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### Comprehensive Evaluation of Home Visiting New Hampshire: Final Report.

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# **Comprehensive Evaluation of Home Visiting New Hampshire *Final Report***

## ***Executive Summary***

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# EXECUTIVE SUMMARY

Home Visiting New Hampshire (HVNH) is a statewide initiative of the Division of Public Health Services (DPHS) Bureau of Maternal and Child Health. The program began in 2001 with awards to support programs in 13 sites and expanded in 2002 for a total of 19 sites across New Hampshire. The grantees provide home-based services to Medicaid-eligible pregnant women and their families, particularly those at-risk for poor pregnancy outcomes, child abuse and neglect, substance abuse, and depression. The goals of Home Visiting New Hampshire are to

1. promote healthy pregnancy and birth outcomes.
2. promote a safe and nurturing environment for children.
3. enhance families' life course and development.

In the HVNH program model, specially trained home visitors and nurses regularly visit pregnant women and their families in their homes to deliver a health and parenting education curriculum, information, referrals, and support to participants. This team coordinates its work within the HVNH grantee agency and with the grantee's partners, i.e., other organizations in the community that can provide needed staff or services.

To determine how well the program has succeeded in achieving its goals, DPHS contracted with RMC Research Corporation in November 2002 to conduct a comprehensive evaluation to assess program implementation and outcomes. Data collection involved collecting a large amount of information from participating mothers over multiple points in time while they were in the program, using HVNH Home Visitors and Nurses as the primary data collectors. The evaluation also included surveys of participants and home visiting staff, and information collected about programs through site visits.

## HVNH Programs and Participants

Home Visiting New Hampshire programs are well distributed across the state with at least one program serving every county. Sites are divided about equally between urban and rural areas. By funding

*By funding almost two-thirds of its sites in the counties with higher poverty rates than the state average, HVNH is able to reach its target Medicaid-eligible population.*

almost two-thirds of its sites in the counties with higher poverty rates than the state average, HVNH is able to reach its target Medicaid-eligible population.

HVNH grantees are community-based human service organizations with varying missions, budgets, staff composition, program organization, and integration within their agencies. About one-half of the grantee agencies are primarily health care providers; the other

*The typical program has several part and full time staff and follows a Home Visitor/Nurse team model with support from other professionals.*

grantees are social services agencies. Almost all partner with complementary health, mental health, material, and family support services and staff. This allows HVNH programs to convene multi-disciplinary teams for family case management that might not ordinarily work together, expanding the opportunities for families to connect to other programs and services.

The typical program is small with several part-time and one or two full-time staff. All of the programs follow a Home Visitor/Nurse team model. However, the activities and roles for each team member vary and most sites have other professionals to provide additional, specialized support to the team and families. Program staff are generally very experienced in their fields and bring complementary skills and backgrounds to the home visiting team. About one-half of the Home Visitors and three-quarters of the Nurses work part-time on the program, dividing their time between HVNH and other positions and responsibilities within the program or their agency.

The grantees are serving the population targeted by the HVNH initiative. Most participants are young, single, first-time mothers in working households with a high school education or less, and are already on Medicaid by the time they enter the program. Over 80% live with husbands, boyfriends, and/or family members; the mothers say these husbands or boyfriends are involved with their pregnancy or baby. Over one-half (57%) of the women are pregnant for the first time. One-third (34%) of the women come into the program with a history of depression. Almost two-thirds (63%) were smokers and about one-third (34%) said they used alcohol before they became pregnant.

*34% of the women come into the program with a history of depression.*

*63% were smokers before they became pregnant.*

## Implementation Outcomes

The HVNH model encourages grantees to collaborate with other community organizations to deliver the home visiting program. They have been generally successful in this and their ability to staff multi-disciplinary teams has depended on it. Also, because of this collaboration, partnering organizations are responsible for one-half of the client referrals made to the HVNH programs.

