New York State Office of Children & Family Services

Center for Human Services Research

healthy families new york

Evaluation of Healthy Families New York (HFNY): First Year Program Impacts

Report to the Governor and Legislature
February 2005

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Governor

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February 2005

Acknowledgements

This evaluation would not have been possible without the full support and commitment of management and staff in the Erie, Rensselaer, and Ulster County HFNY programs. The original program managers in these sites—Andrew Buchan, Ellen Butowsky, and Susanna Gonzalez—were instrumental in helping to get the study off the ground and maintain the integrity of the research design as well as providing key information and insights about their programs. The program managers that succeeded them—Donnamarie Blanchard, Caroline Chant, Ann Marie Correra, and Michael O'Neill—have continued to provide support and guidance to the project. The Family Assessment Workers in the study sites—Valerie Conley, Aletia Knightner, Mary Hans, Leora Cohen-McKeon, Daisy Carrero, Rita Babie, Anabel Diaz, Carmen Oquendo, Tonya Ashton, Lisette Robles, and Maria McCormick—deserve special recognition for the critical role they played in recruiting families for the study, explaining the concept of a randomized trial to them, and obtaining their consent to participate in the evaluation.

The data for this evaluation were collected by dedicated research interviewers who managed to track down more than 1,000 families and convince them to participate year after year. We would like to extend special thanks to Laura Jackson, Maria Aviles, Gayle Bryant, Maria Rivas-Cruz, Shirley Taylor, Roxanne Nagorka, Elizabeth Cataldo, Valerie White, Kenia Marquez, Carol Erceg, Mary Arrese-Aho, Evelyn Santiago and Ann Cleary for their on-going data collection efforts.

From the Office of Children and Family Services (OCFS), we would like to especially thank Joy Griffith, the HFNY project director, who was instrumental in obtaining the resources and cooperation needed to initiate and sustain the evaluation. She has been a steady source of direction and support, helping us to solve problems that have arisen along the way and providing thoughtful reviews of our products. We would also like to acknowledge the invaluable contribution of Lisa Trudeau of the OCFS' Bureau of Evaluation & Research, who assisted in designing and planning the evaluation, developing and pretesting the survey instruments, and training the Family Assessment Workers, the research interviewers, and other staff members. Becky Colman and Kim DuMont of the OCFS' Bureau of Evaluation & Research provided much appreciated help in reviewing and editing the report.

Important contributions to the evaluation came from several staff from the Center for Human Services Research. We owe a special debt of gratitude to Dorothy Baum, who was responsible for designing the random assignment database and for programming and maintaining the Computer-Assisted Personal Interviewing (CAPI) system. Thanks to her high level of competence and commitment to data quality, the data are accurate and complete. Jeff Luks and his crew helped to review, edit, and scan the data that were collected with paper and pencil. Data on child abuse and neglect reports were painstakingly collected from OCFS' Statewide Central Register by Ann-Margret Foley. Immunization data were collected from physicians by Elizabeth Misener.

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Executive Summary

Modeled after the national Healthy Families America (HFA) initiative, Healthy Families New York (HFNY) is a community-based prevention program that seeks to improve the health and well-being of children at risk for abuse and neglect through the provision of home visitation services. HFNY was established in 1995 by the former New York State Department of Social Services, part of which merged with the former Division for Youth in January 1998 to create a new agency devoted to serving children and families—the Office of Children and Family Services (OCFS). The HFNY program is currently active in 28 New York State communities and has four major goals: 1) to prevent child abuse and neglect; 2) to enhance positive parent-child interactions; 3) to promote optimal child health and development; and 4) to increase parents' self-sufficiency. To document the ability of the HFNY program to effect change within each of these core areas, OCFS, in collaboration with the Center for Human Services Research (CHSR) at the University at Albany, embarked on a three-year evaluation study utilizing a randomized experimental design in three counties with established home visitation programs (Erie, Rensselaer, and Ulster). The current report presents the results of the first year of this evaluation study, and examines the extent to which the HFNY program positively affected parenting (including self and official reports of child abuse and neglect), child health and development, and parents' life course development at the time of the targeted child's first birthday.

Program Description

HFNY is a home visitation program that uses population-based screening and assessment methods to target women who are pregnant or have recently given birth and are deemed to be at risk for child abuse and neglect. Potential clients are brought to the attention of HFNY staff through community health and social services agencies that screen parents for a wide range of social and economic risk factors, including single parenthood, teen pregnancy, poverty, low education, unstable housing, substance abuse and mental health problems. Parents who screen positive are referred to the HFNY program, and a Family Assessment Worker (FAW) conducts an assessment interview to determine their ultimate eligibility. During the assessment interview, the Family Stress Checklist (Kempe, 1976), a tool that assesses the risk of parents abusing or neglecting their children, is completed. Parents who score above a predetermined cut-off are offered the opportunity to receive home visitation services. Participation in the program is voluntary.

Home visits are conducted by specially trained paraprofessionals who live in the community being served and share the same language and cultural backgrounds as program participants. Home visitors are not required to have a college degree, but most have some post-secondary education. Home visits are designed to target three areas directly related to program goals: parenting, child health and development, and parents' life course development. Home visitors encourage positive health-related behaviors during pregnancy, provide education on child development and positive parenting practices, refer participants to community resources, and work with parents to address family challenges (e.g., substance abuse, mental health issues). Services are intended to be intensive, ideally beginning during the prenatal period and lasting until the targeted child is five years old, or enrolls in Kindergarten or Head Start.

Previous Research

Home visitation programs are the most widely recommended and practiced strategy for child abuse prevention in the nation. Previous research on the effectiveness of home visiting programs, however, is mixed. Positive program impacts

on birth outcomes, child maltreatment rates, and parents' self-sufficiency have been found in home visitation programs using nurse home visitors, particularly at long-term follow-up and for subgroups of moderately at-risk parents. Data on the effectiveness of HFA, the model that serves as the basis for HFNY, are less robust, with most studies finding modest or no program impacts in the years surrounding service delivery.

Evaluation Design

To determine whether HFNY works for New York State's families, a three-year evaluation of the program was undertaken by the Bureau of Evaluation and Research located within OCFS, in collaboration with the Center for Human Services Research (CHSR) at the University at Albany. A randomized experimental design was used, in which families meeting the assessment criteria were randomly assigned to either an intervention group that was offered HFNY services or to a control group that was given information and referral to other appropriate services. Three sites with established HFNY programs participated in the study: designated neighborhoods within the city of Buffalo (Erie County) and the entire counties of Rensselaer and Ulster.

Recruitment for the study began in March 2000 and ended in August 2001. During this period, women who were found eligible for the program and agreed to participate in the study were randomly assigned to either the HFNY group or the control group. Baseline interviews were conducted with 1,157 study participants shortly after random assignment. Women who entered the study prenatally were interviewed again after their babies were born. Follow-up interviews were conducted with all study participants at one, two, and three years after the target child's birth using standardized instruments and measures specifically designed for the study. Data were also collected from the automated databases maintained by OCFS. Study retention was high: 92% of the parents who completed an initial assessment interview were re-interviewed at the Year 1 follow-up.

The findings associated with the Year 1 wave of data collection (i.e., as of the target child's first birthday) are presented in this report. Subsequent reports will present the findings from the Year 2 and Year 3 follow-up studies.

Findings

The Year 1 evaluation findings indicate that the HFNY program has had a significant impact on outcomes within each of the three domains targeted by the program: parenting, child health and development, and parents' life course development (see table below). Specifically, HFNY helped some parents to develop healthier attitudes toward discipline and more appropriate expectations of their children, and to gain a better understanding of child development. Compared to parents in the control group, HFNY parents were less likely to report neglecting their children, and reported committing fewer acts of severe physical abuse, minor physical aggression, and psychological aggression against their children. In regard to child health and development, HFNY mothers experienced better birth outcomes, and were more likely to breast-feed their babies and to secure health insurance for their children than were their counterparts in the control group. In addition, HFNY was helpful in assisting some parents to reduce depression and alcohol, tobacco, and drug use. The specific findings associated with each of these areas are discussed below.

Summary of Positive Program Effects

Parenting	Child Health and Development	Parental Life Course Development
• Attitudes* • Knowledge* • Self-reported abuse and neglect	• Birth outcomes • Health care access • Nutrition*	• Substance use* • Mental health*

* Effects limited to certain sites or subgroups.

Parenting

At the time of their children's first birthday, parents in the HFNY group tended to report less

favorable attitudes toward the use of corporal punishment than control group parents. This effect approached statistical significance for the sample as a whole, and was statistically significant for one of the program sites and among certain subgroups of study participants, namely parents under the age of 18 and those reporting the fewest symptoms of depression. In addition, HFNY parents in one site were less likely than control group parents in that site to have inappropriate expectations of their children's abilities and behaviors. Finally, among parents with two or more children, the HFNY group scored higher on a scale measuring knowledge of child development than did the control group.

To obtain as accurate and complete a picture of parenting practices as possible, both self-reported parenting behaviors and Child Protective Services (CPS) reports of abuse and neglect involving program participants were examined. The revised Conflict Tactics Scale (CTS) was used to measure self-reported parenting behaviors (Strauss, Hamby, Bonney-McCoy & Sugarman, 1996). Compared to control parents, HFNY parents reported engaging in significantly fewer acts of "serious" abuse and neglect, which were defined as behaviors that were serious enough to have resulted in a substantiated report had they come to the attention of CPS (e.g., punching, choking, leaving the child alone). The frequency of self-reported severe physical abuse, minor physical aggression, and psychological aggression was also significantly lower among HFNY parents than control parents. Observed effects on serious abuse and neglect, minor physical aggression, and psychological aggression were particularly strong for HFNY parents who reported that they had not experienced domestic violence in the year prior to intake into the study.

A significantly lower percentage of HFNY parents than control parents reported having neglected their children, as measured by behaviors such as leaving the child alone or failing to attend to the child's basic needs. Impacts on the prevalence and frequency of neglect were the greatest for Latina parents.

In contrast to the positive program effects found for self-reported abuse and neglect, no significant differences between the control and HFNY groups were observed in the percentage of parents with substantiated CPS reports or the average number of substantiated CPS reports per parent. The

Summary of Significant Parenting Outcomes

Compared to parents in the control group, HFNY parents…

- reported having engaged in fewer acts of abuse and neglect of their children that were serious enough to result in a substantiated CPS report
- reported fewer incidents of severe physical abuse of their children
- were less likely to report having neglected their children
- reported less minor physical aggression against their children
- reported less psychological aggression toward their children
- were less likely to favor physical punishment as a discipline approach (effect limited to one site, parents under 18, and least depressed parents)
- were less likely to have inappropriate expectations for their children (effect limited to one site)
- had greater knowledge of child development (effect limited to parents with two or more children)

discrepancy in the findings for these official indicators of abuse and neglect and the self-reported measures may be due to greater surveillance of HFNY parents by home visitors and the providers to which they refer families. HFNY parents who admitted to having committed serious acts of abuse or neglect were more likely to have a CPS report than were control parents who self-reported serious abuse or neglect. This suggests that actual incidents of abuse and neglect committed by HFNY parents were more likely to be detected and reported to CPS than were those committed by control parents. Consequently, the rate of substantiated CPS reports in the HFNY group may be artificially inflated in comparison to the control group, making it difficult to find a significant difference between the groups on substantiated CPS reports.

Child Health and Development

The HFNY program led to significant improvements in three important areas of child health: birth outcomes, access to health care, and breast-feeding. Specifically, the rate of low birth weight babies among HFNY families was less than half the rate observed in the control group. HFNY parents did not differ from control group parents on other indicators of healthy birth outcomes, such as premature births and the use of neonatal intensive care services. We lacked adequate data to determine whether the program had any effect on parents' use of prenatal care or their prenatal health behaviors, such as smoking and substance use.

In regards to health care access, HFNY parents were more likely than control parents to secure health insurance for their children at the time of their first birthday. The HFNY and control groups did not differ, however, in their access to a primary care provider or in the likelihood of having had a child's medical needs go unmet. Higher rates of health insurance coverage also did not appear to translate into a greater use of preventive health care services, at least within the child's first year of life, as HFNY and control parents did not differ in their rates of child immunizations or in the number of well baby visits attended. HFNY parents did tend, however, to utilize emergency room services when their children suffered injuries or ingestions more often than control parents. Although this finding appears to run counter to the program's goal of promoting use of primary and preventive health care, it may simply mean that HFNY parents were more likely than control parents to seek prompt medical care for their children when accidents occurred.

Positive program impacts were also seen in the area of nutrition. Although no effect was found for the sample as a whole, HFNY mothers with two or more children were significantly more likely than control mothers with two or more children to breast-feed their babies. There was no significant difference between the groups, however, in the number of months mothers engaged in breast-feeding. Finally, in one site, HFNY mothers were substantially more likely than their control group

Summary of Significant Child Health & Development Outcomes

Compared to parents in the control group, HFNY parents…

- delivered significantly fewer low birth weight babies
- were more likely to have health insurance for their children
- were more likely to breast-feed their babies (effect limited to parents with two or more children)
- were more likely to receive WIC benefits for their children (effect limited to one site)

counterparts to be receiving WIC benefits at the time of their children's first birthday.

The HFNY and control groups did not differ in the percentage of mothers who reported providing a safe physical environment for their children.

Parents' Life Course Development

The HFNY program benefited parents in two areas that can significantly influence their life course development, as well as their functioning as parents: depression and substance use. In one site, the percentage of HFNY parents experiencing clinically relevant depression was significantly less than the percentage observed in the control group. For the sample as a whole, the number of parents scoring above the clinical cutoff for alcohol abuse tended to be lower for the HFNY group than for the control group, but this effect only approached statistical significance. HFNY parents in one site drank significantly fewer alcoholic beverages than control group parents in that site. Similarly, in one site, HFNY parents were significantly less likely than control parents to report having used illicit drugs in the past year. Finally, HFNY mothers under the age of 18 smoked fewer cigarettes than control mothers who were less than 18 years old.

Control group parents were found to have significantly higher rates of employment than HFNY parents at their children's first birthday. This is not necessarily a negative finding when viewed in terms of HFNY's child health and development goals. In fact, returning to work too soon after childbirth can in some cases lead to negative outcomes for children (Baydar & Brooks-Gunn, 1991; Belsky & Eggebeen, 1991; Morris, Huston, Duncan, Crosby & Bos, 2001). There were no program impacts on any of the other indicators of parents' economic self-sufficiency, for the sample as a whole or for any subgroup. We expect a greater chance of observing positive program effects on employment, income, and education in the second and third waves of data, because the program design calls for stepping up the focus on increasing economic self-sufficiency following the child's first year.

Family planning analyses revealed a single significant effect for one site. Mothers in this site who received home visitation services were more likely than their counterparts in the control group to experience an additional pregnancy during the year.

Implications and Recommendations

Although some of the findings summarized above were limited to specific subgroups of mothers or to particular program sites, this array of findings is impressive for several reasons. First, early intervention programs are most likely to yield long-term benefits when they strengthen families in several areas (Schorr, 1988). HFNY appears to be accomplishing this goal, with documented program impacts for behaviors within the parenting, child health and development, and parental life course domains.

Second, the results presented in the current report reflect only those impacts observed as of the targeted child's first birthday. HFNY intends for services to be provided to families until the target child is five years old or enters Kindergarten or Head Start. Thus, the reported results represent a preliminary estimate of HFNY's impacts after fami-

Summary of Significant Parental Life Course Development Outcomes

Compared to parents in the control group, HFNY parents…

- were less likely to report symptoms of depression (effect limited to one site)
- consumed less alcohol (effect limited to drinkers in one site)
- were less likely to use illicit drugs (effect limited to one site)
- smoked fewer cigarettes (effect limited to parents under age 18)

lies have received only a portion of the intended program services. Previous research suggests that the strongest benefits of home visitation programs may not become evident until several years after the program has ended (Johnson & Walker, 1991; Olds et al., 1998). Therefore, it is conceivable that modest program effects may be strengthened and new program effects may emerge as the second and third year follow-up assessments are completed.

Third, the present study utilized a randomized experimental design, which is considered the "gold standard" for evaluating program effectiveness. In addition, a conservative, intention-to-treat approach was used when determining program effects. Families who refused or prematurely withdrew from HFNY services were still considered to be members of the HFNY treatment group. Thus, the results represent the impact of being offered the opportunity to participate in HFNY rather than the effect of actually participating in the program. This approach results in a fairly conservative test of program effectiveness, and as such, strengthens our confidence that the findings reported are valid program effects, not skewed by selection bias.

We therefore recommend that support for the HFNY program be continued, and we offer several policy and practice recommendations to strengthen future program development. Specific implications and recommendations are presented below for each of the main outcome areas examined in the study: parenting, child health and development, and parents' life course development. In addition, given the research showing that some of the most compelling effects of home visitation do not emerge until several years after program services have ended, we recommend that the evaluation of HFNY be extended to permit the examination of longer-term impacts on children as they reach their fifth birthday, in particular, developmental outcomes such as school readiness. An assessment of the impacts of HFNY in the child's fifth year would contribute immeasurably to the body of knowledge in the field of home visitation, as there have been no randomized trials to date that have considered the effects of HFA programs beyond the child's third birthday.

Parenting

The differences between the HFNY and control groups on parenting attitudes and knowledge were often small, and program effects were concentrated in specific sites or subgroups. Consequently, we recommend that the program continue to target parental attitudes and knowledge while considering ways to enhance its educational methods so that stronger effects on a broader spectrum of program participants can be achieved.

The impacts observed on parents' self-reported incidents of abuse and neglect against their children are particularly noteworthy, in light of previous research on HFA programs finding no or modest program effects on child abuse and neglect. It is also worth noting that when abuse or neglect did occur among HFNY families, it was more likely to be reported to CPS officials than when it occurred among families in the control group, suggesting that the HFNY program may have resulted in abused and neglected children receiving needed services earlier.

Thus, the present pattern of results suggests that the HFNY program is a promising means of reducing child abuse and neglect among New York's families. However, consistent with prior research findings (Eckenrode et al., 2000; Duggan, McFarlene, et al., 2004; Landsverk et al., 2002), the results of the current evaluation also indicate that the presence of particular risk factors, such as maternal depression and domestic violence, may limit program effectiveness. HFNY has taken a number of steps to better equip its home visitors to address domestic violence, mental illness, and substance abuse, such as providing training on indicators of these issues and on intervention protocols for working with families struggling with these problems, and developing referral arrangements with domestic violence, mental health, and substance abuse treatment providers. We recommend that these existing program practices be strengthened and new approaches be crafted to improve the ability of HFNY to reduce child abuse and neglect in the face of domestic violence, depression, substance abuse, and other issues that may act as obstacles to effective service delivery.

First, although the eligibility assessment conducted by the Family Assessment Workers (FAWs) includes questions on domestic violence, depression, and substance abuse, and home visitors are trained to recognize indicators of these problems, they may go undetected in many cases because of parents' unwillingness to disclose sensitive information and their adeptness in concealing signs of these problems. It is also possible that these types of issues may not arise until months or years after the initial assessment has taken place. We therefore recommend that all HFNY programs incorporate a series of brief, routine assessment measures to periodically screen for domestic violence, depression, and substance abuse throughout the length of parents' involvement in the program.

Second, to help home visitors best respond to identified risk factors, we recommend that they be provided training in the stages of change framework developed by Miller and his colleagues (Miller & Rollnick, 1991), which is now available only to HFNY supervisors. The stages of change model would offer useful guidance to home visitors on how to discuss sensitive issues with parents in supportive ways, how to motivate parents to initiate and sustain change, and how to suggest concrete actions that improve parents' situations.

Third, we believe it is critical for HFNY programs to strengthen their partnerships with local agencies that specialize in providing domestic violence, mental health, and substance abuse services. We recommend that HFNY programs explore the feasibility of implementing a model used by OCFS to promote collaboration between child welfare offices and domestic violence advocacy organizations and substance abuse treatment providers. This model involves the collocation of domestic violence advocates and substance abuse treatment specialists in CPS offices, where they provide consultation on CPS cases in which domestic violence or substance abuse is present, and when indicated, meet with parents to assess their need for services, discuss action steps and service options, and link them with appropriate services. OCFS has found that this approach helps to engage many parents in services who otherwise would have failed to follow through on the referrals made by CPS workers. The collocation model also increases the CPS workers' understanding of domestic violence and substance abuse and their ability to deal more effectively with these issues.

If the collocation approach proves to be infeasible in particular sites, those HFNY programs should consider hiring experts, at least on a part-time basis, in the areas of domestic violence, mental health, and substance abuse. Another possible option is to provide intensive, specialized training in domestic violence, mental health, and substance abuse to designated home visitors or supervisors, who would serve as the "resident experts" on these issues. As in the collocation model, this would enable home visitors to access a specific staff member for information, support and assistance with service planning and delivery in cases involving these challenging issues.

Finally, training and supervision should focus on helping home visitors stay on task with their child-centered curriculum, even when the family is struggling with other stressors.

Child Health and Development

The reduction in low birth weight babies has tremendous implications for children's long-term health and development. Low birth weight is a leading cause of neonatal death, hospitalization, and a range of health and developmental problems throughout childhood (Healthy People 2010, 2002). Moreover, caring for children with high needs puts extra demands on parents, causing continuing stress and potentially impeding parents' ability to achieve economic self-sufficiency (Brooks-Gunn, McCormick, Shapiro, Benasich, & Black, 1994). Thus, program-related reductions in the rate of low birth weight babies should result in better child health, healthier parenting, and greater opportunities for parent self-sufficiency.

The HFNY's focus on providing education and encouraging good prenatal health practices should continue to be a principal program component. However, program development staff should also explore ways to further improve the prenatal component of the program so that home visiting practices can influence other birth outcomes as well

(e.g., premature birth). We recommend that HFNY expedite the planned statewide rollout of a three-day training using a prenatal curriculum developed by HFA that has been pilot tested in three HFNY sites.

We also recommend that HFNY expand its outreach and recruitment efforts to reach more women in the early stages of pregnancy who, without the intervention of the program, would have received no or late prenatal care. Most of the women who are enrolled in HFNY prenatally are identified through prenatal clinics and physicians' offices. Consequently, the program is likely to miss women who do not seek prenatal care until late in their pregnancies or at all.

Currently, the FAWs are responsible for outreach and recruitment as well as for conducting the assessment interview to determine the family's eligibility for the program, which includes the administration of the Family Stress Checklist (FSC). However, most of their time is devoted to conducting the FSC, leaving little time for outreach to find and engage pregnant women who are isolated and have limited contact with prenatal care providers and community organizations. Given the clear benefits of identifying and serving women who otherwise would not have received adequate prenatal care or other supports during their pregnancies, it is questionable whether administering the FSC is the most productive use of the FAWs' time. Data from the HFNY data management system indicate that only one percent of the families screened and referred to HFNY by community providers were later determined to be ineligible for program services based on the FSC assessment. Thus, the relatively simple criteria used by community providers to screen potential HFNY clients appear to be a more efficient means for identifying parents likely to benefit from program services.

Although the FSC has not been found to be an effective targeting tool, it does provide important information about the family that may help home visitors tailor program content and develop more appropriate modes of service delivery. We therefore recommend that HFNY examine the feasibility of using the FSC for service planning rather than for determining eligibility for the program, and to give consideration to changing the roles of the home visitors and FAWs, so that home visitors, instead of FAWs, would conduct the FSC interview. This would make it possible for the FAWs to focus exclusively on outreach and recruitment and to perform universal screening in high risk communities. And it would help to build the home visitors' skills in interviewing parents to obtain sensitive information and provide the home visitors with first-hand information about the risk factors present in their clients' lives.

The finding that HFNY mothers who had more than one child were more likely than their counterparts in the control group to breast-feed their children is important because breast-feeding provides infants with the best possible nutrition during the most sensitive period in their physical development, and thus decreases their risk for a host of acute and chronic illnesses (American Academy of Pediatrics, 1997). Studies also suggest that breast-feeding may improve infants' cognitive development (Morrow-Tlucak, Haude & Ernhart, 1988), as well as prevent a range of maternal health problems (Melton et al., 1993; Newcomb et al., 1994).

However, the restriction of positive breast-feeding results to a single category of mothers suggests the need for closer examination of the ways in which home visitors promote breast-feeding to program participants. Current methods appear to be more effective for mothers with two or more children than for first-time mothers. It may be the case that first-time mothers need a different type or level of support and education to undertake breast-feeding. To promote breast-feeding among all mothers participating in HFNY, the programs should consider contracting with lactation consultants in their communities, or alternatively, having a staff person receive the training needed to become a lactation specialist.

Life Course Development

HFNY's effects on depression and on alcohol, drug, and tobacco use have important implications as these issues present serious obstacles to other central program goals such as healthy parenting practices (Downey & Coyne, 1990) and

economic and educational advancement (Bogard, Trillo, Schwartz & Gerstel, 2001; Hardy, Woods & Wall, 2003; Wickizer, 2001). However, these effects were limited to certain sites and subgroups, indicating the need for HFNY to strengthen current practices and develop new strategies to improve the home visitors' recognition and response to mental illness and substance abuse. As mentioned earlier, it is likely that having experts on staff and forging stronger collaborative arrangements with community agencies would improve home visitors' effectiveness in dealing with mental health and substance abuse.

