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Palm Beach County Nurse-Family Partnership Implementation Evaluation: Final Report

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Submitted to:

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Jill Filene
Project Director

Executive Summary

The Nurse-Family Partnership (NFP) is an evidence-based prenatal and early childhood home visitation program for first-time, low-income mothers. In July 2008, Palm Beach County Nurse-Family Partnership (PBC-NFP), which is operated by the Palm Beach Health Department (and supported by funding from the Children's Services Council (CSC), Palm Health Foundation, and the Quantum Foundation), became the first Nurse-Family Partnership in Florida.

In January 2010, CSC funded James Bell Associates (JBA) to conduct an evaluation of PBC-NFP implementation and operational fidelity. Six areas were examined which included: referrals and enrollment, client characteristics, intervention context, staff development and support, program monitoring and use of data, and agency support. PBC-NFP successfully implemented the core components of the NFP model with a high level of fidelity (see Appendix A for an overview). PBC-NFP met or exceeded objectives for 32 of the 42 NFP Model Elements and Implementation Objectives (81%). The levels of implementation for three additional criteria were only slightly below the NFP target objectives.

Principal Evaluation Question #1: How successful has the PBC-NFP been in targeting intended clients?

Referrals and Enrollment: PBC-NFP enrolled a substantially higher percentage of eligible referrals (91.7%) than the National NFP sites (66.2%) and, therefore, exceeded the National NFP objective to enroll 75% of eligible referrals. Moreover, compared to the National NFP sites, a larger percentage of referrals made to PBC-NFP met the eligibility criteria and fewer declined enrollment. Although PBC-NFP initially experienced challenges generating referrals, the zip codes targeted for recruitment efforts were expanded and full capacity was reached within one year. Recommendations focus on improving management of referral data (e.g., entering referral disposition codes in FOCiS) and increasing the efficiency and effectiveness of the referral process by the entry agency (e.g., identifying more pregnant adolescents).

Client Characteristics: PBC-NFP met three of the five criteria related to the characteristics of clients. Approximately 54% of clients were enrolled at 16 weeks gestation or less, which is lower than the NFP objective of 60%. The gestation age at which at-risk pregnant women in Palm Beach County typically disclose their pregnancy or seek prenatal care has impacted PBC-NFP's ability to enroll women early in their pregnancy. In addition, three clients were less than 28 weeks pregnant when they enrolled; however, after they enrolled in PBC-NFP their due dates changed such that their modified due dates suggested that they were greater than 28 weeks at enrollment.

Recommendations focus on implementing strategies to encourage pregnant clients to disclose their pregnancies or seek prenatal care earlier in their pregnancies (e.g., continue broadcasting "silent" commercials that encourage women to seek prenatal care).

Principal Evaluation Question #2: To what degree has the PBC-NFP achieved fidelity to the NFP model?

The degree to which PBC-NFP met the fidelity criteria associated with the enrollment process and client characteristics was described above. Additional fidelity criteria are associated with the intervention context, staff development and support, program monitoring and use of data, and the agency.

Intervention Context: The implementation of 19 of the 23 criteria associated with the intervention context met or exceeded the NFP objectives. Although the data may shift as more clients move through the infancy phase, the data suggest that the percentage of expected visits completed during the infancy phase for PBC-NFP clients is 49%, which is lower than the NFP objective of 65%. PBC-NFP is, however, more effective at completing the expected number of visits during infancy than the National NFP sites of 39%. Following the delivery of their infants, many clients have less time available (e.g., they return to work or school) so they are unable to meet the expected frequency of visits.

Similar to National NFP sites, client attrition has been higher than the objective established for NFP. Specifically, client attrition during the pregnancy phase in PBC-NFP is 21%, which is higher than the NFP objective of 10%. Many of the clients left during the pregnancy phase because they had a miscarriage or moved out of Palm Beach County. Client attrition during the infancy phase in PBC-NFP is 33%, which is higher than the NFP objective of 20%. The main reasons client's cases were closed during the infancy phase is that the Nurse Home Visitors (NHV) were unable to locate the clients. Client attrition during the toddler phase is low, but in the current dataset, only 16 clients had completed visits during the toddler phase. Recommendations for improving the number of expected visits that are completed, as well as improving client retention focused on flexibility for the NHVs (e.g., allowing "flex" time) and for the clients (e.g., schedule visits according to clients' preferences). The employment of a Mental Health Consultant was also recommended to increase support to the NHVs around infant and maternal health issues.

Staff Development and Support: Eight of the nine criteria related to staff development and support were met. The exception was the employment of registered nurses with a minimum of a bachelor's degree in nursing; not all PBC-NFP nurse home visitors (NHV) have a bachelor's degree.

Although PBC-NFP staff indicate that they receive comprehensive, ongoing training, a few topics are recommended for future training workshops (e.g., infant and maternal mental health).

Program Monitoring and Use of Data: PBC-NFP is successfully implementing the criteria to collect data as specified for NFP and use the reports generated by the NFP National Service Office to guide their practice, assess and guide program implementation, inform clinical supervision, enhance program quality, and demonstrate fidelity. However, errors with the data have precluded using the reports to their fullest extent.

Agency: Two of the three criteria related to the agency were met. For the first year and a half of implementation, PBC-NFP met the criterion to conduct quarterly advisory board meetings; however, PBC-NFP recently modified the schedule to meet on a semi-annual basis, asserting that the quality of meetings is more important than meeting the expected frequency of meetings.

Principal Evaluation Question #3: What causes have been identified for differences between local performance levels and national levels?

A variety of factors have been identified that may contribute to differences between local performance levels and national levels. For example, the structure of the Healthy Beginnings system has contributed to higher levels of fidelity for criteria related to the referral and enrollment process. Differences in the characteristics of clients enrolled in PBC-NFP and the National NFP sites are likely reflective of the variation in characteristics of pregnant women in the communities served. The relative youth of the PBC-NFP program may contribute to a higher level of adherence to criteria related to completing the expected number of visits during pregnancy and infancy than National NFP sites (i.e., because NHVs were still building their caseloads in Palm Beach County). The high level of transience in Palm Beach County may account for differences in attrition or the reasons for attrition.

Principal Evaluation Question #4: To what degree has the PBC-NFP program reached its implementation goals?

In general, PBC-NFP has reached its implementation goals with respect to general operation of the program such as hiring and training staff and accruing cases. Additional implementation goals are reflected in the degree to which PBC-NFP implemented NFP with fidelity (described above).

In summary, the evaluation findings suggest that PBC-NFP was successful in targeting its intended clients and meeting or exceeding the implementation objectives for the majority of NFP Model Elements and Implementation Objectives. As the program moves forward with expansion,

PBC-NFP staff and community partners should collaborate to identify and implement strategies to identify and enroll clients early in their pregnancies and to increase the engagement of clients, especially during the infancy phase.

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I. Introduction

In 1986, a Florida statute authorized the creation of the Children's Services Council of Palm Beach County (CSC). CSC is as an independent government agency (special taxing district) that supports programs to promote and foster the health, development, and well-being of children during their first five years of life. Based on the realization that sustainable positive outcomes could not be achieved by stand-alone programs, CSC developed a coordinated system of prevention and early intervention services, the Healthy Beginnings (HB) system (CSC, 2009). Through HB, CSC aims to promote healthy birth outcomes, reduce the incidence of maltreatment among children ages birth to five years, and increase school readiness. HB is structured to conduct coordinated outreach, screening and assessment, and referrals to direct services including a variety of evidence-based and promising programs. CSC identified the Nurse-Family Partnership (NFP) as a program that targeted CSC's sentinel outcomes and met its evidence-based criteria.

Through a competitive application process, the CSC funded the Palm Beach County Health Department (PBC-HD) to implement NFP; in July 2008, Palm Beach County Nurse-Family Partnership (PBC-NFP) became the first NFP site in Florida. Currently, the Palm Health Foundation, the Quantum Foundation, and the Department of Health supplement CSC funding to support PBC-NFP operations.

At the time of data collection for this evaluation, PBC-NFP was staffed by one full-time nurse supervisor (NS), six full-time nurse home visitors (NHVs), and one data processing specialist. These staff serve a caseload of 150 first-time mothers across Palm Beach County (excluding Glades). In February 2010, the PBC-NFP program began expanding, training three additional full-time NHVs and one full-time NS. Two full-time NHV positions remain vacant. The six additional positions will allow the program to serve 125 additional mothers.

Organization of this Report

This report presents findings from the implementation evaluation of PBC-NFP. Chapter I provides background information about home visitation and NFP specifically, as well as a brief overview of implementation fidelity and the fidelity criteria associated with NFP. The evaluation methodology, including the key evaluation questions, data collection methods and sources, and data analysis methods are described in Chapter II. Chapter III begins with a description of the process for referring potential clients to PBC-NFP. It continues with a description of the disposition of the referrals made to PBC-NFP. Chapter IV provides a description of the mothers who participated in

PBC-NFP. Chapter V describes PBC-NFP's implementation of the key intervention components of NFP. Facilitators and barriers to model implementation are identified. PBC-NFP staff educational background, training, caseload, and supervision are discussed in Chapter VI. Chapter VII describes PBC-NFP's program monitoring activities and use of data. Finally, Chapter VIII discusses the PBC-HD, the Steering Committee, and support provided to PBC-NHV direct service staff.

Overview of Home Visitation and NFP

Home visitation is a widely supported and effective method for the delivery of services and support to families in need. By engaging families in home visitation programs, providers are able to deliver prevention and early intervention services that in turn may lead to outcomes such as improved maternal and child development, health, and well-being; improved family functioning; and decreased rates of child maltreatment. Following the 1991 recommendation by the United States Advisory Board on Child Abuse and Neglect to develop a universal nationwide system of voluntary neonatal home visitation services in the United States (Krugman, 1993), hundreds of home visitation programs proliferated across the country. Since then, the American Academy of Pediatrics, the Centers for Disease Control and Prevention, the Office of Juvenile Justice and Delinquency Prevention, the National Academy of Sciences, the National Governors Association, and the World Health Organization have all endorsed home visitation to prevent child maltreatment, among other negative outcomes, for children and families (AAP Council on Child and Adolescent Health, 1998; Butchart, Harvey, Mian, & Furniss, 2006; Chalk & King, 1998; Olds, Hill, & Rumsey, 1998; Thornton et al., 2000). The success of home visitation programs in producing positive outcomes has varied widely.

Results vary across home visitation programs because services vary in quality, programs have not been implemented with fidelity to their original service models, the program model itself is not effective, and/or because programs are not adequately supported in their efforts to monitor and improve quality. The key elements of quality in home visitation programs are the ability of the program to engage families; use of a curriculum that is guided by a comprehensive theory of change that reflects sound public health and social science theories; the background, skills, supervision, and retention of home visitors; cultural consonance between the program and its clientele; and the program's ability to deliver appropriate services to high-risk families who may have been targeted for or screened into services (Gomby, 2005). Programs that meet intended standards tend to produce better outcomes for children and families (Duggan et al., 2000; Love et al., 2001), and home visitation programs that

implement quality improvement strategies do indeed provide higher quality services (LeCroy & Milligan Associates, Inc., 2003).

NFP, a prenatal and early childhood home visitation program for first-time, low-income mothers, is the home visitation program with the most empirical support. In fact, it is one of only two interventions targeting children 0–6 years that is identified by the Coalition for Evidence-Based Policy as meeting the Top Tier evidence standard (Center for Evidence-Based Policy, 2008). The results of the three initial randomized trials of NFP (in Elmira, Memphis, and Denver) have found consistent program effects, including improved prenatal health, fewer subsequent pregnancies, increased intervals between births, increased maternal employment, fewer childhood injuries, and improved readiness for children born to mothers with low psychological resources (Kitzman et al., 1997 Kitzman, et al.; 2000; Olds et al., 1997; Olds, Henderson, Tatelbaum, & Chamberlin, 1986; Olds et al., 2007).

The goals of NFP are to: (1) improve pregnancy outcomes by helping women engage in good preventive health practices, including thorough prenatal care from their healthcare providers, improving their diets, and reducing their use of cigarettes, alcohol, and illegal substances; (2) improve child health and development by helping parents provide responsible and competent care for their children; and (3) improve families' economic self-sufficiency by helping parents develop a vision for their own future, plan future pregnancies, continue their education, and find work (O'Brien, 2005).

Pregnant women who are expecting their first child enroll in NFP prior to 28 weeks gestation. Public health nurses conduct home visits to women during pregnancy and through the child's second birthday. NHVs follow the NFP Visit Guidelines, which specify the structure of the home visits, the frequency and timing of the visits, and the content to be covered. NHVs visit families weekly upon enrollment, gradually fading to monthly as the child grows (See Table 1.1). Home visits typically last from 60-90 minutes. During the visits, NHVs focus on five domains: personal health (e.g., mental health functioning), environmental health (e.g., neighborhood), life course development (e.g., education), maternal role development (e.g., mothering role), and family and friends (e.g., assistance with child care).

Table 1.1. Visit Schedule

Developmental Period	Frequency
First month after enrollment	Weekly
Between first month and delivery of baby	Every other week
First six weeks after delivery	Weekly
Until child is 21 months old	Every other week
Until child is 24 months old	Monthly

Overview of Implementation Fidelity

Fidelity is the extent to which the delivery of an intervention adheres to the protocol or program model as intended by the developers of the intervention (Dane & Schneider, 1998; Domitrovich & Greenberg, 2000; Mowbray, Holter, Teague, & Bybee, 2003). Researchers have examined and described fidelity across five dimensions: adherence, exposure, quality of delivery, participant responsiveness, and program differentiation (Dane & Schneider, 1998; Durlak & DuPre, 2008; Dusenbury et al., 2003; Fagan, Hanson, Hawkins, & Arthur, 2008). Fidelity to the NFP model is critical in order to preserve the behavior change mechanisms that produced positive outcomes in the first three randomized controlled trials of NFP. There is strong evidence that fidelity levels are significantly related to the amount of positive change achieved by a program. For example, in a review of over 500 studies, Durlak and DuPre (2008) found that mean effect sizes were at least two to three times higher when programs were implemented with high levels of fidelity, especially in terms of adherence and exposure. Unfortunately, research indicates that when evidence-based programs are adopted, they are often implemented with low levels of fidelity (Elliot & Mihalic, 2004; Ennett et al., 2003; Hallfors & Cho, 2007).

Despite the documented relationship between fidelity and outcomes, some modifications will inevitably be made to a program, and it is unrealistic to expect complete adherence to all components of a program's original model (Backer, 2001; Durlak, 1998).[1] In fact, some adaptation is necessary and possibly beneficial. If a provider exclusively adheres to prescribed program components in all instances, it may miss opportunities to maximize program effectiveness (Daro & Cohn-Donnelly, 2001).

[1] Program adaptation is the deliberate or unintentional modification of a program through (1) deletions or additions (i.e., enhancements) to program components; (2) modifications to the nature of the components; or (3) changes in the manner of administration or intensity (i.e., amount or duration) of program components (Backer, 2001).

Researchers have identified numerous factors that affect implementation fidelity (Carroll et al., 2007; Castro, Barrera, & Martinez, 2004; Durlak & DuPre, 2008; Fagan & Mihalic, 2003; Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Hill, Maucione, & Hood, 2007; Mihalic & Irwin, 2003; Pankratz et al., 2006). These factors include characteristics of the: intervention program (e.g., compatibility with agency norms); providers (e.g., perceived benefits of the program); organization(s) responsible for implementation (e.g., positive work climate); program participants (e.g., responsiveness to program); community in which implementation occurs (e.g., political climate); and program support systems (i.e., training and technical assistance).

NFP and Implementation Fidelity

NFP has recognized the importance of quality services and fidelity in program implementation and has instituted several processes for monitoring and improving quality to enhance broad dissemination of the model. Examples of these activities include establishing performance standards for quality; ongoing training for program staff; developing a process for monitoring program site performance; and processes for providing feedback and technical assistance to sites to help them improve their performance if it falls below program benchmarks.

Adherence to the NFP Model Elements and the NFP Implementation Objectives is essential to achieving fidelity to NFP. When agencies implement NFP in accordance with the NFP Model Elements and Implementation Objectives, it is expected that the results will be comparable to those measured in the initial three research trials of NFP. The NFP Model Elements are as follows:

<u>Clients</u>

Element 1 Client participates voluntarily in the Nurse-Family Partnership program.

Element 2 Client is a first-time mother.

Element 3 Client meets low-income criteria at intake.

Element 4 Client is enrolled in the program early in her pregnancy and receives her first home visit by no later than the end of the 28th week of pregnancy.

<u>Intervention Context</u>

Element 5 Client is visited one to one, one Nurse Home Visitor to one first-time mother/family.

Element 6 Client is visited in her home.

Element 7 Client is visited throughout her pregnancy and the first two years of her child's life in accordance with the current Nurse-Family Partnership Guidelines.

Expectations of the Nurses and Supervisors

Element 8 Nurse Home Visitors and nursing supervisors are registered professional nurses with a minimum of a Baccalaureate degree in nursing.

Element 9 Nurse Home Visitors and nursing supervisors complete core educational sessions required by NFP National Service Office and deliver the intervention with fidelity to the NFP Model.

Application of the Intervention

Element 10 Nurse Home Visitors, using professional knowledge, judgment and skill, apply the Nurse-Family Partnership Visit Guidelines individualizing them to the strengths and challenges of each family and apportioning time across defined program domains.

Element 11 Nurse Home Visitors apply the theoretical framework that underpins the program, emphasizing Self-Efficacy, Human Ecology and Attachment theories, through current clinical methods.

Element 12 A full time Nurse Home Visitor carries a caseload of no more than 25 active clients.

Reflection and Clinical Supervision

Element 13 A full-time nursing supervisor provides supervision to no more than eight individual Nurse Home Visitors.

Element 14 Nursing supervisors provide Nurse Home Visitors clinical supervision with reflection, demonstrate integration of the theories, and facilitate professional development essential to the Nurse Home Visitor role through specific supervisory activities including 1:1 clinical supervision, case conferences, team meetings, and field supervision.

Program Monitoring and Use of Data

Element 15 Nurse Home Visitors and Nursing Supervisors collect data as specified by the NFP National Service Office and use NFP Reports to guide their practice, assess and guide program implementation, inform clinical supervision, enhance program quality, and demonstrate program fidelity.

Agency

Element 16 A Nurse-Family Partnership Implementing Agency is located in and operated by an organization known in the community for being a successful provider of prevention services to low-income families.

Element 17 A Nurse-Family Partnership Implementing Agency convenes a long-term Community Advisory Board that meets at least quarterly to promote a community support system to the program and to promote program quality and sustainability.

Element 18 Adequate support and structure shall be in place to support Nurse Home Visitors and Nursing Supervisors to implement the program and to assure that data is accurately entered into the database in a timely manner.

The NFP Implementation Objectives (i.e., objectives concerning fidelity to the program model) overlap with the Model Elements, but provide greater specificity regarding implementation benchmarks for certain implementation activities. The Implementation Objectives include:

Program is Reaching the Intended Population of Low-Income, First-Time Mothers

1. 75% of eligible referrals are enrolled in the program.
2. 100% of enrolled women are first-time mothers (no previous live birth).
3. 60% of pregnant women are enrolled by 16 weeks gestation or earlier.

Program Attains Overall Enrollment Goal and Recommended Caseload

4. A caseload of 25 for all full-time nurses within 8-9 months of program operation.

Program Successfully Retains Participants in Program Through Child's Second Birthday

5. Cumulative program attrition is 40% or less through the child's second birthday.
6. Attrition is 10% or less for pregnancy phase.
7. Attrition is 20% or less for infancy phase.
8. Attrition is 10% or less for toddler phase.

Nurse Home Visitors Maintain Established Frequency, Length, and Content of Visits with Families

9. Percentage of expected visits completed is 80% or greater for pregnancy phase.
10. Percentage of expected visits completed is 65% or greater for infancy phase.
11. Percentage of expected visits completed is 60% or greater for toddler phase.
12. On average, length of home visits with participants is $\geq$ 60 minutes.
13. Content of home visits reflects variation in developmental needs of participants across program phases (see Table 1.2).

Table 1.2. Targeted Average Time Devoted to Content Domains during pregnancy

Content Domain	% of Time
Pregnancy	
Personal health	35-40%
Environmental health	5-7%
Life course development	10-15%
Maternal role	23-25%
Family and Friends	10-15%
Infancy	
Personal health	14-20%
Environmental health	7-10%
Life course development	10-15%
Maternal role	45-50%
Family and Friends	10-15%
Toddler	
Personal health	10-15%
Environmental health	7-10%
Life course development	18-20%
Maternal role	40-45%
Family and Friends	10-15%

II. Evaluation Methodology

CSC funded James Bell Associates (JBA) to conduct a 9-month evaluation of the implementation of PBC-NFP. The evaluation was designed to identify lessons learned from the initial implementation of PBC-NFP in order to guide timely program improvement efforts to maximize benefits for participants, which is particularly important as the program moves forward with expansion. The evaluation used a mixed-methods approach that combined data from primary and secondary sources to address the principal research questions posed in CSC's Invitation to Negotiate (ITN).

Evaluation Questions

The CSC identified four principal questions to be addressed through this evaluation:

1) How successful has the PBC-NFP been in targeting intended clients?

2) To what degree has the PBC-NFP achieved fidelity to the NFP model?

