an individualized service plan and/or a specific theoretical framework can be the basis for activities that take place during home visits. Services are delivered in the living space of the participating family and within their ongoing daily routines and activities. The providers may be credentialed or certified professionals,

paraprofessionals or volunteers, but typically they have received some form of training in the methods and topical content of the program so that they are able to act as a source of expertise for caregivers.<sup>3</sup> Finally, home visiting programs are attempting to achieve some change on the part of participating families – in their understanding (beliefs about child-rearing, knowledge of child development) and/or actions (their manner of interacting with their child or structuring the environment) – or on the part of the child (change in rate of development, health status, etc.). Home visiting also may be used as a way to provide case management, make referrals to existing community services or bring information to parents or caregivers to support their ability to provide a positive home environment for their children.<sup>4</sup>

### **Problems**

Data regarding the efficacy of home visiting programs have been accumulating over the past two decades. Several large-scale home visiting projects have used randomized designs, with multiple data sources and outcome measures, and longitudinal follow-up. These studies have generally found that home visiting programs produce a limited range of significant effects and that the effects produced are often small.<sup>5,6</sup> Detailed analyses, however, sometimes reveal important program effects.<sup>7</sup> For example, certain subsets of participants may experience long-term positive outcomes on specific variables.<sup>8,9</sup> These results and others suggest that in assessing the efficacy of home visiting programs, it is important to include measures of multiple child and family outcomes at various points in time and to collect enough information about participants to allow for an analysis of the program effects on various types of subgroups.

Other difficulties that must be considered when conducting or evaluating research in this area include ensuring the equivalency of the control and experimental groups in randomized trials,<sup>10</sup> controlling for participant attrition (which may affect the validity of findings by reducing group equivalence) and missed visits (which may affect validity by reducing program intensity),<sup>11</sup> documenting that the program was fully and accurately implemented and determining whether the program's theory of change logically connects program activities with intended outcomes.

### **Research Context**

Because home visiting programs differ in their goals and content, research into their efficacy must be tailored to program-specific goals, practices and participants. In general, home visiting programs can be grouped into those seeking medical/physical health outcomes and those seeking parent-child interaction outcomes. The target population may be identified at the level of the caregiver (e.g. teen mothers, low-income families) or the child (e.g. children with disabilities). Some programs may have broad and varied goals, such as improving prenatal and perinatal health, nutrition, safety and parenting. Other programs may have narrower goals, such as reducing the incidence of child abuse and neglect. Program outcomes may focus on adults or on children; providers frequently cite multiple goals (e.g. improved child development, parent social-emotional support, parent education).<sup>12</sup> Researchers need to be certain to identify the intended program outcomes being sought, as well as potential unintended outcomes. The program model needs to be understood as well so that its implementation can be measured accurately.<sup>13</sup> Trying to

uncover the “active ingredient” in successful home visits through analysis of parental engagement is a recent trend in home visiting research.<sup>14,15</sup>

### **Key Research Questions**

Key research questions for home visiting programs include: 1) To what degree does the program achieve its stated goals and objectives for participating families and children? 2) Does the program alter the incidence or prevalence of the target condition in the community? 3) Can the effective program elements be identified and replicated? 4) What factors influence participation and non-participation in the program? 5) What factors influence full and proper implementation of the program? 6) What are the short-term and long-term benefits experienced by participating families relative to non-participating families? 7) What is the cost of the program relative to the benefits it provides to families, to communities and to society?