It is important that HFNY make improvement in economic self-sufficiency a high priority. The programs should continue to link parents to employment and education-related services (e.g., workforce development initiatives, tuition assistance programs, ESL and GED programs, etc.). In addition, HFNY should consider an approach that has been used successfully in some of the programs: providing training to parents on employment readiness skills and motivation to work.

CHAPTER 1
Introduction

Modeled after the national Healthy Families America (HFA) initiative, Healthy Families New York (HFNY) is a community-based prevention program that seeks to improve the health and well-being of children at risk for abuse and neglect through the provision of home visitation services. HFNY was established in 1995 by the former New York State Department of Social Services, part of which merged with the former Division for Youth in January 1998 to create a new agency devoted to serving children and families—the Office of Children and Family Services (OCFS). The program is currently active in 28 New York State communities and has four major goals: 1) to prevent child abuse and neglect; 2) to enhance positive parent-child interactions; 3) to promote optimal child health and development; and 4) to increase parents' self-sufficiency.

To document the ability of the HFNY program to effect change within each of these core areas, the Bureau of Evaluation and Research at OCFS, in collaboration with the Center for Human Services Research (CHSR) at the University at Albany, embarked on a three-year evaluation study utilizing a randomized experimental design in three counties with established home visitation programs (Erie, Rensselaer, and Ulster). The current report presents the results of the first year of this evaluation study, and examines the extent to which the HFNY program positively affected parenting (including self and official reports of child abuse and neglect), child health and development, and parents' life course development at the time of the targeted child's first birthday.

Chapter 2 briefly reviews the theoretical background surrounding home visiting practices and summarizes the results of other evaluations of home visitation programs. In particular, the effectiveness of the two most widely adopted home visitation models, the Nurse-Family Partnership (NFP) and Healthy Families America (HFA) are discussed.

Chapter 3 provides an overview of the HFA initiative and describes the adaptation and implementation of the model within New York State. The conceptual model and theory of change associated with the HFNY program are also reviewed. Chapter 4 describes the evaluation design, data collection procedures, retention in the evaluation, engagement and retention in the HFNY program, and the data analytic strategy.

Evaluation findings are presented separately by core area in Chapters 5, 6, and 7. Chapter 5 examines the impact of the program on parenting outcomes, including parenting attitudes, knowledge, and practices. Chapter 6 discusses the findings related to child health and development, including birth outcomes, health care access, nutrition, and child safety. Chapter 7 describes the program's effects on parents' life course development, including mothers' mental health, substance use, economic self- sufficiency, and family planning.

Finally, Chapter 8 summarizes the overall findings of the study and discusses the implications associated with specific findings. Recommendations for future program practice are also offered.

CHAPTER 2
Review of Prior Research on Impacts of Home Visiting Programs

A basic premise of child abuse prevention is that it is better to be proactive than to wait until abuse patterns emerge and families come to the attention of a social services agency or health professionals (Institute of Medicine, 1994). This is particularly important given that parents at the greatest risk for child maltreatment (single, young, low-income) are unlikely to seek out preventive services on their own, but are often willing to accept services if the barriers to participation are minimized (e.g., transportation, child care, and rigid schedules). Partly for these reasons, home visiting programs have become the most recommended and widely practiced strategy for child abuse prevention in the nation (Guterman, 2001; The U. S. Advisory Board on Child Abuse and Neglect, 1990).

Grounded in the ecological theory of human development (Bronfenbrenner, 1979), home visitation programs focus not only on parents but also on the social and societal contexts in which families are embedded. Although specific program models vary somewhat in structure and content, home visitation programs are explicitly designed to reduce risk factors and build protective factors by intervening at the individual level (e.g., building knowledge, skills and self-efficacy), the dyadic level (e.g., fostering healthy parent-child interactions), and the environmental level (strengthening proximal social networks, stability in the home, and linkages with community services). Another common feature of these models is the emphasis placed on the early introduction and maintenance of services. Programs are designed to begin as early as possible and to last throughout infancy and into early childhood. This gives programs the opportunity to influence the formation of early childrearing patterns and may help to set parents on a positive life course trajectory that reduces later risk for child maltreatment (Olds, Eckenrode, et al., 1997).

In the United States, two of the dominant home visiting models are the Nurse-Family Partnership or NFP (formerly called the Prenatal Early Infancy Project or PEIP) and Healthy Families America (HFA). The following chapter provides a brief description of each of these models and summarizes the findings of previous studies designed to document the effectiveness of programs adopting these models.

A. Nurse Home Visiting Model

NFP began in the late 1970's in Elmira, New York and was designed to provide first-time, at-risk mothers with home visits from early pregnancy through the targeted child's second year. Home visits were conducted by nurses trained to provide education on prenatal health, childcare and child development; to promote economic self-sufficiency and effective family planning; and to facilitate mothers' connections to formal health and human services. As part of the research process associated with the program, mothers were randomly assigned to either a treatment (i.e., home visited) or control group (Olds, Henderson, Chamberlin & Tatelbaum, 1986; Olds et al.1999). Similar programs utilizing the nurse home visitor model were later implemented in other locations (e.g., Memphis, Denver).

The randomized trial of the Elmira NFP program indicated that nurse home visitation had a positive effect on children's health, child maltreatment, and mothers' life course (Olds, Henderson, Tatelbaum & Chamberlin, 1986). Home visited adolescents had babies significantly heavier in birth weight than their control group counterparts. Better pregnancy outcomes were also observed in home visited smokers. The prevalence of pre-term delivery was significantly lower among smokers in the nurse home visited group than among smokers who did not receive home visits

Another area in which NFP appears to have been effective is parenting behavior. Women in the home visited group were more likely than women in the control group to view their child positively

during the child's first year of life and were less likely than mothers who did not receive home visits to punish and restrict their child during the child's second year. In addition, mothers who received home visits provided more appropriate play materials to their children than did their counterparts in the control group (Olds, Henderson, Chamberlin & Tatelbaum, 1986).

Findings related to childhood maltreatment were initially modest and unstable. Although home visited parents who were young, low-income and unmarried tended to be less likely than their control group counterparts to have a verified case of child abuse and neglect during the first two years of their child's life, this effect was no longer apparent once the program ended. When children were four years old, no differences in the number of state-verified cases of child abuse and neglect were found between the home visited and control groups. The groups did differ, however, in the type of abuse and neglect reported. Families who had received nurse home visitation services were less likely than the non-home visited families to have more serious forms of child maltreatment reported (Olds et al., 1999). At the fourth year follow-up, the children of home visited mothers were also less likely than control group children to have received emergency room treatment or to have been seen by a physician for injury or ingestion (Olds et al., 1999).

Surprisingly, the strongest effects on child maltreatment were observed at 15-year follow-up, or 13 years after families were discharged from services. When groups were reexamined 15 years after the birth of their child, the mothers who had received nurse home visitation services were significantly less likely than mothers who did not receive home visitation services to be identified as a perpetrator within a state verified case of child abuse and neglect. Significant reductions in childhood injuries were also noted within the nurse home visited group. Mothers who were poor and unmarried at program enrollment were most strongly affected by the program (Olds, Eckenrode, et al., 1997; Olds et al., 1998; Olds et al., 1999).

In addition to these child-related outcomes, the NFP program also had a significant positive impact on the life course of some of the women who received nurse visitation services. Poor, unmarried women who received home visitation services had fewer subsequent pregnancies, spent less time on welfare and food stamps, and had fewer substance abuse related problems at 15-year follow-up than did their counterparts in the control group (Olds, Eckenrode, et al., 1997).

Randomized trials of nurse home visiting programs in other regions of the country have replicated some of these initial findings, with positive effects found on risk factors for child maltreatment at two years post-birth. However, the effects of these programs on rates of child maltreatment have not yet been reported (Kitzman et al., 1997; Olds et al., 2002).

Several important lessons can be learned from the NFP studies. First, the presence of long-term effects on child maltreatment and maternal life course, despite modest and often unstable initial findings, suggests that the potential value of home visiting programs may not be entirely evident until several years after service delivery. The effects of NFP on some of the risk factors associated with child maltreatment did, however, emerge earlier underscoring the value of showing early program effects on known risk factors, even if initial findings do not reveal a program effect on child maltreatment.

Second, Olds and colleagues have warned against using official reports of child abuse and neglect as the only indicator of child maltreatment. As noted by Olds and his colleagues (Olds, Henderson, Kitzman & Cole, 1995), the presence of a "surveillance bias" may make it appear that home visited families have equal or higher rates of child maltreatment than comparison families. Families receiving home visits may be reported to CPS more often than non-home visited families simply because the presence of a regular visitor in the home provides more opportunities for child maltreatment to be observed. Moreover, home visitors often refer families to other providers in the community, increasing the number of people in a position to detect abuse and neglect. It is therefore possible that the modest and inconsistent findings pertaining to official reports of child mal-

treatment found early in the Elmira NFP study may have been influenced by surveillance bias. In addition, the early detection of maltreatment may motivate the families in the treatment group to get help earlier, thus preventing more severe forms of maltreatment in later years. Thus, incorporating non-official measures of child maltreatment, such as parental self-report, and longer-term indicators of child abuse and neglect may help researchers to avoid the potential pitfalls associated with surveillance bias.

Third, many of the most striking NFP effects were concentrated among subgroups of mothers with a moderate degree of environmental and psychosocial risk factors in their lives. In some cases effects were greatest for mothers who were poor and unmarried, or for those who had a lower sense of control over their lives (Olds et al., 1998). Conversely, effects were frequently absent in families with severe risk, such as those with high rates of domestic violence (Eckenrode et al., 2000). These findings suggest that families with a moderate degree of risk may be most likely to benefit from home visitation programs, while families with severe conditions, such as the presence of domestic violence, may be less likely to benefit from services.

B. Healthy Families America Model

The other dominant model of home visitation currently being utilized in the United States to prevent child abuse and neglect is HFA. Based largely on Hawaii's Healthy Start Program (HSP) that began in the early 1980's, the HFA model is similar to the NFP program. However, one key difference is that home visitation services are delivered to at-risk parents by paraprofessionals, who are not required to have a college degree and typically share the same language and cultural backgrounds as program participants, rather than by nurses. Another important difference is that NFP targets first-time teen mothers, whereas HFA serves mothers of all ages without regard to whether they have other children. Other differences are that parents may enroll as late as 3 months postnatally, versus only prenatally in the NFP model, and services continue throughout the first three to five years of the targeted child's life, as compared to only the first two years of life in the NFP model. Provided services are similar to those offered by NFP, and include supporting parent-child bonding; educating parents about child health, positive parent-child interactions, and basic child development; helping parents to access community resources; and assisting parents in addressing existing family problems, such as parental substance abuse or poor mental health. Families are targeted for service provision through a population-based screening and assessment process designed to identify parents with a high number of risk factors (Daro & Harding, 1999).

The first evaluation of Hawaii's Healthy Start Program (HSP), the program that serves as the primary foundation for the HFA model, reported significant program effects on child maltreatment (Daro, McCurdy & Harding, 1998). Women in the study were randomly assigned to either home visitation or a control group, and were tracked until their child's first birthday. Although the overall percentage of mothers reported for child maltreatment did not differ between the two groups, the average number of CPS reports per mother was significantly less for the home visited group than for the control group. Furthermore, all confirmed cases of maltreatment among home visited families involved the least serious classification of maltreatment available in Hawaii—imminent harm. In contrast, the identified control families engaged in three different forms of neglect as well as imminent harm. Home visited mothers also displayed increased involvement with their children and greater sensitivity to their children's cues as compared with control group mothers. In addition, children in the home visited group were significantly more responsive to their mothers than were their control counterparts at one year of age (Daro, McCurdy & Harding, 1998). Although several methodological problems (differential dropout among treatment conditions, interviewers not blind to treatment conditions) limited the conclusions that could be drawn from the evaluation, initial results were nevertheless considered promising by many in the child abuse prevention field.

Findings from the second major evaluation of HSP, conducted by researchers at John Hopkins University School of Medicine (Duggan et al., 1999; Duggan, McFarlene et al., 2004; Duggan, Fuddy, et al., 2004), have been less favorable. Duggan and colleagues randomly assigned parents referred to HSP to either a home visited or a control group and subsequently monitored family functioning at one, two and three years after the birth of the targeted child. At the time of the target child's second birthday, significant positive program effects were reported for mothers' use of nonviolent discipline strategies, parenting efficacy measures, parenting stress, and maternal mental health (Duggan et al., 1999). However, unlike the first HSP evaluation, no differences in the rate of child protective services reports of child maltreatment were found between groups.

Moreover, at the three-year follow-up, home visited families were not significantly different from the control group on official or self-reported measures of physical and psychological abuse, child hospitalization patterns, and parental risk factors, such as mental health and domestic violence (Duggan, McFarlene, et al., 2004; Duggan, Fuddy, et al., 2004). Home visited mothers were slightly less likely than mothers who did not receive services to report engaging in neglectful behaviors. However, this effect appeared to be due primarily to mothers in the home visited group being less likely than control group mothers to experience difficulty in accessing health care. Likewise, although home visited mothers were less likely than control mothers to report using common forms of corporal/verbal discipline, this effect was attributable to a reduction in threats to spank or hit among mothers from only one of the three agencies included in the study.

Consequently, Duggan and her colleagues conclude that the HSP program has had little impact on child maltreatment and parental risk factors. They attribute the program's shortcomings to home visitors' lack of skills and supervision in dealing with risk factors for abuse and neglect—in particular, domestic violence, substance abuse, and mental illness—and to properly link families to necessary professional services. Furthermore, they argue that HSP, like many HFA programs, has moved away from a risk reduction model to a strengths-based approach in recent years, which may have redirected or precluded the delivery of services for problems that present obstacles to the development of healthy parenting practices. Duggan and colleagues recommend a more targeted approach that identifies risk and develops the expertise in workers to adequately support families with such complex and challenging issues.

A randomized trial of an HFA program in San Diego also found mixed program effects after three years of follow-up (Landsverk et al., 2002). The intervention was based on an enhanced design of HSP. The Healthy Families San Diego (HFSD) program had much higher participant retention rates than HSP: 60% of the participants were still active in HFSD after three years compared to 23% of the participants in HSP. Despite the higher level of participation in the San Diego program, effects were limited to the specific areas in which the program had been enhanced. For example, a key focus of the San Diego intervention was on parent-child attachment, child development, and health practices with regard to the child. In these areas, group differences were noted such that children in the intervention group had higher scores on indicators of mental functioning at Years 1 and 2 and received more well care visits in Years 2 and 3 than children in the control group. Compared to mothers in the control group, mothers in the intervention group reported engaging in less psychological aggression against their children in Years 2 and 3, and using corporal punishment less frequently in Year 3. In addition, fewer HFSD mothers had a repeat pregnancy or live birth within two or three years than mothers in the control group. However, with respect to non-specific and general program goals, no differences were noted in the areas of self-reported physical abuse and neglect of the child, maternal economic indicators, levels of reported parenting stress, intimate partner violence, and maternal substance abuse. Like Duggan and colleagues (Duggan, McFarlane, et al., 2004), Landverk and colleagues suggest that these latter risk factors (i.e., unemployment, parenting stress, domestic violence, and maternal

substance abuse) are beyond the expertise or training of the home visitors, and thus, they cannot adequately identify or respond to the challenges posed by these risky lifestyles.

Thus, despite the popularity and widespread adoption of home visitation models, previous research on the effects of home visiting programs is mixed. Positive program impacts have been found in home visitation programs using the NFP nurse home visitation model, particularly at long-term follow-up and for subgroups of moderately at-risk parents. Evidence of the effectiveness of HFA, the model that serves as the basis for HFNY, is much weaker, with most studies finding no or minimal program impacts in the years surrounding service delivery. However, there have been no randomized controlled studies of the HFA model that have tracked impacts beyond the child's third birthday, even though research on the NFP indicates that the strongest effects of the program did not emerge until several years after the program ended. Given that HFA is widely adopted in many states as a child abuse prevention strategy, additional long-term evaluations of the HFA model employing rigorous methodology are warranted.

CHAPTER 3
Program Description and Conceptual Framework

The Healthy Families New York (HFNY) program was established in September 1995 as an initiative of the former New York State (NYS) Department of Social Services (part of which merged with the NYS Division for Youth in January 1998 to create a new agency devoted to serving children and families—the NYS Office of Children and Family Services or OCFS), in collaboration with the NYS Department of Health. HFNY is modeled after the Healthy Families America (HFA) initiative. The following chapter provides a description of the HFA model and its adaptation and implementation within New York State. To help explain the mechanisms through which the HFNY program expects to achieve its goals, the conceptual model and theory of change associated with the HFNY model are also reviewed.

A. History of the Program

HFA is a nationwide initiative that delivers preventive home visiting services to expectant and new parents who are at risk for child abuse and neglect. The HFA model was derived from the Hawaii Healthy Start Program (HSP). Since HFA began in 1992, it has become the most widely disseminated home visiting program in the nation. In 2001, there were 456 programs serving about 50,000 families in 40 states (Harding, Friedman & Dias, 2003). Across all programs, this amounts to an annual budget of over $240 million.

HFNY is operating in 28 sites throughout the state covering nine entire counties, urban, suburban and rural areas, and nine sites in New York City. Figure 1 displays the location of these sites. Nine of the program sites have been in operation since the inception of HFNY in 1995, two sites since 1997, and the remainder since 2001. The 2003 State Budget included $17.6 million for the HFNY program. Since HFNY began in 1995, 12,397 families have been pro-

Figure 1: Location of HFNY Sites

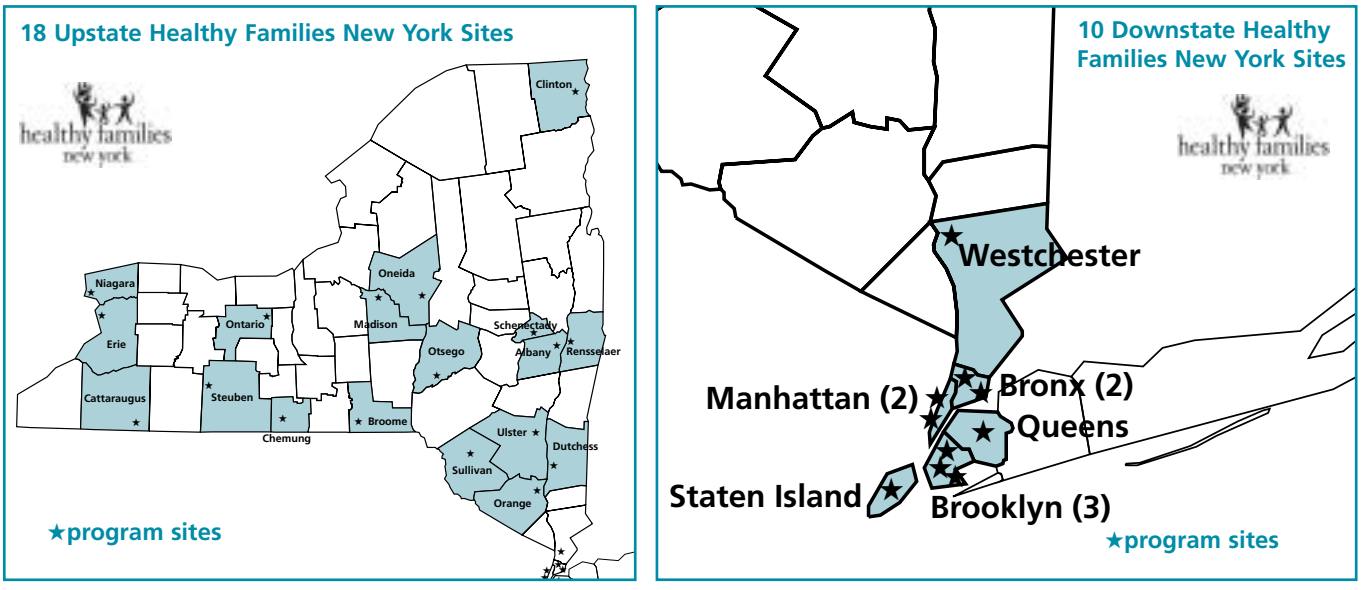


Table 1:
HFNY Program Enrollment by Site, from September 1995 through June 2004

	Year Started	County	Program Name	# Enrolled
Downstate	2001	Westchester	Westchester County Healthy Families	170
	2001	Bronx	South Bronx Healthy Families	123
	2001	Bronx	Special Beginnings	160
	2001	Brooklyn	Successful Start	103
	2001	Brooklyn	Bushwick Bright Start	203
	2001	Manhattan	BABY STEPS Home Visiting Program	111
	2001	Queens	Safe Space	150
	2001	Richmond	Healthy Families Staten Island	162
	1995	Brooklyn	CAMBA Home Visiting Program	590
	1994	Manhattan*	Best Beginnings/Alianza Dominicana, Inc.	604
			Downstate Total	**2,376**
Upstate	2001	Broome	Building Brighter Futures For Broome	190
	2001	Cattaraugus	Healthy Families Cattaraugus	170
	2001	Niagara	Healthy Families Niagara	202
	2001	Oneida	Healthy Families/Oneida County	295
	2001	Ontario	Healthy Families of the Finger Lakes	105
	2001	Orange	Newburgh Healthy Families	144
	2001	Dutchess	Dutchess County Healthy Families	204
	2001	Sullivan	Healthy Beginnings of Sullivan	64
	1995	Albany	Bright Beginnings	1097
	1995	Chemung	Healthy Families Chemung County	759
	1997	Clinton	Early Advantages	220
	1995	Erie	Buffalo Home Visiting Program	1850
	1995	Madison	Starting Together	900
	2001	Otsego	Building Healthy Families	150
	1995	Rensselaer	Healthy Kids	1117
	1997	Schenectady	Healthy Schenectady Families	680
	1995	Steuben	Healthy Families Steuben	1059
	1995	Ulster	Ulster County Healthy Start Program	814
			Upstate Total	**10,021**
			NYS Total	**12,397**

*Does not include families that were assigned to a control group as part of a separate evaluation conducted of the Manhattan program.

vided over 370,000 home visits. Table 1 (on previous page) shows the number of families enrolled in each of the 28 HFNY program sites from inception through June 30, 2004. The cost per family ranges from $2,500 - $3,500 per year, with slightly higher costs in New York City based on participants served and actual claims.

B. Goals and Objectives of the Program

HFNY has four major goals: (1) to prevent child abuse and neglect; (2) to enhance positive parent-child interactions; (3) to promote optimal child health and development; and (4) to increase parents' self-sufficiency.

To accomplish these goals, the program seeks to meet the following objectives:

- Promote positive health behaviors during pregnancy including receipt of proper prenatal care;
- Increase parental knowledge of child development and age-appropriate behavior;
- Enhance parent-child bonding;
- Increase the extent to which children receive well-child check-ups and immunizations on schedule and timely lead assessments and screenings;
- Encourage proper nutrition, avoidance of harmful substances, and other healthy behaviors;
- Increase access to and utilization of health and community services; and
- Promote development of self-sufficiency skills and knowledge of employment, education, and childcare options.

C. Characteristics and Needs of Target Population

The target population for HFNY consists of expectant parents and parents with an infant under three months of age (76% of the families enroll prenatally or within two weeks of birth of the baby) who live in communities that are considered high risk by the NYS Department of Health based on factors such as high rates of teen pregnancy, low birth

Figure 2: Race/Ethnicity of Primary Caretaker

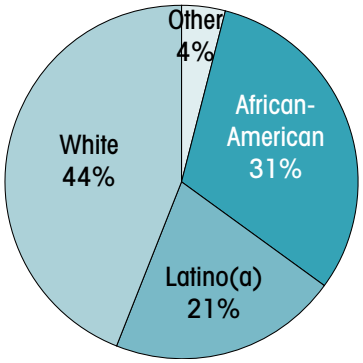


Figure 3: Age of Primary Caretaker

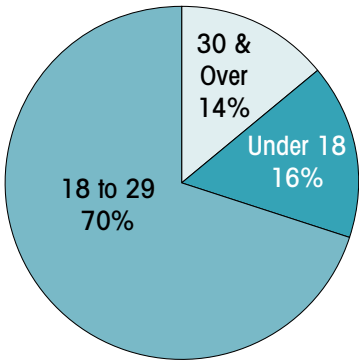
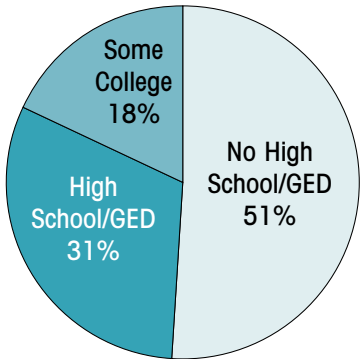


Figure 4: Education of Primary Caretaker



weight babies, infant mortality, Medicaid births, and mothers with late or no prenatal care. The program also targets parents who are at elevated risk for parenting difficulties due to life circumstances such as parental history of childhood abuse, substance abuse, mental illness, criminal activity, or domestic violence.