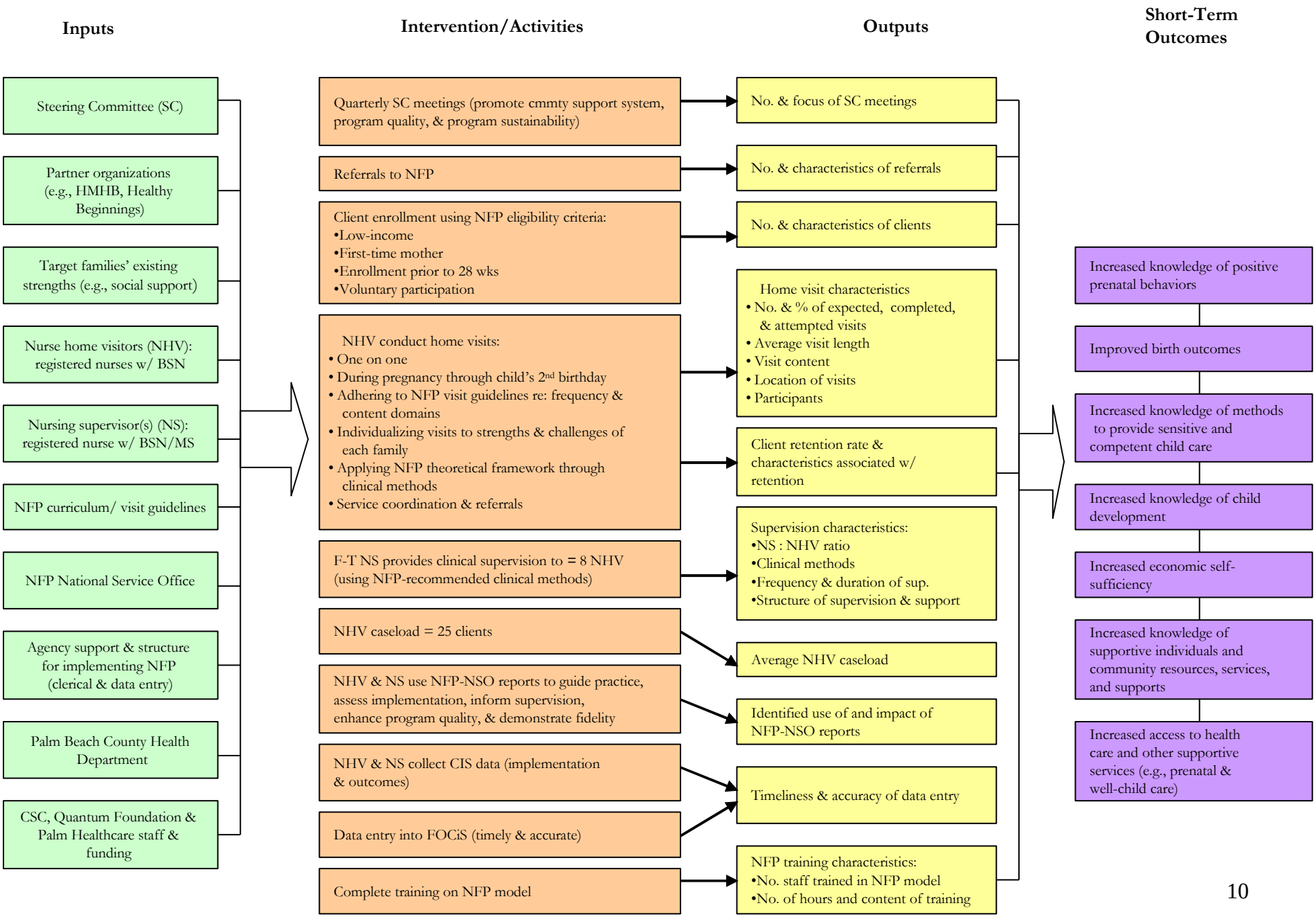
3) What causes have been identified for differences between local performance levels and national levels?

4) To what degree has the PBC-NFP program reached its implementation goals? What aspects of implementation have proven successful and why? What aspects of implementation have proven unsuccessful and why?

Logic Model

The NFP National Service Office (NFP-NSO) developed two logic models to reflect the implementation of NFP (NFP Implementation Logic Model (Flory, nd) and NFP Theory of Change Logic Model (O'Brien, nd)). Using these two logic models as a reference point, JBA developed a logic model (Exhibit 2.1) to guide the examination of implementation fidelity for this evaluation. This logic model served as the framework for developing and conducting the implementation evaluation. The logic model reflects the PBC-NFP program, the NFP Model Elements, and the core inputs, activities, outputs, and short-term outcomes documented in NFP-NSO's logic models. We recognize that NFP was developed to produce additional intermediate and long-term outcomes, but given the focus on implementation in this evaluation, the logic model only displays targeted short-term outcomes.

Figure 2.1. PBC-NFP Implementation Evaluation Logic Model



Data Collection

To reduce the burden on PBC-NFP staff and partners while ensuring a comprehensive evaluation, a mixed-method approach to data collection was employed. Using both quantitative and qualitative methods, the measurement potential of secondary data sources was exhausted while simultaneously initiating non-overlapping primary data collection methods. Key data sources consisted of: (1) quarterly reports from the NFP-NSO; (2) quarterly reports prepared by CSC; (3) an annual report generated by CSC; (4) PBC-NFP program staff; (5) PBC-NFP referral partner staff (Healthy Mothers, Healthy Babies (HMHB) and Home Safe); (6) CSC staff; and (7) Family Outcome and Child Information Systems (FOCiS) database for HB.

The principal evaluation questions, NFP Model Elements, and NFP Implementation Objectives were examined using multiple data collection methods: documentation review and analysis, analysis of administrative data, semi-structured interviews, and observation. Given the nature of the majority of the fidelity criteria, as well as legal concerns, direct observation of NHV-client visits was not a component of the evaluation. However, we recommend incorporating home visit observations into future evaluation activities to provide more information about the context and quality of home visits. Table 2.1 displays the methods that were used to examine the principal evaluation questions.

Table 2.1. Principal Evaluation Questions by Data Collection Method

Research Question	Document Review	Stakeholder Interviews	Secondary Analysis (FOCiS Data)	Case Record Review[2]
How successful has the PBC-NFP been in targeting intended clients?	●	●	●	
To what degree has the PBC-NFP achieved fidelity to the NFP model?	●	●	●	●
What causes have been identified for differences between local performance levels and national levels?	●	●	●	●
To what degree has the PBC-NFP program reached its implementation goals?	●	●	●	●
What aspects have proven successful and why? What aspects have proven unsuccessful and why?	●	●	●	●

[2] PBC-NFP nurses document all information, including progress notes, in FOCiS instead of paper case records as was originally assumed. As such, reference to the use of a case record review consisted of a qualitative review of progress notes contained within FOCiS.

Secondary Data Collection Methods

Documentation Review & Analysis

As documented in Table 2.1, program documents were reviewed to address all of the principal evaluation questions. These documents include:

- Quarterly and annual implementation reports from the NFP-NSO. The NFP-NSO reports provide an overview of the PBC-NFP Program, displaying a snapshot of the characteristics of PBC-NFP clients, implementation, and fidelity to NFP. The NFP-NSO reports compare local-level data against both NFP statistical averages nationwide (and to county and state data for states that are operating more than one NFP program) as well as national NFP objectives. These comparisons highlight areas in which PBC-NFP is meeting implementation benchmarks and where program improvement efforts are needed.

- Quarterly second-level reports developed by CSC. These reports highlight strengths and weaknesses of program implementation.

- Annual third-level report generated by CSC. This report synthesizes trends over the year and discusses the implications of the data.

The information in the NFP-NSO and PBC-NFP reports served as the building blocks for subsequent evaluation activities. In other words, the findings contained in the reports informed how we explored the implementation of PBC-NFP through additional data sources and methods. For example, the reports convey the level at which the program is meeting a criterion, and for some criteria, whether the degree of adherence to a criterion has changed over time (e.g., gestational age at intake for one year compared to the next). During interviews with PBC-NFP staff, we discussed perceptions about the accuracy of the data, the implications of the data, and factors that contributed to the findings contained within the reports. The reports also documented client characteristics, which provided preliminary information about whether PBC-NFP was successfully targeting its intended clients (i.e., do the clients meet the NFP eligibility criteria?).

Analysis of Administrative Data

A select set of data variables in the FOCiS database are uploaded to the NFP-NSO Clinical Information System (CIS) on a monthly basis. These data are related to client characteristics, extent and scope of services, and indicators of maternal and child functioning and are used by NFP-NSO to create the quarterly and annual reports for PBC-NFP.

JBA received a data extract from the FOCiS database from CSC's Business Information Systems staff on April 26, 2010. The data files mirrored the data that are uploaded to the NFP-NSO's CIS. Using these files, JBA created an analytic database by transferring the data to Excel, SPSS, and

SAS and merging files. The creation of the analytic database to maximize the potential of the quantitative data from FOCiS required more work than anticipated. Because the data extract was initially a text file, we added variable names and value labels to facilitate efficient analyses. In addition, we assumed that variables that are used to generate the NFP-NSO reports such as gestation age at intake, maternal age at intake, visit phase (i.e., pregnancy, infancy, and toddlerhood), etc., would be variables within the dataset. Instead, many of these variables needed to be constructed. In addition, we obtained missing data for key variables such as disposition of referrals that were missing for a large number of cases. Last, we identified several variables that were populated with incorrect data (these will be discussed in more detail in subsequent sections of the report). As such, fewer statistical analyses were conducted to examine relationships between implementation variables than expected.

Access to the raw FOCiS data (as opposed to aggregate data contained within the reports) allowed us to "correct" the data provided in the NFP-NSO report and further explore the data such as examining similarities or differences in implementation across staff. As documented in Table 2.1, FOCiS data was used to examine all of the principal evaluation questions.

Primary Data Collection Methods

Primary data collection protocols (i.e., semi-structured interview protocols) were developed based on our understanding of the PBC-NFP Program, the initial findings regarding fidelity (from NFP-NSO and CSC reports), the literature regarding implementation of evidence-based programs, and known factors that impact implementation fidelity.

Semi-Structured Stakeholder Interviews

As described in Table 2.1, stakeholder interviews were used to explore all of the principal evaluation questions. Twenty semi-structured interviews were conducted with staff from PBC-NFP, Healthy Mothers/Healthy Babies (HMHB) staff, Home Safe staff, CSC, and with steering committee members, nursing consultants from the NFP-NSO, and supervisors from two NFP sites in Washington.

In-person interviews were conducted by two trained interviewers from JBA with the majority of staff and community partners; JBA conducted two telephone interviews. In addition to soliciting information about the NFP Model Elements and key implementation activities, the interview protocols covered topics integral to the PBC-NFP Program such as:

- Orientation, training, and professional development (e.g., do staff feel sufficiently trained to provide services to meet the needs of participants?);

- Supervision;
- Perspectives and practices regarding client engagement and retention; and
- Challenges of balancing fidelity concerns with the need to be responsive to clients' unique circumstances, needs, and motivations.

Interview protocols were developed with questions tailored to the role of respondents on the project. Interviews with project staff addressed the core components of NFP, as well as factors that facilitated or inhibited adherence to the NFP fidelity criteria. Interviews with the regional NFP-NSO nursing consultants addressed factors that might contribute to high levels of fidelity at other NFP sites so that these factors could be highlighted in the context of recommendations for program improvement. Interviews with referral partners allowed JBA to examine whether referral staff understood the PBC-NFP eligibility criteria, the referral process, and whether they think the program is reaching the intended target population.

Case Record Review

JBA reviewed a purposive subset of PBC-NFP progress notes in FOCiS. The case record reviews provide in-depth information about several NFP Model Elements and Implementation Objectives.

Meeting Observation

Several of the key NFP Model Elements address supervision and implementation support to NHVs. JBA observed one case consultation/team meeting to examine how the meetings are used to support and provide clinical feedback to the NHVs.

Data Analysis

Quantitative data were uploaded into SPSS® and SAS software for programming and analysis. Frequencies, percentages, and means were obtained for the key variables noted above and are reported in tables in Chapters III and IV. Cross-tabulations and significance tests were conducted where applicable.

Data collected via interview, focus group, observation, and program documentation were analyzed using Atlas.ti® software. Standard qualitative data analysis techniques were used: (1) initial data reduction and transformation of written field notes and transcriptions; (2) identification of higher-

order categories or themes using content analysis and data displays in text or diagrammatic form; and (3) conclusion drawing and verification through cross-checking techniques to establish confidence in the validity of the findings (Miles & Huberman, 1994).

III. Referral and Enrollment

Home visitation programs are often plagued by the difficulty of enrolling, engaging, and retaining families. Approximately 10–25 percent of families that are invited to enroll in home visitation programs refuse services (Gomby, Culross, & Behrman, 1999). This chapter begins with a discussion of the process of referring clients to PBC-NFP followed by a description of the disposition and characteristics of the referrals. Recommendations for improving the referral and enrollment process are provided.

Referral of Pregnant Women into PBC-NFP

Entry into PBC-NFP is preceded by entry into HB. Unlike other NFP sites, PBC-NFP staff do not directly conduct outreach activities. If a friend or family member of a client expresses interest in participating in PBC-NFP, NHVs direct them to the prenatal entry agency, Healthy Mothers/ Healthy Babies (HMHB). HMHB became the prenatal entry agency in July 2010, with the start of the new HB Program. As the prenatal entry agency, HMHB conducts screening and assessments of pregnant women to determine areas of strengths and needs so that they can match clients with services, including linking them to prenatal care and a medical payor source. Ways in which clients may enter HB include (Children's Services Council of Palm Beach County, 2010):

- Pregnant women may be referred to HMHB via one of three outreach agencies, the Healthy Beginnings Call Center, or through a referral made by a community partner (e.g., DCF Resource Specialist).
- Pregnant women may also be referred to HMHB through the Healthy Start Prenatal Risk Screen offered at an obstetrician's (OB's) office or at a PBC Health Department Clinic. Screens are processed by a data team at the Health Department and then sent to HMHB for review.
- Finally, a pregnant woman may come to HMHB through HMHB's outreach program (e.g., mobile outreach van, health fairs, public speaking events, faith-based institutions) or as a walk-in to any HMHB site. Once connected with HMHB, the entry agency can provide the Prenatal Risk Screen.

Women qualify for HB services if they score a 6 or higher on the Prenatal Risk Screen administered by one of the following providers – OB's, the PBC Health Department, or HMHB. These clients may also qualify for HB services if they are referred for another qualifying reason, known as being referred based on other factors (BOOF). In particular, pregnant adolescents who do not score 6 or more on the Prenatal Risk Screen (or do not meet the income requirements), but otherwise meet the NFP eligibility

criteria are "BOOF'd" into the program. Once screening has determined a client eligible for HB services, HMHB staff conduct an assessment to determine whether pregnant women meet the eligibility criteria for PBC-NFP: (1) first time mother (i.e., first expected live birth); (2) 28 or fewer weeks pregnant; and (3) low income (i.e., qualify for Medicaid). When a potential participant positively meets the eligibility criteria, HMHB staff provide them a brief overview of the program. If the woman expresses interest in PBC-NFP, she signs a consent form that allows HMHB to make the referral to the PBC-NFP program through FOCiS.

Infant Referral into PBC-NFP

Healthy Start is structured such that when pregnant clients deliver their infants, their cases are closed and the child becomes the client. Home Safe is the entry agency for HB for children birth to five years old. Home Safe liaisons work in all PBC hospitals to screen new mothers and their infants (they also work with child care centers). If the family scores greater than a 4 on the risk screen, the family is referred to programs and resources in the community. When Home Safe liaisons encounter a PBC-NFP participant who has just delivered her infant, they refer the infant back to PBC-NFP through FOCiS. The process of identifying and referring PBC-NFP infants has not been very effective, resulting in the delay in a large number of infants being referred back to PBC-NFP. This delay is challenge for the NHVs because they are unable to enter NFP forms that are embedded in the infant record in FOCiS until the infant is referred back to the program.[3]

Initially, PBC-NFP participants were expected to identify themselves to Home Safe liaisons. Specifically, clients were instructed by their NHV to tell the liaison or hospital staff that they were a PBC-NFP participant. However, very few participants remembered to share this information. NHVs also provided clients with their business card, which clients were supposed to take to the hospital when they were in labor. This approach has also been met with limited success. PBC-NFP and Home Safe staff indicate that the process has improved because PBC-NFP directly communicate with Home Safe liaisons when they learn an infant has been born. PBC-NFP and Home Safe staff continue to explore new strategies to improve the process and successful referral of PBC-NFP infants back into the program.

[3] In CSC's new data system, all forms will be linked to the mother's file, so this challenge will be resolved.

Disposition of Referrals

Eligibility

Table 3.1 provides an overview of the disposition of referrals made to PBC-NFP[4]. Through April 25, 2010, 324 referrals were received by PBC-NFP. The data indicate that the percentage of referrals made to PBC-NFP that were eligible (89.5%) exceeds the National NFP rate (63.7%). The percentage of referrals that did not meet the eligibility criteria for PBC-NFP (4.6%) was lower than the National NFP rate (13.6%); the percentage of referrals that the program was not able to locate (5.6%) was lower than the National NFP rate (16.5%); and the unknown disposition of referrals (0.3%) was also was lower than the National NFP rate (6.1%).

Table 3.1. Disposition of Referrals

	Local NFP		National NFP[5]
	Frequency	Percent	Percent
Total Referrals	**324**	**100%**	**100%**
Referrals not meeting program criteria	15	4.6%	13.6%
Referrals unable to locate	18	5.6%	16.5%
Referrals disposition unknown	1	0.3%	6.1%
Eligible referrals	**290**	**89.5%**	**63.7%**
Eligible referrals not enrolled due to full caseloads	1	0.3%	15.4%
Eligible referrals for whom program had space	289	99.7%	84.7%
Eligible referrals declining enrollment	24	8.3%	33.8%
Eligible referrals enrolled	**265**	**91.7%**	**66.2%**

It is important to note that the PBC-NFP data presented in this table are different than the data presented in the NFP-NSO Quarterly Reports due to the functionality of FOCiS and the referral tracking requirements of HB. First, HB considers a pregnant woman to be the client until she delivers her baby, at which point the child becomes the client. As a result, the number of referrals into the program presented in the NFP-NSO reports is artificially high because both the pregnant women (referred by HMHB) and their infants (referred by Home Safe) are captured in the referral data through FOCiS.[6] This structure is different than NFP sites across the country, which only consider the pregnant woman as the referral.

[4] All quantitative data were derived from a data extract that covered the period between the initiation of the program in July 2008 and April 25, 2010.

[5] National NFP data as of 6/30/10

[6] A new data system is being developed to replace FOCiS. This new system will allow the program to adequately track referrals at a family level (which will include one count for the pregnant woman and child).

Second, inclusion of infant referrals in the PBC-NFP dataset artificially skews the age of referrals because the infants at birth (i.e., age is zero) are included in the "younger than 15 years" category in the NFP-NSO reports. For example, the NFP-NSO report suggested that 41% of PBC-NFP referrals received in 2009 were for pregnant adolescents under 15.

The third issue identified in the NFP-NSO reports is the high number of referrals with an "unknown disposition." The majority of referrals with an unknown disposition were infant referrals, which were removed from the dataset. With the exception of one referral, the remaining disposition codes were identified and entered into our dataset by matching Client IDs in PBC-NFP's master client roster or through FOCiS progress notes.

The modified dataset portrays the referrals to PBC-NFP program very differently than the NFP-NSO reports in a few ways that reflect a more accurate picture of the flow and disposition of referrals made to PBC-NFP:

1. When the referrals are limited to pregnant women:
   - The number of total referrals made to PBC-NFP (N = 324) are fewer than identified in the March 2010 report (N = 457);
   - The number and percent of referrals that were eligible for PBC-NFP is higher than reported. The percent of referrals that were eligible was 59.7% in the March 2010 report. The current dataset indicates that this percent is much higher- 89.51%.
   - The percentage of referrals under 15 years goes down to 2.8% from 30-41% in the March 31, 2010 report (see Table 3.2 for corrected data). Thus, the largest group of referrals consists of adolescents ages 15-17; as of April 25, 2010, the percentage of referrals in this age group was even higher than in the previous two years.

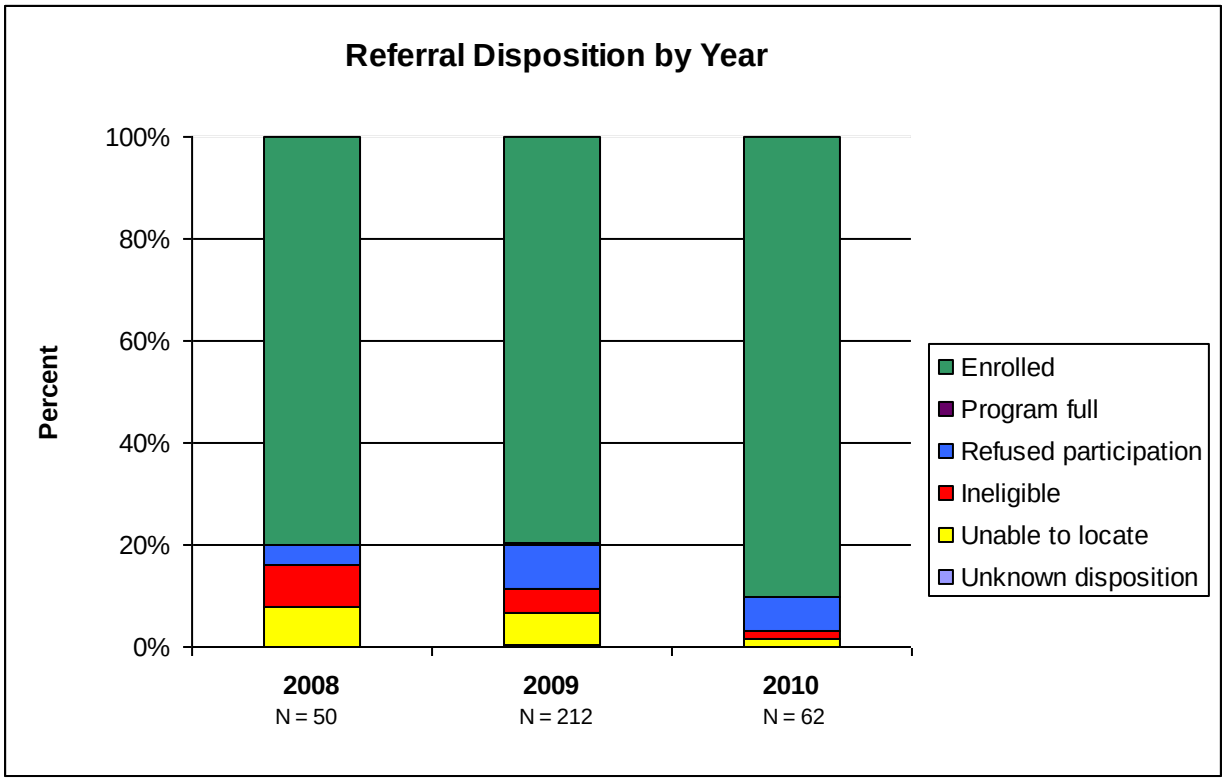
2. The unknown disposition of referrals was reduced from 27.6% (N=126) in the March 2010 report to less than 1% (N=1) in the current dataset. (The number and percentage of referrals with an unknown disposition was even higher in the June 2010 NFP-NSO report—216 referrals, making up 40.4% of all referrals).