*Women who complete the program receive an average of nine visits when pregnant and over thirty visits in the year after the baby is born.*

All program sites have been successful at enrolling families, although the numbers have not been as high as expected. As a consequence, some programs, particularly in the early months of the program before they were well-established in their communities, enrolled some mothers outside the intended demographic, e.g., mothers who are older or with previous children. Almost all women in Home Visiting New Hampshire enroll when pregnant according to the model, usually during their last two trimesters. They stay in the program an average of nine out of a possible eighteen or more months for which they are eligible, with most participating in the program in the period between the last trimester before birth and eight weeks after the baby is born. Of those who leave before completing the program, about one in four leaves before the baby is born and another 24% leave within two months after the birth. Mothers who smoke

*About 1 in 4 mothers leaves the program before the baby is born and another 24% within two months after the birth.*

*Mothers who smoke or are depressed are more likely to leave early.*

and/or are depressed are more likely to leave the program early. Other barriers to consistent program participation include other mental illness, lack of transportation and stable housing, and family instability or transience.

Generally, all sites follow the program model for home visits. Almost all visits take place face to face in the home. The Home Visitor/Nurse team is used in all sites, with Home Visitors providing most of the visits. Women who stay in the program long enough to complete the program are likely to receive an average of nine visits prenatally and over thirty visits in the year after the baby is born.

Home Visitors' and Nurses' achievement of the prescribed number of visits in the program model depends on when the visits occur. Most (81%) of the Home Visitors deliver the prescribed number of visits during pregnancy and beginning about two months after the baby is born until its first birthday. Fewer achieve the prescribed number during the last trimester and right after the baby is born. Most Nurses (66%), on the other hand, are more successful at meeting their prescribed number of visits immediately after the baby is born and are less successful either during pregnancy or when the baby is older. The more Home Visitors and Nurses employed in the program, the more likely they will deliver the prescribed number of home visits.

The duration of these visits for either Home Visitors or Nurses is about an hour. On average, Home Visitors spend as much time during each visit discussing family support issues, depression, family planning, or smoking cessation as they do on the health and parenting education curricula. As a result, Home Visitors and Nurses make an average of seventy-four referrals of families to professionals and agencies a month for additional services, with more than one-half of those to the Women, Infants, and Children (WIC) and mental health programs.

*The more Home Visitors and Nurses employed in the program, the more likely they will deliver the prescribed number of home visits.*

Home visiting staff report generally positive attitudes toward their involvement in HVNH, particularly the program curricula and their working conditions. Their perceptions of

*Home Visitors and Nurses average 74 referrals of families a month to other professionals and agencies for additional services.*

clients are generally positive, but clients can also be the most frustrating aspect of their job, particularly when clients break appointments. The clients report high satisfaction with both HVNH and their Home Visitors and Nurses.

## **Participant Outcomes**

Much has been accomplished toward the three Home Visiting New Hampshire goals, although there has been more success in some areas than in others. The best evidence of positive outcomes has been for the period of pregnancy and in the two months just after the baby is born.

## ***Promote Healthy Pregnancy and Birth Outcomes***

Although 63% of the women participating in HVNH said they smoked before they became pregnant, over one-third higher than the average (40%) for women on Medicaid statewide<sup>1</sup>, by the time they gave birth the number smoking had dropped to 33%.

*Although 63% of the women smoked before pregnancy, by the time they gave birth, that number had dropped to 33%.*

During this same period, the number of cigarettes smoked also declined and the average number of smokers in the household decreased, reducing the pregnant mother's and baby's exposure to secondhand smoke. The number of mothers reporting use of alcohol also declined by 44% between the time prior to pregnancy and the birth of the child.

About 88% of the pregnant women in the program met the recommendations for adequate or adequate plus prenatal care. Over 90% initiated prenatal care visits at the

*Over 90% initiated prenatal care visits at the recommended time and over 95% received the recommended number of prenatal visits, higher than the state averages.*

recommended time and over 95% percent received the recommended number of prenatal care visits. These findings were all higher than the state averages for other women on Medicaid.