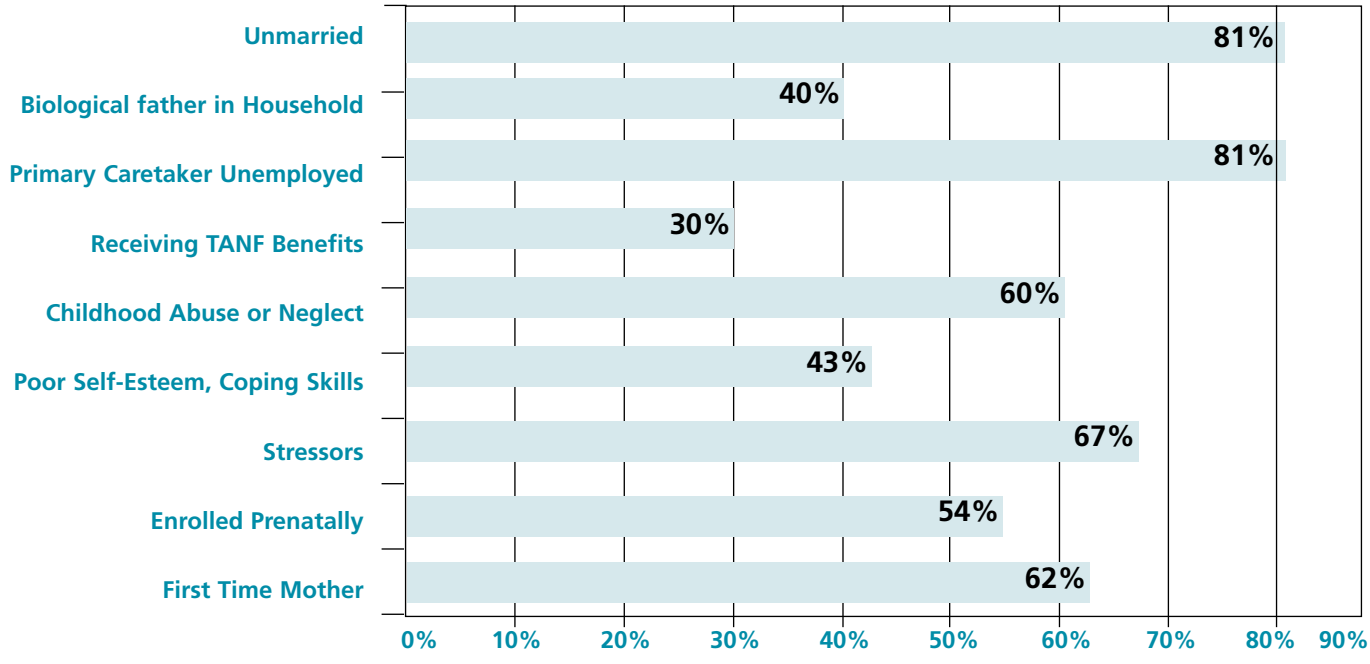
Figure 2 (on previous page) indicates that the population served by HFNY is ethnically and racially diverse—less than half (44%) of primary caretakers (usually the mother of the target child) enrolled in the program are white, with African-Americans making up 31% and Latinos/Latinas comprising 21% of the population served. As shown in Figures 3 to 5, families participating in HFNY have a number of characteristics that increase their risk of experiencing child abuse and neglect and poor child health and developmental outcomes. Primary caretakers tend to be young: 86% are under 30 and 16% are under 18 (see Figure 3 on previous page). Half (51%) have not completed high school or obtained a GED (see Figure 4 on previous page). Few (19%) HFNY participants are married, but 40% live with the biological fathers of their children (see Figure 5). Most (81%) of the primary caretakers were unemployed and 30% were receiving benefits from the Temporary Assistance for Needy Families (TANF) program at the time of their enrollment in HFNY (Figure 5). Six in ten (60%) primary caretakers reported having experienced abuse or neglect when they were children (Figure 5). Forty-three percent were assessed as having low self-esteem or poor coping skills at time of enrollment in the program (Figure 5).

Over half (54%) of the mothers entered the HFNY program prenatally, and 62% were first-time mothers at time of enrollment in HFNY (Figure 5).

D. Screening And Enrollment

HFNY programs perform a systematic needs assessment of all new parents in targeted communities at or before childbirth. Unlike the NFP program discussed in Chapter 2, HFNY is not limited to first-time parents. And in contrast to HSP, it includes pregnant women as well as those who have recently given birth. Through a system of community health and social service agencies and hospitals, the HFNY programs screen expectant and new parents for social and economic risk factors such as single parenthood, teen pregnancy, poverty, poor education, unstable

Figure 5: Selected Characteristics of Program Participants



housing, substance abuse or mental health problems. Parents who screen positive are referred to HFNY. A trained Family Assessment Worker (FAW) at each site then conducts an assessment interview using Kempe's Family Stress Checklist (Kempe, 1976). The Family Stress Checklist (FSC) is a semi-structured interview guide that examines 10 risk factors for child abuse and neglect, such as unrealistic expectations of the child, history of abuse as a child, substance abuse, poor mental health, and domestic violence. The family is considered to be at risk, and thereby eligible for HFNY, if either the mother or the father of the child scores 25 or higher on the FSC. The vast majority (99%) of the families referred to HFNY score above this prescribed cutoff, and are offered home visiting services on a voluntary basis.

E. Program Structure and Content

After the assessment process is complete, a Family Support Worker (home visitor) is assigned to the family. Services are delivered to the parent and child in their home, which allows services to be tailored to the individual family's needs. Home visitors are able to reach families who might not go to an office-based setting. The home visiting approach emphasizes the families' strengths rather than focusing on problems and deficits.

Home visitation is provided until the child turns five or is enrolled in Head Start or Kindergarten. Home visits are scheduled biweekly during pregnancy. After the birth of the child, families are placed on Level 1 and are visited one or more times per week. As families progress through the service levels, based on their needs, home visits occur on a diminishing schedule, from biweekly (Level 2), to monthly (Level 3), and then quarterly (Level 4). Most families stay on Level 1 until the baby is at least six months old. The content of the visits is intended to be individualized and culturally appropriate, such that visits address the unique needs of both children and parents. Activities focus on improving the parent/child relationship, helping parents understand child development and how to encourage optimal growth, providing assistance with access to health care, and developing an Individual Family Support Plan to improve self-sufficiency and family functioning.

Home visits are designed to address some of the most significant factors that influence children's development. Home visitors provide education, information and activities on child development and age-appropriate behavior. They utilize curricula recommended by HFA such as "Partners for a Healthy Baby" and "Parents as Teachers". Home visitors also work with parents to assess children for developmental delays using a standardized instrument at specified ages (Ages and Stages Questionnaire by Squires, J, Bricker, D. & Twombly, L., 2002) and refer them to the local early intervention programs when needed.

Home visits emphasize parent/child interaction. Home visitors provide support, education, information and activities on important topics like bonding, sleeping, bathing, diapering, dressing and discipline. Home visitors assist parents to realize they are the most important people in their children's lives. Home visits also promote maternal, infant and child health. Home visitors provide information about the importance of healthy behaviors, including proper nutrition and family planning. They support efforts to eliminate the use of cigarettes, alcohol and drugs, especially during pregnancy. Home visitors also provide information on health providers or services, and encourage families to seek medical care when appropriate.

While concrete needs are not their primary focus, home visitors often help parents to access transportation, food, clothing, and household goods by making referrals or supporting families in accessing needed services. They also address legal and housing needs, and provide advocacy and support with non-medical providers and services. Home visitors help to develop self-sufficiency skills by teaching parents time management, money management, and problem-solving techniques. They also discuss employment, educational, training and child-care options. Finally, home visitors help families to identify and address issues like violence in the household, substance abuse, and mental illness.

F. Program Staffing

Home visitors are paraprofessionals who are

hired from the community being served, and share the same language and cultural background as the program participants. They are selected primarily based on personal attributes such as warmth, fondness for children, non-judgmental attitude, and belief in non-physical methods of disciplining children. Although home visitors are not required to have any post-secondary education, many (43%) have attended college, and about a third (34%) are college graduates. Home visitors carry a caseload of 15 when the home visitor is visiting families on a weekly basis. Later, when families are visited less frequently, workers may carry a caseload of up to 25 families. This manageable caseload size allows home visitors to spend adequate time with each family.

G. Staff Training and Supervision

All new HFNY staff members attend a one-week HFA training to learn the basic skills to perform home visits and assessments provided by a NYS training team of approved HFA trainers sponsored by Prevent Child Abuse New York (PCANY). Home visitors receive training on parent-child interaction, child development, and strength-based service delivery; FAWs are trained in administering and scoring the FSC; and supervisors receive an additional three days of training on their role in promoting quality services. All staff members also receive intensive local "wraparound" training on a variety of topics such as domestic violence, substance abuse issues, abuse and neglect, well-baby care, and communication skills as well as ongoing advanced training on a variety of topics based on staff needs.

New home visitors are mentored by and shadow experienced home visitors at their site before being assigned their own families. As part of HFA's strong supervisory component, home visitors meet with their supervisors for at least 1.5 hours each week. In addition, supervisors observe one home visit per quarter for each home visitor.

H. Program Support

All 28 HFNY sites receive ongoing support through training, evaluation, technical assistance, and monitoring. OCFS oversees all these aspects of the program. The weeklong HFA training and the three-day supervisory course described above are conducted by PCANY. PCANY also conducts advanced training on selected topics, and visits each site at least once every two years to observe home visits, assessments, and supervision. OCFS staff members also conduct regular site visits to provide technical assistance and monitor compliance with HFA and HFNY standards.

Home visiting sites in New York are connected by a computerized data management system maintained by the Center for Human Services Research (CHSR) at the University at Albany, which is used to collect comprehensive information for managing the program and for evaluating its outcomes. Data are collected on the characteristics and needs of families served, the frequency and content of home visits, service referrals, and program outcomes. The performance of the programs is assessed on a regular basis using standardized performance targets that are related to the goals of the program, and technical assistance is provided as needed. These performance targets were developed to assist the programs to stay focused on the goals of the program. The targets were set above what a comparable group might achieve. For example, when the targets were first developed, 80% of the Medicaid-eligible children received their immunizations within the prescribed time frames. The performance target for the HFNY program was therefore set at 90%. The targets have been refined and changed over time to reflect new priorities and issues. For example, new targets have been established to measure the extent to which the programs have increased the rate of breastfeeding, reduced stress indicators, and increased the referral of families affected by substance abuse, domestic violence, and depression to appropriate community services. A list of the current targets is provided in Table 2.

All program managers attend bi-monthly meetings to share resources, discuss training, evaluation, technical assistance, and quality assurance. These meetings have been held since the program began in 1995. A Home Visiting Council also meets regularly to provide guidance to the programs. This

Table 2: Healthy Families New York Performance Targets

Health and Development Targets

Immunizations at One Year
At least 90% of target children will be up to date on immunizations as of first birthday.

Immunizations at Two Years
At least 90% of target children will be up to date on immunizations as of second birthday.

Lead Assessment
All target children will be assessed for the risk of lead in their environment according to the NYS Health Department's suggested schedule.

Medical Provider for Target Children
At least 95% of target children will have a medical provider.

Target Child Well Baby Medical Provider Visits by 15 months
All target children will have at least 5 well baby visits by 15 months of age.

Target Child Well Baby Medical Provider Visits by 27 months
All target children will have 2 well baby visits between 15 and 27 months of age.

Age Appropriate Developmental Level
All target children will demonstrate age appropriate developmental milestones on the Ages and Stages Questionnaire or be referred for further evaluations/services if delays are detected.

Medical Provider for Primary Caretaker
90% of primary caretakers will have a medical provider.

Parent-Child Interaction Targets

Primary Caretaker Breast-feeding
30% of primary caretakers will breast-feed their target children for at least 3 months from the birth of the child.

Valid PSI Assessments
Programs will complete 75% valid intake/birth PSI assessments.

Reducing Parental Stress in Highly Stressed Families by the Target Child's Six Month Birthday
60% of primary caretakers with a total score above the 85th percentile on the initial Parental Stress Index (PSI) will score below the 85th percentile for total score on the six-month follow-up PSI.

Reducing Parental Stress in Highly Stressed Families by the Target Child's First Birthday
80% of primary caretakers with a total score above the 85th percentile on initial Parental Stress Index (PSI) will score below the 85th percentile for total score on the one-year follow-up PSI.

Reducing Parental-Child Dysfunctional Interaction Stress (PCDI) in Highly Stressed Families by the Target Child's Six Month Birthday
65% of primary caretakers with a PCDI score above the 85th percentile on the initial Parental Stress Index (PSI) will score below the 85th percentile on the PCDI score on the six-month follow-up PSI.

Table 2 (continued): Healthy Families New York Performance Targets

Reducing Parental-Child Dysfunctional Interaction Stress (PCDI) in Highly Stressed Families by the Target Child's First Birthday.
80% of primary caretakers with a PCDI score above the 85th percentile on the initial Parental Stress Index (PSI) will score below the 85th percentile on the PCDI score on the one-year follow-up PSI.

Maternal Life Course Targets

Employment, Education and Training by Target Child's First Birthday
50% of families will be enrolled in an education program, job training or job placement program or will obtain employment by the target child's first birthday.

Employment, Education and Training by Target Child's Second Birthday
75% of families will be enrolled in an education program, job training or job placement program or will be employed by the target child's second birthday.

TANF by Target Child's First Birthday
At least 35% of families who were on TANF at intake will no longer be on TANF by the target child's first birthday.

TANF by Target Child's Second Birthday
At least 50% of families who were on TANF at intake will no longer be on TANF by the target child's second birthday.

Education of Participants Under 21 at Target Child's 6 Month Birthday
At least 85% of primary caretakers under 21 at intake and without a high school degree or GED will be enrolled in a degree bearing program or receive a high school degree or GED certificate by the target child's 6 month birthday.

Education of Participants Under 21 at Intake at Target Child's First Birthday
At least 90% of primary caretakers under 21 at intake and without a high school degree or GED will be enrolled in a degree bearing program or receive a high school degree or GED certificate by the target child's first birthday.

Referrals for Needed Services
If domestic violence, substance abuse, or mental health is identified as a current issue on the FSC assessment of an enrolled participant, a referral will be made for the primary caretaker within 6 months of enrollment 75% of the time.

Council is comprised of representatives from state agencies serving children and families, the state legislature, and home visiting programs and child advocacy organizations from across the state.

HFNY has recently been credentialed by Prevent Child Abuse America/Healthy Families America as a multi-site system, effective through June 13, 2008. HFNY's central administration is recognized as providing administratively sound quality assurance, training and technical assistance, policies and evaluative support to the sites within its multi-site system. The 28 sites within the system are also recognized as providers of high quality home visitation services.

The credentialing process attests that sites within the HFNY system have met nationally estab-

lished, research-based standards, indicative of quality service delivery. It also verifies that HFNY's central administration has met best practice standards related to system management and administration.

The multi-site credentialing process is a two-part review. The first part of the review involves an in-depth examination of both the central administration's and program sites' operations. Both the central administration and eligible sites within the system complete a comprehensive self-assessment. The central administration's self-assessment is based on how well it is promoting the quality of the sites within its system through quality assurance, training, technical assistance, and evaluation of services. The sites' self-assessments are based upon program implementation, including personnel, fiscal, and program management. The second part of the process requires an on-site review based on the content of the completed self-assessments and is conducted by trained peer reviewers that are external to the state. New York is one of only four multi-site systems to receive this credential.

I. Conceptual Framework

A well-articulated theory of change identifies key program characteristics and activities and explains how each of these components contributes to the attainment of stated program goals. Depicted in Figure 6 is a graphic representation, or logic model, of the theory of change associated with the HFNY program. For ease of presentation, only the main pathways or mechanisms through which HFNY is expected to achieve its goals have been highlighted in the model. In practice, the program may also affect change in other ways that are not shown here.

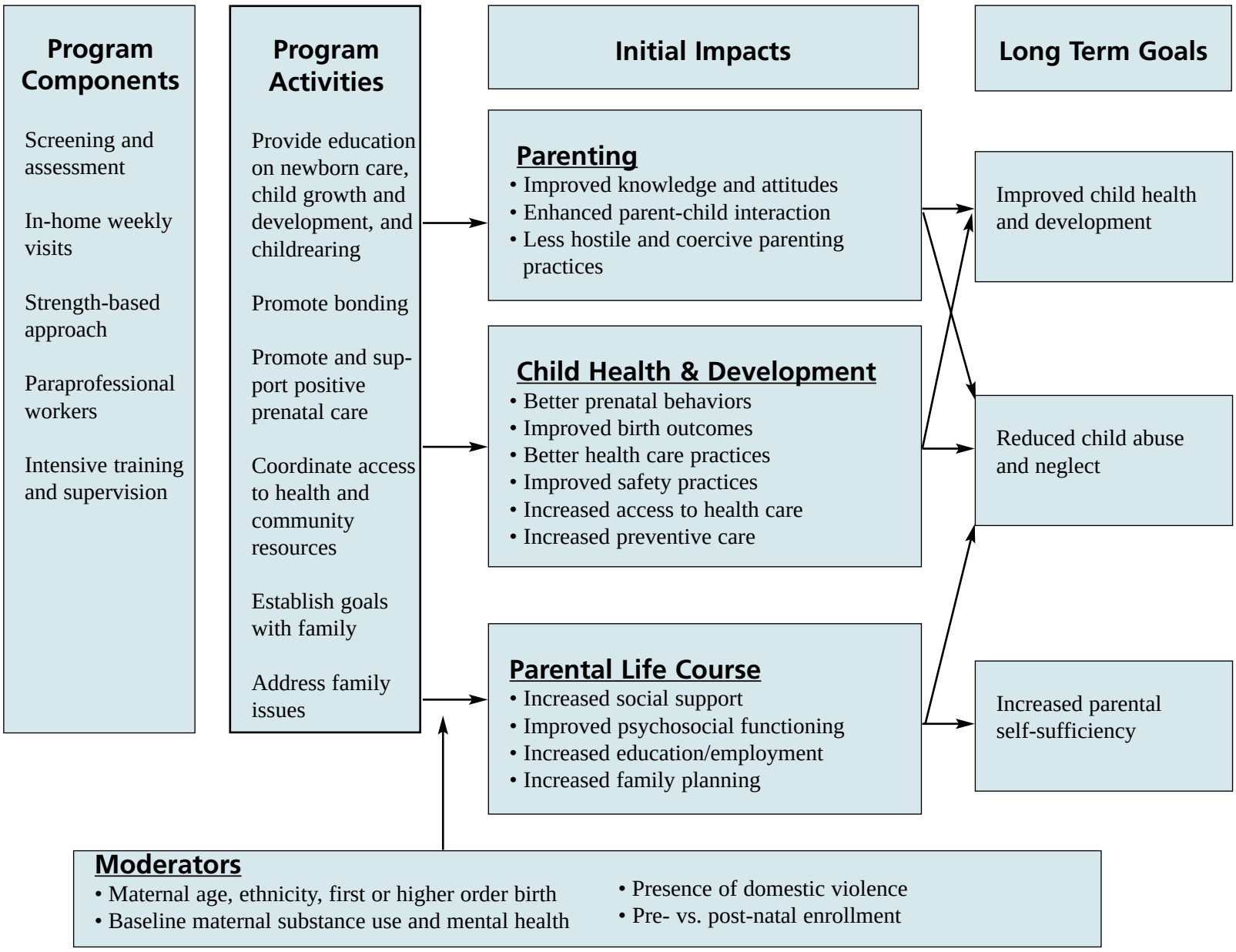
As indicated in the columns on the left-hand side of the model, HFNY uses paraprofessional workers to provide home-based services to parents deemed to be at risk for child abuse and neglect based on program screening and assessment procedures. These in-home visits are designed to provide parents with skills and knowledge on a variety of child-related topics, including the importance of prenatal care, healthy pregnancy behaviors, newborn childcare, basic child development, and positive child-drearing practices. Home visitors also provide parents with information regarding community resources, assist parents in coordinating health care and other needed services, and work with parents to address family issues and establish family goals. In turn, these services are believed to enhance family functioning in three core domains: parenting, child health and development, and parents' life course development.

Specifically, program activities that focus on supporting parent-child interaction and on teaching child development and behavior management skills are expected to enhance parents' understanding of their children's needs and abilities, foster healthy attitudes and beliefs about parenting and discipline, and expand parents' skills for stimulating children's cognitive and social development. These parenting outcomes, in turn, are believed to contribute to the formation of positive early parent-child interactions (e.g., responsiveness, communication, and affection), and the establishment of nurturing, non-coercive parenting practices. Reduced rates of child abuse and neglect are presumed to follow (Bavolek & Keene, 1999; Crittenden, 1985; Lahey, Conger, Atkeson &Treiber, 1984).

Similarly, program activities that serve to link parents with community and health resources, and encourage parents to adopt a wide range of health and safety-oriented behaviors, are hypothesized to exert a positive impact on children's immediate health and development, and lead to long-term improvements in these areas. For example, home visitors discourage smoking, facilitate prenatal medical appointments, and encourage breast-feeding and well-baby visits following birth. They also encourage preventive care, help families identify problems early, and connect families with early intervention services when indicated. These efforts can contribute to healthier prenatal behaviors, improved birth outcomes, and healthier children.

Program activities are also intended to influence parents' life course development. Home visitors try to develop parents' self-sufficiency skills and encourage parents to find employment or further their education and training, as well as helping them find appropriate childcare options and coordinating access to community resources. Home visitors also

Figure 6: Conceptual Framework



work with families to address issues like family planning, substance abuse and mental illness. These efforts are expected to improve parents' support networks and psychosocial functioning, eventually leading to better parenting (Downey & Coyne, 1990; Elder, Van Nguyen & Caspi, 1985; Izzo, Weiss, Shanahan & Rodriguez-Brown, 2000), greater economic self-sufficiency, and family stability (McCloyd, Jayaratnes, Ceballo & Borquez, 1994; Price, Van Ryn & Vinokur, 1994).

It is important to note, however, that a wide range of moderating factors may influence the ability of program activities to produce positive outcomes within each of the three domains described above. As illustrated in the moderator box included at the bottom of the logic model, the presence of certain maternal and family characteristics may either enhance or diminish the likelihood that program activities will result in their intended outcomes. For example, previous research suggests that adolescent mothers may be more likely than older mothers to experience improvements in birth outcomes as a result of home visitation (Olds, Henderson, Tatelbaum & Chamberlain., 1986). Also, the presence of domestic violence has been found to decrease the effectiveness of home visitation on child maltreatment (Eckenrode et al., 2000). Other potential moderators include: maternal ethnicity, parity (first-time mothers versus mothers with multiple children), baseline maternal substance abuse and mental health, and time of program referral (pre versus post-natal).

Potential moderators are included on the logic model because they can significantly impact our understanding of how a program works and for whom. Given the expectation that program effects may be more likely to emerge within certain subgroups than in others, a clearer picture of program impacts is revealed when the effects of program involvement are examined separately for each subgroup as well as for the sample as a whole.

CHAPTER 4
Description of Evaluation

This section of the report describes the evaluation design, data collection procedures, retention in the evaluation, engagement and retention in the HFNY program, and the data analytic strategy. The evaluation uses a rigorous research methodology and a thorough data analytic strategy to maximize the confidence that can be placed in the findings.

A. Evaluation Design

This evaluation is a randomized controlled experiment in which families eligible for HFNY were randomly assigned to an intervention group or to a control group. The intervention group was offered the opportunity to participate in the HFNY program, while the control group was given information and referral to other appropriate services available in the community. Experimental designs are considered the "gold standard" for assessing program impacts because they produce the most reliable and credible results. Random assignment is the most effective way to minimize the differences between the intervention group and the control group at the outset of the evaluation on all characteristics that might influence their outcomes. Demonstrating the initial equivalence of the two groups is critical in order to attribute any differences observed in the outcomes for the two groups solely to the intervention. If the intervention and control groups differ initially, one cannot be certain that differences in the outcomes for the two groups are due to the program or to preexisting differences in the characteristics of the two groups.

Study Sites

The randomized trial was conducted in three home visiting programs located in Erie, Rensselaer, and Ulster counties that had been in operation since the inception of HFNY. These programs were selected because they were well-managed programs capable of carrying out effectively the tasks associated with the research and they were not currently operating countywide, leaving room for expansion. Had we conducted the randomized trial in a program that was already serving all eligible families in the county, the program would have had to scale back the number of families enrolled in home visiting in order to reserve a sufficient number of eligible families for assignment to the control group. With expansion, the three selected sites were able to identify a pool of potential candidates for the program that was large enough to both maintain (or increase) the number of families they served and to form a control group of sufficient size. Recruitment of potential participants was expanded to cover the whole county in Rensselaer and Ulster, and to include additional zip codes in Erie.