Table 3.2. Referrals by Client Age:

Age Category	Year							
	2008		2009		2010		All years	
	n	%	n	%	n	%	n	%
Less than 15	1	2	6	2.83	5	8.06	12	3.7
15-17 years	18	36	63	29.72	29	46.77	110	34
18-19 years	16	32	58	27.36	10	16.13	84	25.9
20-24 years	10	20	40	18.87	10	16.13	60	18.5
25-29 years	2	4	30	14.15	5	8.06	37	11.4
30+ years	3	6	15	7.08	3	4.84	21	6.5
Total	50	100	212	100	62	100	324	100

Figure 3.1 displays the disposition of all referrals (i.e., pregnant women) made to the PBC-NFP program over time. The percent of referrals that were eligible has increased over time (84% in 2008; 89% in 2009; and 97% in 2010). Likewise, the percent of ineligible referrals and referrals that program staff were unable to locate decreased over time. This figure suggests that over time, HMHB and PBC-NFP have identified and incorporated strategies that have increased the effectiveness of the screening and enrollment process.

Figure 3.1. PBC-NFP Referral Disposition by Year



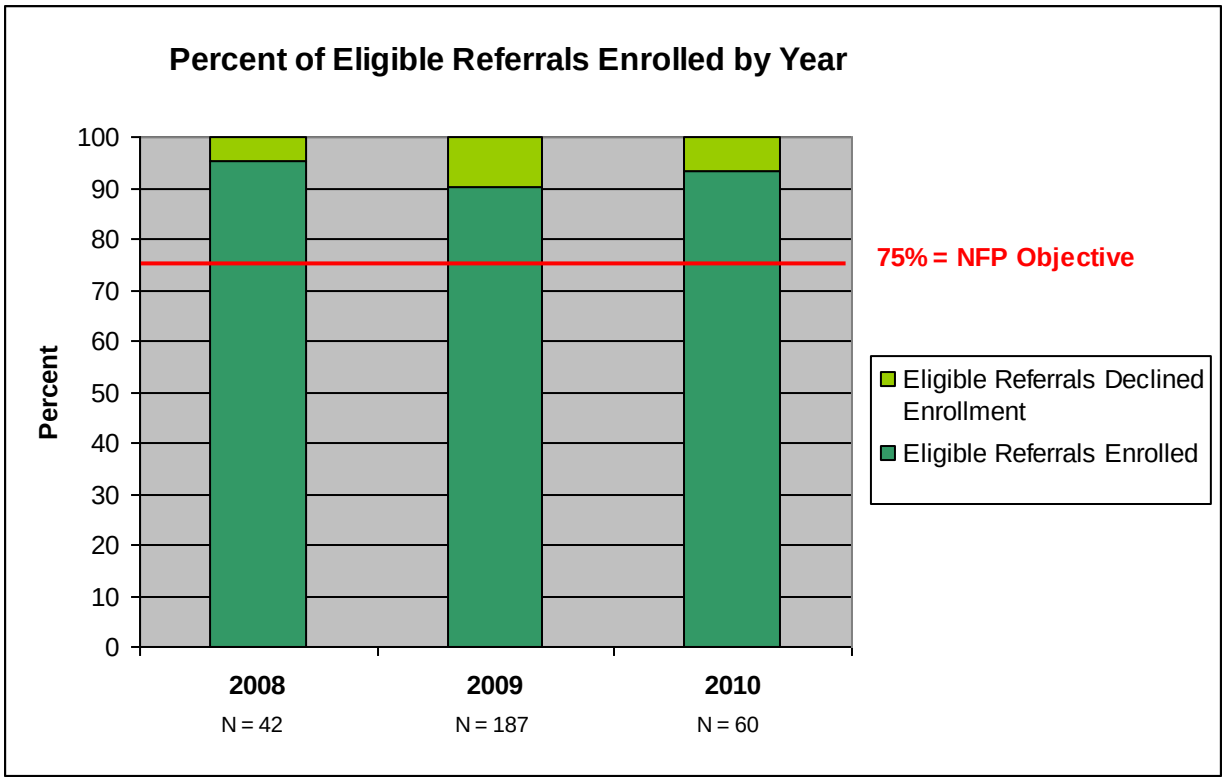
Enrollment

As shown in Table 3.1, 91.7% of eligible referrals were enrolled in PBC-NFP through April 25, 2010 (i.e., 265 of 289 eligible referrals for whom the program had space). This percentage is much higher than the national enrollment (66.2%). Only 8.3% of eligible PBC-NFP referrals for whom the program had space declined enrollment, compared to 33.8% nationally.

The percentage of eligible referrals enrolled by PBC-NFP has consistently exceeded the NFP objective of enrolling 75% of eligible referrals, which has been maintained over time (see Figure 3.2). If

a referral is made to PBC-NFP for a woman that is eligible and resides in a zip code served by an NHV that does not have openings, the NS and NHV for that zip code discuss whether she has any cases that may close soon because clients participation levels are low, they are moving out of the location, etc., to see if a space might be opening up. If necessary, the NS will meet with another NHV to discuss whether the NHV could pick up the case so the program does not have to reject a client. In addition, unlike many other NFP programs, PBC-NFP notifies its referral source when caseloads are full. The NS sends weekly updates to the HMHB supervisor regarding caseload openings (i.e., which zip codes have openings) to minimize the number of women that are turned away by the program due to full caseloads.[7] Only one eligible referral was not enrolled due to full caseloads. Other NFP sites receive referrals from multiple sources, so the feasibility of maintaining communication about caseload openings like PBC-NFP would be more difficult for other sites.

Figure 3.2. Percent of PBC-NFP Eligible Referrals Enrolled by Year



Facilitators and Challenges: Referral and Enrollment Process

[7] HMHB staff indicate that it can be challenging to keep track of the caseload status information because it changes frequently (start-stop).

Systems-level partnerships is a key driver to high quality implementation of evidence-based programs (Fixsen et al., 2005). The structure of HB, which provides these systems-level partnerships, is one of the key contributors to the success of the referral process. Specifically, having a single entry agency (HMHB) screen and refer potential participants to PBC-NFP makes the process more efficient and effective than if the program were accepting referrals from multiple sources like many NFP sites across the country. The high level and increase over time in eligible referrals can be attributed to HMHB's ability to penetrate the community, improved understanding over time by HMHB staff regarding the eligibility criteria, as well as their ability to obtain reliable contact information (and possibly alternative contact information) to enable PBC-NFP staff to establish contact with the referral within the gestation enrollment window. When HMHB staff are unsure whether a client is eligible for PBC-NFP, they contact the NS to confirm eligibility. The entry agency structure allows NHVs to solely focus on delivering services to their caseload rather than trying to also market the program to potential clients and other community agencies. The ongoing communication between HMHB and PBC-NFP is another key factor that contributes to the success of the referral and enrollment process.[8]

The role of HMHB also contributes to the success of enrolling eligible referrals into PBC-NFP. Before referring potential clients to PBC-NFP, HMHB staff provide potential clients with a brief overview of the program and ask them if they might be interested in participating. This process is essentially a "pre-screening," which limits the pool of referrals to PBC-NFP to those who are initially interested in the program. Successful enrollment may also be due to the NHV's belief in the relative benefits of the NFP model, as well as their enthusiasm about the model displayed, albeit unconsciously, to potential participants during promotional visits. NHVs use promotional visits to help the potential participant determine whether PBC-NFP is a good fit for them by providing additional information about what clients can expect from PBC-NFP and the potential benefits of participation. NHVs indicate that conducting the promotional visits within the HB-required 48-72 hours after receipt of the referral might impact the rate of enrollment because they contact the potential clients "while the iron is hot."

The entry agency structure also contributed to some challenges with the referral process. In the beginning of HMHB's role as an entry agency, several referrals were made for women who were not eligible for PBC-NFP because HMHB staff were unclear about some of the eligibility criteria. For

[8] PBC-NFP staff provide feedback to HMHB about the disposition of referrals. If a referral is not eligible or declines participation in the program, the information is sent back to HMHB who refers the woman to a different program if possible.

example, HMHB staff referred several pregnant adolescents who were more than 28 weeks pregnant because they thought the "boofing" rule meant that pregnant adolescents did not have to meet any of the other eligibility criteria. In response, the NS conducted several presentations to HMHB staff about the PBC-NFP eligibility criteria, as well as the overall goals and structure of the program, to facilitate the referral of appropriate clients. As a result, HMHB staff's overall understanding of the program has improved and the percentage of ineligible referrals has decreased. The entry agency structure was also identified as a barrier to getting clients enrolled early because it takes longer to move the referral through the system at HMHB compared to if the referral was made directly to PBC-NFP. While this was perceived as a barrier, PBC-NFP is still performing higher than the National NFP sites and the NFP implementation objective.

The NFP-NSO suggests that it should take approximately nine months to build a full caseload of 25 participants per nurse. CSC and PBC-NFP set a goal of building a full caseload within one year. When PBC-NFP began operating, recruitment of clients was limited to certain zip codes identified by CSC. Using the vital statistics for PBC, 13 zip codes were identified as having the highest rates of first-time mothers. CSC excluded zip codes that were already being served by Healthy Families or Women's Health Initiative (WHIN) to avoid duplication of services. Recruitment in these zip codes was expected to produce a large number of potential participants. The identification and referral of eligible participants in the original zip codes occurred at a much slower rate than projected. As such, it took longer to build to capacity than anticipated. This was very stressful for PBC-NFP staff because they were concerned that their funding would be cut. The CSC Contract Case Manager worked closely with the NS to identify strategies to recruit more clients to meet the deadline. The Contract Case Manager was proficient in using FOCiS and was able to use FOCiS to identify gaps in recruitment so they could fill the openings in the caseload, as HB did not have entry agencies at this point..

From a clinical perspective, however, it was important that enrollment of clients occurred at a gradual rate so that NHVs did not have all of their clients reaching certain milestones at the same time (e.g., weekly visits after the birth of the child). Gradual enrollment also allowed NHVs to develop and maintain their relationships with clients as well as meet the NFP objectives for the expected number of visits. Since this was a new NFP site, it was also important to allow time for the NHVs to learn how to implement the program. The flow of referrals increased when CSC expanded the zip codes for PBC-NFP. Full capacity was reached June 30, 2009, approximately one year after the program began.

Recommendations: Referral and Enrollment Process

The following are recommendations about how the referral and enrollment process could be improved:

- In order to create a more accurate reflection of the disposition of referrals into the PBC-NFP program, implement a process to reduce the number of disposition codes that are missing in FOCiS. This might involve assigning roles to HMHB and PBC-NFP staff regarding the documentation of disposition codes. In addition, although this does not appear to be an issue with the extract that the NFP-NSO receives, the dataset JBA received had incorrect disposition codes for some cases. Specifically, when clients that were enrolled in the program dropped from the program, their "enrolled" disposition code in the referral data was overwritten to indicate that they declined participation in the program.
- Identify process that will exclude infants from being included in the referral statistics generated by NFP-NSO.
- In the development of the new data system, establish a mechanism for more effectively linking family members in the system.
- In order to recruit more pregnant adolescents, conduct more outreach/marketing activities in middle schools, high schools, and transition homes for homeless adolescents. PBC-NFP staff suggest that the program could serve many more pregnant adolescents than are currently identified by outreach efforts, so outreach efforts should continue to be refined. As discussed in the next section, pregnant adolescents often delay disclosing their pregnancies.
- Collaborate with community-based agencies that work with adolescents to identify avenues to reach adolescents that are not enrolled in school.
- PBC-NFP and HMHB should work together to identify opportunities for expediting the referral process to PBC-NFP to facilitate enrollment of clients as early in their pregnancies as possible.
- HMHB and PBC-NFP should identify characteristics of potential clients, beyond the eligibility criteria, who would benefit most from the program. Occasionally, PBC-NFP enrolls a client that meets the eligibility criteria, but their overall risk level is low. For example, one client had just lost their job so she met the low-income requirement. However, she was highly educated with a Masters degree so the program was not as beneficial to her as it would be to others. Staff are concerned that if the program accepts inappropriate referrals, there will be women who would benefit from the program but cannot enroll because the program is full.
- The NS should continue to conduct regular presentations to new and existing HMHB staff about the eligibility criteria for enrollment, as well as the goals and activities of NFP, so that the information is reinforced for existing staff and new staff can be trained. In addition, the NS should provide HMHB with updates about the outcomes of PBC-NFP participants.
- PBC-NFP should examine the feasibility of sending HMHB staff a list of women that are expected to deliver each month so that Home Safe liaisons can more easily identify PBC-NFP clients.

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IV. Client Characteristics

The eligibility criteria for intended clients are clearly outlined by the NFP-NSO. Clients should be low-income, first-time mothers. In addition, clients should voluntarily agree to participate in the program and enroll early in their pregnancies. The characteristics of clients will have implications for short- and long-term client-level outcomes achieved by PBC-NFP. For example, National data, as well as data from PBC, support a strong link between demographic characteristics and birth outcomes (Children's Services Council, 2010; Health Resources and Services Administration, 2006). In this chapter, we describe the characteristics of PBC-NFP clients, how the characteristics of clients have changed over time, and how the characteristics of clients compare to characteristics of the National NFP clients.

Model Element 1: Client participates voluntarily in NFP program.

PBC-NFP staff indicate that all clients are participating voluntarily in the program, though they note that participation is influenced by some clients' mothers, particularly the adolescent clients.

Model Element 2: Client is a first-time mother.

> *"They're like sponges for information. They are enthusiastic, open, and listen to everything anyone says."*
>
> *"It's hard to teach an old dog new tricks. First-time mothers are at a vulnerable point for change and are open to information."*

NFP is designed to target first-time mothers (i.e., expecting their first live birth). First-time mothers are perceived as being more likely to accept offers of support from NHVs. In addition, because they have not had any experience with pregnancy or childrearing, NHVs have the opportunity to help clients establish positive patterns for caring for themselves when they are pregnant and their children once they are born. It is anticipated that the skills they develop through participation in NFP will carry over to subsequent children. Last, NFP aims to reduce stressors such as unplanned and closely-spaced pregnancies which interfere with clients' abilities to provide competent care for their children or become economically self-sufficient.

As seen in Table 4.1, all PBC-NFP clients are first-time mothers. All PBC-NFP staff agree with the rationale that first-time mothers can benefit most from NFP; they report their clients are eager to learn about their pregnancies and their new children. Some NHVs believe that women who already

have children could also benefit from NFP because they may not have had the opportunity to gain sufficient knowledge or learn appropriate behaviors related to pregnancy or parenting.

Demographic Characteristics

Table 4.1 presents the characteristics of PBC-NFP clients at enrollment by year of enrollment and the characteristics of clients who enrolled in NFP sites across the country between January 1, 2010 and June 30, 2010. PBC-NFP clients are younger than the National NFP clients. In PBC, 38.7 % of clients are 17 and under compared to 28.1% nationally. Clients aged 15-17 years make up the largest subgroup in PBC, compared to ages 20-24 for the National NFP sites; both have consistently remained the highest subgroup, respectively, over time.

Table 4.1. Demographic Characteristics at Intake

	PBC-NFP All years	PBC-NFP 2008	PBC-NFP 2009	PBC-NFP 2010	National NFP 2010[9]
	%	%	%	%	%
First-Time Mothers	100	100	100	100	99.67
Maternal Age	N = 251	N = 41	N = 170	N = 40	--
<15 years	3.2	2.4	3.5	2.5	2.4
15-17 years	35.5	36.6	31.8	50	25.7
18-19 years	24.7	29.3	24.7	20	26.6
20-24 years	18.7	22.0	18.8	15	31.0
25-29 years	12.0	4.9	14.7	7.5	9.4
>=30 years	6.0	4.9	6.5	5	5.0
Marital Status	N = 226	N = 36	N = 160	N = 30	--
Married	8.4	13.9	7.5	6.7	12.5
Unmarried[10]	91.6	86.1	92.5	93.3	87.5
Race/Ethnicity	N = 222	N = 36	N = 155	N = 31	
American Indian/Native American	0	0	0	0	2.8
Black/African American	56.3	55.6	58.1	48.4	28.2
Asian/Pacific Islander	0	0	0	0	1.5
White Non-Hispanic	16.7	16.7	18.1	9.7	32.6
Hispanic/Latina	23.4	25	21.3	32.3	29.8
Other/Multiracial	3.6	2.8	2.6	9.7	5.0
Primary Language	N = 230	N = 36	N = 162	N = 32	--
English	86.5	91.7	87.7	75	84.6
Spanish	7.4	5.6	4.9	21.9	13.1
Other	6.1	2.8	7.4	3.1	2.4

[9] All 2010 National NFP data cover the period between January 1, 2010 and June 30, 2010.

[10] Unmarried consists of single, never married; divorced; and separated. In 2009, only one client was divorced and one was separated; no clients were divorced or separated in 2008 or 2010.

	PBC-NFP All years	PBC-NFP 2008	PBC-NFP 2009	PBC-NFP 2010	National NFP 2010[9]
Education	N = 223	N = 36	N = 155	N = 32	--
With High School Diploma or GED	36.8	36.1	41.9	12.5	52.2
Currently Enrolled in School	51.6	51.4	48.1	73.1	44. 5
Median Household Size	4	4	4	4	3
Living Composition	N = 229	N = 36	N = 162	N = 31	--
Lives Alone	3.9	11.1	3.1	0	5.2
Lives with Husband/Partner	27.1	19.4	29.0	25.8	31.9
Lives with Mother	48.0	50	46.3	54.8	45.0
Lives with Others	20.1	19.4	21.0	16.1	15.3
Lives in Group Home/Shelter	0.9	0	0.6	3.2	1.9
Confined to Facility/Incarcerated	0	0	0	0	0.3
Homeless	0	0	0	0	0.3

The majority of clients in PBC (91.6%) and nationally (87.5%) are unmarried. The percentage of unmarried clients in PBC-NFP has increased slightly over time. Most unmarried clients in PBC have a "partner" (78%); most of the partners are also the father of the baby (97%). Seventy percent of PBC-NFP clients speak to the father of the baby daily, and 14% of clients do not speak to the father of baby at all.

Black/African Americans make up almost 60% of PBC-NFP clients, but just over a quarter of the National NFP clients, who are more likely to be White non-Hispanic (32.6%) compared to PBC-NFP (16.7%). The NFP-NSO advises new NFP sites to serve only English-speaking clients for the first year of implementation. As such, PBC-NFP began enrolling Spanish-speaking clients who could be served by the "expansion team" in the spring of 2010. This likely explains the increase in the number of Hispanic/Latina clients and the number of clients who identified Spanish as their primary language in PBC in 2010. The percentage of PBC-NFP clients who speak Spanish is lower than the National NFP clients, but we expect this might shift over time given the large number of Spanish-speaking residents in PBC.

Fewer PBC-NFP clients received a high school diploma or GED (36.8%)[11] than the National NFP clients (52.2%). Almost half of PBC-NFP clients are currently enrolled in school (48.4%), which is slightly higher than the percentage of National NFP clients (44.5%). The differences between PBC-NFP and National NFP can partially be attributed to the younger age of clients in PBC. In PBC, the clients currently enrolled in school are attending middle school (7.6%), high school or GED program

[11] The majority of these clients in completed high school (87%) as opposed to receiving their GED.

(70.3%), post-high school/vocational/technical training program (9.3%), or college (12.7%) (these data are not presented in the table).

The median household size is four individuals for PBC-NFP clients and three for National NFP clients. The largest number of clients in PBC and nationally live with their mothers (48% and 45% respectively). The percentage of clients who live alone has decreased over time and the percentage who live in a group home or shelter has increased.

Model Element 3: Clients meet low-income criteria at intake.

Given the link between income and adverse outcomes for child health and development, NFP provides prevention and early intervention to low-income women and their families to enhance outcomes for children and families. All enrolled clients were low-income at intake (i.e., eligible for Medicaid). Table 4.2 displays the economic conditions of clients at intake. A larger percentage of PBC-NFP clients are unemployed (76%) than National NFP clients (70.23%). Thirteen percent of PBC-NFP clients who were unemployed at intake had been working, but stopped working because of their pregnancy. Despite the economic downturn, the percentage of clients who were unemployed has decreased over time and the percentage employed part-time has increased. None of the clients enrolled in 2010 (prior to April 25, 2010) were employed full-time. The mean wage per hour for PBC-NFP clients' most recent job was $8.30 per hour; the median was $7.50.