### **Research Results**

A recent review of large-scale home visiting programs that included rigorous evaluation components concluded:

These findings are sobering. In most of the studies described, programs struggled to enroll, engage, and retain families. When program benefits are demonstrated, they usually accrued only to a subset of families originally enrolled in the programs, they rarely occurred for all of a program’s goals, and the benefits were often quite modest in magnitude.<sup>16</sup>

Research into the implementation of home visiting programs has documented a common set of difficulties across programs in delivering services as intended. First, target families may not accept initial enrolment into the program. Two studies that collected data on this aspect of implementation found that one-tenth to one-quarter of families declined invitations to participate in the home visiting program.<sup>17,18</sup> In another study, 20% of families that agreed to participate did not begin the program by receiving an initial visit.<sup>19</sup> Second, families may not receive the full number of planned visits. Evaluation of the Nurse Home Visitation Project found that families received only half of the scheduled number of visits.<sup>20</sup> Evaluations of the Hawaii Healthy Start and the Parents as Teachers programs found that 42% and 38% to 56% of scheduled visits were actually conducted.<sup>21,22</sup> Even when visits are conducted, the planned curriculum and visit activities may not be presented according to the program model, and families may not follow through with the activities outside of the home visit.<sup>23,24</sup> Finally, in a review of major home visitation research, Gomby, Culross and Berman (1999) found that between 20% and 67% of enrolled families left home visitation programs before the scheduled termination date.

Most notable, perhaps, is that the assumed link between parent behaviour change and improved outcomes for children has not received general support in research conducted to date. In other words, even when home visitation programs succeed in their goal of changing parent behaviour, these changes do not appear to produce significantly better child outcomes.

A number of model programs were unable to document program impacts through control group designs. An evaluation of Hawaii's Healthy Start program found no differences between experimental and control groups in maternal life course (attainment of educational and life goals), substance abuse, partner violence, depressive symptoms, the home as a learning environment, parent-child interaction, parental stress and child developmental and health measures.<sup>25</sup> However, program participation was associated with a reduction in the number of child abuse cases.

An evaluation of the Parents as Teachers program also failed to find differences between groups on measures of parenting knowledge and behaviour or child health and development.<sup>26</sup> Small positive differences were found for teen mothers and Latina mothers on some of these measures.

Evaluation of the Home Instruction Program for Preschool Youngsters found mixed results regarding program effectiveness. In some cohorts, program participants outperformed non-participants on measures of school adaptation and achievement through second grade, but these results were not replicated with other cohorts at other sites.

Available research indicates that home visiting programs produce better outcomes when they employ more highly trained visitors (such as nurses), are based on theories of development and behaviour change, target empirically derived risk factors and follow a well-constructed curriculum across the series of visits.<sup>27</sup> When these conditions are met, home visiting programs have been shown to lead to positive outcomes. The Nurse Home Visitation Program produced gains in the following areas for the experimental group in a randomized trial.<sup>28</sup> In terms of child safety, homes of home visitation families presented fewer hazards and children had fewer visits to emergency rooms, injuries and ingestions. Parental life course was also affected by participation in the program. Visited families had fewer subsequent pregnancies, a greater time span between pregnancies, greater participation in the workforce and reduced time on government aid programs. The program reduced child abuse and neglect – evaluation found reduced rates of child abuse and neglect at program exit and at 15-year follow up. Last, in terms of parental behaviour, visited families demonstrated reduced cigarette consumption, improved diet and greater use of formal and informal social supports.

Randomized clinical trials have also shown that programs are more likely to have positive effects when targeted to the neediest subgroups in a population. For example, in addition to the whole-sample effects noted above, smokers in the Nurse Home Visitation Program had fewer preterm deliveries, and low-income single teen mothers used less punishment with their children and provided more appropriate play materials. At a 15-year follow-up, children of the last group of mothers had fewer arrests, convictions and behaviour problems. A cost-benefit analysis of the program found no net savings resulting from the program. However, the program produced net savings exceeding costs by a factor of four when only low-income unmarried mothers were considered.<sup>29</sup>

The largest randomized trial of a comprehensive early intervention program for low-birth-weight, premature infants (birth to age three), the Infant Health and Development Program, included a home visiting component along with an educational centre-based program.<sup>30</sup> At age three, intervention group children had significantly better cognitive and behavioural outcomes and improved parent-child interactions. The positive outcomes were most pronounced in the poorest socio-economic group of children and families and in those who participated in the intervention most fully. The Chicago Parent-Child Center Program also combined a structured preschool program with a home visitation component. This program found long-term differences between program participants and matched controls. Participating children had higher rates of high-school completion, lower rates of grade retention and special education placement and a lower rate of juvenile arrests.<sup>31</sup> These studies suggest that a more intensive intervention involving the child directly may be required for larger effects to be seen.