The Erie, Rensselaer, and Ulster programs are characterized by considerable diversity in terms of geographic location, urbanization, host agency affiliation, and the characteristics of eligible families, which afforded the opportunity to test the program model with different populations and in different contexts. The Erie program targets families from inner-city neighborhoods in the city of Buffalo that have high rates of low birth weight, poverty, teen pregnancy, and other problems that put children at higher risk of poor health outcomes and maltreatment. As mentioned above, the Rensselaer and Ulster programs now serve their entire counties, which include small cities as well as suburban and rural areas. Erie's home visiting population consists primarily of African-American families and Latino families of Puerto Rican origin. Home visited families in Rensselaer are predominantly white but a sizable percentage are African-American. Participants in the Ulster program are largely white with an appreciable number of Latinos, many of whom are recent immigrants from Mexico and Central American countries. The Erie program operates under the auspices of a community-based agency, while the Rensselaer program is affiliated with a hospital and the Ulster program is associated

with a primary care organization that provides comprehensive health care and mental health services.

Recruitment and Screening

Families were selected for the randomized trial based on the same criteria used to determine eligibility for HFNY. Women who were pregnant or had an infant less than three months old were screened for risk factors such as single parenthood, teen pregnancy, and poverty at prenatal clinics, doctors' offices, hospitals, and community-based organizations. Women who screened positive were referred to HFNY, and a Family Assessment Worker (FAW) scheduled an appointment to meet with the potential study participant in her home. The FAW provided information to the potential study participant regarding the types of services she would be offered, the nature of the study, what would be expected of her, her right to refuse or end participation in the research, and the procedures for protecting the confidentiality of the information provided. The FAW then asked the woman to sign an informed consent form signifying her willingness to participate in the study. All women who signed the informed consent form were assessed by the FAW for risk of engaging in child abuse and neglect using the Family Stress Checklist (FSC), and those scoring at or above the pre-established cutoff of 25 were considered eligible for the study.

Recruitment for the study began in March 2000 and ended in August 2001. Over this period, 1,296 women were found to be eligible for the randomized trial and gave consent to participate.

Random Assignment and Treatment Conditions

Roughly half of the 1,296 women were randomly assigned to the intervention (HFNY) group and half were assigned to the control group. The random assignment was performed within each site using a computer program designed specially for this study. Security protections were built into the computer program to preclude program or evaluation staff from bypassing the random assignment process.

Each member of the HFNY group was assigned to a home visitor, who contacted her to set up an initial home visit to complete the enrollment process. After enrollment in HFNY, families were provided the usual array of services offered by the program. About 10 percent of the HFNY group was never enrolled in the program because they could not be located or later decided against participating in the program. The FAW provided parents in the control group with information about other services in the community and made referrals based on the needs identified during the assessment interview. Members of the control group were not referred to other home visiting programs that provided services similar in type, duration, and intensity to HFNY. FAWs did not follow up to determine whether parents actually received the services to which they were referred.

Once a family was assigned to the HFNY group or the control group, they remained in that group for the duration of the study. Members of the HFNY group who never enrolled in the program or dropped out prematurely were kept in the HFNY group, in order to preserve the comparability of the HFNY and control groups accomplished through random assignment.

B. Baseline Characteristics of Sample

Evaluation staff attempted to conduct an in-home baseline (or intake) interview with each member of the HFNY and control groups within one month of random assignment. In all cases, the mother was the person interviewed for the study. Although the mother was asked questions about the father of the target child and other members of the family, the focus of the baseline interview and all subsequent interviews is the mother and the target child. Despite the best efforts of the interviewers, the interview could not be scheduled until more than one month had elapsed in some cases. In others, the interview could not be conducted at all. The primary reason intake interviews were not completed, accounting for more than half of the uncompleted interviews, was that the parent subsequently became ineligible for the study due to moving outside the catchment area or to fetal or infant death. Other reasons were that the parent could not be located or declined to participate in the study. Only parents

who completed intake interviews were included in the study sample.

Table 3: Distribution of Sample

	Control Group	HFNY Group	Total
Erie	302	290	592
Rensselaer	147	145	292
Ulster	140	133	273
Total	589	568	1,157

Of the parents who were randomly assigned, 1,157 (or 89%) completed intake interviews and became study participants. As Table 3 shows, the HFNY group consists of 568 parents and the control group includes 589 parents. Erie County comprises about half the sample (592), and Rensselaer and Ulster each make up approximately a quarter of the sample (292 and 273, respectively).

As shown in Table 4, the demographics of the sample are comparable to the characteristics of the population of families enrolled in HFNY programs across the state, which were presented in Chapter 3. Like the population, the sample is ethnically and racially diverse—42% were African American, 17% Latina, 34% white, and 7% of another race or ethnicity. Mothers participating in the study were predominantly young (average age=22.4) and poorly educated (52% had not completed high school or received a GED). While few participants were married (11%), a sizable proportion (38%) lived with a partner or spouse. Over a quarter (28%) lived with the baby's grandparent.

Three-quarters (76%) of study participants were unemployed and nearly two-thirds (62%) received less than half of the previous year's income from work. Reflecting the program's enrollment criteria relating to TANF eligibility, one-third (32%) of participants were receiving public assistance at baseline. To be eligible for HFNY, participants must either be receiving TANF benefits or have an income up to 200% of the poverty level. An additional 10% of the participants who do not meet these criteria are accepted into the program and are supported by local funds.

Over half (56%) of study participants had moved at least once in the year prior to intake into the study. Almost one in ten (9%) had substantiated child abuse or neglect reports prior to intake, and one in five (22%) had been physically abused in the previous year by a partner or spouse. Four in ten (42%) scored above the cut point for depression on the Center for Epidemiological Studies Depression Scale (CES-D), a widely used measure of depressive symptoms (Radloff, 1977). One-third (32%) of the mothers were smokers at the initiation of the study, 17% reported using illicit drugs in the previous year, and 4% scored above the cut point for alcohol abuse on the Alcohol Use Disorders Identification Test (AUDIT, Babor, de la Fuente, Saunders, & Grant, 1992).

Roughly two-thirds (64%) of the mothers were randomized prenatally and nearly six in ten (59%) were first-time mothers.

There were no significant differences between the HFNY group and control group on any of these measures, demonstrating that the random assignment was successful in securing the equivalence of the two groups at baseline.

C. Data Collection

The primary source of data for the study is structured interviews with parents in their homes and observation of parent-child interactions. Another important source is OCFS' automated databases: CONNECTIONS, which contains information about reports and determinations of child abuse and neglect, and the Child Care Review Service (CCRS), which includes information about entry and movement within the foster care system. Data on immunizations and well-child visits were obtained from medical records kept by physician's offices and clinics. Information on the type, intensity, and duration of services provided to the HFNY group comes from the Data Management System for the HFNY program, which was developed in 1996

Table 4: Baseline Characteristics of Sample

	All Cases (N=1,157)	Control Group (N=589)	HFNY Group (N =568)
Mother's Race/Ethnicity			
African-American	41.9%	43.0%	40.8%
Latina	17.0%	17.1%	16.9%
White	33.7%	33.6%	33.8%
Other	7.3%	6.3%	8.5%
Born outside U.S. and first language other than English	7.7%	7.8%	7.6%
Mother's Age			
Under 18	20.9%	18.9%	23.1%
18-29	68.0%	69.3%	66.7%
30 or older	11.1%	11.9%	10.2%
[Average age]	[22.4]	[22.6]	[22.3]
Mother's Education			
Did not complete high school or GED	52.3%	50.3%	54.4%
Completed high school or GED	25.5%	26.2%	24.8%
Some college	22.2%	23.5%	20.8%
Mother's Marital Status/Living Arrangements			
Unmarried	89.4%	88.6%	90.1%
Lived with spouse or partner	37.5%	38.4%	36.4%
Lived with baby's grandparent	27.8%	28.0%	27.6%
Employment/Government assistance			
Mother unemployed at baseline	76.4%	74.8%	78.0%
Less than half of previous year's family income came from work	62.2%	59.9%	64.6%
Family received welfare at baseline	32.4%	31.1%	33.8%
Moved at least once in previous year	55.6%	56.0%	55.3%
Physically abused by partner in previous year	21.6%	22.8%	20.4%
Prior substantiated child abuse reports	8.6%	9.0%	8.3%
Smoker	32.2%	31.8%	32.6%
Above alcohol abuse cutoff	3.6%	3.9%	3.3%
Used illicit drugs in previous year	16.6%	15.4%	17.8%
Scored above depression cutoff	41.7%	42.2%	41.2%
Mother randomized prenatally	64.2%	66.4%	61.9%
First-time mother	58.9%	57.4%	60.6%

and is maintained by CHSR. In addition, a survey of home visitors in the three study sites was conducted to gather information about their characteristics, attitudes, and perceptions of the work environment and supervision received.

Participants were interviewed in their homes at intake into the study, shortly after the birth of their children (if they entered the study prior to giving birth), and at the time of their children's first, second, and third birthdays. For the Year 3 follow-up assessment, we introduced an observational protocol in addition to the interview. The protocol involves videotaping parent-child interactions in four different situations (each of 5 minutes duration) that impose a different set of demands on the mother and the child. These situations are similar to others that have been widely used in studies of parent-child interactions, and are designed to elicit behaviors that are relevant to the present study.

All of the intake, birth, and Year 1 and Year 2 follow-up interviews have been completed. The Year 3 follow-up assessment is still underway, with an expected completion date of March 2005. Program impacts as of the Year 1 follow-up assessment are the subject of this report. Subsequent reports will focus on the effects of HFNY from intake through the target child's second and third birthdays.

A wide array of descriptive and outcome variables, selected in accordance with study's conceptual framework, were measured at the intake, birth, and follow-up interviews: parents' demographic characteristics and background; marital status and living arrangements; housing and neighborhood; parenting attitudes and practices; childhood history of abuse and neglect; prenatal care and birth outcomes; child's and parents' health and health care; child's safety; employment, dependence on government assistance, and financial hardship; parents' education and training; domestic violence; parents' mental health and coping; social support; parental use of harmful substances; and family planning. Table 5 displays the data collected at intake, birth and Year 1 and the instruments used to measure them. Measures that were based on a combination of questions from the interviews rather than a standardized scale are referred to in the table as "item composite." More detailed information about the measurement of outcomes is provided in the following chapters.

All interviews have been conducted using laptop computers equipped with a Computer-Assisted Personal Interviewing (CAPI) system. CAPI guides the interviewers through each interview, providing prompts as appropriate, automatically skipping questions that are not applicable to the respondent, substituting phrases based upon previous responses, and editing data upon entry to maximize integrity and consistency.

Extensive measures have been taken to maintain data quality. To minimize the threat of biased measurement, interviewers are independent of the HFNY program and are not informed of the participant's group assignment. Prior to their employment on this project, the interviewers had experience interviewing and working with at-risk populations, and familiarity with the community. A field coordinator stationed at CHSR supervises the interviewers, carefully monitoring their interview completion rate and the quality of their interviews. The field coordinator observes a random subset of the interviews conducted by each interviewer, and contacts a random subset of participants to confirm that the interviewer had indeed interviewed them and had asked the types of questions included in the survey instrument.

Before each wave of data collection, interviewers receive two days of training in topics such as basic interviewing techniques, procedures for locating respondents and contacts, maximizing participation and completion, avoiding and converting refusals, administering the questionnaire, and use of the CAPI system. They are also given ample opportunity to practice interviewing and using the CAPI before conducting "live" interviews. With the addition of the observational component in Year 3, interviewers received extensive training in observational methods, and the use of videotape equipment. Interviewers practiced the observational protocol within the training setting.

Table 5: Data Collected at Intake/Birth and Year 1

Domains	Measures	Specific Constructs	Intake/ Birth	Year 1
Demographic factors	Item composite	Age; gender; race/ethnicity; country of birth; length of time in the U.S.; primary language; English ability	✔	
Marital status and living arrangements	Item composite	Marital status; presence of partner in household; number and ages of children in household; children living outside the household	✔	✔
Housing and neighborhood	Item composite	Type of residence and payment; length of tenancy; homelessness during past year; and perceived safety and quality of neighborhood.	✔	✔
Parenting attitudes	Adult-Adolescent Parenting Inventory (AAPI), Version 2 (Bavolek & Keene, 1999)	Inappropriate expectations; empathy; corporal punishment; role reversal; power and independence	✔	✔
Knowledge of child development	Knowledge of Infant Development Inventory (KIDI) (McPhee, 1981)	Understanding of child behaviors and abilities at different stages of development		✔
Parenting practices	Revised Conflict Tactics Scale (CTS2): parent-child (Strauss, Hamby, Bonney-McCoy, & Sugarman, 1996)	Non-violent discipline; neglect; psychological aggression; minor physical aggression; serious physical abuse		✔
Child abuse and neglect reports	OCFS CONNECTIONS database	Administrative database of all child abuse and neglect reports and their determinations	✔	✔
Foster care	OCFS Child Care Review Service (CCRS) database	Administrative database of all foster care placements and spells	✔	✔
Childhood history of abuse and neglect	Revised Conflict Tactics Scale (CTS2): adult recall (Strauss, 1999) Item composite	Non-violent discipline; neglect; psychological aggression; minor physical aggression; serious physical abuse Sexual abuse	✔ ✔	
Prenatal care/Birth outcomes	Item composite	Timing and frequency of prenatal care; birth weight; premature birth; neonatal intensive care	✔	

Table 5 (continued): Data Collected at Intake/Birth and Year 1

Child's health/Health care access	Item composite	Breast-feeding; well-baby visits; immunizations; health conditions and disabilities; insurance coverage; emergency room visits; hospitalizations	✔	✔
Child safety	Safety checklist (research team)	Steps taken to increase child safety		✔
Mother's health/Health care access	RAND 36-Item Health Survey 1.0 (Hays, Sherbourne & Mazel, 1993)	Health status; effects of poor health on ability to work, fulfill family responsibilities, engage in recreational and social activities, and perform activities of daily living	✔	
	Item composite	Types of health problems and disabilities; primary health care provider; insurance coverage	✔	✔
Employment and income	Item composite	Employment status; job earnings and benefits; receipt of assistance from public sources (TANF, food stamps, SSI, WIC, etc.); income received from family, friends and other sources.	✔	✔
Education and training	Item composite	Years of school completed; high school or equivalent completion; college attendance and degrees; training received	✔	✔
Material hardships	Item composite	Eviction; hunger; loss of utilities; use of charity	✔	✔
Domestic violence	Revised Conflict Tactics Scale (CTS2): partner-to-partner (Strauss, Hamby, Bonney-McCoy, & Sugarman, 1996)	Partner negotiation skills; physical and psychological aggression; physical injury.	✔	✔
Mental health	Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977)	Current level of depressive symptomatology, with emphasis on the affective component, depressed mood	✔	✔
	Item composite	Type of mental health problems; mental health treatment received	✔	✔
Coping	Mastery of Psychological Coping Resources Scale (PSM) (Pearlin & Schooler, 1978)	Perceived capacity to influence events and circumstances in one's life	✔	✔

Table 5 (continued): Data Collected at Intake/Birth and Year 1

Domains	Measures	Specific Constructs	Intake/ Birth	Year 1
Social support	Index of Socially Supportive Behaviors (ISSB) (Barrera, Sandler & Ramsay, 1981)	Directive guidance; nondirective support; positive social interaction; tangible assistance	✔	✔
Alcohol abuse	Alcohol Use Disorders Identification Test (AUDIT) (Babor, de la Fuente, Saunders, & Grant, 1992).	Frequency and amount of drinking; alcohol dependence; problems caused by alcohol	✔	✔
Drug abuse	Drug Abuse Screening Test (DAST) (Skinner, 1982)	Frequency and amount of drug use; drug dependence; problems caused by drugs	✔	✔
	Item composite	Any drug use; types of drugs used	✔	✔
Smoking	Item composite	Ever smoked; length of time smoked; number of cigarettes per day; when quit	✔	✔
Family planning	Item composite	Prevalence and type of birth control used; subsequent pregnancies/births		✔

D. Retention in the Study

Several steps have been taken to retain participants in the study. First, participants are given a financial incentive for each interview/observation. Prior research suggests that financial incentives are effective in encouraging response to surveys, particularly ones involving a significant time commitment. Second, interviewers make multiple attempts to schedule and complete interviews/observations, contacting the participant by phone or by going to her home and varying the hours and days of attempted contact. Interviewers are well trained in how to avert refusals.

Third, interviewers devote considerable effort to maintaining contact with participants and tracking participants who have a change of address or phone number. To facilitate tracking, at each interview point, participants are asked to provide contact information for at least three people who would know their whereabouts should they move. Interviewers also send frequent mail reminders asking for change of address information, and when necessary, they visit the neighborhood of the mother's last known address to ask landlords, neighbors, storekeepers, and other knowledgeable neighborhood contacts about her whereabouts.

These efforts have resulted in a high rate of retention in the study. Of the parents interviewed at intake, 1,062 (or **92%**) were re-interviewed at the Year 1 follow-up. Two and a half percent of study participants refused to be interviewed at Year 1, about four percent could not be located for the Year 1 interview, and about two percent had become ineligible for reasons such as death of the mother or child or termination of parental rights. The response rate to the Year 2 follow-up interview was only slightly lower than that for the Year 1 interview—**87%**.

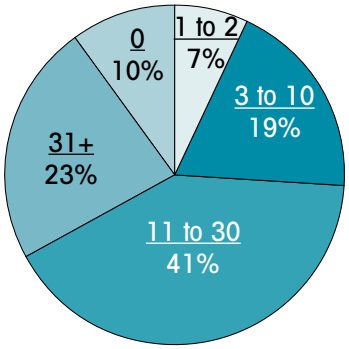
We conducted a series of statistical tests to determine whether participants' likelihood of being re-interviewed at Year 1 was significantly related to their group assignment (HFNY group or control group) or to a range of characteristics assessed at intake. The following baseline characteristics were examined: age, race/ethnicity, English as a second language status, marital and cohabitation status, education, employment, welfare use, number of economic hardships, whether participant entered the study prenatally, being a first-time mother, parenting attitudes scales, whether the mother had health insurance or a primary care provider, depression, sense of mastery, smoking, alcohol, and substance use. The HFNY group and the control group did not differ significantly with respect to attrition from the study. Also, there were few significant differences at baseline between parents lost to attrition versus those retained in the sample. Loss of participants between intake and Year 1 was higher among mothers entering prenatally (12%, compared to 7% entering postnatally) and among African-Americans and Latinas as compared to whites (12% and 10%, versus 5% of whites). Retained mothers had slightly more positive attitudes regarding children's independence and autonomy than those lost to attrition. As described below, most of these variables were included as covariates in our data analytic models to eliminate any influence they might have had on the study's findings.[1]

E. Engagement and Retention in the HFNY Program

The HFA model calls for home visits to be provided twice a month during pregnancy, on a weekly basis during the child's first six months of life, and then on a diminishing schedule based on family needs. The HFNY programs have struggled to meet these standards, due to the difficulties in scheduling home visits with mothers whose availability is limited by school or work and those whose life circumstances are destabilizing. New York is not the only state facing this challenge: A recent study conducted by Prevent Child Abuse America of the implementation of the HFA model in nine states revealed that none of states met the HFA guidelines for intensity of home visits (Harding, Reid, Oshana, & Holton, 2004).

Figure 7 displays the number of home visits received by families assigned to the HFNY group, from time of enrollment in the study through the target child's first birthday. As can be seen, a small proportion (10%) of the HFNY group did not

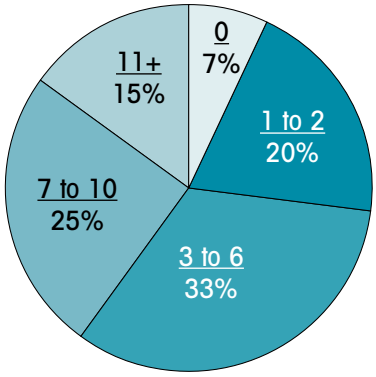
Figure 7: Total Number of Home Visits Received



receive any home visits. These parents either declined to participate when contacted by FSWs or could not be located. Another small proportion (7%) received only one or two visits before they disengaged from the program. Two-thirds (64%) of the HFNY group were visited more than 10 times from enrollment until the target child turned one, and almost a quarter (23%) were visited more than 30 times during the period. Thus, although the majority of HFNY participants received a substantial number of home visits, it's apparent that many were not visited as frequently as envisioned by the HFA model. The three sites were similar with respect to the frequency of home visits. However, a slightly higher percentage of participants in Erie than in Rensselaer and Ulster received no home visits—12% versus 6% and 8%, respectively (data not shown).

Figure 8 shows the number of prenatal home visits received by the 325 participants assigned to

Figure 8: Number of Home Visits During Pregnancy



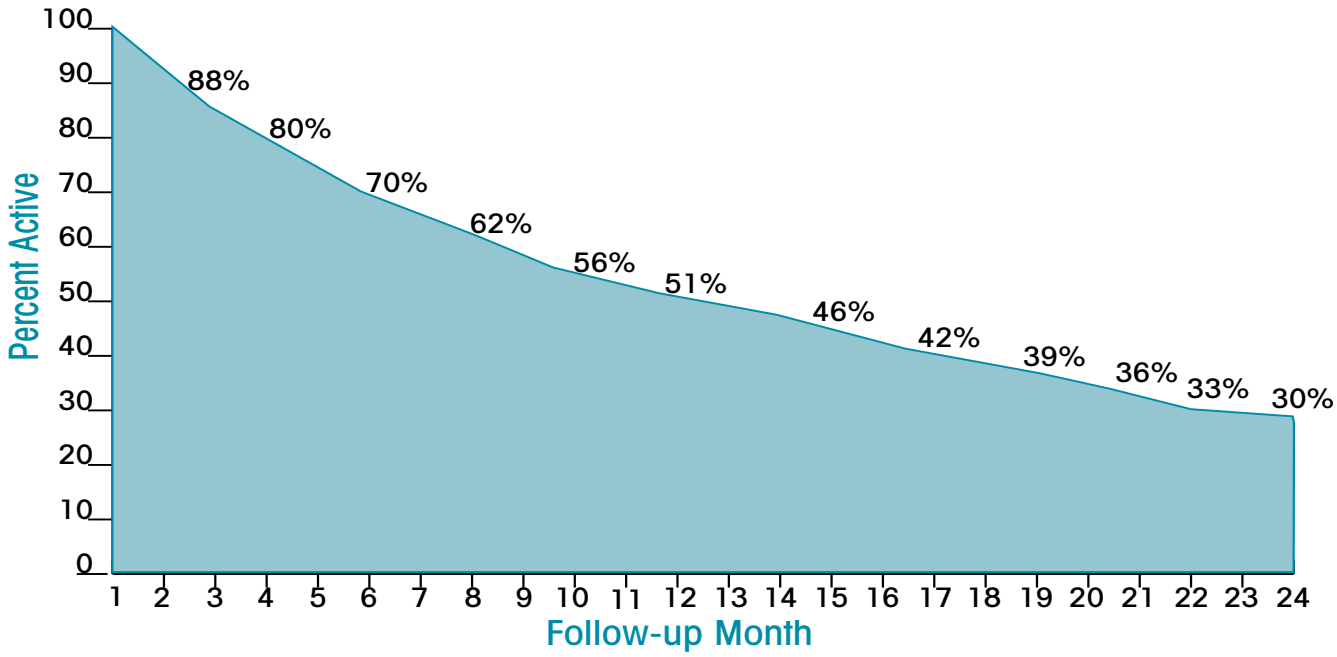
the HFNY group before the target child was born. Seven percent of these participants received no home visits and 20% received only one or two prenatal visits during their pregnancy. However, four in ten women (40%) received quite intensive (seven or more) home visits during their pregnancy.

The HFA model recommends that home visits be provided until the child turns five or enters Kindergarten or Head Start. However, retaining families in the HFNY programs for this long has proven to be a challenge, despite the aggressive outreach efforts employed by home visitors. As Figure 9 shows, 70% of the participants who enrolled in HFNY were still active[2] in the program six months after enrollment (i.e., date of first home visit), 51% remained in the program one year after enrollment, and 30% stayed in the program for at least two years. These retention rates match exactly the retention rates reported for the HFA programs in nine states included in the aforementioned implementation study conducted by Prevent Child Abuse America (Harding et al., 2004). Erie County had a lower rate of retention in the program than did Rensselaer and Ulster. At one year, 46% of Erie's participants remained in the program, compared to 54% of the participants in Rensselaer and 56% of the participants in Ulster, and at two years, Erie's retention rate was 27% versus 31% for Rensselaer and 34% for Ulster.

F. Data Analysis Strategy

Our data analyses are driven largely by the program's theory of change, which posits that HFNY improves family outcomes in three primary areas (parenting, child health and development, and parents' life course development), by building family strengths and reducing risk factors that influence these program goals. Therefore, our analyses examine the extent to which the program led to improvements in each of these three areas. The main components of the data analysis strategy include: (1) examining whether the HFNY group did significantly better than the control group on each outcome variable; and (2) testing whether the differences between the HFNY group and the control group were larger for some sites or subgroups of the

Figure 9: Rate of Retention in HFNY



sample than for others.