The median annual household income is the same for PBC-NFP and National NFP clients ($10,500). Over a third of PBC-NFP clients have an annual household income of $3,000 or less. Nearly three quarters of PBC-NFP clients were receiving government or community services at enrollment (72.6%). The use of WIC and Food Stamps appears to be similar to the National NFP rates. Medicaid usage among PBC-NFP clients is consistently higher than National NFP usage, and fewer clients in PBC have health insurance coverage other than Medicaid than the National NFP clients.

Table 4.2. Economic Conditions at Intake

	PBC-NFP All years	PBC NFP 2008	PBC-NFP 2009	PBC-NFP 2010	National NFP 2010
	%	%	%	%	%
Current Employment	N = 225	N = 35	N = 158	N = 32	--
Full-Time (37+ hours/week)	6.7	5.7	8.2	0	--
Part-Time	17.3	11.4	18.4	18.8	--
Unemployed	76	82.9	73.4	81.3	70.2%
Median Annual Household Income	N = 121 $13,500	N = 20 $13,500	N = 85 $10,500	N = 16 $7,500	-- $10,500
Government Assistance Use	N = 167	N = 26	N = 124	N = 17	--
WIC	69.5	61.5	70.2	76.5	73.6%
Medicaid	91.6	88.5	92.0	94.1	74.7%
Food Stamps	21.0	11.5	22.6	23.5	25.2%
TANF	0	0	0	0	7. 6%
Social Security	4.2	0	2.4	23.5	--
Unemployment Benefits	3.0	7.7	2.4	0	--
Housing Assistance	0.6	3.9	0	0	--
Health Insurance Coverage Other Than Medicaid	N = 186 9.7	N = 31 6.5	N = 129 9.3	N = 22 15.4	15.3%

PBC-NFP staff indicate that most clients struggle to make ends meet each week. Clients who are employed make just enough money to pay for the necessities. Safe, affordable housing is an ongoing struggle for many clients because of the limited availability of housing in PBC and restrictive eligibility criteria for housing assistance preclude clients from receiving support. For example, clients can get short-term housing support, but only if they can demonstrate that they are receiving sufficient income to be able to pay the following month. Housing is especially an issue for adolescent clients who do not have a support system or someone to live with. There is currently only one shelter for homeless adolescents in PBC, so many are homeless for a period of time, causing them to live in unsafe and overcrowded conditions. PBC-NFP staff report that limiting enrollment to low-income clients is advantageous because these women are the most accepting of assistance, appreciate the assistance the most, and have more room for positive growth.

Model Element 4: Client is enrolled in the program early in her pregnancy and receives her first home visit no later than the end of the 28th week of pregnancy.

All women must enroll in NFP no later than the end of the 28th week of pregnancy. An NFP Implementation Objective is to enroll 60% of women prior to the end of their 16th week of pregnancy.

Early enrollment allows NHVs more time to work with clients to modify health-related behaviors known to impact birth outcomes (e.g., smoking, diet, substance use, prenatal care).

Table 4.3 displays the gestational age of clients at intake. Overall, 98.8% of referrals were enrolled prior to the end of the 28th week of pregnancy, which is slightly lower than the NFP objective of 100%. On a regular basis, clients' due dates change after they enroll in the program. This explains why three cases were enrolled 29 weeks or later. Approximately 54% of clients were enrolled at 16 weeks gestation or less, which is lower than the NFP objective of 60%. The percentage of women enrolled between 17 and 28 weeks was 44.9%.

Table 4.3. Gestational Age at Intake

	PBC NFP 2008	PBC-NFP 2009	PBC-NFP 2010	PBC-NFP All years
	%	%	%	%
	N = 40	N = 167	N = 40	N = 247
0-16 weeks	52.5	53.3	57.5	53.9
17-28 weeks	47.5	44.9	42.5	44.9
29+ weeks	0	1.8	0	1.2

Some NHVs suggest that clients who enroll in PBC-NFP close to 28 weeks are more involved in visits because they are further along in their pregnancy, such that the pregnancy and upcoming delivery of the baby feel more "real." However, the majority of NHVs report that enrollment of clients earlier in pregnancy has many advantages. The early enrollment of clients allows the nurse and client to establish a strong relationship that enhances the mother's commitment to participating in the program. In addition, early enrollment affords more time for NHVs to cover all of the NFP material prior to delivery of the infant.

The most obvious disadvantage of enrolling women early in their first trimester is the increased risk of miscarriage, resulting in attrition from PBC-NFP. NHVs are also concerned that women who enroll prior to the end of the first trimester may not fully engage in the program (because they have not "wrapped their arms around the pregnancy yet") or might lose interest and drop out of the program prematurely.

The gestation of clients at intake is to a large extent dependent on when the woman seeks prenatal care. PBC-NFP staff report that cultural factors may influence when some clients seek prenatal care. Many undocumented women do not know how or are afraid to access resources available to them in the community. Adolescents do not seek prenatal care early in their pregnancies because they do not realize they are pregnant, deny that they are pregnant, or do not disclose that they

are pregnant until late in their pregnancy. This may be one of the reasons PBC-NFP is not be meeting the objective of enrolling 60% of clients prior to 16 weeks. In other words, if pregnant clients are not coming into contact with HB agencies or prenatal care providers until later in the pregnancy, they will miss the early enrollment window or will not be eligible for participation in PBC-NFP.

Other Client Characteristics

Table 4.4 provides an overview of client health concerns and history of intimate partner violence at intake. PBC-NFP clients were more likely to have smoked cigarettes during their pregnancy prior to intake (including in the last 48 hours) (14.6%) than National NFP clients (11%). On a positive note, the percentage of clients who smoked during their pregnancy prior to intake has decreased over time. Overall, 3% of PBC-NFP clients had smoked more than five cigarettes in the 48 hours prior to intake. A larger percentage of National NFP participants (85.3%) received prenatal care during their first trimester than PBC-NFP clients (75.9%). On average, PBC-NFP clients initiated prenatal care during their 8th week of pregnancy (median = 9.2 weeks; range 1 – 28 weeks).

Overall, 83.3% of PBC-NFP clients had a mental health score of three or higher, which indicates positive affect/mental health. This percentage is lower than the National percentage (89.8%), suggesting that fewer clients in PBC have positive affect at intake than the National NFP clients.[12] However, fewer clients in PBC (4.42%) report having a history of a mental health concern than the National NFP clients (12.72%). The higher number of National NFP clients reporting a history of mental health concerns in the National NFP sites may be a factor of the younger clients in PBC (who, at age 15 or 16, may not have had a diagnosed mental health issue). At intake, 7.8% of PBC-NFP clients report use of mental health services; this number increases during subsequent assessments of clients (e.g., during the postpartum period), which means that the clients are effectively being linked to mental health services.

[12] The data reported in the NFP-NSO reports suggest that approximately 90% of PBC-NFP clients have positive affect. It is unclear why the numbers presented in the NFP-NSO reports differ from the results produced by the data JBA received.

Table 4.4. Maternal Health Concern and History of Intimate Partner Violence Reported at Intake

	PBC-NFP All years	PBC NFP 2008	PBC-NFP 2009	PBC-NFP 2010	National NFP 2010
	%	%	%	%	%
Maternal Health	N = 226	N = 33	N = 163	N = 30	--
Cigarette Smoker[13]	14.6	24.2	14.1	6.7	11.0
Smoking 5+ Cigarettes	3.1	3.0	3.1	3.3	4.5
Receiving Prenatal Care in First Trimester	N = 249	N = 36	N = 164	N = 34	--
	75.9	75	84.8	67.7	85.3
Health Problems	N = ~246	N =~36	N = ~162	N = ~34	--
Heart Problems	2.0	0	2.4	2.9	2.5
High Blood Pressure	1.2	0	1.8	0	2.9
Diabetes	1.2	0	1.8	0	1.9
Kidney Disease	0	0	0	0	0.9
Epilepsy	1.2	2.8	1.2	0	1.2
Sickle cell disease	0	0	0	0	0.6
Chronic gastrointestinal diseases	1.6	0	1.2	5.9	2.1
Asthma/Chronic pulmonary diseases	9.6	11.1	11.0	5.9	15.6
Chronic urinary tract infections	2.4	2.8	2.4	2.9	5.9
Chronic vaginal infections (inc. STIs)	2.4	2.8	3.1	0	4.2
Genetic disease/congenital anomalies		0	0.6	0	1.4
Mental Health					
Mental Health Score ≥ 3 (i.e., Positive Affect)	N = 221	N = 35	N = 155	N = 31	--
	83.3	85.7	82.0	87.1	89.8
History of Mental Health Issue	N = 249	N = 36	N = 164	N = 34	--
	4.4	8.3	3.7	5.9	12.8
Intimate Partner Violence	N = 216	N = 31	N = 154	N = 30	--
Abused in Past Year	16.2	29.0	13.0	16.7	13.6
	N = 211	N = 27	N = 158	N = 25	--
Fear of Partner/Other	5.2	3.7	5.1	8	5.9

Staff from CSC and PBC-NFP are concerned that PBC-NFP clients the current assessment instruments are not identifying mental health concerns appropriately. PBC-NFP staff indicate that a much larger number of clients have mental health issues based on the Edinburgh Depression Scale administered at intake (JBA did not have access to this data) than are identified through NFP's

[13] The data reported in the NFP-NSO reports suggest that approximately 4% of PBC-NFP clients smoked during their pregnancy prior to enrollment. It is unclear why the numbers presented in the NFP-NSO reports differ from the results produced by the data JBA received.

depression screening questions. An NFP site in Washington has similar findings; the number of clients identified as having mental health symptoms using the Brief Symptom Inventory is much higher than the number of clients identified as having poor mental health using the NFP screening questions. The Washington site suggests that the difference at its site may be due to the screening tools or to clients' greater willingness to report mental health issues to a research assistant (who they do not know) than to their NHV (with whom they will continue to have a relationship).

PBC-NFP clients are more likely to report being a victim of physical abuse in the year prior to enrollment (i.e., hit, slapped, kicked, or otherwise physically hurt by someone) than National NFP clients (16.2% vs. 13.6%). The perpetrator of the violence was most often the client's boyfriend, ex-boyfriend, or other family member. Overall, 5% of PBC-NFP clients were afraid of their partner or someone important to them, which is similar to National NFP clients (5.9%). The percentage of PBC-NFP clients who are afraid of their partner has increased over time.

Summary

The data presented in this chapter suggest that PBC-NFP is reaching its intended clients. Interview respondents agree that the program is reaching its intended clients, and that the clients are generally representative of the residents in PBC that would be eligible for the program. Clients enrolled in PBC-NFP have higher risk factors for poor outcomes than the PBC population overall.

The following are recommendations related to enrolling clients in PBC-NFP:

- HMHB and/or PBC-NFP should continue to work with school nurses and guidance counselors to identify and implement new strategies to encourage pregnant adolescents to disclose their pregnancies and initiate prenatal care earlier so they can be identified and referred to PBC-NFP.
- CSC should continue broadcasting commercials with messages that encourage women to seek prenatal care as soon as they suspect they are pregnant (i.e., miss their period).

V. Intervention Context

The NFP-NSO has established Visit Guidelines, which specify the structure of the home visits, the frequency and timing of the visits, and the content to be covered. This chapter describes the ability of PBC-NFP to implement these guidelines. Details about visits with clients will be provided, such as the location, duration, and content of visits. The level of adherence to NFP Model Elements and Implementation Objectives will be discussed, as well as how implementation has changed over time, and how PBC-NFP implementation compares to the implementation by NFP National sites.

Distribution of Visits

Between program initiation and April 25, 2010, NHVs completed 3,426 visits. As participants progress through the program and their pregnancies/childbirth, they move through three phases: pregnancy phase (intake to birth of infant); infancy phase (birth to 12 months), and toddler phase (13-24 months). As seen in Figure 5.1, the majority of visits completed in 2008 were to pregnant clients (97%). In 2009, the majority of visits were still completed with pregnant clients (60.4%), but the numbers began to shift toward infant visits as some of the initial clients started to give birth (39.6%). In 2010, this shift to infancy visits continued, with the majority of visits completed to families with infants younger than one year (72.7%). 2010 was the first year that visits were completed with families that had progressed to the toddler phase (3.3%).

Figure 5.1. Percent of Visits at Specified Location

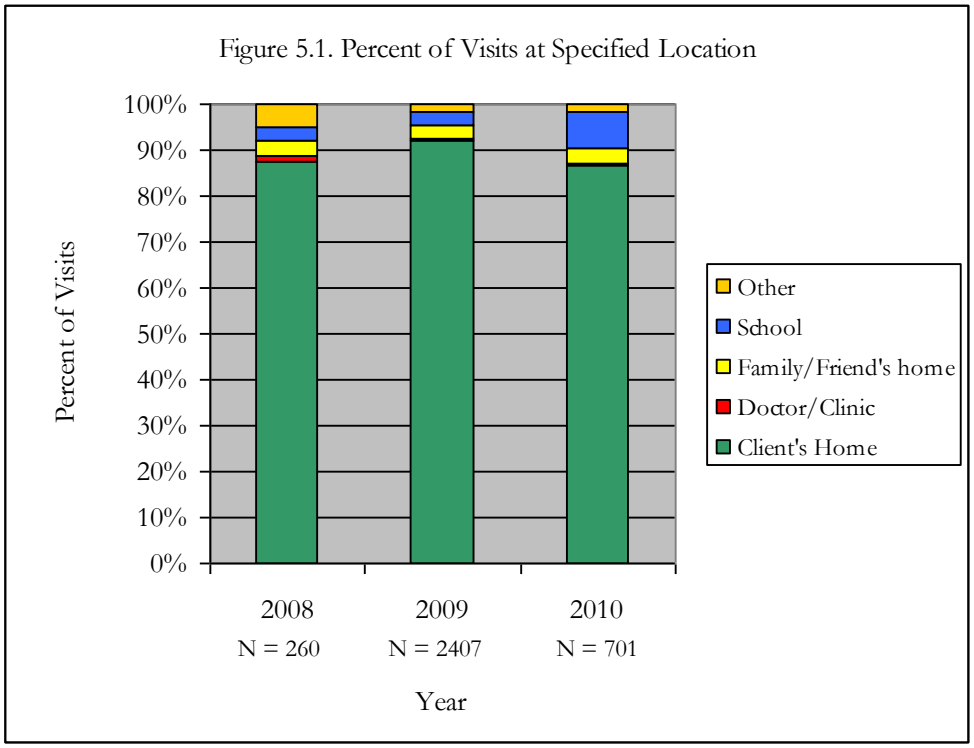


Table 5.1 displays the number of visits completed by each NHV, as well as the distribution of visits across the three phases. The number of visits completed by NHVs ranged from 459 to 708. For each NHV, the majority of visits were completed during the pregnancy phase; visits conducted during the toddler phase have been limited.

Table 5.1. Distribution of Visits by Phase and NHV ID

NHV ID	A	B	C	D	E	F
	N = 708	N = 471	N = 658	N = 490	N = 459	N = 559
	%	%	%	%	%	%
Pregnancy	50.4	55.6	54.6	54.7	57.7	58.1
Infancy	49.2	43.5	44.7	44.3	41.6	41.3
Toddler	0.4	0.9	0.8	1.0	0.7	0.5

One-on-One Visits

Model Element 5: Client is visited one to one, one NHV to one first-time mother/family.

The NFP-NSO does not provide a specific objective as to the number of visits that should be conducted one NHV to one client, but it is assumed that the percentage should be close to 100%. Four of the six NHVs stated that they had never conducted visits with more than one client at a time while two NHVs have provided visits to more than one client at a time (e.g., sisters or roommates) on an infrequent basis. Despite the fact that it may be convenient for the NHVs to visit two clients at the same time, it is important that visits are individualized to the strengths, challenges, and preferences of each client, which requires visits to be one to one. In addition, clients may not feel comfortable discussing certain topics in the presence of someone other than their NHV. We recommend that the NS monitor this in the future.

Key Implementation Activity: Services involve client's social network, as appropriate.

Integral to NFP is the inclusion of the client's family and social support system in visits, if appropriate. The development of a positive relationship with members of the client's support system may facilitate the client's participation in the program and keep her engaged in the program (Cole et al, 1998). In addition, members of the client's support network (such as the client's mother or husband/partner) can learn how to provide developmentally appropriate care for the baby. However, PBC-NFP staff report that not all clients have strong ties to a support network that should be encouraged to participate. For example, some of the clients' husbands/partners engage in behaviors to

which NHVs would like to minimize their client's exposure (e.g., illegal activity, substance abuse, violence).

Clients' interest in having their support network participate in visits varies. Some clients want their mother and/or husband/partner present at all visits. Other clients prefer to participate in visits by themselves because they do not feel comfortable discussing certain topics in front other others (e.g., domestic violence) or do not have a good relationship with their mother and/or the father of their baby. In fact, some clients schedule appointments at locations other than the home so that they do not have to discuss certain topics in front of their mother.

Although most NHVs perceive the presence of the client's mother as beneficial, they indicate that sometimes the client's mother provides opposing information based on her own beliefs (e.g., sleeping position). NHVs are sensitive to this issue, especially when it pertains to cultural beliefs or behaviors. Sometimes NHVs prefer not to have the client's mother present at visit because:

> "*…the client takes a backseat. The client's mother answers all the questions and tells her own stories. The client loses her voice in the session.*"

As seen in Table 5.2, the majority of PBC-NFP visits are conducted with the client only. Less than 10% of PBC-NFP and National NFP visits involve the client's mother during the pregnancy and infancy phases. Only 23 visits were completed with participants in the Toddler Phase prior in the current dataset, so the percentages listed below should be interpreted with caution. In PBC, involvement of the husband/partner is less frequent than the client's mother, and also less frequent than the National NFP average. The observed difference between PBC-NFP and the National NFP sites may be because fewer PBC-NFP clients are living with their husband/partner in than the National NFP sites.

Table 5.2: Visits Involving Participants Other Than Clients By Phase

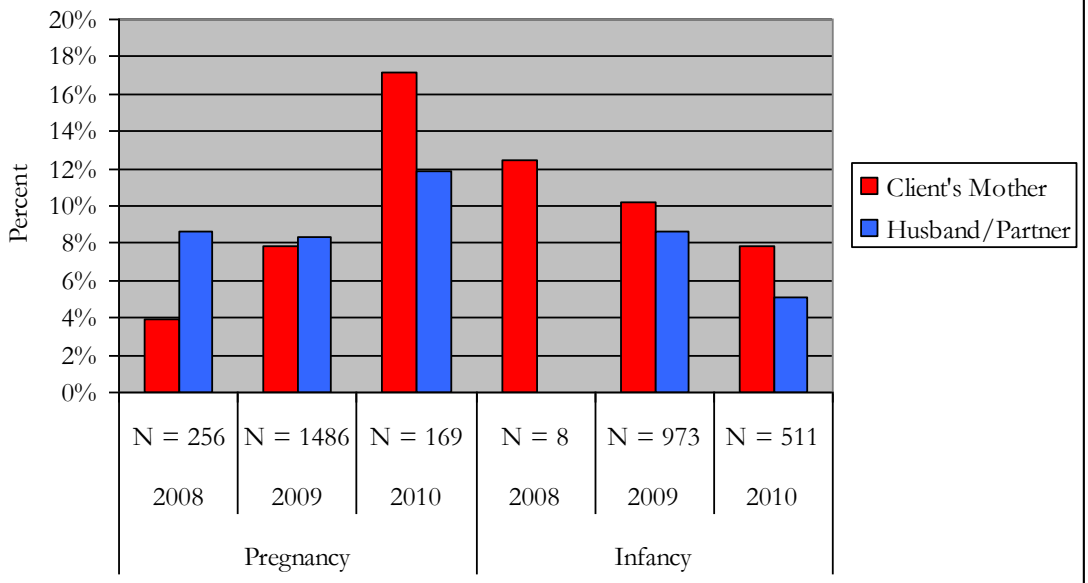
	PBC-NFP			**National NFP**		
	Pregnancy	Infancy	Toddler	Pregnancy	Infancy	Toddler
	%	%	%	%	%	%
Client's Mother	8.2	9.4	13.0	8.8	8.9	7.1
Husband/Partner	8.7	8.4	7.4	12.9	11.4	10.3

PBC-NFP staff report that the low percentages of involvement are mostly due to the client's mother and husband/ partner not being present at the time of the visit. Although 50% of clients live with their mother, many mothers work or are otherwise not home during the visit. Some clients' mothers participate in every visit, but others go in and out of the room but rarely sit down to talk or listen during a visit. Overall, when the client's mother or husband/partner participates in a visit, their

level of involvement and understanding of the material was rated as high by the NHVs, and their conflict with the material was rated as low. Other individuals from the client's social support system may participate in visits, such as the client's siblings, cousins, or friends, but the frequency of their involvement is not tracked systematically by NFP.

The data presented in Figure 5.2 indicate that the percentage of visits completed in the pregnancy phase in which the client's mother is involved has increased over time, but the percentage of infancy visits in which she was involved has decreased over the three years.

Figure 5.2. Visits Involving Participants Other Than Clients By Phase & Year



In addition to varying over time, the involvement of the client's mother and husband/father in visits varies by NHV. As seen in Table 5.3, the involvement of the client's mother ranges from 2.5% to 12.1% of visits during the pregnancy phase and 0.9% to 23.6 during the infancy phase. Involvement of the client's husband/partner ranges from 6.4% to 11.1% of visits in the pregnancy phase and 2.6% to 11.5% during the infancy phase. It is unclear whether this variation is due to characteristics of the clients served by each NHV (e.g., adolescents) or to characteristics of each NHV (e.g., demographic characteristics, strategies to involve support network). Interestingly, NHV A involved the client's support network less frequently than the other NHVs but completed more home visits than the other NHVs. It is possible that efforts to include the support network take more time, so they have less time

to complete as many visits. The number of visits completed during the toddler phase per NHV is too small to examine variation across nurses.