### **Conclusions**

Research on home visitation programs has not been able to show that these programs have a strong and consistent effect on participating children and families, but modest effects have been repeatedly reported. Programs that are designed and implemented with greater rigour seem to provide better results. These results may include changes in parental health and safety behaviour, parenting and discipline and parental life course. Home visitation programs also appear to offer greater benefits to certain subgroups of families, such as low-income single teen mothers. On the whole, home visitation programs have not been shown to result in large changes in important child outcomes, such as birth weight, cognitive development or behaviour problems.

### **Implications**

“One of the clearest messages that has emerged from this program of research is that the functional and economic benefits of the nurse home visitation program are greatest for families at greater risk.”<sup>32</sup> This finding implies that universal home visitation programs may be inefficient, unnecessarily using resources that could be better spent on families that are more likely to experience benefits. Programs that are successful with families at increased risk for poor child development outcomes tend to be programs that offer a comprehensive focus – targeting families’ multiple needs – and therefore may be more expensive to develop, implement and maintain. In their current state of development, home visitation programs do not appear to represent the low-cost solution to child health and developmental problems that policy-makers and the public have hoped for.<sup>33</sup> However, information that is accumulating about long-term outcomes and effective practices may lead to the development of replicable programs that are capable of producing modest but consistent and positive results for participating target families.

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## **Prenatal/Postnatal Home Visiting Programs and Their Impact on Young Children’s Psychosocial Development (0-5): Commentary on Olds, Kitzman, Zercher and Spiker**

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### ***Topic***

*Home visiting programs (prenatal and postnatal)*

### **Introduction**

Home visitation has been cited by several policy analysts and advocates in the U.S. as offering a particularly promising service delivery approach for educating parents and reducing abuse potential.<sup>1,2,3</sup> This is particularly true if services are offered early in a child’s development. Initiation of services during pregnancy or at birth facilitates the development of a secure, positive attachment between the parent and child and establishes a cornerstone for later development.<sup>4</sup> Offering such services in a parent’s home has a number of added advantages. Such services offer the provider an excellent opportunity to assess the safety of the child’s living environment and to work individually with the parent to improve parent-child interactions. The method also affords the participant a degree of privacy and the practitioner a degree of flexibility that is difficult to achieve in group-based programs.

Despite the strategy’s theoretical and popular appeal, rigorous evaluations of prenatal/postnatal home visitation programs confirm mixed performance levels, as noted in each of the three CEECD papers submitted on this topic. Zercher and Spiker consider the empirical evidence in light of the broadest array of research questions, looking for empirical support for the method’s efficacy and effectiveness. By contrast, Kitzman focuses on the ability of home visitation programs to reach socially disadvantaged families effectively and pays particular attention to how different program structures or elements might influence enrolment rates, as well as individual outcomes. Olds examines the evidence that these types of interventions can address three core predictors of social and emotional problems for children (e.g. mothers’ prenatal health, parents’ caregiving and maternal life course). All three papers note the wide variability among programs grouped under the broad heading of prenatal/postnatal home visitation and the limited number of what might be considered “high-quality” evaluation studies (i.e. randomized clinical trials).