Intention-to-Treat Approach

In estimating program effects, we used an "intention-to-treat" approach. This means that parents who were randomly assigned to the HFNY program were kept in the HFNY group, regardless of whether or not they actually received any home visiting services. Restricting the analysis to parents who receive home visiting services would invalidate the random assignment because the HFNY and control groups would no longer be comparable. Parents who remain in HFNY are likely to differ from those who drop out prematurely or never enroll, and those differences can affect their outcomes. For example, parents who stay in the program tend to be more motivated to change than those who do not, and thus have a greater likelihood of improving even without the services of the program. Given that it would be impossible to determine who in the control group would or would not have received services had they been offered the HFNY program, the only way to maintain the equivalence of the HFNY and control groups is to keep parents in their originally assigned groups. Thus, in effect, the results represent the impact of being offered the opportunity to participate in HFNY rather than the effect of actually participating. Although this results in a fairly conservative test of the program's effectiveness, it has the advantage of giving us greater confidence that the findings are not skewed by selection bias.

Statistical Models

A standard analysis of variance approach was used to compare the HFNY group to the control group on all relevant outcome variables. For each outcome variable, the treatment condition (i.e., assigned to the control group versus the HFNY group) was the primary independent variable. To improve the accuracy of the estimates of program impacts, the models also included several demographic and risk-related variables as covariates. Covariates were selected based on whether they were correlated significantly with a majority of outcome variables tested or with participant attrition between intake and the Year 1 interview. To simplify the interpretation of program effects across models, we used a common set of covariates in most analyses. The majority[3] of models controlled for the following parent characteristics, measured at intake:

mother's age, race/ethnicity, marital status, depression score, receipt of social support, presence of economic hardship, and whether she entered the study prenatally. In addition, in cases where an outcome variable was measured both at intake and at Year 1 (e.g., parenting attitudes), our statistical comparisons controlled for the intake measure.

In models where the outcome of interest was measured on an interval or ratio scale and followed a normal distribution, we tested hypotheses using least squares multiple regression. When the outcome was a count variable with a large proportion of zero or near-zero values, program effects were analyzed using log-linear regression, assuming a negative binomial distribution, as appropriate (Long, 1997). For outcome variables that were binary (e.g., smoking status, presence of child abuse or neglect), logistic regression was used.

Reporting of Statistically Significant Results

If we compare the HFNY and control groups on virtually any outcome variable, we would expect to find some degree of difference simply due to chance. Therefore, tests for statistical significance are needed to determine whether a difference in the outcomes for the two groups is so small that it should be considered random "noise" and ignored, or whether it is attributable to the offering of home visitation services. We used the widely accepted threshold of $p<.05$ to indicate statistical significance, which essentially means that a group difference is large enough that it would occur by chance only 5% of the time. In other words, finding a difference that large by chance is so improbable that we assume it is due to some other factor. Because we assigned participants randomly to the HFNY and control groups, rendering them equivalent on all measurable factors, we can attribute any significant group difference to the HFNY program.

We also highlight differences between the HFNY and control groups with p-values less than .10, which we refer to as trends or differences approaching statistical significance. These findings are potentially important, but must be interpreted with greater caution, because we have less confidence that the group differences are not simply due to chance.

Examination of Program Effects by Site and Subgroup

In addition to exploring the effects of HFNY in the entire sample, we also examined whether program effects were stronger in some sites than in others, or for some subgroups of the sample than for others. The site and subgroup-specific analyses indicate the extent to which program effectiveness is influenced by program or regional factors as well as participant characteristics.

In selecting specific subgroups to include in the analyses, we considered the most important reasons that subgroup differences might exist. First, home visitors may change the focus of their efforts depending on the parents' personal, social and clinical needs. Second, the life circumstances of some parents may be so destabilizing that they overwhelm any possible program effect. Third, parents' life circumstances may make it impossible for the service to be delivered effectively. Finally, parents differ with respect to how well the program fits their needs, which affects how strongly they are willing to engage in the program.

There are an infinite number of subgroup analyses that could be tested, but scientific theory and findings from past research on home visiting led us to focus on seven key subgroup variables, all of which are relevant for future service planning and policy decisions.

Prenatal status. Program effects on all outcome variables were expected to be stronger among mothers who entered the study prenatally versus postnatally.

First-time parents. Program effects on parenting attitudes, knowledge of child development, parenting practices, and child maltreatment were expected to be greater among first-time parents as compared to parents who had other children at intake.

Age of parent. Program effects on all outcome variables (except employment and use of public assistance) were expected to be greater among mothers who were under age 18 at intake as opposed to 18 or older.

Presence of domestic violence in home. Program effects on all outcome variables were expected to be

greater among parents in homes where no domestic violence was reported in the year prior to intake, compared to homes where domestic violence occurred. Domestic violence was measured using the Revised Conflict Tactics Scale (CTS2): partner-to-partner (Strauss, et al., 1996), and was defined as psychological or physical abuse inflicted on the mother by an intimate partner.

Parents' own history of child abuse and neglect. Program effects on parenting attitudes and child abuse and neglect were expected to be greater among mothers who did not experience abuse or neglect during their own childhood than among parents who reported childhood maltreatment. Childhood maltreatment was measured by the Revised Conflict Tactics Scale (CTS2): adult recall (Strauss, 1999), and was defined as psychological or physical aggression or neglect committed against the mother by one or both of her parents.

Parents' depression. Program effects on all outcome variables were expected to be greater among parents who were moderately (but not severely) depressed at intake, compared to less depressed parents. Depression was measured by the Center for Epideminologic Studies Depression Scale, or CES-D (Radloff, 1977). Parents who scored in the lowest 25% on this scale were considered to be the least depressed group, that is, those who reported experiencing no or few depressive symptoms. Parents scoring in the highest 25% on the CES-D were considered to be severely depressed, and those scoring in the middle 50% were considered to be moderately depressed.

Parents' sense of personal mastery. Program effects on all outcome variables were expected to be greater among parents who, at intake, had a lower sense of personal mastery (i.e., perception of one's ability to influence life events) versus those with a higher sense of mastery. Mastery was measured by the Mastery of Psychological Coping Resources Scale or PSM (Pearlin & Schooler, 1978).

Before testing for any site- or subgroup-specific program effects, we first determined, for each outcome, whether there was an "interaction effect" between the treatment condition (i.e., HFNY group or control group) and site or subgroup. In other words, we tested whether the program effect for any given site or subgroup was significantly greater than the effect for the other sites or subgroups. If the treatment condition by site/subgroup interaction effect had a p-value less than .10, we conducted follow-up tests of the treatment condition effect within each site/subgroup (which we will refer to here as simple effects) to determine which sites or subgroups had significant program effects and which did not. Simple effects were reported as statistically significant if they had- a p-value less than .05. If the treatment condition by site/subgroup interaction effect had a p-value of .10 or higher, it was reported as non-significant and no further tests were done. This is a fairly conservative approach in that it sets a higher threshold for detecting significant differences, and thus reduces the likelihood of finding statistically significant differences simply due to chance.

CHAPTER 5
Impacts on Parenting

This chapter reports the results of the statistical analyses of all outcome variables in the parenting area. It also describes the measurement of each outcome variable. We highlight differences in outcomes between the HFNY and control groups that were found to be statistically significant, either for the entire sample or within specific sites or subgroups. In addition, we draw attention to differences between the HFNY and control groups that approach statistical significance (referred to as trends), although these must be interpreted more cautiously.

As shown in the logic model in Chapter 3, HFNY seeks to influence participants' knowledge and attitudes about parenting in order to promote effective parenting practices and prevent child abuse or neglect. Program impacts on parenting attitudes and knowledge and parenting practices are summarized below.

A. Parenting Attitudes and Knowledge: Outcome Measurement

Parents provided information about their attitudes towards parenting by completing the Adult-Adolescent Parenting Inventory (AAPI) version 2 (Bavolek & Keene, 1999), a self-report measure in which they indicated how strongly they agreed or disagreed with 40 statements regarding child rearing. The AAPI has a high degree of reliability and has been validated in several empirical studies (Bavolek & Keene, 1999). As parents completed the AAPI at intake as well as at the Year 1 follow-up assessment, we can measure changes in their parenting attitudes over time. The AAPI has five subscales that measure different dimensions of parenting attitudes. For each of these subscales, higher scores represent more favorable attitudes about child-rearing, and therefore, less risk for child abuse or neglect. Box 1 provides a short description of each subscale and a sample item from the subscale.

Parents also completed the Knowledge of Infant Development Inventory (KIDI, MacPhee, 1981), in which they indicated whether they agreed or disagreed with statements about child development. Parents completed the KIDI at the one-year follow-up but not at intake. Thus, while we can compare the HFNY group responses to the control group responses at the time of the target child's first

Box 1: AAPI Subscales

Physical Punishment

Extent to which parents favor the use of corporal punishment as a means of discipline.

Sample item: "Spanking teaches children right from wrong"

Inappropriate Expectations

Extent to which parents inaccurately perceive the skills and abilities of their children.

Sample item: "Good children always obey their parents"

Empathy

Extent to which parents recognize the importance of being aware of children's needs and emotions.

Sample item: "Children should keep their feelings to themselves"

Role Reversal

Extent to which parents believe that children have the responsibility to meet the needs of adults.

Sample item: "Children should always be aware of ways to comfort their parents after a hard day's work"

Power/Independence

Extent to which parents emphasize obedience and conformity to parental authority.

Sample item: " 'Because I said so' is the only reason parents need to give"

birthday, we cannot measure changes in parenting knowledge since intake. Of the 58 items on the original KIDI, we selected 13 that were appropriate for the infancy stage of child development and were most relevant to the HFNY curriculum. Examples of these statements are: "Babies understand only the words they can say" and "The more the parent comforts a crying baby. . . the more the parent spoils the baby."

B. Parenting Attitudes and Knowledge: Program Impacts

Table 6 summarizes the impacts of HFNY on parenting attitudes and knowledge. The results of the analyses based on the entire sample are displayed for all outcome variables examined, while the results pertaining to specific sites or subgroups are shown only if a statistically significant effect was found. The first two columns of the table pro-

Table 6: Program Impacts on Parenting Attitudes and Knowledge

Outcome Variable	Sample[a]	Control Group Mean		HFNY Group Mean		p value[c]
		Intake	Year1[b]	Intake	Year 1[b]	
Attitudes: Physical Punishment	Entire sample	37.75	38.01	37.58	38.43	.053+
	County A	35.36	35.41	35.38	36.22	.019*
	Under age 18	37.44	36.69	36.48	37.80	.005*
	Lowest 25% on depression scale	36.97	37.17	37.85	39.14	.010*
Attitudes: Inappropriate Expectations	Entire sample	18.01	18.83	18.34	19.11	.490
	County C	18.02	17.91	18.93	19.64	.048*
Attitudes: Empathy	Entire sample	35.74	36.64	36.10	37.12	.202
Attitudes: Role Reversal	Entire sample	21.76	23.24	21.88	23.59	.141
Attitudes: Power/Independence	Entire sample	19.18	19.40	19.18	19.39	.907
Knowledge of Child Development (KIDI)	Entire sample	not measured	10.32	not measured	10.51	.088+
	Parent had other child at intake[d]	not measured	10.40	not measured	10.78	.018*

[a] The Ns for the entire sample and subsamples are as follows: entire sample=1,060; under age 18=223; lowest 25% on depression scale=232; parent had other child at intake=602.

[b] Means are adjusted for the following covariates: race/ethnicity, age, depression, marital status, social support, pre- vs. post-natal status, economic hardship, and the intake value of the outcome variable (if available).

[c] * indicates that the difference between HFNY and control groups on the adjusted group means at Year 1 was statistically significant ($p<.05$); + indicates that the difference approached statistical significance ($p<.10$).

[d] Interpret with caution because interaction term associated with this effect has p-value=.103, slightly above our threshold.

vide the name of the outcome variable and the sample on which the analysis was based (i.e., entire sample, site, or subgroup). The next four columns show the means for the control and HFNY groups at intake (if available) and the adjusted means for the two groups at the Year 1 follow-up. The last column gives the p value for the statistical comparison between the control group and HFNY group on the adjusted means at Year 1, along with a symbol indicating if the group differences were statistically significant. An asterisk means that the difference was statistically significant at the .05 level, and a plus sign denotes a trend or a difference that approached statistical significance (i.e., $p<.10$).

As shown in Table 6 (see previous page), for the entire study sample, parents in the HFNY group showed slightly greater improvement from intake to Year 1 in their attitudes toward physical punishment than did parents in the control group. Parents in the HFNY and control groups had similar scores on attitudes toward physical punishment at intake, but the increase in the average scores from intake to Year 1 for the HFNY group (37.58 to 38.43) was greater than that for the control group (37.75 to 38.01). The difference between the control group and the HFNY group in their adjusted mean scores at Year 1 was a trend (i.e., a difference approaching statistical significance), as indicated by the "+" in the last column of Table 6. The program had a statistically significant effect (noted by the "*" in the last column of Table 6) on attitudes toward physical punishment at Year 1 for the following subsamples: parents from County A, parents who scored in the lowest 25% on a measure of depression[4] at intake (i.e., parents reporting the fewest number of depressive symptoms), and parents under age 18. For parents under age 18, the average score on attitudes toward physical punishment actually declined from intake to Year 1 in the control group (37.44 to 36.69) and increased in the HFNY group (36.48 to 37.80).

HFNY had no effect on parents' inappropriate expectations at Year 1 for the full sample. As shown in Table 6, average scores on inappropriate expectations increased by about the same amount in the HFNY and the control groups from intake to the one-year follow-up. There was a statistically significant effect on inappropriate expectations at Year 1 in County C, however, where the average HFNY group scores rose from 18.93 to 19.64 while the control group scores decreased slightly from 18.02 to 17.91.

HFNY and control group parents did not differ significantly in their attitudes related to empathy, role reversal, or power/independence. At intake, average scores on these subscales for parents in the HFNY and control groups were virtually the same. By one year, average scores had increased slightly in both groups.

There was a trend in the direction of parents in the HFNY group scoring higher on knowledge of child development than parents in the control group (10.51 versus 10.32). Parents in both groups demonstrated a fairly high degree of child development knowledge by answering an average of ten items correctly. Among parents who had other children at intake, the average score on knowledge of child development was significantly higher for the HFNY group (10.78) than for the control group (10.40).

C. Parenting Attitudes and Knowledge: Summary and Discussion

These differences tended to be modest in size. The program appears to have had no effect on the other parenting attitudes measured: empathy, role reversal, and power/independence.

We have no clear explanation for why the effects on attitudes regarding physical punishment and inappropriate expectations occurred only in specific sites, given that program managers from all three study sites indicated that these were two important areas on which home visitors focused their attention. One possible reason for the lack of an effect on physical punishment in Counties B and C is that their average scores at intake were much higher (39.2 and 40.7, respectively) than in County A (35.4), making it more difficult to effect increases in those sites. It is less clear why the program effect for inappropriate expectations was limited to County C, as its baseline score on this measure was comparable to that of the other two counties.

Compared to parents in the control group, parents in the HFNY group…

- were less likely to favor physical punishment as a discipline approach (effect limited to County A, parents under 18, and least depressed parents)
- were less likely to have inappropriate expectations for their children (effect limited to County C)
- had greater knowledge of child development (effect limited to parents with other children at intake)

As we expected, the program effect on attitudes toward physical punishment was particularly strong among younger parents. We theorized that, because younger parents were less knowledgeable and less confident about parenting, they would be more receptive to the information and role modeling provided by their home visitors. This explanation is supported by data indicating that younger parents in our sample were less likely than older parents to have more than one child and had lower scores on the KIDI.

It is interesting to note that the program effects on attitudes toward physical punishment were significant for parents with the lowest depression scores, but not for parents with moderate or high depression scores. This is inconsistent with the results of the NFP evaluation, which showed that it was the mothers with few psychological resources who derived the most benefit from the program (Olds et al., 1999). Perhaps moderate and severe depressive symptoms are enough to interfere with delivery of program services or to reduce parents' receptivity to home visitors.

We expected to find program effects on the other attitude scales as well, but none were evident at one year. In particular, building parents' empathy is a central program objective during the infancy stage, and is an area that program staff indicated was a prominent focus with all of their clients. It is possible that the aspects of empathy tapped by our instrument were not appropriate for the infancy period. Many of the items referred to abilities that were beyond the developmental level of the babies in this sample (e.g., "Children have a responsibility to please their parents," "Parents who encourage their children to talk to them only end up listening to complaints"). It is possible that the empathy scale will be more relevant during the early childhood period (ages 2-5), and thus will be more likely to show program effects in the Year 2 and 3 follow-up assessments.

It is less surprising that there were no effects on role reversal or power/independence. As these aspects of parenting are less likely to emerge as issues at this early stage of parenting, they were less likely to be addressed during home visits in the child's first year of life. We expect to see more evidence of program impact in these areas in the data from the second and third years.

The overall difference in scores on knowledge of child development between the HFNY and control groups approached statistical significance, suggesting that the program made some progress in this area. Also, the significant difference observed among parents who started the program with other children is encouraging. However, in both cases, the difference between groups was less than half of a point, which is fairly weak. We expected to observe a stronger program effect on parents' knowledge of infant development, given that home visitors focused a great deal of attention on educating parents about this topic. One explanation may be that home visitors covered many areas of infant development that were not asked about in the KIDI. For example, the curricula used by the HFNY programs include such topics as introduction to solid foods,

learning to read different cries of newborns, and newborns' need for skin-to-skin contact, which are not represented in the KIDI. Therefore, it is conceivable that we would have observed stronger effects if we had used a more comprehensive measure of parents' knowledge.

D. Parenting Practices: Outcome Measurement

Two measures of parenting practices that are widely used in evaluations of home visiting programs are child abuse and neglect reports that have been substantiated (or confirmed) by Child Protective Services (CPS) and parents' self-reported behaviors. Each of these measures has advantages and disadvantages. The chief advantage of using substantiated child abuse and neglect reports is that there is a high probability the abuse or neglect actually occurred and it was considered serious. A major limitation of CPS reports is that most incidents of child abuse and neglect are never reported to CPS. This is particularly true for infants because of their limited contact with neighbors, schools, and others who would have occasion to notice maltreatment. Moreover, a relatively small proportion of the reports that are made to CPS are substantiated. The fact that a report was unsubstantiated does not necessarily mean an absence of abuse or neglect, but rather that there was insufficient evidence to support the allegations.

Another serious drawback of using CPS reports as a measure of child abuse and neglect in evaluations of home visiting programs is that these programs are subject to what has been referred to as surveillance or detection bias (Olds et al., 1995). This means that families receiving home visits may be reported to CPS more often simply because home visitors have more opportunity to observe child maltreatment in the home. In addition, home visitors often refer families to other providers in the community, which are then in a better position to detect abuse and neglect. Surveillance bias operates to inflate estimates of substantiated abuse and neglect reports for the home visited group in comparison to the control group, which is under less surveillance.

Self-report of parenting practices has the benefit of capturing abusive and neglectful behaviors that may never come to the attention of CPS. On the other hand, parents tend to underreport undesirable behavior like child abuse and neglect and they may have difficulty recalling whether and how frequently they engaged in certain parenting practices. The tendency to underreport may be more pronounced among home visiting participants due to concerns that the information will be relayed to the home visiting program, which may then notify CPS.

To obtain as accurate and complete a picture of parenting practices as possible, we used both CPS reports and self-reported parenting behaviors for the Year 1 and 2 follow-ups. In Year 3, we added videotaped observations of parent-child interactions.

The revised Conflict Tactics Scale (CTS) was used to measure self-reported parenting practices (Strauss, Hamby, Bonney-McCoy & Sugarman, 1996). Parents were asked how often they engaged in 27 different behaviors in the past year (never, 1 time, 2 times, 3-5 times, 6-10 times, 11-20 times, more than 20 times). To reduce parents' reluctance to disclose negative behaviors to the interviewers, they were instructed to fill out a paper and pencil version of the CTS (which did not include their names), and then place the completed instrument in a sealed envelope. The CTS is one of the most widely used self-report measures in research on family violence. Its reliability and validity have been demonstrated in Strauss (1999) and in Strauss et al., (1996).

The CTS has six subscales that are outlined in Box 2. We used all of the subscales in the analysis of program impacts except for nonviolent discipline. This subscale was excluded because some of the disciplinary practices included in the subscale such as sending a child to his or her room and explaining why something is wrong would not be appropriate for a one-year-old. Consequently, greater use of these forms of discipline cannot be interpreted as a positive outcome for the children in this study at the point of the one-year follow-up. The severe and very severe physical abuse subscales were combined for

Box 2: CTS Subscales

Non-Violent Discipline

Putting child in 'time out,' sending child to his or her room, explaining why child's behavior was wrong.

Psychological Aggression

Shouting or swearing at child, calling child dumb or lazy, threatening to spank.

Neglect

Leaving child alone, being too caught up in own problems to convey love, unable to provide food, unable to obtain medical care for child, being too high on drugs or alcohol to care for child.

Minor Physical Aggression

Spanking with a hand or belt, slapping on hand or leg, pinching.

Severe Physical Abuse

Hitting with fist, slapping on face or ears, kicking, knocking down.

Very Severe Physical Abuse

Shaking, choking, burning.

the data analysis due to the small number of parents reporting these behaviors.

A number of the parenting practices included in the CTS do not constitute child abuse and neglect as it is defined in statute, even though they may have negative short-term or long-term effects on the child. For example, swearing at or spanking a child is not considered abusive behavior. To derive a proxy measure of "official" child abuse and neglect, we created a serious abuse/neglect composite scale consisting of the 11 most serious items from the neglect and severe/very severe physical abuse subscales (see Box 3). The composite scale encompasses acts that likely would have resulted in a substantiated report had they been brought to the attention of CPS.

For each of the CTS subscales used in the analysis and for the serious abuse/neglect composite scale, we computed two different scores that were recommended by the developers of the CTS (Strauss and Gelles, 1990). The first is referred to as prevalence and involves giving a score of 1 if parents engaged in at least one behavior in a subscale one or more times in the past year and a score of 0 if they did not. The

Box 3: Items Included in Serious Abuse/Neglect Composite

- Hit with fist
- Hit with object
- Threw, knocked down
- Shook
- Grabbed neck
- Beat up
- Burned
- Threatened with gun
- Left child home alone
- Not able to make sure child got necessary medical attention
- So drunk/high had problem taking care of child

other coding scheme, referred to as chronicity, computes a score for a subscale by summing the frequencies of the items in the subscale. For example, if a parent reporting having left the child alone once and having been unable to provide food for the child twice in the past year, the score for the neglect subscale would be 3. Parents who reported that they had not engaged in any of the behaviors in a subscale received a score of 0 on chronicity for that subscale.

We also reviewed CPS records of child abuse and neglect reports. The source of these data was OCFS' CONNECTIONS database, which tracks abuse and neglect cases from the time they are reported to the Statewide Central Register for Child Abuse and Neglect through their investigation and determination. For each report found for a study participant, we collected information on whether or not the report was substantiated, who the perpetrator and victim were, the type of maltreatment alleged, the extent of injury to the child, and whether substance abuse and domestic violence were involved. Box 4 displays the CPS outcome measures.

Box 4: CPS Outcome Measures

- All substantiated reports
- Substantiated reports where parent is the perpetrator
- Substantiated reports where target child is the victim
- Substantiated reports where parent is the perpetrator and target child is the victim
- Substantiated reports where parent is the perpetrator and target child is the victim of physical abuse
- Substantiated reports where parent is the perpetrator and target child is injured as a result of physical abuse
- Substantiated reports where parent is the perpetrator and target child is the victim of sexual abuse

E. Parenting Practices: Program Impacts

The HFNY group did not differ significantly from the control group on the prevalence of behaviors comprising the serious abuse/neglect composite scale, our proxy measure for official abuse and neglect that was created from the CTS. As shown in Table 7 on the next page, 7.6% of the control group, as compared to 5.7% of the HFNY group, reported having committed at least one serious abusive or neglectful act in the past year. However, as Table 7 and Figure 10 indicate, for the entire sample there was a significant difference between the control and HFNY groups on the chronicity of behaviors included in the serious abuse/neglect composite, with control parents reporting an average of twice as many acts of serious abuse or neglect as HFNY par-

Figure 10: Comparison of HFNY and Control Groups on Chronicity of Self-Reported Serious Abuse/Neglect

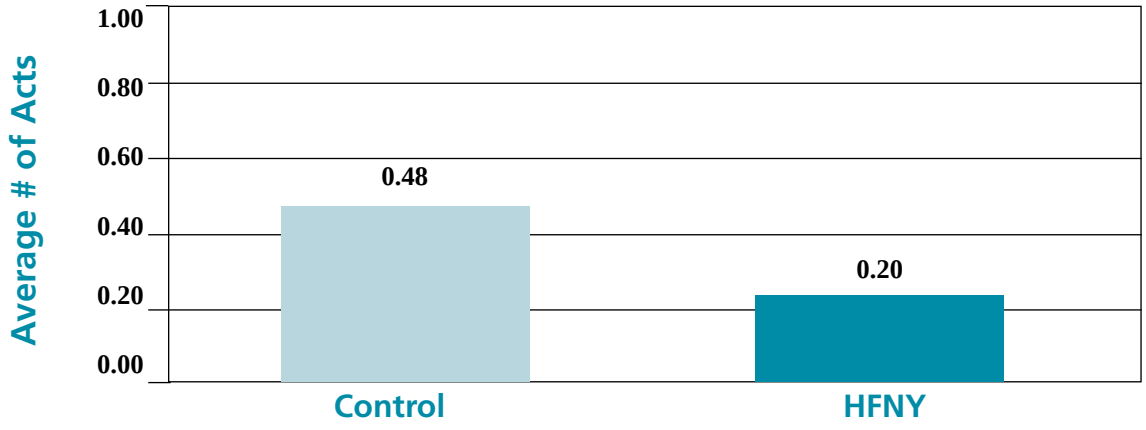


Table 7: Program Impacts on Parenting Practices

Outcome Variable	Sample[a]	Year 1 Control Group Mean[b]	Year 1 HFNY Group Mean[b]	p value[c]
Serious Abuse/Neglect Composite				
Prevalence	Entire sample	7.6%	5.7%	.190
Chronicity	Entire sample	.48	.20	.042*
	18 or older[d]	.67	.15	.002*
	No domestic violence[d]	.94	.11	.004*
Severe/Very Severe Physical Abuse				
Prevalence	Entire sample	3.1%	2.3%	.377
Chronicity	Entire sample	.42	.06	.010*
Neglect				
Prevalence	Entire sample	8.5%	5.4%	.045*
	Latinas	13.1%	2.4%	.011*
Chronicity	Entire sample	.33	.19	.146
	Latinas	1.16	.03	.019*
Minor Physical Aggression				
Prevalence	Entire sample	44.4%	39.7%	.137
	County B	50.7%	37.0%	.030*
	No domestic violence	47.0%	35.3%	.019*
Chronicity	Entire sample	3.27	2.34	.021*
	No domestic violence	3.31	1.77	.001*
Psychological Aggression				
Prevalence	Not examined			
Chronicity	Entire sample	4.92	3.21	.001*
	Highest 25% on depression scale	9.34	4.02	.001*
	No domestic violence	5.05	3.05	.000*
CPS Reports				
Percent with at least one substantiated report	Entire sample	6.2%	7.9%	.272
Average number of substantiated reports	Entire sample	.08	.10	.389

[a] The Ns for the entire sample and subsamples are as follows: entire sample=1,059; 18 or older=816; no domestic violence=418; Latinas=169; highest 25% on depression scale=271.