Table 5.3. Number of Visits Completed by NHV ID by Phase That Included Client's Mother or Husband/Partner

NHV ID	A		B		C		D		E		F	
	N	%	N	%	N	%	N	%	N	%	N	%
Client's Mother												
Pregnancy	357	2.5	262	8.8	359	7.3	268	6.0	265	12.1	325	11.4
Infancy	348	0.9	205	8.8	294	9.2	217	7.8	191	23.6	231	12.1
Husband/Partner												
Pregnancy	357	9.2	262	11.1	359	9.2	268	9.7	265	6.4	325	6.5
Infancy	348	2.6	205	6.8	294	10.5	217	8.8	191	11.5	231	6.1

It is difficult to recommend that PBC-NFP staff implement strategies to increase the percentage of visits that involve the client's support network, as the current level may be the most "appropriate" given the issues identified above. However, during our interviews, NHVs provided several examples of how they try to engage the support network:

- During promotional visits, present PBC-NFP to all of the individuals in the home and tell them that the program is for the client and her support network.
- Beginning with the promotional visit, stress that the NHV wants the family to be involved in the program—that is why the program is called Nurse-Family Partnership.
- When other individuals are in the home, NHVs can ask the client "who is that?" The NHV can then ask the individual if they want to join visit (i.e., give them permission to be involved since some family members/friends think the visits are only for the client).

Location of Visits

Model Element 6: Client is visited in her home.

"Clients feel more comfortable doing, acting, and saying things in their own environment."

Although the NFP-NSO has not set a specific objective regarding the percent of contacts that should occur in the home, NFP is a home visitation program so the majority of visits should be conducted in the home. Home visits are important because they allow the NHV to observe and intervene with the client and child in their home environment. However, in order to meet the different needs of clients, NHVs should be flexible and provide services according the preference of the client.

As seen in Table 5.4, the majority of visits have been completed in the client's home (90.7%). The second most frequent location for visits is school (3.9%) followed by family or friend's home (2.9%), "other" location not specified (2.0%), and in a doctor's office/clinic (less than 1%). The

location of attempted visits is similar to the location of completed visits (i.e., client's home being the most frequent and doctor's office/clinic being the least frequent).

Table 5.4. Percent of Visits at Specified Location

	PBC NFP 2008	PBC-NFP 2009	PBC-NFP 2010	PBC-NFP All years
	N = 260	N = 2407	N = 701	N = 3368
Location	%	%	%	%
Client's Home	87.3	92.2	86.7	90.7
Doctor/Clinic	1.5	0.5	0.3	0.5
Family/Friend's home	3.1	2.7	3.6	2.9
School	3.1	2.8	7.7	3.9
Other	5	1.8	1.7	2.0

As mentioned above, all NHVs conduct the majority of visits in the client's home (see Table 5.5). However, NHVs do vary individually with regard to the amount of visits that they provided in the home and in other settings. For example, NHV A provides more visits in the school than any of the other NHVs, whereas NHV E uses the "other location" code more frequently than the other NHVs.[14] The location of visits might also be related to the number of visits that involve the client's support network. For example, because NHV provides more visits in the school than the other NHVs, she has fewer opportunities to engage the client's support network in visits.

Table 5.5. Percent of Visits at Specified Location by NHV ID

	NHV ID					
	A	B	C	D	E	F
	N = 702	N = 443	N = 656	N = 471	N = 457	N = 558
Location	%	%	%	%	%	%
Client's Home	81.6	97.3	92.5	92.1	89.1	96.1
Doctor/Clinic	0	0.9	1.1	0	0.2	0.9
Family/Friend's home	4.3	0.2	3.7	5.1	1.5	2.2
School	11.1	0	1.1	1.7	5.3	0.2
Other	2	1.6	1.7	1.1	3.9	0.7

All PBC-NFP staff report that the home is the best location to conduct face-to-face meetings with participants, because home visits allow NHVs to observe clients in their home environment and provide suggestions about making the home environment safer, cleaner, and more nurturing. NHVs also observe the interactions between members of the household and can involve these members of the

[14] NHVs use the "other location" code to track visits conducted in locations such as parking lots, stores, restaurants, libraries, WIC offices, client's employment setting, shelters, and parks.

client's support network in visits if appropriate. For the most part, clients are more willing to share information in their own home because they feel that they have more privacy in this setting.

However, there are some circumstances that require NHVs to conduct visits in other locations outside the home. Visits may be completed in locations that are more convenient for clients' schedules, such as at their job or school. NHVs may also meet clients in other locations if a home neighborhood environment is unsafe and unsanitary (e.g., guns, drugs, and rodents, and roaches). Some clients' homes are overcrowded, which introduces distractions and concerns about privacy (i.e., clients do not feel comfortable discussing topics such as birth control). NHVs are not always welcome in the home by other members of the household which necessitates conducting visits in other locations.

Telephone Contacts

Table 5.6 provides an overview of telephone contacts with clients. NFP-NSO indicates that telephone contacts should be tracked if NHVs provide "some professional service, e.g., gathered further data to assess mother's or infant's health status, provided health teaching, made a referral, etc." (NSO, 2007). The data exclude phone calls that were made regarding the scheduling of upcoming visits.

Table 5.6. Telephone Contacts with Clients

	PBC-NFP 2008	PBC-NFP 2009	PBC-NFP 2010	PBC-NFP All years
Number of Clients With Phone Contacts	5	114	40	159
Total Number of Phone Contacts	6	160	54	220
Average number of calls per client	1.2	1.4	1.4	1.4
Average Time per Call in Minutes	19.2	17.8	19.5	18.3

The circumstances in which PBC-NFP NHVs complete the Telephone Encounter Form varies by NHV. Some NHVs report that they complete the form only if they cover program content over the phone if they are unable to complete a face-to-face visit and cannot schedule another visit the same week due to other conflicts. Others complete the form if a client requests information such as a doctor's phone number. This variation is supported by the data presented in Table 5.7. Phone contacts made by two of the NHVs make up 75% of all phone contacts tracked in the NFP data. Interestingly, NHVs A and C complete more visits and conduct more telephone contacts than the other NHVs. This may due to a variety of reasons. For example, these two NHVs might complete the contact forms more consistently than other NHVs. Or, they might contact clients more frequently by phone to keep the clients engaged, such that the clients are more likely to be available for their scheduled visits.

Table 5.7. Telephone Contacts with Clients by NHV ID

	NHV ID					
	A	B	C	D	E	F
Number of Phone Contacts	66	12	99	8	25	7

Telephone contacts (including text messages) are a way of keeping clients engaged. In future evaluation efforts, it would be interesting to merge the visit and telephone contact files together to examine the impact of phone contacts, assuming that they cover program content, on the distribution of contacts.

- Conduct training to increase the consistency across NHVs in completing telephone contact forms.

Number & Length of Visits

Model Element 7: Client is visited throughout her pregnancy and the first two years of her child's life in accordance with the current NFP Guidelines.

As described in Chapter 1, the NFP Visit Guidelines provide objectives for the number of expected visits in each phase. In addition, objectives have been established for the average percent of expected visits that are completed (which varies by phase) and the average visit length. Table 5.8 provides an overview of visits conducted during the pregnancy phase since program initiation for PBC-NFP and the National NFP sites, as well as the NFP Implementation Objectives.

Table 5.8. Number of Visits During the Pregnancy Phase Since Program Initiation

	PBC-NFP		**National NFP**	**NFP**
	Number	Average per Client	Average per Client	**Objective**
All Clients	212	--		
Completed Visits	1765	8.3	8.3	
Expected Visits	1936	--		
Percent of Expected Visits Completed		**80.7**	73.3	**80**
Average Visit Length (minutes)		**79.8**	74.1	**60**
Average Total Contact Time (minutes)		700.5	613.0	
Attempted Visits	172	0.8		
Clients who Completed Pregnancy	151	--		
Completed Visits	1520	10.1	9.1	
Expected Visits	1893	--		
Percent of Expected Visits Completed		82.0	80.3	
Average Visit Length (minutes)		79.9	74.1	
Average Total Contact Time (minutes)		823.9	674.4	

Attempted Visits	117	0.8		

The data for "all clients" includes data for clients who had or should have completed the pregnancy phase by April 25, 2010 (N = 212). Clients that "should have" completed a phase refers to women who dropped out of the program prematurely. For the pregnancy phase, this refers to clients who completed at least one visit during the pregnancy phase but dropped out before they delivered their baby. This means that if a woman was expected to complete 10 visits prior to the report date, but dropped out after five visits, she completed 50% of expected visits. It is also important to note that this table does not include participants who were considered enrolled in the program based on the disposition code for the referral, but never had a completed visit (i.e., they never engaged in the program). Phone contacts are not counted as visits.

The average number of visits completed with all clients during pregnancy was 8.3 for both PBC-NFP and National NFP sites. The percent of expected visits completed for all PBC-NFP clients (80.7%) exceeds the National NFP sites (73.3%), and slightly exceeds the NFP Implementation Objective of 80%. The average visit length for all PBC-NFP clients was 79.8 minutes, slightly above the National NFP sites (74.1 minutes). It is assumed that visit length at PBC-NFP is higher than the National NFP sites because PBC-NFP is still a new NFP site and is learning how to efficiently implement the model and navigate client crises. The average visit length in 2010 for PBC-NFP and National NFP sites is very similar. The average visit length also exceeds the NFP Implementation Objective minimum length visit of 60 minutes. PBC-NFP NHVs conduct an average of .8 "attempted"[15] visits per client. It should be noted, however, that based on a review of FOCiS progress notes, visit attempts are not consistently recorded by NHVs in the PBC-NFP data. For example, in the case example presented in Appendix B, three of the six home visit attempts documented in the progress notes were identified as attempts using the Home Visit Form in FOCiS.

"Clients who completed pregnancy" refers to clients who successfully completed the pregnancy phase (i.e., delivered their infant) (N = 151). The average number of visits completed with PBC-NFP clients who completed pregnancy (10.1) was higher than the National NFP clients. The percent of expected visits completed for PBC-NFP clients who completed pregnancy (82%) was also higher than the National NFP clients. NFP-NSO does not have an objective for the percent of expected visits completed for clients who completed pregnancy. The average length of visits for PBC-NFP clients

[15] An attempted visit is one in which the NHV tries to make a visit, but for some reason, were not able to conduct the visit (e.g., no response at home, client was not at home when NHV arrived, or client refused visit when NHV arrived at the home (NFP, 2007).

who completed pregnancy (79.9 minutes) is higher than the National NFP sites (74.1 minutes) and has consistently been above 60 minutes. Similar to all clients, an average of .8 visits are attempted with clients who completed pregnancy.

Figure 5.3 displays the percent of expected pregnancy visits completed for all clients by year the client completed their first visit. In 2008, the percentage exceeded the NFP Implementation Objective of 80% (91.4%), but was just under the objective in 2009 (78.1%). Only one client who was enrolled in 2010 had completed or was expected to complete the pregnancy phase by April 25, 2010.

Figure 5.3. Percent of Expected Pregnancy Visits Completed for All Clients by Year

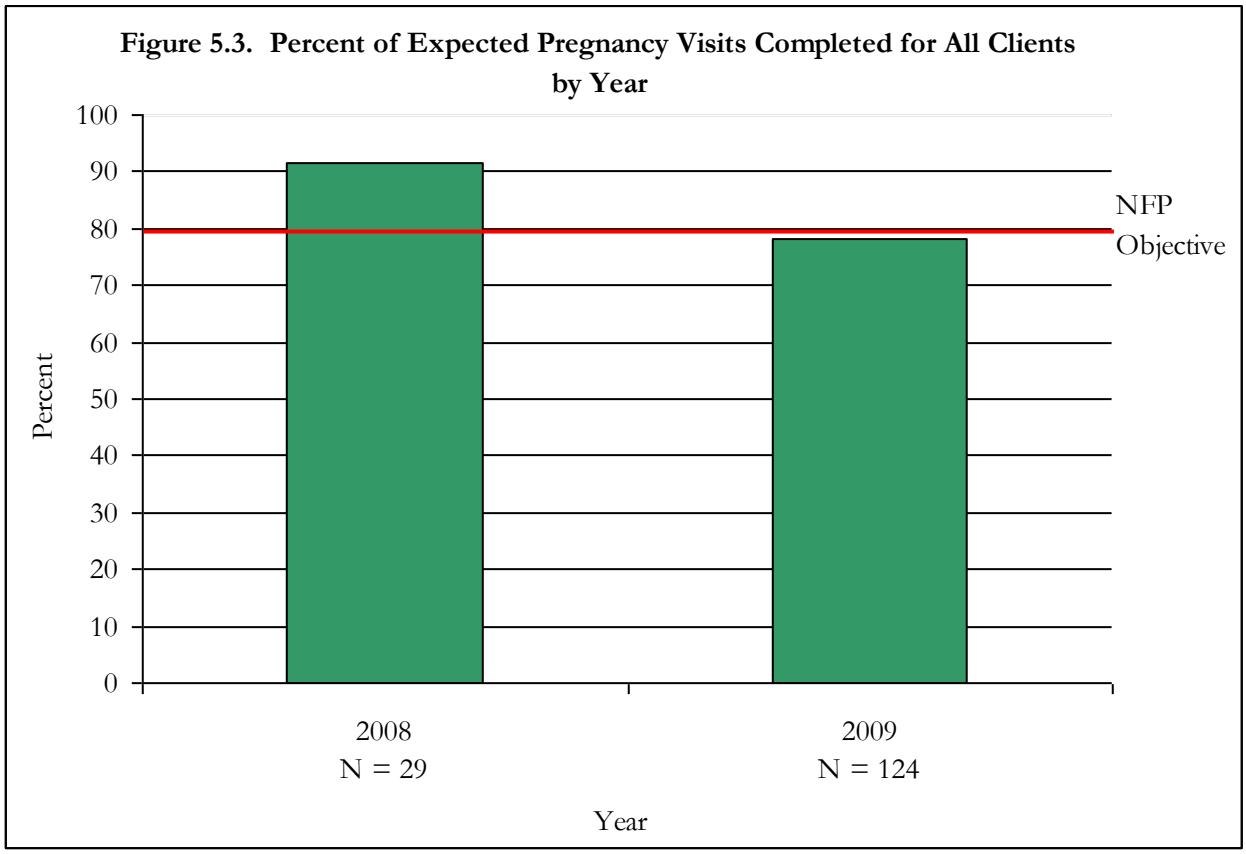


Table 5.9 provides an overview of visits conducted during the infancy phase since program initiation for PBC-NFP and the National NFP sites, as well as the NFP Implementation Objectives. The data for "all clients" includes data for clients who had or should have completed the infancy phase by April 25, 2010 (N = 25). Clients that "should have" completed a phase refers to women who dropped out of the program prematurely. For the infancy phase, this refers to clients who dropped out before their baby turned one year old.

Table 5.9. Number of Visits During the Infancy Phase Since Program Initiation

	PBC-NFP		National NFP	NFP
	Number	Average per Client	Average per Client	Objective
All Clients	25	--		
Completed Visits	331	13.2	11.3	
Expected Visits	675	--		
Percent of Expected Visits Completed		**49.0**	39.1	**65**
Average Visit Length (minutes)		**82.2**	72.0	**60**
Average Total Contact Time (minutes)		963.5	1,042.1	
Attempted Visits	34	1.4		
Clients who Completed Infancy	16	--		
Completed Visits	279	17.4	17.6	
Expected Visits	432	--		
Percent of Expected Visits Completed		64.6	60.8	
Average Visit Length (minutes)		79.6	72.1	
Average Total Contact Time (minutes)		1511	1,271.2	
Attempted Visits	27	1.7		

The average number of visits completed with all clients during infancy was higher for PBC-NFP (13.2) than National NFP sites (11.3). The percent of expected visits completed for all PBC-NFP clients (49.0%) exceeds the National NFP sites (39.1%), but neither PBC-NFP nor the National NFP sites met the NFP Implementation Objective of completing 65% of expected visits during infancy. This is partially due to the fact that "all clients" includes clients who dropped out during the infancy phase. NFP sites across the country are experiencing a higher than expected attrition rate during infancy (67%) (NFP, 2007). In addition, NHVs report that many clients go back to school or get a new job after the baby is born, reducing mothers' availability to participate in visits. The average visit length for all PBC-NFP clients (82.2 minutes) was above the National NFP sites (72 minutes). The average visit length exceeds the NFP Implementation Objective minimum length visit of 60 minutes. PBC-NFP NHVs conduct an average of 1.4 attempted visits per client during the infancy phase.

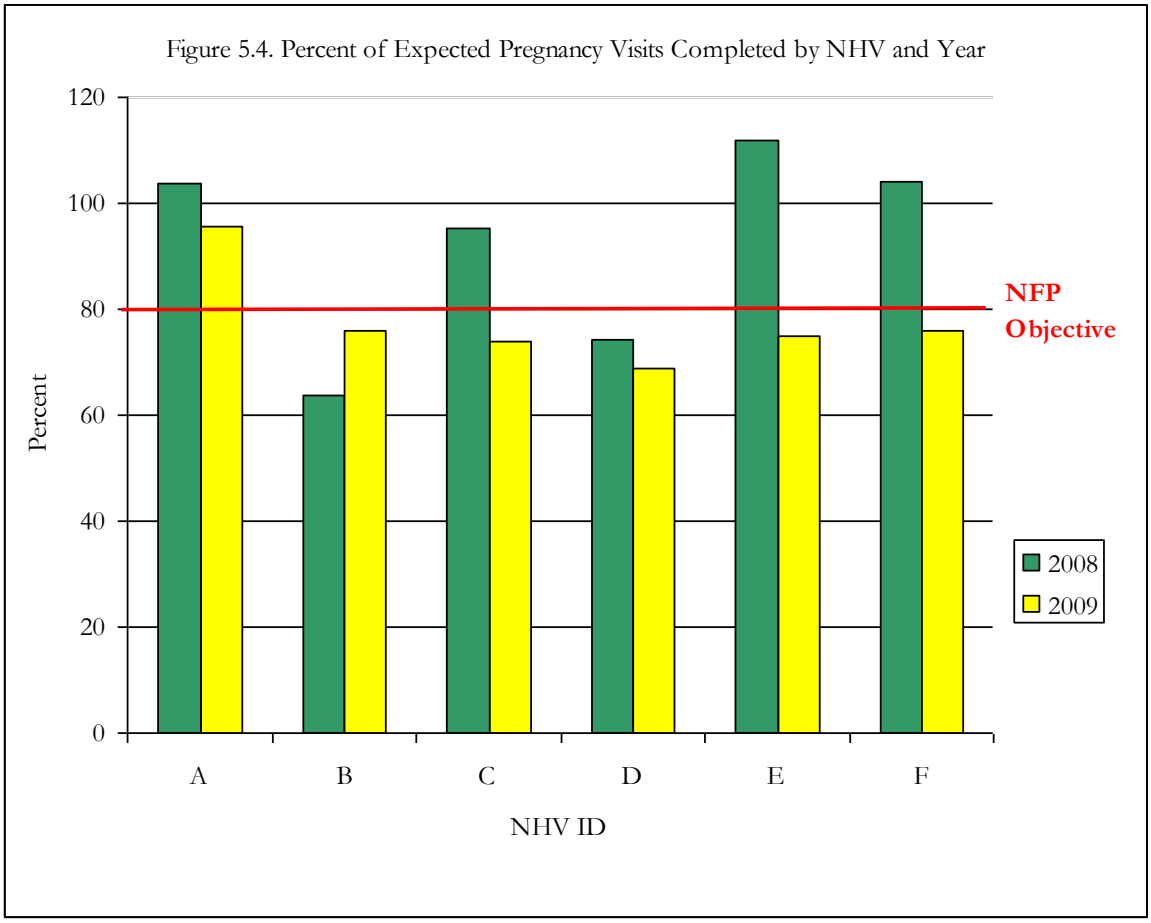
"Clients who completed infancy" refers to clients who successfully completed the program phase (i.e., were still enrolled at child's first birthday) (N = 16). The average number of visits completed with PBC-NFP clients who completed infancy (17.4) was approximately the same as the National NFP clients (17.6). The percent of expected visits completed for PBC-NFP clients who completed infancy (64.6%) was higher than the National NFP clients (60.8%). NFP-NSO does not have an objective for the percent of expected visits completed for clients who completed infancy. The average length of visits for PBC-NFP clients who completed infancy (79.6 minutes) is higher than the

National NFP sites (72.1 minutes). The length of visits has consistently been above 60 minutes. An average of 1.7 visits are attempted with clients who completed infancy.

Percent of Expected Pregnancy Visits Completed: Variation by NHV

Figure 5.4 displays the percent of expected pregnancy visits that were completed by NHV and year clients were enrolled. Four of six nurses exceeded the NFP Implementation Objective (80%) in 2008. The percentage exceeds 100 for three nurses because they completed more than the expected number of visits. In 2009, only one NHV exceeded the NFP Implementation Objective. Interestingly, this NHV (A) has the shortest average visit length so she may have more time in her schedule to complete visits than the other NHVs.

Figure 5.4. Percent of Expected Pregnancy Visits Completed by NHV and Year



Percent of Expected Infancy Visits Completed: Variation by NHV

We did not examine the trends for the percent of expected infancy visits completed over time due to the small sample size for infancy.

Facilitators and Challenges: Percent of Expected Visits Completed

"Some have never had anyone in their lives be kind or consistent or have expectations of them."

"Some clients are waiting there with their books open and others you have to search for."