### Research and Conclusions

Despite the innovation's popularity, evaluative data on home visitation programs reviewed by all three authors indicate that positive outcomes are neither universal for all models nor consistent across all populations. All three of the papers agree that large randomized trials generally conclude that home visitation services produce "a limited range of significant effects and that the effects produced are often small." All three also agree that effects are more likely to occur among the most disadvantaged populations. Overall, Kitzman and Olds, drawing largely on their own work, are slightly less dismissive of the intervention than Zercher and Spiker, noting that significant and positive impacts have been observed in pre-natal health behaviour in mothers, child abuse and neglect, and mother-infant relationships, and that positive impacts can be sustained and improved over time. At least one longitudinal study cited in all three papers demonstrated a reduction in welfare dependency and criminal behaviour among the treatment group compared to the controls.<sup>5</sup>

In drawing their conclusions, Zercher and Spiker rely almost exclusively on one primary source for their evaluative data, a summary document produced by the Packard Foundation on data gathered over a decade ago.<sup>6</sup> Kitzman and Olds heavily reference their own work. To be fair, the Kitzman and Olds research constitutes an impressive package of studies. The development of their Nurse Family Partnership (NFP) program and its consistent evaluation through a series of carefully designed randomized trials and longitudinal research are unprecedented in the field of social-service planning. NFP remains one of the most highly regarded and consistently implemented home visitation programs in the US.

Since the publication of the Packard Report, however, the research base on prenatal/postnatal home visitation programs has become broader and more nuanced. Meta-analyses of this expanded research base confirm the model's impacts on a range of risk and protective factors associated with child maltreatment.<sup>7,8,9</sup> In addition, all of the major home visitation models in the U.S. are currently engaged in a variety of research activities, many of which are resulting in better defined models and more rigorous attention to the key issue of participant enrolment and retention, staff training and quality assurance standards.<sup>10</sup> For example, recent findings emerging from the initial two-year follow-up of the Early Head Start National Demonstration Project confirm the efficacy of home visitation programs with new parents. Specifically, Early Head Start mothers were more supportive, more sensitive, less detached and more likely to extend play to stimulate cognitive development, language and literacy than mothers assigned to the control group in this large randomized trial. Early Head Start mothers also reported less frequent use of spanking and, in general, described using milder forms of discipline in managing their two-year-olds.<sup>11</sup> These impacts were more likely to occur among those Early Head Start recipients who enrolled in the programs implementing home visitation programs than among those enrolled in programs relying exclusively on centre-based services, although the strongest gains were achieved by programs that offered a combination of home- and centre-based services.

Rather than view the lack of consistent findings as an indication of program failure, another interpretation of these patterns is that they underscore the inevitable limitation of

any single intervention, no matter how well designed and delivered.<sup>12</sup> Improving child outcomes and parental capacity requires not simply a strong program but also high-quality systems of care. Indeed, more recent research suggests that partnering these types of intensive home-based interventions with a group- or community-based service program can dramatically increase the proportion of new parents who will use prevention services.<sup>13,14,15</sup> Additional research is needed along these lines to identify any unique role home visitation may play within the context of a broad, diversified system of parent education and support.

### **Implications for Policy Development**

All three papers offer differing perspectives on the utility of expanding home visitation services. Kitzman suggests that strengthening the knowledge base will require that home visitation programs retain integrity and commitment to a given model to determine overall efficacy as well as the specific utility of various structural elements. Zercher and Spiker argue that the intervention should be adopted only as a secondary prevention strategy, noting that no empirical evidence exists to support a universal service delivery strategy. Olds cautions that any application of the model to a new culture or population should be done only after an investment is made in randomized clinical trials.

While individual home visitation programs are increasingly well defined and carefully implemented, the best method for rigorously evaluating their effectiveness is less clear. The diversity of family needs and pathways to improving child development suggests that the most effective home visitation programs will be those that are not only well implemented but also well informed of the unique challenges and strengths of their local communities.<sup>16</sup> Fully understanding the impacts of home visitation programs, therefore, requires diverse assessment methods. The best policies and programs may emerge when we consider the collective lessons from a wide body of research, utilizing diverse theoretical models and methodologies.<sup>17</sup>

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