[b] Means are adjusted for the following covariates: race/ethnicity, age, depression, marital status, social support, pre- vs. post-natal status, economic hardship, prior CPS reports.

[c] * indicates that the difference between the HFNY group and control group adjusted means at Year 1 was statistically significant ($p<.05$); + indicates that the difference approached statistical significance ($p<.10$).

[d] Depression was excluded from this model, because it appeared to have a disproportionately large influence on the results.

Note:

Prevalence is the percentage of parents reporting having engaged in one or more of the behaviors in the subscale at least once in the past year. Chronicity is the total number of times in the past year the parent reported having engaged in the behaviors in the subscale. A score of 0 was assigned if the parent had not engaged in any of the behaviors in the subscale.

ents (.48 versus .20). (The average chronicity scores for both groups are less than 1 because most parents indicated that they had not committed any serious abusive or neglectful acts, and therefore, they were assigned a chronicity score of 0.)

The program effect on chronicity was more pronounced among parents over age 18 and those reporting that they had not experienced domestic violence[5] in the year prior to study intake. Specifically, within the over age 18 group, the average number of serious abusive or neglectful acts in the past year reported by the control parents (.67) was more than four times the average reported by HFNY parents (.15). Among parents reporting no domestic violence, the control group reported an average of nearly nine times as many serious abuse or neglect incidents as the HFNY group (.94 compared to .11).

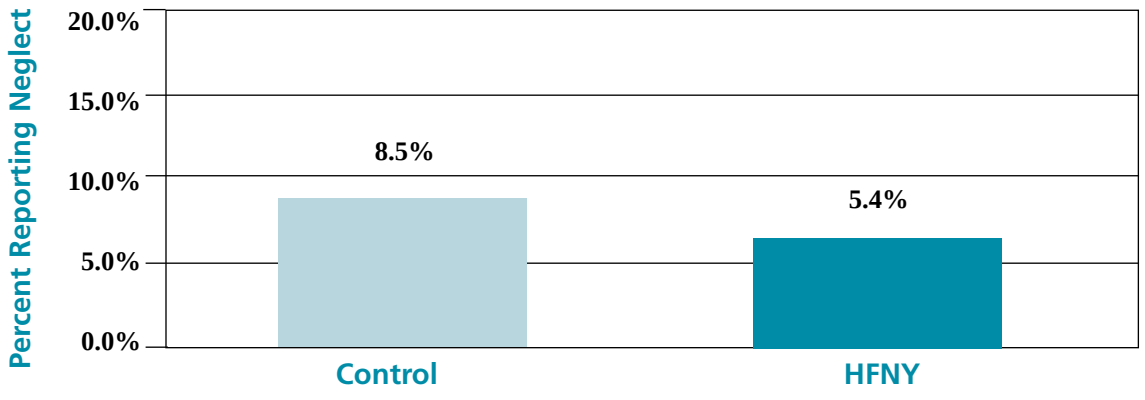
Consistent with the findings for the serious abuse/neglect composite scale, no program effect was observed for the prevalence of severe/very severe physical abuse, but a significant effect was noted for the chronicity of severe/very severe physical abuse for the entire sample. An average of .42 severe/very severe acts of physical abuse were committed by the control group compared to only .06 for the HFNY group.

As depicted in Figure 11, the prevalence of self-reported neglect in the entire sample was significantly higher for the control group (8.5%) than for the HFNY group (5.4%). No significant program effect on the chronicity of neglect was found for the entire sample, but strong program effects on both the prevalence and the chronicity of neglect were observed for the Latina subsample. Latinas in the control group were much more likely than Latinas in the HFNY group to report having engaged in any neglectful behaviors (13.1% versus 2.4%), and the average number of neglectful acts committed by Latina parents in the control group was 1.16, compared to only .03 for Latina parents in the HFNY group.

For the sample as a whole, the control group reported significantly more incidents of minor physical aggression than the HFNY group, an average of 3.27 compared to 2.34. The effect on the prevalence of minor physical aggression in the entire sample was not significant. In County B, control parents were significantly more likely than HFNY parents to report having engaged in any minor physical aggression (50.7% versus 37.0%). Among parents who did not experience domestic violence, the prevalence as well as the chronicity of minor physical aggression was significantly higher for the control group than for the HFNY group: the prevalence rate was 47.0% for the control group compared to 35.3% for the HFNY group (see Figure 12 next page) and the average number of incidents was 3.31 for control parents as opposed to 1.77 for HFNY parents.

We did not examine prevalence rates for self-

Figure 11: Comparison of HFNY and Control Groups on the Prevalence of Self-Reported Neglect



reported psychological aggression, because some of the items were so minor that engaging in them once in the past year would not be considered problematic (e.g., "Shouted at child"). For the entire sample, the average number of acts of psychological aggression reported was 35% higher for the control group (4.92) than for the HFNY group (3.21). In addition, there was a significant program effect on the chronicity of psychological aggression for two subgroups: parents who scored in the highest 25% of the depression scale (control: 9.34, HFNY: 4.02), and parents reporting no domestic violence (control: 5.05, HFNY: 3.05).

In sharp contrast to the many positive program effects found for self-reported abuse and neglect, no significant differences between the control and HFNY groups were observed for any of the indicators of substantiated CPS abuse and neglect reports.[6] Table 7 shows the results for two of these indicators: percentage with one or more substantiated reports and the average number of substantiated reports.

Thus, although the data from the CTS indicate that there was significantly less child abuse and neglect in the HFNY group than in the control group, this effect is not evident when examining CPS reports. As explained earlier, other researchers who have encountered similar results have theorized that the absence of program effects on CPS reports might be due to increased surveillance of program participants (Olds et al., 1995). To explore this theory, we examined whether parents in the HFNY group who self-reported serious abuse and neglect were more likely to have a CPS report (either substantiated or unfounded) during Year 1 of the study than parents in the control group who self-reported serious abuse and neglect. As Figure 13 reveals, of parents who self-reported serious abuse or neglect, the percentage with CPS reports was indeed significantly greater in the HFNY group (38.3%) than in the control group (20.3%).

F. Parenting Practices: Summary and Discussion

Although no program effects were observed with the CPS report data, the self-report data suggest that HFNY led to significant reductions in several types of negative parenting practices. Significant effects on the serious abuse/neglect composite, severe/very severe physical abuse, neglect, minor physical aggression, and psychological aggression were found for the entire sample. Furthermore, among parents who engaged in serious abuse or neglect, those in the HFNY group were significantly more likely to be reported to CPS than were those in the control group.

We cannot know for sure why the significant drop in self-reported abuse and neglect was not accompanied by a comparable decline in substanti-

Figure 12: Comparison of HFNY and Control Groups on the Prevalence of Self-Reported Minor Physical Aggression, Among Parents Reporting No Domestic Violence

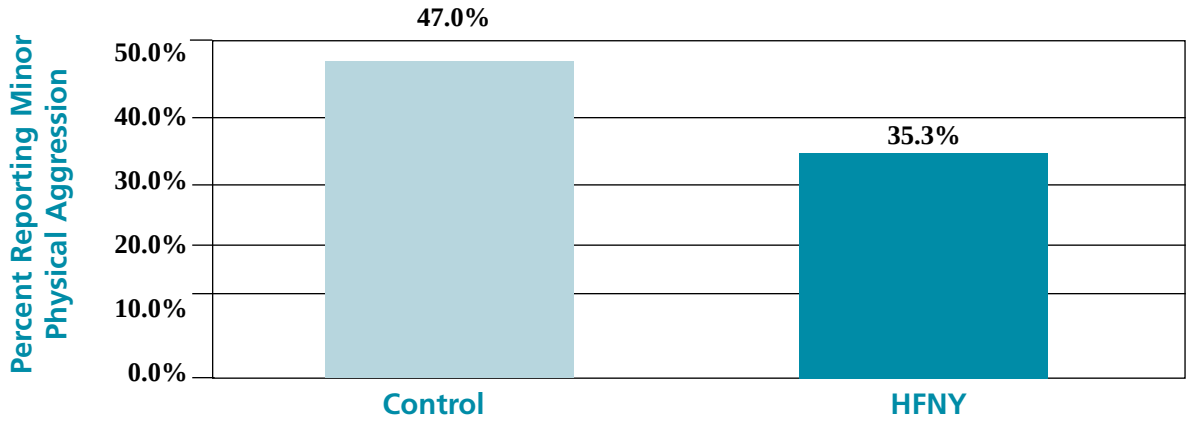
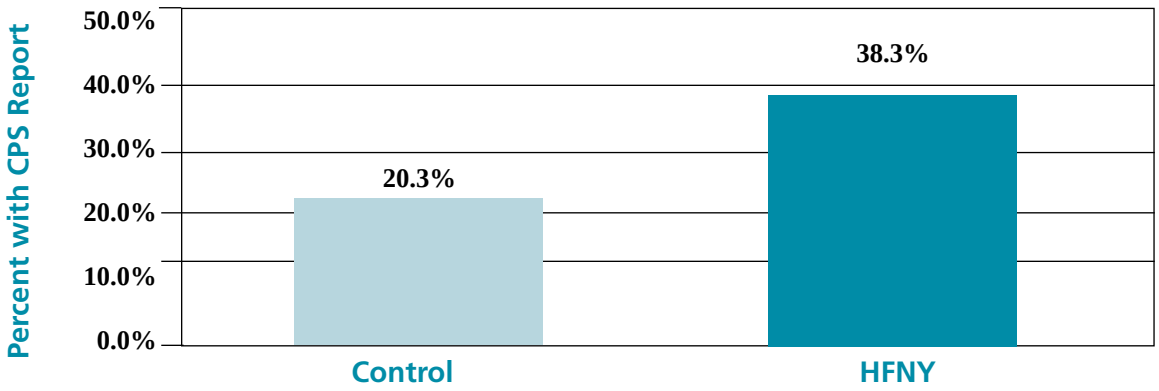


Figure 13: Percentage of Parents Self-Reporting Serious Abuse/Neglect Who Had a CPS Report During Year 1



ated CPS reports, but the data from Figure 13 suggest that greater surveillance of the HFNY group may account for the discrepancy in the findings. Specifically, if it is true that actual incidents of abuse or neglect are more likely to result in CPS reports in the HFNY group than in the control group, then the rate of CPS reports in the HFNY group will be artificially inflated, making it more difficult to find a significant difference between the HFNY and control groups on substantiated CPS reports.

It was notable that several of the effects on self-reported parenting behaviors were concentrated within specific subgroups. As described in Chapter 3, we expected that families who were at moderately high risk at baseline would benefit most from home visitation. We hypothesized that those with the most severe problems would not gain as much from home visitation because their problems (1) may be so debilitating that they are beyond the scope of what home visitors can realistically address, and/or (2) create barriers that prevent home visitors from delivering services (e.g., a mother may be too depressed to answer the door, or an abusive partner does not allow the home visitor into the home). Alternatively, we expected that parents at lowest risk would not benefit as much because higher-functioning parents with fewer hardships may have less of a need for a home visitor.

As expected, the subgroup that most consistently displayed greater program effects was parents who were not victims of domestic violence. Significant effects on serious abuse or neglect, minor physical aggression, and psychological aggression were found for that subgroup. We have no direct evidence to explain why no program effects occurred in families with domestic violence, but we speculate that it is attributable in part to the fact that home visitors have a more difficult time

Compared to parents in the control group, parents in the HFNY group reported significantly less…

- serious physical abuse of their children
- neglect of their children
- minor physical aggression against their children
- psychological aggression toward their children

entering the home when the mother has an abusive partner. It is also possible that the overwhelming array of problems created by domestic violence is beyond the scope of what most home visitors are capable of handling. Our finding of stronger program effects in the absence of domestic violence is consistent with previous research on the Nurse-Family Partnership program (Eckenrode et al., 2000) and suggests that a similar mechanism may be operating in HFNY.

In contrast, the results comparing program effects across different levels of depression did not conform to our expectations. The program effect on psychological aggression was present only for those with the highest depression scores. There was no program effect on psychological aggression among parents with more moderate depression scores (i.e., those within the second and third quartiles) as predicted, or with low depression scores (first quartile). Thus, it appears that, although the most depressed parents engaged in more psychological aggression toward their children than did the least depressed parents, the HFNY program *buffered* the effect of parental depression.

CHAPTER 6
Impacts on Child Health & Development

The logic model in Chapter 3 indicates that the program seeks to influence several short-term outcomes that can have impacts on health and development not only during childhood, but throughout the lifespan. These include parents' prenatal behaviors, which can affect fetal development and birth outcomes, provision of adequate health care and nutrition during infancy, and safety practices to prevent unintentional injury.

A. Prenatal Care and Birth Outcomes: Outcome Measurement

At the intake interview (or the birth interview, if the parent entered the study prenatally), parents indicated in what trimester they began prenatal care visits and the approximate frequency of their prenatal care visits in each trimester of their pregnancy (weekly, two to three times a month, monthly, less than once a month, none), their baby's birth weight, whether their baby was born prematurely (i.e., four or more weeks before due date), and whether the baby required neonatal intensive care following birth. We used the birth weight data to create a variable indicating whether the baby was born under 5.5 lbs (low birth weight).

The program could influence prenatal care and birth outcomes only if mothers in the HFNY group had the opportunity for at least minimal contact with a home visitor before the birth of their children. Therefore, all analyses involving birth outcomes were conducted using only the subsample of mothers that were randomly assigned at least two months prior to the birth of their children. Also, analyses examining the prenatal care received in different trimesters were limited to subsamples that were randomized at least two months prior to the start of the trimester of interest.

B. Prenatal Care and Birth Outcomes: Program Impacts

No significant difference between the HFNY group and the control group was observed in the average number of prenatal care visits in the third trimester (see Table 8). The effects of HFNY on the frequency of prenatal care during the first and second trimesters could not be analyzed due to the small number of parents who were randomized prior to the beginning of these trimesters.

Of those who were randomized at least two months prior to the birth of their children, control group mothers were significantly more likely to deliver low birth weight babies than were HFNY group mothers. As Figure 14 illustrates, the rate of low birth weight was two-and-a-half times higher for the control group (8.3%) as it was for the HFNY group (3.3%). There were no significant program effects on the rate of premature births or the percentage of babies requiring neonatal intensive care.

C. Prenatal Care and Birth Outcomes: Summary and Discussion

The substantial reduction in the rate of low birth weight babies as a result of HFNY is a crucial finding, given that low birth weight is a leading cause of infant deaths and of childhood illnesses and disabilities. Unfortunately, the data do not provide a clear explanation for how the program accomplished this result. The program appeared to have no impact on one of the primary contributors to low birth weight: inadequate prenatal care. However, the lack of an effect on prenatal care may be attributable to the method used to recruit women for the study and the point in their pregnancies at which they entered the study. As recruitment for the study (which followed the same approach as the HFNY program) occurred in prenatal clinics and doctors' offices,

Table 8: Program Impacts on Prenatal Care and Birth Outcomes

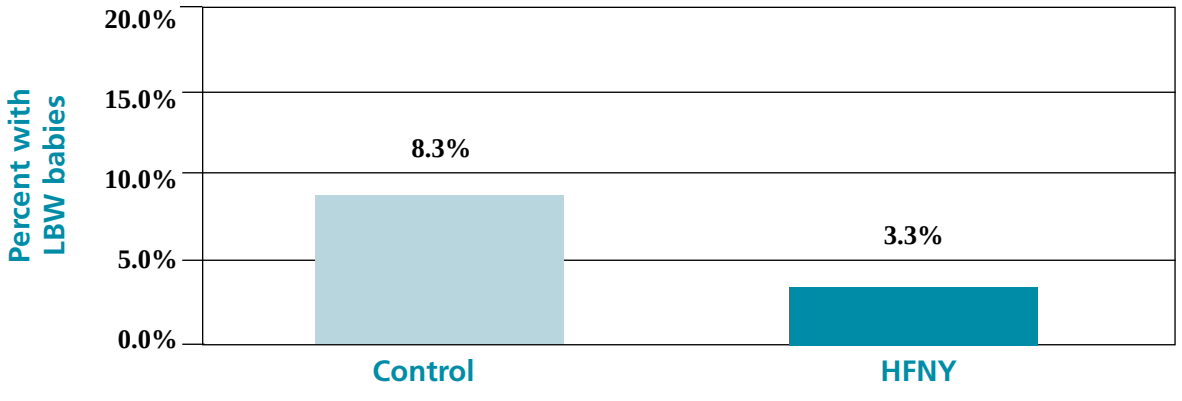
Outcome Variable	Sample[a]	Control Group Mean[b]	HFNY Group Mean[b]	p value[c]
Prenatal Care				
Number of prenatal care visits in third trimester	Parents randomized at least 2 mos. prior to third trimester	8.61	8.63	.973
Birth Outcomes				
Low birth weight	Parents randomized at least 2 mos. before birth	8.3%	3.3%	.012*
Premature birth	Parents randomized at least 2 mos. before birth	6.9%	6.1%	.712
Received neonatal intensive care	Parents randomized at least 2 mos. before birth	7.3%	5.2%	.292

a The Ns for the subsamples are as follows: parents randomized at least 2 mos. prior to 3rd trimester=281; parents randomized at least 2 mos. before birth of target child=519.

b Means are adjusted for the following covariates: race/ethnicity, age, depression, marital status, social support, economic hardship.

c * indicates that the difference between HFNY and control groups was statistically significant (p<.05); + indicates that the difference approached statistical significance (p<.10).

Figure 14: Comparison of Control Group and HFNY Group on Percentage of Mothers Delivering Low Birth Weight Babies



Compared to parents in the control group, parents in the HFNY group delivered significantly fewer low birth weight babies.

rather than through outreach, most women were already receiving prenatal care at the time they enrolled in the study. In fact, the rate of early (first trimester) prenatal care in our sample (85%) was even higher than the rates for the general population in the three study counties (74% to 79%).[7] Consequently, it would have been difficult for HFNY to improve on this rate. The program may have increased the frequency of prenatal care in the first or second trimesters, but there was no way to test this due to the small numbers of women who entered the study at this stage in their pregnancies.

It is possible that HFNY helped to reduce the number of low weight births by improving pregnant women's compliance with health provider recommendations regarding nutrition, self-care, and avoidance of smoking and substance use. Home visitors put a great deal of emphasis on the importance of prenatal care visits and worked to reinforce the messages provided by health professionals during prenatal visits. However, we do not have adequate data on maternal nutrition, tobacco and substance use, and stress during pregnancy that would allow us to examine this possibility.

Low birth weight generally correlates closely with premature birth and the need for neonatal intensive care. However, our results show that the HFNY program had no effect on these birth outcomes. One reason for the discrepancy may be that premature birth tends to be a less reliable measure than low birth weight because women often do not know the exact date of conception. A review of Health Department birth records may help shed light on this issue.

D. Child Health and Safety Outcomes: Outcome Measurement

During the Year 1 interview, parents were asked to provide information on whether their babies were covered by health insurance, had a regular health provider, had ever been without needed medical care, had received WIC benefits in the past month, the number of well-child visits their babies received during their first year of life, and the number of times their babies had been taken to the emergency room. Parents also reported on whether they breast-fed the target child and the number of months that they continued breast-feeding. Lastly, parents were asked to sign consent forms that allowed access to their child's immunization records. Since participant recall in this area is highly unreliable, the data were collected directly from health care providers. Most providers were willing to fax the records, but some preferred on-site record reviews. Because this type of data collection is very labor intensive, only a subsample of immunization records were collected and reviewed. These medical records were carefully monitored for completeness and accuracy. Then, the information was typed into a database designed specifically for this purpose.

To measure safety practices, parents completed the Child Safety Checklist, which asked how regularly they engaged in 23 behaviors aimed at increasing child safety in the past year. Examples of these items include: "Covered electrical outlets," "Installed window guards," "Kept small objects out of the child's reach." For each item, parents indicated whether they engaged in the behavior "none of the time," "some of the time," "all of the time," or that it was not applicable to them. The safety score was computed as the percentage of practices that parents reported doing "all of the time." Parents who reported that the target child had been taken to the emergency room (ER) were asked what diagnoses were associated with those visits. We used those data to create a second safety measure indicating whether the target child had at least one ER visit that involved injury or ingestion, diagnoses suggesting possible inattention to the child's safety. These

included: swallowed object, cuts/stitches, bruises/contusions, falls, injured head/neck/face, removal of foreign object, and dehydration. (Fractures were not reported by any parent.)

E. Child Health and Safety: Program Impacts

As can be seen in Table 9, parents in the control group were significantly less likely than parents in the HFNY group to have health insurance for their children as of the Year 1 follow-up interview (90.4% as compared to 93.9%). There was no program effect, however, on the parents' likelihood of having health insurance coverage for themselves. There also were no significant differences between the HFNY and control groups on the child having a regular health care provider, the child ever having been without needed medical care, the number of well-baby visits, and completion of all immunizations. Although the program did not have a significant effect on the receipt of WIC in the study sample overall, a significant program effect was noted for County B, where HFNY families were substantially more likely than control families to receive WIC (HFNY: 73.3%; control: 60.1%).

No program effect was found for the sample as a whole[8] on the percentage of mothers who breast-fed the target child or on the number of months they breast-fed. However, among mothers who had another child at intake, HFNY mothers were significantly more likely to report having breast-fed the target child than were control mothers (49.9% versus 39.5%).

No significant differences between the HFNY and control groups were observed on the Child Safety Checklist scores. Overall, parents received high scores in this content area. The percentage of parents reporting that their children had an emergency room visit involving injury or ingestion was slightly greater in the HFNY group (6.2%) than in the control group (3.8%).

F. Child Health and Safety: Summary and Discussion

The program effect on health insurance for children probably reflects the efforts by home visitors to help parents' plan for their children's health care needs and to link them with community services. Though we would expect this to affect other health care outcomes as well, the generally high rates among control group parents made it difficult to show major improvements (e.g., over 98% of mothers and children had a primary care provider).

We have no definite explanation for why the program effect on WIC was limited to County B. However, one likely explanation is that one home visitor from that HFNY site had previously worked in the WIC program in the county, and therefore had a thorough understanding of how to help clients achieve and maintain their certification for WIC benefits. In addition to helping her own clients with WIC, this staff member was also a resource person for other home visitors in the county, thus increasing their ability to help their own clients access WIC benefits.