The decrease in the percent of expected pregnancy visits completed between 2008 and 2009 may be due to the increase in caseloads and the increase in women that were entering the infancy phase in 2009. This meant that NHVs were trying to schedule weekly visits with a large number of their clients at the same time, possibly impacting their overall ability to complete visits. The delivery of babies in NHVs' caseloads also meant that they had to write case notes on both the client and her infant, reducing the amount of time the NHV was available to go into the field. In addition, NHVs' small caseloads during initial program operations allowed them the ability to reschedule cancelled appointments during the same week. With the shift in caseload size, NHVs became unable to continue this approach. Following guidance from the NFP-NSO Nursing Consultant and other NFP sites, NHVs instead began waiting until the next pre-scheduled appointment time to complete the missed visit (e.g., two weeks later).

The frequency of visits can sometimes be overwhelming for clients, particularly when visits are held weekly. This finding has been observed in other programs and studies, such that clients are "too busy" for regular home visits (e.g., Kitzman, Cole, Yoos, & Olds, 1997). Often this is because clients are not used to having consistent contact from an interested professional or because their life circumstances are not set up for regular visits (i.e., employment, school, and other obligations). NHVs specifically note the immediate post-partum period as challenging in this aspect. One NHV stated that *"… at end of the fourth week of infancy, they are tired of you. Six weeks of weekly visits is hard for them when they are sleep-deprived and adjusting to the new baby and role as a mother.*" Some clients directly state that they do not want to participate in the program as frequently as the guidelines call for, while others passively communicate about the intensity (i.e., cancel or no-show).

In these cases, giving the client the option of decreasing the frequency of visits may be enough to re-engage the client so they get back on track with the visit schedule. If the NHVs continue to push the weekly visits with these clients, they might drop out. The Memphis NFP trial incorporated this flexibility as well. When clients could not meet the visit requirements, NHVs sometimes completed in-person visits with clients at least once a month, using phone contact as needed (Korfmacher, Kitzman, & Olds, 1998). Meeting the needs of the client is likely more important than meeting the visit frequency objective. Therefore, the flexibility to schedule visits according to clients' preferences may impact the completion of expected visits as well as attrition. However, the reduction in the frequency of visits should be discussed with the NS prior to implementing the modification. Previous research on

NFP suggests that flexibility in scheduling visits is critical, but that the visit schedule implies a commitment to the clients that they may never have had from a service agency or program. In addition, even if clients do not participate at the expected level, the ongoing nature of the program can be a powerful tool for change (Korfmacher, Kitzman, & Olds, 1998).

NHVs report that the reliability of clients in showing up for scheduled visits is one of the key factors that impacts the completion of expected visits (i.e., cancellations and no-shows). Like all similar programs implemented with high-risk populations, the rate of incomplete visits (program attempts) is high in PBC-NFP. For example, 9.6% of all scheduled pregnancy visits were not completed because the client was not available for the visit (i.e., no-show). When clients enroll, some NHVs are clear about the program's expectations with regard to visits. Some NHVs tell their clients that it is okay to cancel a visit and that they do not need to provide a reason for the cancellation. However, NHVs hold clients responsible and request that they send a text to let the NHV know so she can readjust her schedule and keep track of where the client has moved, if applicable. NHVs create calendars for clients so that clients can keep track of their time commitments, which is especially important with adolescents. Home Visit Forms, which contain the date and time of the next appointment, are left with the client at the end of a visit. NHVs also send text messages to clients the day of the visit to remind them of the appointment and confirm their availability; clients prefer text messages over phone calls. Timing of enrollment also impacts the completion of expected visits. For the pregnancy phase, the earlier the client is enrolled, the longer period of time NHVs have to complete the recommended number of visits, which gives more cushion for cancelled visits or no-shows.

NHVs report several additional client-related factors that impact their ability to complete expected visits: engagement in the program, phones being disconnected, schedules (i.e., school or employment), transience/living arrangements, and crises (e.g., electricity turned off). In addition, preliminary analyses indicate potential associations between the percent of expected visits completed and variables such as client conflict with the material, client understanding of the material, length of visits, household income, and percent time spent on life course development. Additional analyses would have to be undertaken to determine the validity, strength, and direction of these relationships.

In addition to incorporating the facilitators (i.e., flexible scheduling, appointment reminders, etc.) discussed above, the following should be considered in improving the percent of expected visits that are completed.

- Allow "flex" time so that if NHVs are available, they can complete visits in the evening or on the weekend when clients are available.

- Be sensitive to clients' preference regarding the frequency of visits. Although fidelity to the objectives regarding visit frequency is important, NFP also emphasizes the importance of maintaining the quality of the relationship with the client.

Visit Length

Although the average visit length has remained within the targeted 60-90 minute range over the years, the average has decreased over time from 87.7 minutes in 2008 to 77.4 minutes in 2009 (see Figure 5.5). This is likely due to NHVs caseloads building to full capacity over time, and therefore having less time available per visit, as well as their increased efficiency with completing visits.

Figure 5.5. Average Visit Length During Pregnancy for All Clients by Year

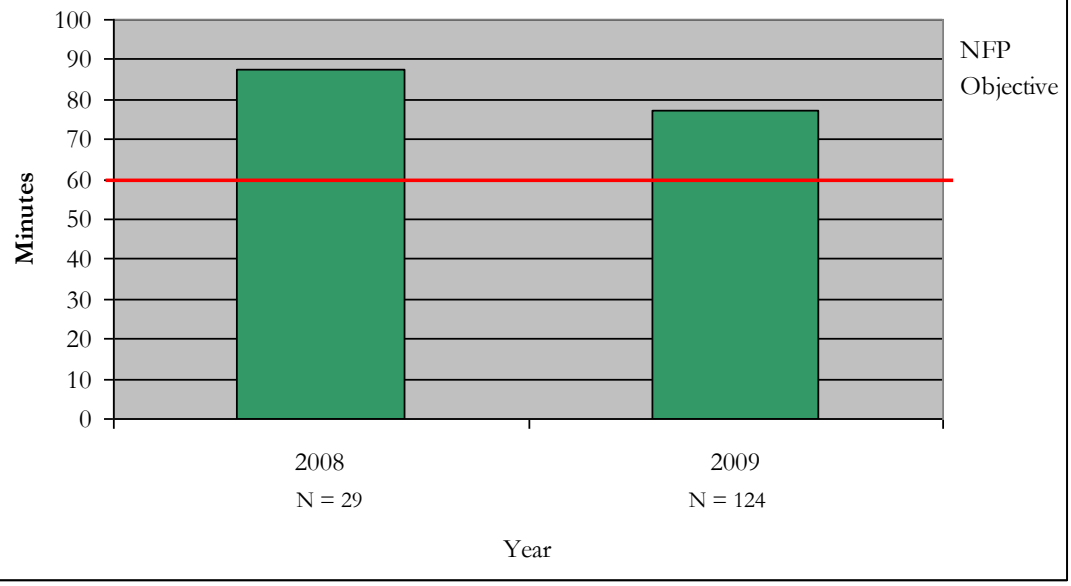
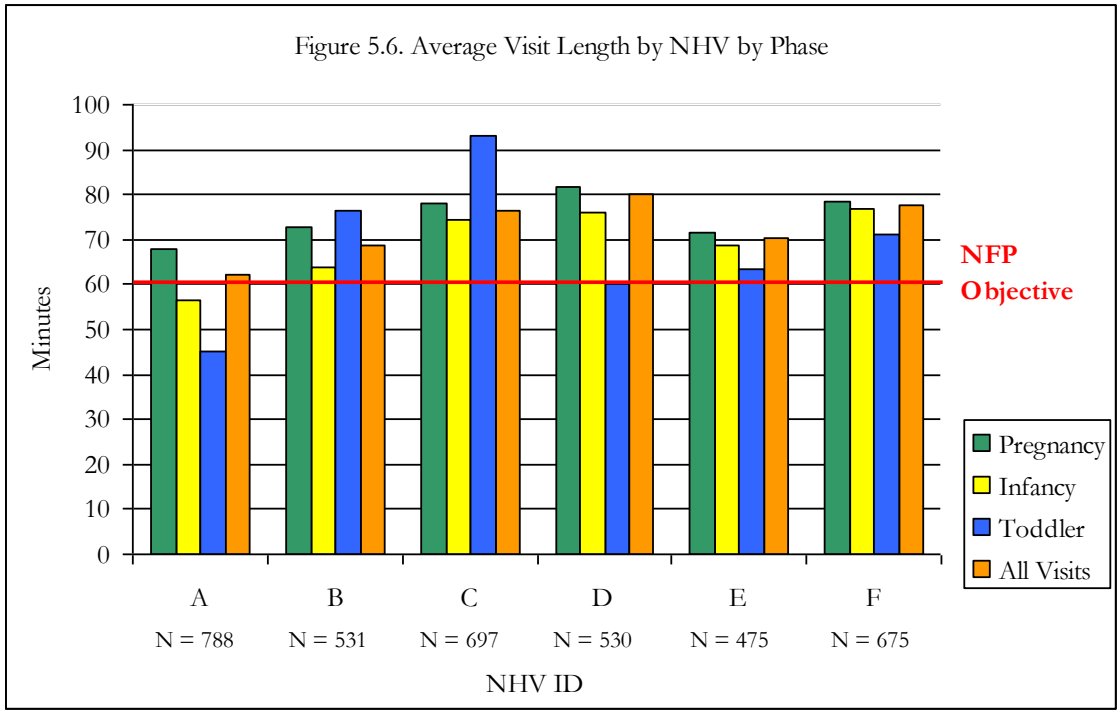


Figure 5.6 displays the average visit length by NHV by phase and total visits. As suggested during interviews, the length of infancy visits is shorter than pregnancy visits. NHVs report that one of the main reasons visits are longer during pregnancy is due to the frequent viewing of videos, which are not shown during infancy. The data for the toddler phase only includes 24 visits, so the overall increase in visit length from infancy to toddler may change once more visits have been completed.



Facilitators and Challenges: Average Visit Length

"When dealing with younger moms and teens, there are lots of external and situational factors that have to be addressed before you can work on the curriculum. If you don't take care of those issues, the clients can't focus on the content."

PBC-NFP staff and staff from other NFP sites report that visits are typically 60-90 minutes because due to the amount of material to cover and the need to discuss the client's concerns and stressors. Sixty minutes is often too short to use the facilitators as intended by NFP-NSO to reflect on clients' thoughts, feelings, and actions. It is important that clients not feel hurried in order for them open up and share information. PBC-NFP staff have not encountered many challenges with meeting the minimum visit length (i.e., 60 minutes).[16] NHVs report that visits are shorter than 60 minutes if a client terminates a visit early because she has another appointment scheduled that the NHV was not aware of, or if the client is dealing with other issues that interfere with the visit. Otherwise, clients are enthusiastic and interested in participating in and learning from PBC-NFP. Clients often have a limited support network and like spending time and talking with the NHV. As NHVs have become more experienced with the curriculum, they have fine-tuned their approach to conducting visits and have learned to implement the program efficiently while still being able to navigate the clients' crises.

[16] During the NFP-NSO training, NHVs were advised that visits should last 60-90 minutes.

Visit Content

"Choice is really nice but in day to day it's time consuming and very difficult. We just have to work on fine tuning that ourselves. Great for clients but very challenging for the NHVs."

In an effort to reduce client attrition, NFP-NSO developed new Visit Guidelines. The previous version of the guidelines specified the content and materials that were to be used at each visit (i.e., visit by visit in a specific order based on gestation and child's age). The new guidelines are intended to be more flexible and "client-driven", such that the client chooses the topic they will discuss at each visit rather than following the specified order of the curriculum. Clients are provided a menu and asked which topic they would like to cover during the next visit. The new guidelines also incorporate more motivational interviewing techniques.

Although PBC-NFP staff like the content of the new guidelines, staff have experienced a number of challenges with incorporating them into their practice and the guidance they have received about the new guidelines has been limited. The biggest challenge has been managing all of the papers required for the visits in a way that makes them easily accessible for visits. The NHVs developed a tracking sheet that outlined each topic and put those in order based on progression through the program (e.g. 10 months and visit #30). This tracking sheet was provided to all NHVs. NHVs have a binder with all of the materials so they can pull out the necessary documents, but it is still difficult. One NHV suggested that it can take about 45 minutes to prepare for a visit. In addition, since some NHVs only come into the office once a week, they struggle to find other locations to store all of the materials for the week because of the limited space in their cars and homes.

Second, although some clients like choosing the topics, there are many that prefer the NHV to select the topic. In addition, some clients are overwhelmed with the long menu of topics. NHVs indicate that allowing clients some choice within an order that mirrors developmental milestones order (e.g., discuss safety before the baby starts crawling). One NHV admitted that she had not been asking her clients to choose the topic because it was too difficult for her to manage all of the papers involved. The topics she chooses are based on the issues that the client is experiencing, or will soon be experiencing. For example, if a client mentions the baby is drooling, the NHV will cover teething at their next visit. Other tenured NFP sites that were trained in the previous guidelines have experienced similar challenges with the new guidelines.

We anticipate that as NHVs have more experience with implementing the guidelines, their comfort with implementing them will increase. In the meantime, we provide the following suggestions:

- PBC-NFP is the only NFP site in Florida. As such, the PBC-NFP staff do not have a network of other NFP sites to collaborate with (e.g., state consortiums that meet formally on a regular basis and informally as necessary). As such, we recommend asking the NFP-NSO Nursing Consultant to connect the PBC-NFP NS to NSs at other NFP sites in the region to discuss how they have incorporated the new guidelines and the successes and challenges they have experienced with them. Although an in-person visit would be ideal to observe the way others have incorporated the guidelines, we acknowledge that the budget would like restrict this activity.
- Schedule a technical assistance session with the NFP-NSO Nursing Consultant. Ask the Nursing Consultant to share information she has obtained about how the other NFP sites she oversees have incorporated the new guidelines.
- Adapt the guidelines to meet the client's needs. Instead of providing clients with a full menu of topics, create a menu with approximately five relevant topics for the client to choose from.
- Discuss the new guidelines in case consultation/team meetings. To increase staff's comfort level, ask staff to present a topic that is unique or one that a NHV has implemented well.

Model Element 10: Nurse Home Visitors, using professional knowledge, judgment and skill, apply the Nurse-Family Partnership Visit Guidelines individualizing them to the strengths and challenges of each family and apportioning time across defined program domains.

"*The lack of stability in the lives of clients makes it difficult to make program material relevant when they have more pressing concerns such as finding somewhere to live.*"

The content covered during NFP visits is based on guidelines that are designed to promote knowledge and skills in five domains of maternal, child, and family functioning: 1) personal health of the client, 2) environmental health, 3) client's life-course development, 4) maternal role, and 5) relationships with friends and family (NFP, 2007). Examples of content covered in each domain are provided below:

- Personal Health: refers to mother's health both pre-and postnatal, e.g., nutrition and exercise requirements, fatigue and loss of sleep, physical or emotional symptoms, birth control, preterm labor, substance abuse, mental health, etc.
- Environmental Health: refers to factors within the home, work, school, neighborhood, or community which have the potential to adversely impact mother or child's health/safety, e.g., domestic violence, inadequate heating, gun safety, gangs, etc.
- Life Course Development: mother's plans for the future related to education, job training, employment, and decisions about planning further children, etc.
- Maternal Role: mother's adjustment to the responsibilities of the maternal role, facilitation of infant attachment, child care, immunizations and well-child care, discipline, promotion of child development, physical, behavioral, and emotional care of child, etc.

- ❖ Friends and Family: mother's development of social networks and other support systems, changes in relationships with husband/partner, assistance with child care, etc.

The proportion of visit time spent on each of these domains varies according to the developmental stages during each phase. For example, during pregnancy, the client's health is a primary concern. During the infancy and toddler phases, the focus shifts to parenting through the development of the maternal role, while continuing to emphasize and plan for the client's future.

Content: Pregnancy Phase

Table 5.10 provides an overview of the content covered during face-to-face PBC-NFP visits by phase and year, as well as how the content distribution compares to National NFP sites and the NFP Implementation Objectives. PBC-NFP consistently meets or exceeds the NFP objectives for all domains during the pregnancy phase with the exception of maternal role in 2008. However, the percent of time on maternal role increased sufficiently in 2009 and 2010 such that the average across all years meets NFP Implementation Objective.

Content: Infancy Phase

During the infancy phase, PBC-NFP meets or exceeds the NFP Implementation Objectives for four of the five domains. Across all years, the average percent of time on maternal role during infancy across all visits is just below the objective (44.5%). If the increase in time spent discussing maternal role in 2010 continues, it is anticipated that the average across years will increase sufficiently to meet the NFP Implementation Objective. NHVs report that some of their clients prefer to discuss issues related to themselves or their support network over maternal role; this is especially the case with adolescent clients. In addition, clients' issues related to their health or relationship need to be resolved before they can focus on learning about child development. However, NHVs indicate that there are other clients that are interested in focusing most of the discussion on their baby, so much that NHVs sometimes have to redirect the clients to focus on other issues (e.g., life course development). This seems to be a common phenomenon across home visitation programs.

Discussing maternal role during visits is a challenge for the National NFP sites as well, who fell below the objective for maternal role in 2009 and 2010. PBC-NFP staff and the NFP Nursing Consultant suggest that the economic downturn has shifted focus to issues such as environmental health (e.g., housing) and life-course development (e.g., employment) over maternal role development. NHVs state that many clients are transient due to a lack of financial stability.

Content: Toddler Phase

Only 23 visits have been completed during the toddler phase, so the data for PBC-NFP during the toddler phase should be interpreted with caution. Preliminary data suggest that both PBC-NFP (and National NFP sites) met or exceeded the objectives for all domains except life course development.

Table 5.10. Average Percent of Visit Content by Phase & Year

	PBC-NFP All years	PBC-NFP 2008	PBC-NFP 2009	PBC-NFP 2010	National NFP 2010	NFP Objective
Pregnancy	N = 1911	N = 256	N = 1486	N = 169	N = 58,680	
Personal Health	40.6	40.5	40.7	39.9	39.7	35 - 40
Environmental Health	8.6	10.2	8.4	8.0	10.0	5 - 7
Life-Course Development	12	12.8	11.9	12.2	11.9	10 - 15
Maternal Role	24.5	**21.4**	24.9	25.8	25.1	23 - 25
Friends & Family	14.2	15.1	14.1	14.1	13.3	10 - 15
Infancy	N = 1490	N = 8	N = 971	N = 511	N = 85,169	
Personal Health	21.2	30.6	23.3	16.9	19.6	14 - 20
Environmental Health	8.7	8.8	8.6	8.9	10.8	7 - 10
Life-Course Development	12.9	15	12.8	12.9	13.2	10 - 15
Maternal Role	44.5	**32.5**	**42.8**	48	**43.1**	45 - 50
Friends & Family	12.7	13.1	12.4	13.3	13.2	10 - 15
Toddler	N = 23			N = 23	N = 35,502	
Personal Health	16.5	.	.	16.5	17.0	10 - 15
Environmental Health	10.9	.	.	10.9	11.4	7 - 10
Life-Course Development	**16.5**	.	.	**16.5**	**14.9**	18 - 20
Maternal Role	40.9	.	.	40.9	43.0	40 - 45
Friends & Family	15.2	.	.	15.2	13.7	10 - 15

The NFP Manual states that the focus of each home visit should be agreed upon by the client and NHV at the preceding visit, which allows for individualization related to the client's needs (NFP, 2007). PBC-NFP NHVs report that the content they cover is driven by the client's interests. They are aware of the NFP Implementation Objectives regarding the distribution of time across the five domains, but the objectives do not drive their practices during a visit. One NHV indicated that if she does not cover enough material in a certain domain during a visit, she will spend more time on that domain at the next visit.

Table 5.11 displays the variation across NHVs in the percent of time spent on the five domains over time during the pregnancy phase. This table allows the reader to examine issues in specific years (and average over all years), as well as performance across domains by NHVs that contribute to the overall success in meeting the NFP content objectives. The red bolded text identifies areas and years

for which an NHV performed under the objective. For example, Nurse A consistently spent less time covering maternal role during the pregnancy phase. Although Nurse B fell below the target for discussing life course development in 2008 and 2009, she is currently meeting the NFP objective in 2010. The NFP-NSO reports that they have not provided a lot of training on how to complete this section of the Home Visit Encounter Form because the replication sites are not research projects in which consistency is critical. As such, variations in the way NHVs track their time might be a function of how they complete the form rather or differences in the distribution of content.

Table 5.11. Average Percent of Pregnancy Visit Content by NHV ID & Year

	NFP Obj.	2008		2009		2010		All years	
		n	%	n	%	n	%	n	%
Personal Health	**35-40%**								
A		38	46.7	312	57.2	7	62.1	357	56.2
B		36	59.4	202	41.4	24	**31.9**	262	43
C		58	**31.6**	274	38.9	27	45	359	38.2
D		35	35.3	219	**29.7**	14	**26.4**	268	**30.2**
E		38	39.7	224	36.8	3	35	265	37.2
F		51	36.2	253	35.1	21	37.6	325	35.4
Environmental Health	**5-7%**								
A		38	9.5	312	9.8	7	7.9	357	9.8
B		36	12.2	202	7.2	24	10.4	262	8.2
C		58	9.1	274	6	27	5.7	359	6.5
D		35	9.9	219	15.1	14	17.1	268	14.5
E		38	8	224	5.2	3	5	265	5.6
F		51	12.4	253	7.2	21	10.7	325	8.3
Life Course Devel.	**10-15%**								
A		38	14	312	10.9	7	10	357	11.2
B		36	**8.3**	202	**8.6**	24	11	262	**8.8**
C		58	17.3	274	11.6	27	10.9	359	12.5
D		35	11.1	219	17.5	14	12.9	268	16.4
E		38	11.8	224	15.1	3	15	265	14.7
F		51	11.7	253	**8.3**	21	11.7	325	**9.1**
Maternal Role	**23-25%**								
A		38	**16.1**	312	**11.3**	7	**10**	357	**11.7**
B		36	**8.9**	202	31	24	30.2	262	27.9
C		58	23	274	31.2	27	30.7	359	29.9
D		35	24.1	219	**20.9**	14	**22.9**	268	**21.4**
E		38	25.5	224	23.9	3	31.7	265	24.2
F		51	27.4	253	34.5	21	**21.9**	325	32.6
Friends & Family	**10-15%**								
A		38	12.9	312	10.9	7	10	357	11.1
B		36	11.1	202	11.9	24	16.5	262	12.2
C		58	18.9	274	12.4	27	**7.6**	359	13.1
D		35	19.6	219	16.9	14	20.7	268	17.4
E		38	14.9	224	19	3	13.3	265	18.3
F		51	12.5	253	14.8	21	18.1	325	14.7

Table 5.12 displays the variation across NHVs in the percent of time spent on the five domains over time during the infancy phase. The data support the program-level challenge covering maternal role during the infancy phase; Nurse C is the only NHV that meets the objective across all three years. The data also support positive trends including the program-level success of covering friends and family during the infancy phase. All NHVs meet or exceed the objective for covering friends and family for all three years except Nurse C (in 2009), though her average is just below the objective.