Most babies (89%) born to mothers in HVNH had normal or higher birth weights. A few (3.8%) were born with very low weights, higher than the average for very low weight babies of Medicaid mothers in the state. The percentage of low weight babies (7.1%) was slightly higher than the state average (6.4%). Similarly, the percentage of babies that were preterm (including very preterm) was 10%, about the same as the state average. However, the percentage of very preterm babies (3%) was higher than the state average (1.3%). Most mothers and babies had few complications during birth.

Evidence from their own comments and HVNH staff records indicate that HVNH participants increased their knowledge and use of

*The percentage of women with depression symptoms during pregnancy, 22%, dropped by half to 11% after the baby was born.*

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<sup>1</sup> State data referenced in this Executive Summary and the full report were provided by the N.H. Department of Health and Human Services for use in this report.

community resources during pregnancy. For example, between enrollment and the baby's birth, participant's enrollment in the Women, Infants, and Children (WIC) program increased by more than 10%.

Over one-half (53%) of the women were screened for depression during pregnancy. Referrals to professionals for mental health problems as a result of those screenings and other information collected by staff was the second-most frequent type of referral made, after referrals to WIC. The percentage of women with depression symptoms, 22%, dropped by half to 11% after the birth of the baby.

### ***Promote a Safe and Nurturing Environment for Children***

From the time the baby is a few months old until its first birthday or when the mother exits the program, the evidence for positive outcomes is less clear than it is for pregnancy. On the one hand, mothers maintained their enrollment in Medicaid and ties to health care providers,

*While in HVNH, mothers maintained their enrollment in Medicaid and ties to health care providers.*

increasing the likelihood that this vulnerable population continued to obtain regular care while in the program. Also, by this time in the program, virtually all women had been screened at least once for depression. On the other hand, there is evidence of more depression and smoking during this period.

With the birth of the child, the percent of mothers with any depression symptoms increased. The peak period was between seven and twenty weeks when the percentage of mothers with symptoms nearly doubled from 11% to 20%. However, this percentage is still lower than the percentage found during pregnancy. Severity of symptoms followed the same pattern, with the percentage of mothers with moderate and severe symptoms lower overall between birth and the baby's first birthday than during pregnancy, but with a slight peak around the seven to twenty week period.

The trend in depression symptoms after the baby is born is similar to the pattern found for smoking behavior. Although smoking declined during pregnancy and immediately after birth, by the time they had left the program, the percent of mothers smoking and the number of cigarettes they smoked began to increase.

*At around seven weeks, the percentage of mothers with depression and with moderate and severe symptoms peaked.*

A small percentage of women who said they were not smoking when they enrolled in the program reported that they had taken up smoking by the time they left the program, after the baby was born. This percentage was larger than the percentage of women who said they gave up smoking between enrolling and leaving the program. Fathers showed the same pattern, but the percentage of non-smoking fathers at the mother's enrollment in HVNH that were smoking when she left was lower than for the mothers.

*Some women, who did not smoke or drink before the baby, said they began using them after the baby was born.*

The evaluation found a pattern for alcohol use that is similar to the pattern described above for smoking. The 34% of mothers who said they were drinking prior to pregnancy declined to 19% with the baby's birth. After the baby was born, this number increased to 23%. A small group of women who said they were not using alcohol before pregnancy had begun drinking by the time they left the program after the baby was born.

*Mothers' scores on a checklist of literacy-related activities in the home increased.*

As part of the program's effort to improve the nurturing environment of the home, staff encouraged mothers' engagement in learning how to increase their children's literacy, cognitive, and other aspects of development through the parenting education curriculum and by observing and monitoring behaviors and conditions within the home. They also encouraged mothers to obtain health insurance and a primary and/or prenatal health care provider.

These strategies were at least partially successful. Mothers' scores on a checklist of their literacy-related activities in the home increased significantly between the baby's birth and the mother's exit from the program. Babies were assessed for development stage at four, eight, and twelve months. Most babies showed no evidence of problems, but one-fifth of the babies had one or more problem areas that may put them at risk for developmental delays. Referrals for early intervention is the next step for such identification and according to data collected from the sites by DPHS, referrals to early supports and services increased with each year of the program.