It is unclear why the effect on breast-feeding occurred only for mothers with more than one child. One possible reason is that, in the control group, the rate of breast-feeding for mothers with other children was substantially lower than the rate for first-time mothers. This finding is consistent with data from national surveys (Ryan, Wenjun and

Compared to parents in the control group, parents in the HFNY group…

- were more likely to have health insurance for their children
- were more likely to receive WIC benefits for their children (effect limited to County B)
- were more likely to breast-feed their children (effect limited to parents with other child at intake)

Table 9: Program Impacts on Child Health and Safety

Outcome Variable	Sample[a]	Year 1 Control Group Mean[b]	Year 1 HFNY Group Mean[b]	p value[c]
Health Care				
Mother has health insurance	Entire sample	78.4%	80.1%	.642
Child has health insurance	Entire sample	90.4%	93.9%	.033*
Mother has primary care provider	Entire sample	85.0%	86.9%	.275
Child has primary care provider	Entire sample	98.6%	98.4%	.914
Child ever without needed medical care	Entire sample	1.4%	2.2%	.306
Number of ER visits for child	Entire sample	1.36	1.22	.162
Family received WIC	Entire sample	72.2%	74.8%	.317
	County B	60.1%	73.3%	.009*
Number of well baby visits	Entire sample	4.61	4.54	.590
All immunizations complete	Random subsample	90.8%	89.7%	.662
Mother breast-fed baby	Entire sample	44.7%	45.9%	.718
	Parent had other child at intake	39.5%	49.9%	.008*
Number of months breast-fed	Entire sample	1.04	1.01	.781
Child Safety				
Child safety checklist	Entire sample	85.9%	86.1%	.782
Any ER visits involving injury or ingestion	Entire sample	3.8%	6.2%	.068+

a The Ns for the samples are as follows: entire sample=1,061; immunization subsample=584 ; parent had other child at intake=602.

b Means are adjusted for the following covariates: race/ethnicity, age, depression, marital status, social support, pre- vs. post-natal status, economic hardship, and intake value of outcome variable (if available).

c *indicates that the difference between HFNY group and control group adjusted means at Year 1 was statistically significant ($p<.05$); + indicates that the difference approached statistical significance ($p<.10$).

Acosta, 2002). This rate differential may have provided home visitors with a greater opportunity to influence breast-feeding behavior for mothers with two or more children.

Finally, the finding that children in the HFNY group had slightly more emergency room visits involving injury or ingestion than children in the control group was not consistent with our expectations. Our approach to measuring this variable makes it difficult to know whether there was a difference in actual ER visits or if parents in the HFNY group were simply more likely than parents in the control group to seek medical care when accidents occurred. The latter explanation is quite plausible given that an important focus of home visits was to encourage parents to promptly seek medical care when needed.

CHAPTER 7
Impacts on Life Course Development

The logic model shows that the program attempts to impact a set of outcomes related to parents' life course development. These life course-related outcomes can affect parents' capacity to remain economically self-sufficient throughout their lives and can have an indirect impact on parenting and child health. This section is divided into four separate categories: economic self-sufficiency, psychosocial functioning, substance use, and family planning.

A. Economic Self-Sufficiency: Outcome Measurement

Parents were asked a number of questions about employment, income and education at both the intake and one-year follow-up interviews. Specifically, they were asked to provide information on any current or prior jobs they held, the amount of income they received from all sources (e.g., work, welfare, disability, unemployment), and the highest level of education they had achieved. Income-related data was used to calculate if the parents received at least half of their income from work. Educational level and age were combined to determine if the parents had achieved an age-appropriate amount of education. Age-appropriate educational level for younger parents meant their age was no more than six years greater than their grade level. Age-appropriate for older parents meant they had a high school diploma, a GED or a college degree. We also created a variable indicating whether parents made any progress in their formal education between the intake and the one-year follow-up interview.

B. Economic Self-Sufficiency: Program Impacts

The program had a significant negative impact on the percentage of mothers who were employed (see Table 10). Although mothers in both groups were more likely to be employed at Year 1 than at intake, the rate of increase in employment from intake to Year 1 was significantly greater in the control group (23.2% to 47.6%) than in the program group (20.4% to 40.8%). There were no significant program impacts on the percentage of parents who reported receiving welfare or housing assistance and the percentage receiving more than half of their household income from work. No significant differences between the HFNY and control groups were observed on either the percentage of parents whose education was appropriate to their age or the percentage of parents who made educational achievements from intake to Year 1.

C. Psychosocial Functioning: Outcome Measurement

Parents provided information on their level of depression by completing the Center for Epidemiological Studies Depression Scale (CESD, Radloff, 1977). Using a four-point Likert scale, they indicated how often in the past week they experienced each of 20 different depressive symptoms (Example: "In the past week": "I felt hopeful about the future; I felt sad"). We used the total depression score (range 0-60), as well as a binary score indicating whether the total depression score was at or above the cutoff of 16, which defines cases of likely depression (Radloff, 1977).

Parents also completed the Mastery of Psychological Coping Resources Scale or PSM (Pearlin and Schooler, 1978). They indicated how much they agreed or disagreed with eight statements related to their capacity to affect events and circumstances in their lives (Example: "I have little control over the things that happen to me.").

D. Psychosocial Functioning: Program Impacts

For the full sample, there were no significant program effects on depression or sense of mastery (see Table 10). Both the average depression score

Table 10: Program Impacts on Life Course Development

Outcome Variable	Sample[a]	Control Group Mean		HFNY Group Mean		p value[c]
		Intake	Year 1[b]	Intake	Year 1[b]	
Economic Self-Sufficiency						
Employed (mother)	Entire sample	23.2%	47.6%	20.4%	40.8%	.045*
Received TANF assistance	Entire sample	27.0%	30.4%	31.1%	35.0%	.270
Received > 50% income from work	Entire sample	38.1%	56.6%	33.6%	51.2%	.185
Education appropriate for age	Entire sample	59.4%	60.3%	59.8%	57.5%	.149
Achieved more education in past year	Entire sample	Not measured	19.7%	Not measured	19.7%	.982
Psychosocial Functioning						
Depression score	Entire sample	15.73	11.61	15.05	11.45	.942
Above depression cutoff	Entire sample	43.7%	31.2%	40.0%	29.0%	.692
	County B	37.7%	38.2%	39.4%	23.4%	.014*
Sense of personal mastery	Entire sample	23.93	23.55	24.02	23.80	.145
Substance Use						
Smoking status	Entire sample	30.9%	43.8%	31.0%	41.3%	.305
Smoking frequency	Entire sample	2.14	3.93	2.01	3.42	.151
	Under age 18	1.16	3.31	1.00	1.77	.010*
Alcohol abuse score	Entire sample	1.07	1.28	1.03	1.14	.535
Alcohol abuse (scored above cutoff)	Entire sample	0.3%	3.8%	0.2%	2.0%	.090+
Amount of drinking	Drinkers only	Not measured	1.94	Not measured	1.67	.098+
(average # of drinks when drinking)	County A drinkers	Not measured	2.14	Not measured	1.51	.010*
Any drug use	Entire sample	14.4%	10.6%	16.0%	9.8%	.586
	County C	16.5%	9.4%	9.2%	2.9%	.047*
Family Planning						
Consistently uses birth control	Entire sample	Not measured	72.6%	Not measured	69.6%	.328
Pregnancy or childbirth during	Entire sample	Not measured	9.1%	Not measured	9.6%	.799
first year	County C	Not measured	3.2%	Not measured	10.1%	.042*

[a] The Ns for the entire sample and subsamples are as follows: entire sample=1,060; under age 18=192; drinkers=379.

[b] Means are adjusted for the following covariates: race/ethnicity, age, depression, marital status, social support, pre- vs. post-natal status, economic hardship, and intake value of outcome variable (if available).

[c] *indicates that the difference between the HFNY and control group adjusted means at Year 1 was statistically significant ($p<.05$); + indicates that the difference approaches statistical significance ($p<.10$).

and the percentage of parents scoring above the depression cutoff decreased at about the same rate from intake to Year 1 in the HFNY and control groups. There was a significant program effect on depression in County B, however. The percentage of parents in this county scoring above the depression cutoff decreased dramatically from intake to Year 1 in the HFNY group (39.4% to 23.4%), but increased slightly in the control group (37.7% to 38.2%). The mastery score remained virtually unchanged in both groups.

E. Substance Use: Outcome Measurement

Parents reported on several aspects of their use of tobacco, alcohol, and illicit drugs both at intake and one-year follow-up. A self-administered paper-and-pencil questionnaire was used at the one-year follow-up so that parents could answer these sensitive questions in private.

Those who reported any drinking at all in the past year completed the Alcohol Use Disorders Identification Test or AUDIT (Babor, de la Fuente, Saunders & Grant, 1992), on which they indicated the frequency with which they experienced eight different symptoms of alcohol abuse (range of possible scores: 0 - 32). Based on the authors' guidelines, a score of 8 or more indicates a strong likelihood of alcohol abuse. We examined both the raw score and whether or not the score was above the alcohol abuse cutoff. We also examined one item from the AUDIT separately ("In the past year how many drinks containing alcohol did you have on a typical day when you were drinking?"), because of its clinical significance and its widespread use in the alcohol literature (Kellner, Webster & Chanteloup, 1996; US Preventive Service Task Force, 2004).

F. Substance Use: Program Impacts

Both the percentage of parents who reported smoking cigarettes and the average number of cigarettes smoked per day increased from intake to Year 1, but the rate of increase over time was about the same in the HFNY and control groups (see Table 10). However, among parents under age 18, the average number of cigarettes smoked per day increased from intake to Year 1 at a higher rate in the control group (1.16 to 3.31) than in the HFNY group (1.00 to 1.77). For this subgroup, the difference between HFNY parents and control parents in the average number of cigarettes smoked per day at Year 1 was statistically significant.

The average AUDIT score showed a slight increase from intake to Year 1 that was virtually the same in the HFNY and control groups. But the percentage scoring above the cutoff for alcohol abuse increased more in the control group (0.3% to 3.8%) than in the HFNY group (0.2% to 2.0%). The difference between the HFNY group and the control group in the percentage scoring about the alcohol abuse cutoff at Year 1 approached statistical significance.

Among parents reporting any drinking, there was no significant program effect on the average number of drinks consumed per occasion in the entire sample. However, among drinkers in County A, the HFNY group reported a significantly lower average number of drinks per occasion than did parents in the control group (1.5 versus 2.1).

The rate of self-reported illicit drug use decreased from intake to one-year follow-up. This decrease was not significantly different between HFNY and control groups for the entire sample. However, within County C, self-reported drug use in the HFNY group fell 68.2% between intake and Year 1 (9.2% to 2.9%), whereas in the control group it dropped 42.9% during the same time period (16.5% to 9.4%). There was a statistically significant difference between the HFNY and control groups in County C in the percentage reporting drug use at the one-year follow-up.

G. Family Planning: Outcome Measurement

At the one-year follow-up, parents were asked about their desire to delay their next childbirth ("Do you want to have another baby now, wait a

while, or not have another baby?") and also about the extent to which they consistently used reliable contraception. Specifically, parents who reported having used forms of birth control such as condoms, birth control pills, Norplant, etc. were asked "Do you use [birth control] . . . all of the time?" Finally, parents were asked if they were pregnant at the time of the interview or if they had delivered another baby since the target child was born.

H. Family Planning: Program Impacts

There were no significant differences between the control and HFNY groups in consistent use of birth control. Because there were so few parents who indicated that they wanted to have a baby "now", reliable statistical comparisons could not be computed on this variable. For the entire sample, the program did not have a significant program impact on the percentage of parents who reported either being pregnant or having had another baby between the intake and the one-year interviews. Within County C, however, HFNY parents were significantly more likely to report being pregnant or having had a subsequent birth than were parents in the control group (10.1% to 3.2%).

I. Life Course Development: Summary and Discussion

The HFNY program appeared to have yielded no positive impacts in the first year in the areas of economic self-sufficiency or family planning, although it did lead to benefits in parents' psychosocial functioning and substance use. The fact that the primary focus of the HFNY program in the first year is on parenting may explain the lack of an effect on economic self-sufficiency. More significant results may be found in the Year 2 and Year 3 follow-up interviews.

Program staff at all sites indicated that they focus part of their effort on addressing depression and substance use issues with parents. One possible reason for the positive effect on depression in County B is that their clinical supervisor was trained as a clinical psychologist. She was able to provide ongoing education, guidance, and case consultation to home visitors on a wide range of mental health issues.

Similar factors may explain the effect on alcohol and drug use in County A and County C, respectively. The program in County A is housed in the same building as a substance abuse treatment facility and staff reports a close relationship between the two agencies. In County C, there was a former drug abuse counselor on staff.

Family planning is typically discussed to some extent in home visitation sessions, although it is not a major focus of the program. There is no clear explanation for the finding that parents in the County C HFNY group were more likely to report having had a subsequent pregnancy or birth than parents in the control group. Although the differences were not statistically significant, parents in this county also reported lower rates of consistently using effective birth control and were more likely to report wanting another baby as of the Year 1 interview.

Compared to parents in the control group, parents in the HFNY group…

- were less likely to report symptoms of depression (effect limited to County B)
- smoked fewer cigarettes (effect limited to parents under age 18)
- consumed less alcohol (effect limited to drinkers in County A)
- were less likely to use illicit drugs (effect limited to County C)

CHAPTER 8
Implications & Recommendations

The Year 1 evaluation findings indicate that the HFNY program has had a significant impact on outcomes within each of the three domains targeted by the program: parenting, child health and development, and parents' life course development (see Table 11). Specifically, HFNY helped some parents to develop healthier attitudes toward discipline and more appropriate expectations of their children, and gain a better understanding of child development. Compared to parents in the control group, HFNY parents were less likely to report neglecting their children, and reported committing fewer acts of severe physical abuse, minor physical aggression, and psychological aggression against their children. In regard to child health and development, HFNY mothers experienced better birth outcomes, and HFNY mothers who had two or more children were more likely to breast feed their babies than their counterparts in the control group. HFNY parents were also more likely than control parents to secure health insurance for their children. In addition, HFNY was helpful in assisting some parents to reduce depression and decrease levels of alcohol, tobacco, and drug use.

Although some of the findings summarized above were limited to specific subgroups of mothers or to particular program sites, this array of findings is impressive for several reasons. First, early intervention programs are most likely to yield long-term benefits when they strengthen families in several areas (Schorr, 1988). HFNY appears to be accomplishing this goal, with documented program impacts for behaviors within the parenting, child health and development, and parental life course domains.

Second, the results presented in the current report reflect only those impacts observed as of the targeted child's first birthday. HFNY intends for services to be provided to families until the target child is five years old or enters kindergarten or Head Start. Thus, the reported results represent a preliminary estimate of the HFNY's impacts after families have received only a portion of the intended program services. Previous research suggests that the strongest benefits of home visitation programs may not become evident until several years after the program has ended (Johnson & Walker, 1991; Olds et al., 1998). Therefore, it is conceivable that modest program effects may be strengthened and new program effects may emerge as the second and third year follow-up assessments are completed.

Third, the present study utilized a randomized experimental design, which is the method of choice for evaluating program effectiveness. As

Table 11: Summary of Positive Program Effects

Parenting	Child Health & Development	Parental Life Course Development
• Attitudes* • Knowledge* • Self-reported abuse and neglect	• Birth outcomes • Health care access • Nutrition*	• Substance use* • Mental health*

* Effects limited to certain sites or subgroups.

noted in Chapter 4, random assignment was successful in producing intervention and control groups that were equivalent in all respects except for their exposure to HFNY, so that differences in outcomes between the groups can be attributed confidently to the program itself. In addition, a conservative, intention-to-treat approach was used when determining program effects. Families who refused or prematurely withdrew from HFNY services were still considered to be members of the HFNY treatment group. Thus, the results represent the impact of being offered the opportunity to participate in HFNY rather than the effect of actually participating in the program. This approach results in a fairly conservative test of program effectiveness, and as such, strengthens our confidence that the findings reported are valid program effects, not skewed by selection bias.

We therefore recommend that support for the HFNY program be continued, and we offer several policy and practice recommendations to strengthen future program development. Specific implications and recommendations are presented below for each of the main outcome areas examined in the study: parenting, child health and development, and parents' life course development. In addition, given the research showing that some of the most compelling effects of home visitation do not emerge until several years after program services have ended, we recommend that the evaluation of HFNY be extended to permit the examination of longer-term impacts on children as they reach their fifth birthday, in particular, developmental outcomes such as school readiness. An assessment of the impacts of HFNY in the child's fifth year would contribute immeasurably to the body of knowledge in the field of home visitation, as there have been no randomized trials to date that have considered the effects of HFA programs beyond the child's third birthday.

A. Parenting

The HFNY program improved parental attitudes in the areas of support for use of physical punishment and inappropriate expectations of children, and increased parents' knowledge of child development. To the extent that improvements in these areas are expected to lead to positive changes in parental behavior, such as a reduced reliance on physical discipline strategies and fewer inappropriate behavioral demands, these outcomes may have important implications for the prevention of child abuse and neglect (Bavolek & Keene, 1999). The differences between the HFNY and control groups were often small, however, and program effects were concentrated in specific sites or subgroups. Consequently, we recommend that the program continue to target parental attitudes and knowledge while considering ways to enhance its educational methods so that stronger effects on a broader spectrum of program participants can be achieved.

Given the program's goal of reducing child abuse and neglect, the impacts observed on parents' self-reported incidents of serious abuse and neglect against their children are particularly noteworthy. The behaviors included in the serious abuse and neglect composite scale (e.g., punching, choking, leaving the child alone) were serious enough to have resulted in a substantiated report had they come to the attention of CPS. Experiencing abuse or neglect is a strong predictor of later psychological, social, and behavioral problems among children (Kim & Cicchetti, 2003; Macfie, Cicchetti & Toth, 2001), and if reported, can lead to legal problems for parents, family dissolution, and a host of other problems. Thus, reducing the incidence of serious forms of abusive and neglectful behaviors should result in significant benefits for children, parents, and families.

Program effects on less severe forms of negative parenting (e.g., minor physical aggression, psychological aggression) may also translate into healthier outcomes for program children. Coercive parenting is a prominent risk factor for later behavioral problems in children (Eddy, Leve & Fagot, 2001; O'Connor, Deater, Rutter & Plomin, 1998), and can develop into intractable patterns of negative parent-child interaction (Patterson, 1982) that may eventually lead to later abuse. Conversely, a reduction in negative parenting behaviors may create more opportunities for parents to develop a warm, nurturing parenting style, laying the foundation for

positive social and emotional development throughout the child's life (Forgatch & DeGarmo, 1999; MacDonald, 1992). Similarly, positive program effects on the prevalence of self-reported neglect suggest that HFNY parents were more engaged with their children and attentive to their basic needs, factors likely to lead to improvements in children's physical, emotional, and cognitive well-being.

Finally, it is worth noting that when abuse or neglect did occur among HFNY families, it was more likely to be reported to CPS officials than when it occurred among families in the control group. This suggests that the HFNY program may have resulted in abused and neglected children receiving needed services earlier, which may help to prevent long-term patterns of abusive or neglectful behaviors from developing in HFNY families. In addition, this finding highlights the importance of using multiple indicators of child maltreatment in evaluations of home visiting programs, rather than relying solely on CPS reports.

Thus, although previous research on HFA programs has often found no or modest program effects on child abuse and neglect, the present pattern of results suggests that the HFNY program is a promising means of reducing child abuse and neglect among New York's families. However, consistent with prior research findings (Eckenrode et al., 2000; Duggan, McFarlene, et al., 2004; Landsverk et al., 2002), the results of the current evaluation also indicate that the presence of particular risk factors, such as maternal depression and domestic violence, may limit program effectiveness. The effect of HFNY on both parental attitudes and practices was influenced by parents' initial level of depression, although the nature of that effect did not follow a consistent pattern. Likewise, HFNY's effect on self-reported parenting practices tended to be greatest among families reporting no domestic violence.

Reducing domestic violence, mental illness, and substance abuse is a challenge, even for programs staffed by professionals that specialize in treating these problems. HFNY has taken a number of steps to better equip its home visitors to address these issues. Within the first year of employment, home visitors receive training on indicators of domestic violence, depression, and substance abuse, and on intervention protocols for working with families struggling with these problems. HFNY programs develop referral arrangements with domestic violence, mental health, and substance abuse treatment providers in their communities. Since the evaluation began, the HFNY programs have hired clinical supervisors with advanced degrees in social work or psychology to support home visitors in dealing with multi-problem families. Recently, HFNY added a performance target that tracks whether families identified as having problems with domestic violence, depression, or substance abuse are referred for services within six months of enrollment.

We recommend that these existing program practices be strengthened and new approaches be crafted to improve the ability of HFNY to reduce child abuse and neglect in the face of domestic violence, depression, substance abuse, and other issues that may act as obstacles to effective service delivery.

First, although the eligibility assessment conducted by the FAWs includes questions on domestic violence, depression, and substance abuse, and home visitors are trained to recognize indicators of these problems, they may go undetected in many cases because of parents' unwillingness to disclose sensitive information and their adeptness in concealing signs of these problems. It is also possible that these types of issues may not arise until months or years after the initial assessment has taken place. One promising approach to consider to improve detection of domestic violence, depression, and substance use—currently in use by the NFP program (Olds, 2002)—involves having home visitors use a short structured interview to ask about these issues at regularly scheduled intervals throughout the duration of the program. The structured and routine nature of the interview has the advantage of providing an opportunity to broach delicate issues that some parents and home visitors may otherwise feel

inclined to avoid. Parents' responses may then be used as a starting point for discussions about whether and how to deal with these issues in future home visits. We recommend that all HFNY programs incorporate a series of brief, routine assessment measures to periodically screen for domestic violence, depression, and substance abuse throughout the length of parents' involvement in the program.

Second, to help home visitors best respond to identified risk factors, we recommend that they be provided training in the stages of change framework developed by Miller and his colleagues (Miller & Rollnick, 1991), which is now available only to HFNY supervisors. The stages of change model offers useful guidelines to help providers understand when and how to introduce challenging topics with their clients. Training in this model would enhance home visitors' skills in discussing sensitive issues, like domestic violence, in supportive ways that are not likely to be perceived as intrusive, demeaning, or threatening to the parent. It would also provide guidance to home visitors on how to motivate parents to initiate and sustain change and to suggest concrete actions that improve their situations.

Third, we believe it is critical for HFNY programs to strengthen their partnerships with local agencies that specialize in providing domestic violence, mental health, and substance abuse services. We recommend that HFNY programs explore the feasibility of implementing a model used by OCFS to promote collaboration between child welfare offices and domestic violence advocacy organizations and substance abuse treatment providers. This model involves the collocation of domestic violence advocates and substance abuse treatment specialists in CPS offices, where they provide consultation on CPS cases in which domestic violence or substance abuse is present, and when indicated, meet with parents to assess their need for services, discuss action steps and service options, and link them with appropriate services. OCFS has found that this approach helps to engage in services many parents who otherwise would have failed to follow through on the referrals made by CPS workers. The collocation model also increases the CPS workers' understanding of domestic violence and substance abuse and their ability to deal more effectively with these issues.

If the collocation approach proves to be infeasible in particular sites, those HFNY programs should consider hiring experts, at least on a part-time basis, in the areas of domestic violence, mental health, and substance abuse. Another possible option is to provide intensive, specialized training in domestic violence, mental health, and substance abuse to designated home visitors or supervisors, who would serve as the "resident experts" on these issues. As in the collocation model, this would enable home visitors to access a specific staff member for information, support and assistance with service planning and delivery in cases involving these challenging issues.

Finally, training and supervision should focus on helping home visitors stay on task with their child-centered curriculum, even when the family is struggling with other stressors. For example, it would be useful to examine home visitors' perspectives about the ways in which domestic violence, depression, and substance abuse impede their ability to deliver services to families, and how they currently modify their delivery of the program components in these circumstances. This could help to identify home visiting practices likely to be productive and/or counterproductive with these families, and it could aid in the development of new practice guidelines.

B. Child Health and Development

The HFNY program led to significant improvements in three important areas of child health: birth outcomes, access to health care, and breast-feeding. Most notably, the rate of low birth weight births among HFNY families was less than half the rate observed in the control group. The reduction in low birth weight babies has tremendous implications for children's long-term health and development. Low birth weight is a leading cause of neonatal death, hospitalization, and a range of health and developmental problems throughout childhood (Healthy People 2010, 2002). Moreover, caring for children with high needs puts extra demands on par-

ents, causing continuing stress and potentially impeding parents' ability to achieve economic self-sufficiency (Brooks-Gunn, McCormick, Shapiro, Benasich, & Black, 1994). Thus, program-related reductions in the rate of low birth weight babies should result in better child health, healthier parenting, and greater opportunities for parent self-sufficiency.

Children of HFNY parents were also more likely than children in the control group to have health insurance. Although no differences in well baby care or immunization patterns were noted during the first year, in the long run this effect may lead to HFNY children receiving more preventive and needed medical services. To the extent that high medical costs prevent parents from seeking medical attention for their children, higher rates of insurance coverage should encourage timely health care access and long-term improvements in overall child health. In addition, greater health care coverage may help families free up financial resources to address other basic needs. Parents with health insurance do not need to choose between paying for child medical costs and paying for other family necessities, such as food and clothing.

Finally, HFNY mothers who had more than one child were more likely than their counterparts in the control group to breast-feed their children. Breast-feeding provides infants with the best possible nutrition during the most sensitive period in their physical development, and thus decreases their risk for a host of acute and chronic illnesses (American Academy of Pediatrics, 1997). Studies also suggest that breast-feeding may improve infant's cognitive development (Morrow-Tlucak, Haude & Ernhart, 1988), as well as prevent a range of maternal health problems (Melton et al., 1993; Newcomb et al., 1994). Consequently, increasing the number of children who are breast-fed promises to improve both child and maternal health.