Table 5.12. Average Percent of Infancy Visit Content by NHV ID & Year

	NFP Obj.	2008		2009		2010		All years	
		n	%	n	%	n	%	n	%
Personal Health	14-20%								
A		1	30	210	17	137	**10.6**	348	14.5
B				123	28	82	23.7	205	26.3
C				186	20.9	108	**13.2**	294	18.1
D				140	20.8	75	19.5	215	20.4
E		7	30.7	152	29.8	32	26.1	191	29.2
F		51	36.2	253	35.1	21	37.6	325	35.4
Environmental Health	7-10%								
A		1	20	210	9.6	137	**5.9**	348	8.2
B				123	**6.4**	82	**6.2**	205	**6.3**
C				186	6.9	108	10.1	294	8.04
D				140	15.8	75	16.6	215	16.1
E		7	7.1	152	**5.1**	32	**5.5**	191	**5.3**
F		51	12.4	253	7.2	21	10.7	325	8.3
Life Course Devel.	10-15%								
A		1	20	210	14.5	137	10.4	348	12.9
B				123	12.3	82	10.5	205	11.6
C				186	11.3	108	14.5	294	12.5
D				140	16.5	75	20.7	215	18
E		7	14.3	152	14.2	32	14.2	191	14.2
F		51	11.7	253	**8.3**	21	11.7	325	**9.1**
Maternal Role	45-50%								
A		1	**20**	210	47.5	137	62.9	348	53.5
B				123	**39.2**	82	**39.9**	205	**39.4**
C				186	51.2	108	51.5	294	51.3
D				140	**34.3**	75	**31.6**	215	**33.4**
E		7	**34.3**	152	**37.7**	32	**41.1**	191	**38.1**
F		51	**27.4**	253	**34.5**	21	**21.9**	325	**32.6**
Friends & Family	10-15%								
A		1	10	210	11.4	137	10.2	348	11
B				123	14.3	82	19.8	205	16.5
C				186	**9.2**	108	11	294	**9.9**
D				140	12.5	75	11.6	215	12.2
E		7	13.6	152	13.2	32	13.1	191	13.2
F		51	12.5	253	14.8	21	18.1	325	14.7

PBC-NFP has been successful in covering all domains in both the pregnancy and infancy phases, with the exception of maternal role during infancy. Therefore, our recommendations are limited:

- In order to increase the consistency of NHVs in tracking the domains they cover during visits, conduct booster training session(s) on completing the content covered section of the Home Visit Encounter form.
- Continue to discuss the domains during case consultation meetings to identify strategies to increase the time spent covering maternal role during infancy visits.

Individualized Intervention

"Go with the client's hearts desire."
"I follow the client's agenda, not my own."

Although NFP is based on a standard curriculum, it calls for NHVs to individualize service delivery based on clients' strengths and challenges. In PBC, NHVS develop individualized family support plans every three months which consists of client-identified goals. NHVs individualize services by allowing the client to choose the topics they discuss during visits. NHVs report that they incorporate clients' developmental levels into their method of service delivery. For example, NHVs read material to clients if they have a lower educational level or incorporate videos and picture books with adolescents to maintain their interest. In addition, NHVs focus on client strengths, not just their current challenges (e.g., good job making and keeping WIC appointments).

Service Referrals

Key Implementation Activity C: NHV coordinates services based on client's identified needs, referring to available community resources, as needed

Client's needs are identified through discussions with the client and through the initial and ongoing assessments. The identification of strengths and challenges can be difficult, though, when a client does not like to talk or is difficult to engage (e.g., clients say "whatever", or "whatever you think"). NHVs indicate that in these cases, they try to be non-judgmental and patient. Although NHVs sometimes directly call an external service agency for the client, the majority provide clients with phone numbers for the agency so that clients can increase their feelings of self efficacy. NHVs encourage clients to seek government assistance such as WIC and Medicaid themselves, and so may not provide a referral for them. On a less frequent basis, NHVs help clients complete enrollment forms or provide a referral to an agency that will help them complete the form. NHVs also make referrals through FOCiS if the service is within HB.

Table 5.13 displays the number of referrals made to external services at intake. The data reflect the number of referrals, not the number of clients that got a referral. Thus, a client may have received a referral for a service more than once. The most common referrals are to WIC (15%), childbirth education (11%), child care (9%), food stamps (9%), Medicaid for the child (8%), and health services for the client (7%). PBC-NFP staff report that most clients need mental health counseling. However, the data indicate that just 51 (6%) referrals were made for mental health services. It is important to note that almost one quarter of clients received a referral for mental health (24%). These data support the concern that the depression screening may not be accurate. The number of clients who were screened as having poor affect at intake (N = 37) is less than the number who were referred for mental health services at intake (51).

Table 5.13. Referrals to Other Services and Distribution by Category- All Years

	Referrals Made in Visit	Referrals Made in Phone Calls	Total Referrals	Distribution by Category
Government Assistance				
TANF	17	0	17	2%
Medicaid Client	42	2	44	5%
Medicaid Child	63	5	68	8%
Food Stamps	73	1	74	9%
Social Security	3	0	3	0%
Unemployment	2	0	2	0%
SCHIP	0	0	0	0%
WIC	128	2	130	15%
Crisis Intervention				
Domestic Violence	5	1	6	1%
Child Abuse	0	0	0	0%
Mental Health Services	50	1	51	6%
Substance Abuse				
Smoking Cessation	7	0	7	1%
Alcohol Abuse	1	0	1	0%
Drug Abuse	4	0	4	0%
Health Care Services				
Client	57	6	63	7%
Child	31	5	36	4%
Developmental Referral				
Client	0	0	0	0%
Child	1	0	1	0%
Education				
GED/Alternative HS	20	0	20	2%
Education Beyond HS	2	0	2	0%
Other Services				
Child Care	71	1	72	9%
Job Training	7	0	7	1%
Housing	29	3	32	4%

	Referrals Made in Visit	Referrals Made in Phone Calls	Total Referrals	Distribution by Category
Transportation	41	2	43	5%
Injury Prevention	34	0	34	4%
Childbirth Education	93	1	94	11%
Lactation Services	0	1		0%
Charitable Services	22	0	22	3%
Legal Services	8	1	9	1%
Other				
Total	811	32	843	100%
Number of Clients Served			**212**	

PBC-NFP staff are concerned that the services referral data are not accurate, specifically that not all referrals are being documented. Table 5.14 demonstrates that the number of referrals made by the NHVs varies significantly (ranging from 14 to 294). These data suggest that either the NHVs track referrals differently or they provide referrals at a very different rate. Based on knowledge about the needs of clients, it is somewhat concerning that so few referrals have been made by NHV B and D. The NS indicated that she was going to work with NHVs to improve the tracking of referrals that are made external to HB.

Table 5.14 Referrals to Other Services by NHV ID

NHV ID	# Referrals Made in Visit	# Referrals Made in Phone Calls	# Total Referrals
A	230	64	294
B	4	12	16
C	57	98	155
D	6	8	14
E	181	25	206
F	69	6	75

Facilitators and Challenges: Service Referrals

PBC is known to be a very resource-rich county compared to many other counties across the country. However, NHVs report that clients often need a service/program that is not available, particularly because it is full. The need for safe, affordable housing is high in PBC, but its availability is very limited. For example, one NHV reported that a client was looking for reduced rent/section 8 housing and was told to call back in 3-4 years. The availability of mental health services is also limited. NHVs indicate that very few clients who are referred to in-home mental health services receive the service because mental health providers have difficulty making contact with or connecting with the client. If a client is not available for a scheduled visit when the provider goes to their home, their case is closed.

The prevalence of mental health problems in new mothers, specifically depression, is a widely known issue. Mental health problems can have profound negative impacts on parenting, maternal life course, and child development (Ammerman, Putnam, Bosse, Teeters, Van Ginkel, 2010). Given the concerns about clients' mental health problems and their difficulty in receiving mental health services, we believe more intensive efforts are needed to support clients around their mental health if targeted client-level outcomes are going to be achieved by PBC-NFP.

In order to reduce the level of and impact of mental health problems, as well as intimate partner violence, several NFP sites across the country are examining the impact of augmenting NFP with a mental health component. Specifically, these NFP sites are providing more intensive training to NHVs on maternal and infant mental health and are employing a mental health consultant (MHC) to support NHVs in their work with clients (e.g., Boris et al., 2006).[17] Rather than work directly with clients, MHCs provide support to the NHVs to support their work with clients. MHCs can participate in case consultation meetings, as well as meet individually with the NS or NHVs. MHCs can provide feedback on symptomology, diagnosis, referral to mental health services, as well as provide support to the NHVs as they process issues related to their clients, giving the NHVs tools to use to cope with their caseloads and use appropriate self care (to reduce burnout).

One PBC-NFP staff stated that "the level of acuity of some families is difficult and overwhelming. So many of our clients have mental health issues." To help NHVs cope with these issues and to better support their clients with mental health issues, we believe that PBC-NFP should consider augmenting the program with an MHC and/or more intensive training on infant and maternal mental health.

PBC-NFP maintains a resource directory that identifies services/resources available to clients in PBC. NHVs try to keep up-to-date with community services through discussions at team meetings. However, we believe that more work could be done in this area. The following are recommendations that might improve the services referral process and subsequent reports regarding the frequency of referrals:

- Provide training to improve the consistency in tracking service referrals.
- Although PBC-NFP maintains a resource directory, it should be updated periodically with new resources.

[17] An NFP site in Washington employed a MHC to work directly with clients on mental health issues but concluded that the MHC was more effective when she supported NHVs rather than working directly with clients. This support to NHVs had a secondary impact of increasing retention of the NHVs.

- Continue to establish and maintain relationships with other community service agencies to facilitate clients' access to supportive services.

Incorporation of NFP Theories

Model Element 11: Nurse home visitors apply the theoretical framework that underpins the program, emphasizing Self-Efficacy, Human Ecology and Attachment theories, through current clinical methods.

> *"Follow the client's heart's desire. It's about what the client wants. Her seeing her own success is better than us saying good job"*

Direct observation of NHVs in the field would have provided more accurate data on the NHVs ability to adhere to Model Element 11. So although NHVs might draw from the NFP theories (subconsciously), the current data rely on a NHV's ability to articulate the theories and describe how they use them. As such, several NHVs had difficulty operationalizing the theories, but we expect that their practice incorporates them based on their discussion of clients and services. Other NHVs described the theories and provided examples of how they incorporate them into their work. NHVs indicate that they try to follow the guidelines and have an understanding of the theories operating in the background. However, in the absence of observational data, we recommend:

- Conduct booster training on NFP's theoretical framework (including Self-Efficacy, Human Ecology, and Attachment theories).

Client Attrition

Implementation Activity: Program successfully retains participants in program through child's second birthday.

> *"Either they click with you or not. It's the relationship that matters. You have to try not to pass judgment on them because if you do, it's done."*

Korfmacher, O'Brien, Hiatt, and Olds (1999) report that the rate of participant attrition is approximately 10–15 percent higher in replication sites than in original study trials (Korfmacher, O'Brien, Hiatt, & Olds, 1999). In a review of evaluations of several large national models of home visitation programs conducted by Gomby et al. (1999), 20–67 percent of families had dropped out of their home visitation programs before services were scheduled to end. In a review of a broader range of programs, Guterman (2001) concluded that 8–51 percent of families drop out within 12 months of enrollment, with a median dropout rate of 15 percent. In addition, enrolled families receive on average only half of the scheduled number of home visits regardless of the intended frequency of these visits.

Status of Enrolled Clients

Table 5.15 displays the progression of participants through the program, beginning with all clients who entered, left, remain active, or completed each phase. It is important to note that the number of clients identified as enrolled based on referral disposition codes (N = 265) is different than the number of clients who entered the pregnancy phase (N = 247). Per the NFP-NSO, to be included in the enrolled/entered pregnancy phase category, clients need to have completed one or more visits. As such, there were 18 clients identified as enrolled through the disposition code, but because they never had a completed visit, they are not included in the table below. All attrition findings are based on the 247 clients identified as enrolled in Table 5.15.

Table 5.15. Status of Enrolled Clients

Pregnancy Phase	
Enrolled/Entered Pregnancy Phase	247
Left During Pregnancy	52
Currently Active in Pregnancy Phase	33
Completed Pregnancy Phase	162

Infancy Phase	
Entered Infancy Phase	162
Left During Infancy Phase	53
Currently Active in Infancy Phase	93
Completed Infancy Phase	16

Toddler Phase	
Entered Toddler Phase	16
Left During Toddler	1
Currently Active in Toddler Phase	15
Completed Toddler Phase	0

Client Attrition from PBC-NFP

Table 5.16 provides an overview of the rate of attrition across each phase compared to the NFP Implementation Objectives. The attrition rate for PBC-NFP during the pregnancy and infancy phases is higher than the NFP Implementation Objectives.[18] However, the NFP-NSO suggests that attrition rates might exceed the target objectives for sites that are in their initial three-year program cycle (see footnote below).

[18] The NFP Manual (2007) states "although attrition rates may exceed the target objectives defined above when NHV are first learning the program model (i.e., initial three year program cycle), we believe that program staff need to carefully attempt to develop strategies to fully engage participants in the program through the child's second birthday. In examining current rates of attrition among our national sample of NFP participants, we note considerable variability among sites, with an overall average of about 65% attrition through the child's second birthday (15% pregnancy, 33% infancy, and 17% toddler). Thus, we have established an intermediate objective of reducing attrition nationally by 12-15% over the next five years."

Table 5.16. Rate of Client Attrition as of April 25, 2010

Phase of Attrition	PBC-NFP %	NFP Objective %
Pregnancy Phase	21	10
Infancy Phase	33	20
Toddler Phase	6	10
Cumulative to Date	**43**	---[19]

Table 5.17 provides details about the timing of attrition for all clients who left the program during each phase for PBC-NFP and the National NFP sites. The month of attrition during infancy was unknown for 12 PBC-NFP clients because the infant's date of birth was not recorded in FOCiS. We expect the distribution of the phase of attrition to shift as clients progress through the end of the program. Specifically, only 16 clients had begun the toddler phase as of April 25, 2010.

Table 5.17. Timing of Attrition for Clients who Left the Program

	PBC-NFP			National NFP	
	#	Percent	Cumulative %	Percent	Cumulative %
Pregnancy	52	49.1	49.1	26.1	26.1
Infancy					
Birth to 6 Months	28	26.4	75.5	28.9	55.0
6 to 12 Months	13	12.3	87.8	18.9	73.8
Month unknown	12	11.3	99.1	---	---
Toddler					
12 to 18 Months	1	0.9	100	13.3	87.1
18-24 Months	0	0	100	6.5	93.7
Phase Unknown	0	0	100	6.34	100

Client Attrition during the Pregnancy Phase

Twenty-one percent of the clients who entered PBC-NFP dropped out of the program during the pregnancy phase; 66% completed the pregnancy phase; and 13% were currently active in the pregnancy phase (see Tables 5.15 and 5.16).

The majority of clients who left during the pregnancy phase left between 17 and 28 weeks gestation. Of the 52 clients that dropped during pregnancy:

- 9 dropped when they were ≤ 16 weeks pregnant (7 were due to miscarriage);
- 28 dropped when they were ≤ 28 weeks pregnant (3 were due to miscarriage);
- 14 dropped at 29 or greater weeks (1 was due to miscarriage); and

[19] The NFP Implementation Objective for cumulative attrition through the child's second birthday is 40%. As of April 25, 2010, none of the PBC-NFP children had reached their second birthday. If the current attrition rate continues, cumulative attrition will be close to the NFP objective.

- 1 gestation age is unknown.

From a performance improvement perspective, it is important to note that 13 of the 53 clients (24.5%) who dropped out of PBC-NFP during the infancy phase actually completed their last visit during the pregnancy phase.[20] This suggests that the rate of attrition, or at least the timing of disengagement from the program, is higher during pregnancy than the numbers reflect. In other words, engagement strategies should be implemented during the pregnancy phase that will impact retention in both the pregnancy phase and the infancy phase.

Reasons for Client Attrition during the Pregnancy Phase

Table 5.18 displays the reasons for attrition during the pregnancy phase for PBC-NFP by year and National NFP sites in 2010. Not being able to locate the client is the most common reason for attrition during the pregnancy phase for PBC-NFP (35.3%) and the National NFP sites (28%). The percentage of clients who leave the program due to miscarriage/fetal death is higher in PBC-NFP (21.6%) than the National NFP sites (8.8%). The rate of miscarriage may be due to the higher risk status of PBC-NFP clients compared to the National NFP clients. Moving out of the service area is the third most common reason for leaving the PBC-NFP program during pregnancy (11.8%), whereas it is the second most common reason for the National NFP sites (11.8%). These differences should be interpreted with caution because of possible coding inconsistencies between PBC-NFP and the National NFP sites.

Client Attrition during the Infancy Phase

As seen in Table 5.15 and 5.16, the rate of client attrition was higher in infancy than pregnancy; 33% of clients who entered the infancy phase (i.e., delivered their baby) dropped out of the program during infancy; 10% completed the infancy phase; and 57% are still active during the infancy phase. NHVs report that many clients lose interest in PBC-NFP or have conflicting priorities and leave the program approximately four to six weeks after they have their baby. Although only three clients left the program around 6 weeks, if we apply the finding from the progress notes that cases often have four to eight weeks between their last completed visit and NHV completion of the change

[20] The length of time between when a client last completes a visit and when the case has been closed (i.e., client dropped from the program) can be up to two to three months.

Table 5.18. Reasons for Client Attrition in Pregnancy Phase

	PBC-NFP 2008		PBC-NFP 2009		PBC-NFP 2010		PBC-NFP All Years		National NFP 2010
Pregnancy Phase	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**%**
Miscarriage/Fetal Death	2	100	9	20	0	0	11	21.6	8.8
Moved Out of Service Area	0	0	6	13.3	0	0	6	11.8	16
Unable to Locate	0	0	16	35.6	2	50	18	35.3	28
Excessive Missed Appointments	0	0	4	8.9	0	0	4	7.8	11
Maternal Death	0	0	1	2.2	0	0	1	2	0.1
Unable to Serve	0	0	0	0	0	0	0	0	1.7
Transferred to Another NFP Program	0	0	0	0	0	0	0	0	2.8
No Visits for >180 Days	0	0	0	0	0	0	0	0	2.6
Declined Further Participation for One of the Following Reasons									
Returned to Work	0	0	1	2.2	0	0	1	2	3.1
Returned to School	0	0	0	0	0	0	0	0	1.3
Receiving Services from Another Program	0	0	0	0	0	0	0	0	1.9
Pressure from Family Members	0	0	0	0	0	0	0	0	1.7
Refused New Nurse	0	0	0	0	0	0	0	0	1.2
Dissatisfied with the Program	0	0	0	0	0	0	0	0	0.4
Client Received What She Needs from the Program	0	0	4	8.9	1	25	5	9.8	6.2
Client Incarcerated/Out of Home Placement	0	0	0	0	0	0	0	0	0.1
Other	0	0	4	8.9	1	25	5	9.8	12.4
Total in Pregnancy	**2**	**100**	**45**	**100**	**4**	**100**	**51**	**100**	**---**

Table 5.19. Reasons for Attrition in Infancy Phase

	PBC-NFP 2008		PBC-NFP 2009		PBC-NFP 2010 YTD		PBC-NFP All Years		National NFP 2010 YTD
Infancy Phase	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**%**
Infant Death	0	0	1	2.5	0	0	1	1.9	0.5
Moved Out of Service Area	0	0	9	22.5	2	15.4	11	20.8	17.4
Unable to Locate	0	0	19	47.5	7	53.8	26	49.1	31.6
Excessive Missed Appointments	0	0	2	5	1	7.7	3	5.7	14.6
Child No Longer in Custody	0	0	0	0	0	0	0	0	1.5
Maternal Death	0	0	0	0	0	0	0	0	0
Unable to Serve	0	0	0	0	0	0	0	0	1.6
Transferred to Another NFP Program	0	0	0	0	0	0	0	0	1.6
No Visits for >180 Days	0	0	0	0	0	0	0	0	0
Declined Further Participation for One of the Following Reasons									
Returned to Work	0	0	0	0	0	0	0	0	5.5
Returned to School	0	0	4	10	0	0	4	7.5	1.6
Receiving Services from Another Program	0	0	0	0	0	0	0	0	0.4
Pressure from Family Members	0	0	0	0	0	0	0	0	0.7
Refused New Nurse	0	0	0	0	0	0	0	0	4.1
Dissatisfied with the Program	0	0	0	0	0	0	0	0	0.5
Client Received What She Needs from the Program	0	0	4	10	3	23.1	7	13.2	6.9
Client Incarcerated/Out of Home Placement	0	0	0	0	0	0	0	0	0.3
Other	0	0	1	2.5	0	0	1	1.9	3.8
Total in Infancy	**0**	**0**	**40**	**100**	**13**	**100**	**53**	**100**	**100**

in status form (indicating that the case was closed), the data do support this. See Appendix B for an example of the process that leads up to a case being closed for a client that drops out of the program prematurely. Fourteen clients left the program between 10 and 14 weeks.