### ***Enhance Families' Life Course and Development.***

Although the evaluation did not have much information on the families beyond the period of their program participation, there are some indications that families were able to increase their

*The number of households relying on TANF income decreased while more households relied on jobs for income.*

self-sufficiency while in HVNH. The number of households relying only on Temporary Assistance for Needy Families (TANF) income decreased between enrollment and the time they left the program, while more households came to rely on jobs. More families decreased their participation in TANF than enrolled in TANF while participating in HVNH.

Other indicators about the family's development of self-sufficiency are less positive. Two-thirds of the women who had been in school before their pregnancies stopped attending, which may mean they attained their goal but some might also have dropped out. Also, some women became pregnant again soon after giving birth, 12% while still enrolled in the program with the first child.

### **Factors Influencing Participant Outcomes**

A few program site characteristics were identified that could contribute to explanations for variations in several outcomes. They are the urban and rural status of the site, whether the grantee was a health service or social services agency, and whether the site was one of the three pilot sites for the HVNH initiative. One explanation is that all of these findings are related to some aspect of the pilot sites since all three of those sites are rural health service agencies, and were among the five programs that contributed the most data to the evaluation.

HVNH pilot sites had almost twice the number of low birth weight babies as non-pilot sites. They also had more preterm babies than the non-pilot sites but the difference was not large enough to be statistically significant. Being a pilot site also had a positive effect on the percent of women screened for depression. Significantly more women were screened for depression at the pilot sites. Health service agency sites and rural sites also screened more women for depression than their social service or urban counterparts. All three of these site characteristics are related to the severity of depression found in the HVNH participants. Women in non-pilot, urban,

*Being a site that was urban or rural, a health or social services agency, and one of the three pilot project sites, made a difference for depression screening and severity, and low birth weight outcomes.*

and social services sites were more likely to have higher depression scores, with more evidence of symptoms, than women in the pilot, rural, and health services sites. At the same time, Home Visitors spent significantly more time on home visits with this population of women with higher depression scores, at least during pregnancy.

These findings present a mixed picture. On the one hand, the sites that have the less severe cases of depression are the rural, health services-based, and/or pilot sites. These sites are screening women more frequently for depression so it is possible that the lower depression scores are a result of women obtaining more or better treatment. On the other hand, their counterparts in the urban areas that are not pilot sites or health services agencies are more likely to handle the more severe depression cases. They are screening less than the rural sites, but they may also be handling the most difficult cases to treat, the cases that are the least amenable to change, or many of their depressed mothers are already in treatment before they enroll and do not need to be screened. The differences between the sites cannot be explained by the intensity of HVNH programming provided by the sites because program dosage was not significant in these analyses.

## **Summary**

Home Visiting New Hampshire has tried to implement a fairly precise model throughout the state with the intent to affect changes in pregnancy, birth, and family outcomes among one of the state's most vulnerable populations: young women and their families on Medicaid. In spite of the considerable variation in the characteristics of the grantees and their programs in the initiative, HVNH sites have been successful at following the model in most aspects.

Grantees have been particularly good at promoting collaboration between agencies and partners, and using the home visiting team as the vehicle for that, expanding the community resources and opportunities available to families. Most home visiting teams have implemented home visits as planned, delivering health and parenting education and information, screening mothers and children, and making referrals.

One site characteristic that appears to make a significant difference for program implementation is the number of staff employed, which affects the intensity of services provided and fidelity to the model. Also, the amount of screening for depression that Home Visitors and Nurses conduct is related to characteristics of the sites, specifically the site's status as a pilot site, as urban or rural, or as a health services or social services agency.

A number of positive outcomes have been found in the data collected for the evaluation, particularly for adequacy of prenatal care, incidence of smoking, and depression during pregnancy. No characteristics of the sites explain any of the differences among the mothers' smoking behaviors. However, the severity of the mothers' depression is related to the same set of site characteristics: urban/rural, health services/social services agency, and whether or not the site was a pilot site.

For some of these outcomes, it is tempting to attribute behavioral change to the HVNH program because of the intensity of program activities targeted at these behaviors. However, without good comparison groups, the evidence for program impact at this point is only suggestive and would benefit from further evaluation research.