In sum, HFNY efforts to improve child health outcomes appear to have been successful in several arenas. The program's focus on providing education and encouraging good prenatal health practices is consistent with other programs designed to improve birth outcomes among high-risk mothers (Olds, Kitzman, et al., 1997; Seitz & Apfel, 1994) and clearly should continue to be a principal program component. However, program development staff should also explore ways to further improve the prenatal component of the program so that home visiting practices can influence other birth outcomes as well (e.g., premature birth). We recommend that HFNY expedite the planned statewide rollout of a three-day training using a prenatal curriculum developed by HFA that has been pilot tested in three HFNY sites. This curriculum focuses on several important topics, including prenatal care; nutritional needs during pregnancy; the impact of stress; stress reduction techniques; risky health behaviors during pregnancy; depression during and following pregnancy; prenatal growth and development; prenatal bonding; preparing for labor and delivery; breast-feeding; and family planning.

We also recommend that HFNY expand its outreach efforts to reach more women in the early stages of pregnancy who, without the intervention of the program, would have received no or late prenatal care. Most of the women who are enrolled in HFNY prenatally are identified through prenatal clinics and physicians' offices. Consequently, the program is likely to miss women who do not seek prenatal care until late in their pregnancies or at all.

As described in Chapter 3, pregnant women are screened by prenatal clinics, physicians' offices, and community agencies for the presence of social and economic risk factors such as single parenthood, teen pregnancy, poverty, low education, substance abuse, and mental health problems. Those with a sufficient number of risk factors are then referred to HFNY for an assessment interview. This interview is completed by a Family Assessment Worker (FAW) and includes the administration of the Family Stress Checklist (FSC). The FSC is a more comprehensive assessment of parents' psychological and social risk factors, which is used to determine the family's eligibility for the program. The FSC is typically administered in the homes of potential participants and requires about an hour to complete.

The FAWs are responsible for outreach and recruitment as well as for conducting the assessment interview. However, most of their time is devoted to

administration of the FSC, leaving little time for outreach to find and engage pregnant women who are isolated and have limited contact with prenatal care providers and community organizations. Given the clear benefits of identifying and serving women who otherwise would not have received adequate prenatal care or other supports during their pregnancies, it is questionable whether administering the FSC is the most productive use of the FAWs' time. Data derived from the HFNY data management system indicate that the FSC assessment provides little added value in targeting eligible families. Only one percent of the families screened and referred to HFNY by community providers were later determined to be ineligible for program services based on the FSC assessment. Thus, the relatively simple criteria used by community providers to screen potential HFNY clients appear to be a more efficient means for identifying parents likely to benefit from program services.

Although the FSC has not been found to be an effective targeting tool, it does provide important information about the family that may help home visitors tailor program content and develop more appropriate modes of service delivery. We therefore recommend that HFNY examine the feasibility of using the FSC for service planning rather than for determining eligibility for the program, and to give consideration to changing the roles of the home visitors and FAWs, so that home visitors, instead of FAWs, would conduct the FSC interview. This would make it possible for the FAWs to focus exclusively on outreach and recruitment and to perform universal screening in high risk communities. And it would help to build the home visitors' skills in interviewing parents to obtain sensitive information and provide the home visitors with first-hand information about the risk factors present in their clients' lives.

We recommend that the program continue to promote breast-feeding to all mothers. The CDC's HP2010 national goal states that 75% of mothers should engage in at least some breast-feeding with their infants. The rate in our sample was slightly over 50%. This rate is not especially low given the high-risk nature of our sample, and is comparable with the rates found for the general population in this region of the country (Ryan, Wenjoun & Acosta, 2002). Nevertheless, HFNY is uniquely suited to have a community-wide influence on breast-feeding given the large number of families it serves, and the extensive contact and long-term relationships established between home visitors and parents.

However, the restriction of positive breast-feeding results to a single category of mothers also suggests the need for closer examination of the ways in which home visitors promote breast-feeding to program participants. Current methods appear to be more effective for mothers with two or more children than for first-time mothers. It may be the case that first-time mothers need a different type or level of support and education to undertake breast-feeding, but that the program does not yet address those different needs in a systematic way. To promote breast-feeding among all mothers participating in HFNY, the programs should consider contracting with lactation consultants in their communities, or alternatively, having a staff person receive the training needed to become a lactation specialist.

Finally, HFNY parents were more likely than controls to seek emergency room care for their children. This pattern of results was unexpected and is difficult to interpret. If the reason for greater emergency room use among home visited parents is due to parents responding appropriately to home visitors' messages about the importance of getting timely medical care for their child, this outcome may be positive. However, parents should receive clear and consistent messages about when it is and is not appropriate to use the emergency room, to limit potentially unnecessary and costly health care utilization patterns. Again, our results do not necessarily indicate a problem in this regard, but they do suggest that the issue should be examined more closely.

C. Life Course Development

The HFNY program benefited parents in certain sites in two areas that can significantly influence their life course development, as well as their functioning as parents: depression and substance use. Although neither issue is an explicit focus of the

HFNY program, these topics often arise during home visits because they present obstacles to other central program goals such as economic and educational advancement (Bogard, Trillo, Schwartz & Gerstel, 2001; Hardy, Woods & Wall, 2003; Wickizer, 2001), and healthy parenting practices (Downey & Coyne, 1990). Parental substance abuse in particular has been related to repeated allegations of child maltreatment, an increased likelihood of children entering and staying longer in foster care, and reduced chances of family reunification (USDHHS, 1999; Wolock & Magura, 1996; Walker, Zangrillo & Smith, 1991).

Moreover, the reduction of substance use and depression in the first year may have additional benefits in terms of program implementation. Parents who experience a reduction in these issues early in the program may subsequently engage more fully in program activities, increasing the likelihood that service delivery will be effective. Consequently, consistent with the recommendations made earlier in our discussion of parenting outcomes, we recommend that HFNY strengthen current practices and develop new strategies to improve the home visitors' recognition and response to these types of parental issues. It is likely that having experts on staff and forging stronger collaborative arrangements with community agencies would improve home visitors' effectiveness in dealing with mental health and substance abuse issues. As indicated in Chapter 7, access to professionals with specialized expertise increased the likelihood of positive outcomes in the areas of mental health and substance abuse. The reduction in depression among HFNY participants was limited to a program that had hired a clinical psychologist. Similarly, the positive effect on alcohol use was seen in a program that is housed in the same building as a substance abuse treatment facility, and the decline the drug use was observed in a program that has a former drug abuse counselor on staff.

In contrast to the findings associated with maternal mental health and substance abuse, positive program effects were not found for variables related to economic self-sufficiency or family planning. However, the lack of a dramatic rise in parents' employment during their baby's first year of life is not necessarily a negative finding when viewed in terms of the program's child health and development goals. In fact, returning to work too soon after childbirth can in some cases lead to negative outcomes for children (Baydar & Brooks-Gunn, 1991; Belsky & Eggebeen, 1991; Morris, Huston, Duncan, Crosby & Bos, 2001).

In the longer term, however, both employment and effective family planning can have wide-ranging benefits for families, including reduced poverty (Furstenberg, Brooks-Gunn & Morgan, 1987), and improved health, behavior and school achievement outcomes for children (Morris, et al., 2001). Furthermore, evidence from research on the NFP program suggests that the long-term effects of nurse home visitation on child abuse and neglect occurred partly because that program reduced parents' dependence on welfare benefits and reduced the number of closely spaced pregnancies (Eckenrode, 2004). Thus, it is important that HFNY make improvements in economic self-sufficiency and family planning high priorities.

The programs should continue to link parents to employment- and education-related services (e.g., workforce development initiatives, tuition assistance programs, ESL and GED programs, etc.). In addition, HFNY should consider an approach that has been used successfully in some of the programs: providing training to parents on employment readiness skills and motivation to work.

We expect a greater chance of observing positive program effects on employment, income, and education in the second and third waves of data, because the program design calls for stepping up the focus on increasing economic self-sufficiency following the child's first year. The likelihood of those outcomes will depend partly on home visitors' ability to adapt to changing economic conditions in their communities. It will also depend on the program's ability to reduce other risk factors, such as depression, substance abuse, and closely spaced pregnancies.

REFERENCES

American Academy of Pediatrics, Work Group in Breast-feeding (1997). Breast-feeding and the use of human milk: Policy statement. *Pediatrics*, 100(6), 1035-1039.

Babor, T. F., de la Fuente, J. R., Saunders J., & Grant, M. (1992). *The Alcohol Use Disorders Identification Test (AUDIT): Guidelines for use in primary health care*. Geneva, Switzerland: World Health Organization.

Bavolek, S. J. & Keene, R. G. (1999). *Adult-Adolescent Parenting Inventory (AAPI-2): Administration and development handbook.* Park City, UT: Family Development Resources Inc.

Baydar, N. & Brooks-Gunn, J. (1991). Effects of maternal employment and child-care arrangements on preschoolers' cognitive and behavioral outcomes: Evidence from the children of the National Longitudinal Survey of Youth. *Developmental Psychology,* 27(6), 932–945.

Belsky, J. & Eggebeen, D. (1991). Early and extensive maternal employment and young children's socioemotional development: Children of the National Longitudinal Survey of Youth. *Journal of Marriage and the Family*, 53(4), 1083–1100.

Bogard, C. J., Trillo, A., Schwartz, M. & Gerstel, N. (2001). Future employment among homeless single mothers: The effects of full-time work experience and depressive symptomatology. *Women and Health*, 32(1-2), 137-157.

Brooks-Gunn, J., McCormick, M. C., Shapiro, S., Benasich, A. & Black, G. W. (1994). The effects of early education intervention on maternal employment, public assistance, and health insurance: The Infant Health and Development Program. *American Journal of Public Health*, 84 (6), 924-931.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.

Crittenden, P. M. (1985). Maltreated infants: Vulnerability and resilience. *Journal of Child Psychology and Psychiatry*, 26, 85-96.

Daro, D., McCurdy, K. & Harding, K. (1998). *The role of home visiting in preventing child abuse: An evaluation of the Hawaii Healthy Start Program*. Chicago, IL: National Committee to Prevent Child Abuse.

Daro, D. A. & Harding, K. A. (1999). Healthy Families America: Using research to enhance practice. *The Future of Children*, 9(1), 152-176.

Downey, G. & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin*, 108(1), 50-76.

Duggan, A. K., Fuddy, L, Burrell, L, Higman, S, McFarlane, E, Windham, A, Sia, C. (2004). Randomized trial of a statewide home visiting program to prevent child abuse: Impact in reducing parental risk factors. *Child Abuse and Neglect*, 28, 623-643.

Duggan, A. K., MacFarlane, E. C., Fuddy, L, Burrell, L, Higman, S, Windham, A, Sia, C. (2004). Randomized trial of a statewide home visiting program to prevent child abuse: Impact in preventing child abuse and neglect. *Child Abuse and Neglect*, 28, 597-622.

Duggan, A. K., MacFarlane, E. C., Windham, A. M., Rohde, C. A., Salkever, D. S., Fuddy, L., Rosenberg, L. A., Buchbinder, S. B., & Sia, C.

(1999). Evaluation of Hawaii's Healthy Start Program. *The Future of Children*, 9, 66-90.

Eckenrode, J. J. (2004). Nurse Family Partnership Program: Enduring effects on mothers and children. Paper presented at the 2004 Conference of Prevent Child Abuse New York, April 26.

Eckenrode, J. J., Ganzel, B. L., Henderson, C. R., Jr., Smith, E., Olds, D. L., Powers, J., Cole, R., Kitzman, H., & Sidora, K. (2000). Preventing child abuse and neglect with a program of nurse home visitation: The limiting effects of domestic violence. *Journal of the American Medical Association*, 284, 1385-1431.

Eddy, J. M., Leve, L. D. & Fagot, B. I. (2001). Coercive family processes: A replication and extension of Patterson's Coercion Model. *Aggressive Behavior*, 27(1), 14-25.

Elder, G. H., Van Nguyen, T., & Caspi, A. (1985). Linking family hardship to children's lives. *Child Development*, 56(2), 361-375.

Forgatch, M. S. & DeGarmo, D. S. (1999). Parenting through change: An effective prevention program for single mothers. *Journal of Consulting and Clinical Psychology*, 67(5), 711-724.

Furstenburg, F. F., Jr., Brooks-Gunn, J., and Morgan, S. P. (1987). *Adolescent Mothers in Later Life*. New York: Cambridge University Press.

Gomby, D. S., Culross, P. L. & Behrman, R. E. (1999). Home visiting: Recent program evaluations - Analysis and recommendations. *The Future of Children*, 9(1), 4-26.

Guterman, N. (2001). *Stopping Child Maltreatment Before It Starts: Emerging Horizons in Early Home Visitation Services*. Thousand Oaks, CA: Sage.

Harding, K., Friedman, L. & Diaz, J. (2003). *Healthy Families America: 2001 Annual profile of program sites*. Available at www.healthyfamiliesamerica.org/downloads/hfa_site_survey.pdf

Harding, K., Reid. R., Oshana, D. & Holton J. (2004). Initial results of the HFA implementation study. Chicago, IL: Prevent Child Abuse America.

Hardy, G. E., Woods, D. & Wall, T. D. (2003). The impact of psychological distress on absence from work. *Journal of Applied Psychology*, 88(2), 306-314.

Institute of Medicine, (1994). *Reducing risks for mental disorders: frontiers for preventive intervention research*. National Academy Press: Washington, D.C.

Izzo, C., Weiss, L., Shanahan, T., & Rodriguez-Brown, F. (2000). Parental self-efficacy and social support as predictors of parenting practices and children's socioemotional adjustment in Mexican immigrant families. *Journal of Prevention and Intervention in the Community*, 20, 197-214.

Johnson, D. L. & Walker, T. (1991). A follow-up evaluation of the Houston Parent Child Development Center: School performance. *Journal of Early Intervention*, 15 (3), 226-236.

Kellner, F., Webster, I. & Chanteloup, F. (1996). Describing and predicting alcohol use-related harm: an analysis of the Yukon Alcohol and Drug Survey. *Substance Use and Misuse*, 31, 1619-1638.

Kempe, H. (1976). *Child abuse and neglect: The family and the community*. Cambridge, MA: Ballinger Publishing Company.

Kim, J. & Ciccetti, D. (2003). Social self-efficacy and behavior problems in maltreated children. *Journal of Clinical Child and Adolescent Psychology*, 32(1), 106-117.

Kitzman, H., Olds, D. L., Henderson, C. R., Hanks, C., Cole, R. Tatelbaum, R., McConnochie, K. M., Sidora, K., Luckey, D., Shaver, D.,

Engelhardt, K., James, D., & Barnard, K. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing: A randomized controlled trial. *Journal of the American Medical Association*, 278(8), 644-652.

Lahey, B. B., Conger, R. D., Atkeson, B. M., & Treiber, F. A. (1984). Parenting behavior and emotional status of physically abusive mothers. *Journal of Consulting and Clinical Psychology*, 52, 1062-1071.

Landsverk, J., Carrilio, T., Connelly, C., Ganger, W., Slymen, D., Newton, R., Leslie, L., & Jones, Collette (2002). *Healthy Families San Diego clinical trial: Technical report*. San Diego, CA: Child and Adolescent Services Research Center and San Diego Children's Hospital and Health Center.

Lazarov, M. & Evans, A. (2000). Breast-feeding: Encouraging the best for low-income women. *Zero To Three, 21*, 15-23.

Long, J. S. (1997). *Regression Models for Categorical and Limited Dependent Variables*. Thousands Oaks, CA: Sage Publications.

MacDonald, K. (1992). Warmth as a developmental construct. An evolutionary analysis. *Child Development*, 63, 753 - 773.

Macfie, J., Ciccetti, D. & Toth, S. L. (2001). Dissociation in maltreated versus non-maltreated preschool-aged children. *Child Abuse and Neglect*, 25(9), 1253-1267.

MacPhee, D. (1981). *Manual: Knowledge of Infant Development Inventory*. Unpublished manuscript. University of North Carolina.

McCloyd, V. C., Jayaratnes, T. E., Ceballo, R. and Borquez, J. (1994). Unemployment and work interruption among African-American single mothers: Effects on parenting and adolescent socioemotional functioning. *Child Development, 65*, 562-589.

Melton, L. J., Bryant, S. C., Wahner, H. W., O'Fallon, W. M., Malkasian, G.D., Judd, H .L. & Riggs, B. L. (1993). Influence of breast-feeding and other reproductive factors on bone mass later in life. *Osteoporosis International*, 3, 76-83

Miller, W. R. & Rollnick, S. (1991). *Motivational Interviewing*. New York: Guilford.

Morris, P. A., Huston, A. C., Duncan, G. J., Crosby, D. A. & Bos, J. M. (2001). *How Welfare and Work Policies Affect Children: A Synthesis of Research*. Manpower Development Research Corporation. Available at www.mdrc.org/publications/100/full.pdf

Morrow-Tlucak, M. Haude, R. H. & Ernhart, C. B. (1988). Breast-feeding and cognitive development in the first 2 years of life. *Social Science Medicine*, 26(6), 635-639.

Newcomb, P. A., Storer, B. E. Longnecker, M. P.; Mittendorf, R., Greenberg, E. R., Clapp, R. W., Burke, K. P., Willett, W. C. & MacMahon, B. (1994). Lactation and a reduced risk of premenopausal breast cancer. *New England Journal of Medicine*, 330, 81-87.

O'Connor, T. G., Deater, D. K., Rutter, M. & Plomin, R. (1998). Genotype-environment correlations in late childhood and early adolescence: Antisocial behavioral problems and coercive parenting. *Developmental Psychology*, 34(5), 970-981.

Olds, D. L., (2002). Prenatal and infancy home visiting by nurses: From randomized trials to community replication. Prevention Science, 3(3), 153-172.

Olds, D. L., Eckenrode, J. J., Henderson, C. R., Jr., Kitzman, H., Powers, J., Cole, R., Sidora, K., Morris, P., Pettitt, L., & Luckey, D. (1997). Long-term effects of home visitation on maternal life course, child abuse and neglect and children's arrests: 15-year follow-up of a randomized trial. *Journal of the American Medical Association*, 278 (8), 637-643.

Olds, D. L., Henderson, C. R., Jr., Chamberlin, R., & Tatelbaum, R. (1986). Preventing child abuse and neglect: A randomized trial of nurse home visitation. *Pediatrics*, 78, 65-78.

Olds, D. L., Henderson, C. R., Jr., Cole, R., Eckenrode, J., Kitzman, H., Luckey, D., Pettitt, L., Sidora, K., Morris, P., & Powers, J. (1998). Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-year follow-up of a randomized trial. *Journal of the American Medical Association*, 280, 1238-1244.

Olds, D, Henderson, C. R. , Kitzman, H. &Cole, R. (1995). Effects of Prenatal and Infancy Home Visitation on Surveillance of Child Maltreatment. *Pediatrics*, 95(3), 365-371.

Olds, D. L., Henderson, C. R., Kitzman, H. J., Eckenrode, J. J., Cole, R. E. & Tatelbaum, R. C. (1999). Prenatal and Infancy Home Visitation by Nurses: Recent Findings. *Future of Children*, 9(1), 44-65.

Olds, D.L., Henderson, C.R., Tatelbaum, R., & Chamberlin, R. (1986). Improving the delivery of prenatal care and outcomes of pregnancy: A randomized trial of nurse home visitation. *Pediatrics*, 77, 16-28

Olds, D. L., Henderson, C. R., Jr., Tatelbaum, R., & Chamberlin, R. (1988). Improving the life-course development of socially disadvantaged mothers: A randomized trial of nurse home visitation. *American Journal of Public Health, 78*, 1436-1445.

Olds, D., Hill, P., Robinson, J., Song, N., & Little, C. (2000). Update on home visiting for pregnant women and parents of young children. *Current Problems in Pediatrics, 30*, 105-148.

Olds, D. L., Kitzman, H., Cole, R., & Robinson, J. (1997). Theoretical foundations of a program of home visitation for pregnant women and parents of young children. *Journal of Community Psychology, 25*, 9-25.

Olds, D. L., Robins, J., O'Brien, R., Luckey, D., Pettitt, L. M., Henders, C. R., Ng, R. K., Sheff, K. L., Korfmacher, J., Hiatte, S. & Talmi, A. (2002). Home visiting by paraprofessionals and by nurses: A randomized, controlled trial. *Pediatrics, 110(3)*, 486-496.

Patterson, G. (1982). *Coercive family process*. Eugene, OR: Castalia Publishing Company.

Pearlin, L.I. and Schooler C. (1978). The structure of coping. *Journal of Health and Social Behavior*, 19, 2-21.

Price, R. H., Van Ryn, M., & Vinokur, A. D. (1992). Impact of a job search intervention on the likelihood of depression among the unemployed. *Journal of Health and Social Behavior*, 33, 158 - 167.

Radloff, LS. (1977). The CES-D: a self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.

Ryan, A. S., Wenjoun, Z., & Acosta, A. (2002). Breast-feeding continues to increase into the new millennium. *Pediatrics*, 110(6), 1103-1109.

Schorr, L.B. (1988). *Within reach: Breaking the cycle of disadvantage*. New York: Doubleday.

Squires, J, Bricker, D. & Twombly, L. (2002). The ASQ: SE user's guide for Ages & Stages *Questionnaires:Social-Emotional*. Baltimore: Brookes.

Straus, M. A. & Gelles, R. J. (1990). *Physical Violence in American Families: Risk Factors and Adaptations to Violence*, 535-559. New Brunswick, NJ: Transaction Publishers.

Srauss M. A., Hamby S. L., Bonney-McCoy S., & Sugarman DB. (1996). The revised conflict tactics scales (CTS2). *Journal of Family Issues*, 17(3): 283-316.

Strauss, M. A. (1999). *Child-report, audit-recall, and sibling versions of the revised Conflict*

Tactics Scales. University of New Hampshire, Durham: Author.

Walker, C., Zangrillo, P. & Smith, J. (1991). *Parental drug abuse and African American children in foster care*. Washington, DC.: National Black Child Development Institute.

Wathen, C. N. & MacMillan, H. L. (2003). Interventions for violence against women: Scientific review. *Journal of the American Medical Association*, 289(5), 589-600.

Wickizer, T. M. (2001). *The Impact of Substance Abuse Treatment on Employment Outcomes Among AFDC Clients in Washington State: Report to the Substance Abuse and Mental Health Services Administration* (DHHS Publication No. (SMA) 01-3508). Available at http://www.samhsa.gov/pubs/content/tap25/ (May, 2004).

Wolock, I. & Magura, S. (1996). Parental substance abuse as a predictor of child maltreatment re-reports. *Child Abuse and Neglect*, 20, 1183-1193.

U.S. Advisory Board on Child Abuse and Neglect, U.S. Department of Health and Human Services. (1990). *Child abuse and neglect: Critical first steps in response to a national emergency.* Washington, D. C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services (US DHSS). (1999). *Blending Perspectives and Building Common Ground: A Report to Congress on Substance Abuse and Child Protection.* Washington, D.C.: U.S. Government Printing Office.

U.S. Preventive Services Task Force. (2004). *Recommendation statement: Screening and Behavioral counseling interventions in primary care to reduce alcohol misuse.* Available at http://www.ahrq.gov/clinic/3rduspstf/alcohol/alcomisrs.htm (June 15, 2004).

ENDNOTES

[1]Parents' attitudes regarding power and independence was not used as a covariate in our statistical models because of its low reliability (α = .48).

[2]A participant was counted as being active in the program at a given point in time if she had not been discharged from the program and had received at least one home visit in the previous three months. This time period was chosen because home visitors are expected to do "creative outreach" for up to three months in an effort to re-engage reluctant participants in the program.

[3]There were a few exceptions in cases where a covariate was confounded with the outcome variable being tested, or when the test was limited to a subsample that makes a covariate irrelevant. For example, economic hardship was excluded from the model in analyses examining welfare, income from work, and employment. Also, in analyses involving only the prenatal sample (e.g., birth weight), prenatal status was excluded from the model.

[4]Center for Epidemiologic Scale (CES-D), Radloff (1977)

[5]Domestic violence was measured using the Revised Conflict Tactics Scale (Strauss, et al., 1996), and was defined as psychological abuse or physical abuse committed by an intimate partner. About 60% of the mothers reported that they had experienced psychological or physical abuse by an intimate partner, and 20% reported having suffered physical abuse.

[6]The program did not have differential impacts on substantiated reports for parents with prior substantiated child abuse or neglect reports as compared to those with no prior history of substantiated reports.

[7]New York State Department of Health, 2004.

[8]We included both the pre and postnatal samples in the analyses of breast-feeding. Although most mothers who enrolled in the program postnatally or just before childbirth would have already decided on whether to breastfeed, home visitors may have influenced breast-feeding initiation among mothers who either did not or could not begin breast-feeding in the hospital, either by providing education and support in their homes or through referrals to specialists who can help with delayed onset of lactation in the period shortly following childbirth. Additionally, their ongoing support throughout the year may have helped to lengthen the duration of breast-feeding. Prenatal status was included as a covariate in the breast-feeding analyses to adjust for possible differences between parents who entered the study during pregnancy and those that entered after childbirth.