Reasons for Client Attrition during the Infancy Phase

Table 5.19 displays the reasons for attrition during the infancy phase for PBC-NFP by year and National NFP sites in 2010. Similar to the pregnancy phase, being unable to locate the client is the most common reason for attrition during the infancy phase for PBC-NFP (49.1%) and the National NFP sites (31.6%). Moving out of the service area is the second most common reason for attrition for both PBC-NFP (20.8%) and the National NFP sites (17.4%). Despite PBC-NFP staff's reports of clients dropping out during infancy because they return to work or school, only four clients were identified in FOCiS as leaving the program because they were returning to school, and no clients left the program to return to work. It is unclear why this discrepancy exists.

Client Attrition during Toddler Phase

Of the 16 clients who entered the toddler phase, only one client left the program. This client's last completed visit occurred during the infancy phase.

Gestational Age

PBC-NFP staff hypothesize that the gestational age at which clients are enrolled impacts retention. One theory is that if clients enroll too early in their pregnancies they have increased risk of miscarriage and of losing interest in the program. The other hypothesis is that if clients enroll close to 28 weeks, they do not have enough time to establish a strong relationship with the NHV before they deliver their infant and are likely to drop out. The data suggest similar rates of attrition: 40% of clients who enroll prior to 16 weeks gestation drop out of the program; 45% of clients enrolled between 17 and 28 weeks drop out of the program. Excluding clients who miscarried from the analyses, 34% enrolled prior to 16 weeks gestation dropped out, and the number remains the same for clients between 17 and 28 weeks gestation (45%). Gestational age at enrollment was unknown for three clients.

Table 5.20 displays the gestational age at enrollment for clients who left the program. The number of clients who dropped out of PBC-NFP who enrolled prior to 16 weeks (50%) is similar to those who enrolled between 17 and 28 weeks (47.2%). The average gestational age at enrollment for clients who dropped out of PBC-NFP was 16.4 weeks.

Table 5.20. Gestational Age at Enrollment for Clients who Dropped from PBC-NFP

Gestational Age at Enrollment	#	%
≤ 16 weeks	53	50
17 to 28 weeks	50	47.2
Unknown	3	2.8

These data suggest that at this time, gestational age at intake does not impact client attrition overall. However, the rate of miscarriage is higher for clients who are enrolled during the first trimester (35%) than the rate for those who enrolled prior to 16 weeks or overall across all gestation ages (21% for both). These data are consistent with the knowledge that the risk of miscarriage is highest during the first trimester. It is possible that the rate of miscarriage is higher for PBC-NFP clients because they enroll in the program earlier than the National NFP clients. However, the NFP-NSO reports do not provide data related to the gestational age at enrollment for the National NFP sites. As such, if a greater number of clients are enrolled after the first trimester, the overall rate of attrition during pregnancy might decrease.

Variation in Client Attrition by NHV

Table 5.21 displays the total number of clients and the reasons why clients have left the program by NHV ID. NHV C had the most clients leave the program (21) and NHV F had the fewest leave the program (12). The most common reason for leaving the program for three of the NHVs was being unable to locate the client. NHV D has the largest number of clients who have declined further participation. Further analyses should explore whether variation across NHVs is due to characteristics of clients, the NHV, or other contextual issues.

Table 5.21. Reasons for Attrition by NHV ID

	NHV ID											
	A		B		C		D		E		F	
Reason for Attrition	#	%	#	%	#	%	#	%	#	%	#	%
Declined further participation	5	27.8	2	11.1	3	14.3	7	38.9	3	21.4	2	16.7
Miscarried/fetal death/infant death	3	16.7	0	0	4	19.1	2	11.1	2	14.3	1	8.33
Moved out of service area	1	5.6	2	11.1	5	23.8	2	11.1	3	21.4	4	33.3
Unable to locate	9	33.3	14	77.8	8	38.1	6	33.3	3	21.4	4	33.3
Excessive missed appointments/attempted visits	3	16.7	0	0	1	4.8	0	0	3	21.4	1	8.33
Maternal death	0	0	0	0	0	0	1	5.6	0	0	0	0
Total	**18**	**100**	**18**	**100**	**21**	**100**	**18**	**100**	**14**	**100**	**12**	**100**

Factors Associated with Client Attrition

Preliminary analyses of the data indicate some potential associations between attrition and variables such as involvement level of the client, involvement level of the client's mother, client conflict with the material, length of visits, and percent time spent on personal health. Additional analyses would have to be undertaken to determine the validity, strength, and direction of these relationships.

In addition, PBC-NFP staff identified a variety of client-level factors that they perceive to impact engagement in the program, many of which are supported by the literature about home visitation programs:

- Client acceptance of program content. Clients are more likely to continue to be engaged in the program if they are accepting of the program content. This finding is supported by preliminary analyses between client characteristics and attrition.
- Goodness of fit. If the client does not perceive the program as beneficial to them, they are less likely to be engaged.
- Client transience. Client transience due to unstable housing conditions is common with PBC-NFP clients. NHVs indicate that clients frequently move without providing the NHV their new address. When clients move frequently, it is difficult to develop a support network because they are not in any one given place for long enough to develop relationships.
- Level of support from family members or friends. If a client has a strong support system, she is less likely to participate in the program because her needs are already being met by her friends and family. If a client's family members or friends are not supportive of the client's involvement in the program, or the information provided goes against the family member's beliefs or traditions, she is less likely to remain engaged (Wagner et al., 2000). For example, one client almost dropped out because her father thought the NHV worked for Child Protective Services and did not want her to continue to participate.
- Employment or school attendance. NHVs indicate that many clients are unable to maintain regular involvement in PBC-NFP because they return to work or school, or because their existing work or school schedule is too demanding to continue participation. However, the data suggest that very few clients are identified as leaving the program because they returned to school (N = 4) or work (N = 1).
- Intensity of needs/challenges. Clients who have complex needs, severe mental health issues, or are constantly in crisis have challenges engaging in the program and meeting the visit requirements.
- Young clients. Young clients, especially adolescent clients, seem to respond better to PBC-NFP than the older clients.

Recommendations: Client Attrition

The following recommendations are informed by NHV's feedback about strategies they perceive as being effective at retaining clients, suggestions identified by other NFP sites, and JBA's

knowledge regarding home visitation programs. The NHV's approach to providing services and use of strategies to maintain communication with the clients has the greatest potential to improve retention. Key strategies include:

- Establish a positive relationship with client. A positive relationship with the client is the cornerstone of NFP. The most important factor for retaining clients is a positive relationship or emotional connection between the client and the NHV. One NHV stated that "*if you don't have a good relationship with the client, the curriculum doesn't matter.*"
- Interact with client in a non-judgmental manner. One NHV stated that she tries to "*keep her poker face on and try not to expect perfection.*"
- Avoid being directive. Instead, NHVs should instead use motivational techniques to engage the client. *"They don't like being told what to do."*
- Follow the client's agenda. One NHV reported that she does not take her PBC-NFP materials out of her bag until she has listened to the client tell her about what is currently going on in her life.
- Be flexible. NHVs should be flexible regarding the frequency, time of day, location, and content of visits. PBC-NFP and other NFP sites have determined that if clients need to decrease the frequency of visits or take a break from services for a short period, they are more likely to continue to participate in the program. As mentioned in the section about the percent of expected visits section, if clients are pushed to maintain the expected frequency for visits when they cannot or do not want to, they are more likely to drop out. The Nursing Consultant agrees that it is more important to retain a client than to meet the visit frequency objectives. To maintain the involvement of some clients, a combination of phone calls and visits might be necessary.

  It is also important to be flexible about the content of visits. Other NFP sites have suggested that if a NHV feels like a client may be losing interest in the program, the NHV should consider putting aside the facilitators and use the PIPE activities instead so the client realizes why they are participating in PBC-NFP (i.e., the well-being and development of their baby).
- Continue to use technology. Sending text messages has proved to be a very effective communication method with PBC-NFP clients, especially the adolescent clients. Other NFP sites have set up Facebook pages to try to maintain contact with clients
- Be clear about the expectations of the program. During the promotional visit, it is important to tell the client that the NHV *can* be available to help the client with her needs and desires until the baby is two years old rather than telling the client she has to participate through the child's second birthday or not providing an end date for participation. It is critical to identify what the client wants to learn through the program and communicate that the NHV can teach her those things.
- Interject child development information during the pregnancy phase. NHVs should provide child development information during the pregnancy phase because it can help ease the transition to being a mother (e.g., cover information about infant cues).

- Provide clients materials with PBC-NFP contact information on it. In addition to items such as pens, mugs, picture frames, etc., consider developing items with PBC-NFP contact information on it that clients are most likely to take with them when they move (e.g., electric plug covers) so they remember to provide the NHV with their new contact information.
- Take photographs of the clients. Most clients love receiving photographs of their babies. NHVs should take a lot of photographs of the clients (and their babies) and give them to the client. Consider engaging in scrapbooking activities with clients. Clients, especially adolescent clients, enjoy this activity. In addition, the scrapbooking activity provides a good opportunity to teach the client information about child development.

Future analyses should examine whether there is a common the number of visits completed prior to attrition (i.e., if clients tend to leave the program after a certain number of visits), in addition to examining the phase of attrition. In addition, further exploration of the characteristics associated with attrition should be conducted. If possible, analyses should include scores from the Risk Screen to understand the impact of the overall risk of clients on implementation outcomes.

VI. PBC-NFP Staff Development & Support

The implementation literature suggests that factors related to staff development and support impact the level of fidelity. This chapter provides an overview of PBC-NFP staff characteristics and the processes in place to support implementation.

Model Element 8: Nurse Home Visitor (NHV) and Nursing Supervisors (NS) registered nurse with minimum BA/BS in nursing

> "*The staff excel in everything. It's a group of people that really enjoy the program. They all volunteered to be part of the program. They are a cohesive group and know that they are in it together.*"

The NS received a Bachelor of Science (BS) in urban affairs and an Associate Degree in nursing. Not all of the NHVs have the minimum BA/BS in nursing. The nurses have the following degrees related to nursing:

- Diploma nursing degree
- Associates degree in nursing (2)
- BA/BS in nursing (2)
- Masters degree in nursing management
- Masters degree in nursing

The NS and all NHVs had experience conducting home visits prior to PBC-NFP through the HB Nurse Home Visitation Program.[21] Thus, when they began implementing PBC-NFP, they were able to build on their existing knowledge related to public health nursing intervention strategies and the target population, as well as connections to other agencies and resources in the field. All PBC-NFP self-selected into PBC-NFP, and their belief and commitment to implementing PBC-NFP with quality is evident. The passion and dedication of staff, as seen in PBC-NFP, is critical to implementation fidelity. The PBC-NFP staff are cognizant of NFP Model Elements and Implementation Objectives, but at the same time are committed first and foremost to improving the well-being of their clients. The NFP-NSO Nursing Consultant indicated that the NFP-NSO prefers for NHVs to have their bachelor's degree, but that they do make exceptions, especially if the NHV is performing well. Educational background does not appear to impact the level of implementation for PBC-NFP.

[21] The NS and all NHVs had worked in the PBC-HD prior to implementing PBC-NFP (5 months – 13 years prior to PBC-NFP).

Model Element 9: Nurse home visitors and nursing supervisors complete core educational sessions required by NFP National Service Office and deliver the intervention with fidelity to the NFP Model.

Adequate pre-service and in-service training and technical assistance are critical to high quality implementation (Fixsen et al., 2005). All PBC-NFP staff completed the core education sessions required by NFP-NSO.[22] The NFP-NSO training was conducted at the NFP-NSO Headquarters in Denver, Colorado. Examples of topics covered include recruitment, enrollment, scheduling, reflective supervision, motivational interviewing, reflective practice, and data collection.

In order to expect a high level of implementation, staff must have the adequate knowledge and skills to implement the program. PBC-NFP staff had mixed reports as to whether they felt sufficiently trained to implement NFP after they completed the NFP-NSO training. One of the biggest challenges was that PBC-NFP is the only NFP site in Florida, and this was the first cohort of NHVs. As such, PBC-NFP staff did not have other NS or NHVs to consult with. NHVs stated that it would have been very helpful to have been able to observe another NHV conduct a home visit- either in-person or on video. Even though the NHVs had previous experience with home visitation, NFP is very different than the programs they had implemented.

PBC-NFP staff also participate in training workshops provided by CSC that directly relate to and enhance their work with PBC-NFP. One PBC-NFP staff member stated "*I think we excel because we have had all of those CSC trainings. We are very well equipped.*" Workshops cover topics such as child maltreatment, cultural diversity, SIDS, maternal mental health, Touch Points, client retention trainings, solution-focused clinical methods, reflective practice, and HB assessment tools. One NHV indicated that mandatory participation in some of the workshops is a positive thing, because it forces NHVs to attend workshops that they otherwise would not have but can benefit from. PBC-NFP staff do not have to pay for the required training workshops, but optional workshops are provided for a minimal charge that PBC-NFP staff must pay for out-of-pocket. PBC-NFP staff report that workshops are often full. CSC has made efforts to advertise workshops several months before they are conducted to allow staff to schedule clients around the workshops. NHVs report that it can still be challenging to find time to attend workshops because they have full schedules.

The following recommendations are provided to enhance training for NHVs:

- Provide additional (or refresher) training on:
  - Infant and maternal mental health;

- Community resources and skills to support low-functioning cognitive clients;
- Alternatives to attending school to complete education (e.g., online courses);
- Eligibility requirements for government assistance (e.g., Medicaid, WIC, etc.);
- Implementing the new NFP Guidelines and PIPE. Specifically, guidance about preparing for a visit in an efficient manner;
- Intimate partner violence;
- Human trafficking;
- Recognizing and responding to suspected child maltreatment;[23] and
- Updates on infant safety (e.g., car seat use, SIDS).

➢ Send the CSC contract manager to NFP-NSO training if he/she is going to be involved in planning and making programmatic decisions. PBC-NFP staff, as well as the former contract manager, believe that it is critical for the individual in this role to understand NFP beyond the numeric implementation objectives.

Model Element 12: A full time Nurse Home Visitor carries a caseload of no more than 25 active clients.

"*More clients equals more driving and more charting which equals less time to spend with clients".*

The current report focuses on the first cohort of PBC-NFP staff, consisting of six NHVs and one NS. Once the program reached capacity on June 30, 2009, each NHV has maintained a maximum caseload of 25 active clients. This means that the maximum number of clients PBC-NFP can serve is 150 at any one time. When cases are closed, a new family is enrolled.

When asked to reflect on the impact of the size of their caseload, NHVs indicated that a full caseload is hard to manage given the Department of Health requirements regarding charting (i.e., "double charting") discussed previously. NHVs indicated that if all of their cases have entered the infancy or toddler phases, their caseload is really like 50 clients. In addition, because PBC is a large county, NHVs spend a lot of time driving to clients' homes ("windshield time") even when their clients live within the same zip code. The impact of the caseload is also dependent on the types of clients on a NHV's caseload- if all are active and meeting the visit frequency guidelines, it is hard to meet the guidelines for visits. If some clients are not available for the expected frequency of visits, the full caseload is easier to manage.[24] NHVs report that an ideal caseload size would be about 20 cases.

[23] We also recommend developing a relationship with staff from the Department of Children and Families (DCF) so NHVs can discuss possible cases of child maltreatment and determine the appropriate response.

[24] Other NFP sites consider the acuity of a NHVs caseload. If the NHV has several cases with serious issues (e.g., Lupus, severe child maltreatment), the NS will keep their caseload lower to be able to more effectively meet the needs of these clients and prevent NHV burnout.

Model Element 13: A full-time Nursing Supervisor provides supervision to no more than eight individual Nurse Home Visitors.

Both the "original" team and the "expansion" team are structured so that the full-time NS provides supervision to five NHVs.

Model Element 14: Nursing Supervisors provide Nurse Home Visitors clinical supervision with reflection, demonstrate integration of the theories, and facilitate professional development essential to the Nurse Home Visitor role through specific supervisory activities including 1:1 clinical supervision, case conferences, team meetings and field supervision.

> *"Reflective supervision is REALLY helpful. We really need a chance to unload. We sometimes get too emotionally involved or caught up. (The NS) is removed from the case and can come up with good ideas, resources, and things to say and do with the client."*

The supervision provided to NHVs was identified as a strength of the program. Leadership is identified as key drivers of implementation (Fixsen et al., 2005). For example, the most significant predictor of implementation and retention in an Oregon Healthy Families program was the number of hours of supervision provided per month to home visitors (McGuigan et al, 2003). Through JBA's data collection efforts, the PBC-NFP NS's leadership, commitment to supporting the NHVs, and her dedication to high quality of implementation of NFP was evident. Her ability to bring a diverse group of NHVs together to function as a cohesive unit was specifically noted. A significant accomplishment for PBC-NFP is that there has been no turnover in the NHV positions, which is unusual for home visitation programs. The support provided by the NS, as well as the peer support and collaboration likely contributes to this success.

The NFP-NSO requires that case conference meetings and team meetings are conducted at least twice a month. In the beginning of the program, PBC-NFP alternated these meetings so each occurred every other week. However, to minimize the number of days NHVs were required to come into the office (to allow them greater time to meet with clients in the field), case conferences and team meetings were combined into one, longer meeting (approximately 2 hours) that is held every other week.

During the team meeting portion of the combined meetings, the team discusses administrative issues related to the NFP-NSO, PBC-HD, or HB. During the case conference portion of the combined meetings, a NHV presents information (including a handout) about a client they are working with and then the NHVs and NS discuss the case. The NHV provides details about the case, such as when the client enrolled, demographic characteristics of the client, support from family and friends, how many

visits have been completed, the content they have covered in each of the domains, the nurse-client relationship, challenges they face with the case (e.g., resistant to services), and vulnerabilities and strengths of the client. The staff ask each other a lot of questions and solicit input from the others, share information about new resources in the community, and provide general support to each other. For example, in the meeting JBA observed, one of the NHVs mentioned that a client was participating in "online school." The other NHVs asked questions about how it worked, who teaches the classes, whether the client needed to attend school at a physical location, etc. NHVs who had had clients participate in the online courses shared their experiences with how the clients had responded to the online school.

Through the staff's discussions about their cases, JBA observed several important clinical behaviors such as:

- NHVs observe and respond appropriately to clients' cues.
- NHVs try to improve clients self esteem and support their strengths.
- NHVs are aware of the impact of the client's support system on the client's participation in the program.
- NHVs share lessons that they have learned through interacting with their own clients that other NHVs might also benefit from.
- NHVs incorporate self efficacy theory into their practice. Rather than doing things for clients, they teach the client how to do things themselves and encourage them to follow through. One NHV described an interaction with a client in which she was teaching the client to feed the baby cereal with a spoon instead of putting the cereal in a bottle. She stated that she "*wanted her to do it, but I was practically sitting on my hands not to help her. He ate it and was happy, and phew, now she will do it again because it worked.*"

The NHVs report that they greatly benefit from these meetings because they value feedback from their peers. In addition, they receive affirmation that other NHVs are dealing with the same issues, even if they have not figured out the best way to resolve them yet. *"I learn so much from them because I'm operating on my own daily. They make you feel that you are not on your own. We learn from each other both how to deal with emotions related to services and also about resources in the community."* NHVs also communicate frequently outside of formal case consultation/team meetings. NHVs call each other to locate a service or ask other clinical questions (e.g. what a client should do who has a baby with an ear infection and has airplane travel scheduled).

The NS is supposed to observe each NHV in the field at least once every quarter. The majority of NHVs reported that observation occurs quarterly, but a couple believed it might occur less

frequently than that. The NS observes NHV performance to determine the level of adherence to the NFP Visit Guidelines and Model Elements and examine the interaction between the NHV and client.

In alignment with the NFP-NSO requirements, clinical supervision is provided one-on-one to each NHV on a weekly basis for one hour. In addition, the NS maintains an open door policy such that NHVs can speak with her informally as often as they want. During meetings and supervisory sessions the NS draws from the NFP theories. The NHV's caseload is discussed, specifically the cases in which there are challenges that the NHV wants to get feedback on. For example, discussion might focus on a NHVs challenges with engaging a client. They discuss the different client-and NHV-related factors that might be influencing that. Some discussion is purely on the "nuts and bolts" such as filling out a form.

The NS and NHVs report that supervision is "reflective supervision" through which NHVs can talk about how they feel about certain issues (related to their caseload or personal issues that impact their job performance) and how to improve the process of working with clients. Using reflective supervision, the NS is not directive with respect to problem solving, but instead acts as a sounding board so NHVs arrive at a conclusion on their own. NHVs describe the NS as very supportive and "solution-focused."

Two recommendations are made with respect to the supervision provided to the NHVs:

- The NS should provide more constructive feedback about her observations of NHVs in the field.
- Reflective supervision should incorporate more discussion regarding NHVs feelings and own practice and less on updating the NS about the status of cases.

VII. Program Monitoring & Use of Data

The ongoing support and consultation provided to PBC-NFP by the NFP-NSO is a critical component to monitoring and improving implementation (Fixsen et al., 2005). The NFP-NSO distributes a monthly newsletter which addresses different program elements and highlights current National NFP activities or sites. PBC-NFP participates in a monthly call with NFP-NSO staff. During these calls, issues related to data collection or analysis, updates about NFP across the country and possible expansion opportunities within Florida, and other programmatic issues are discussed (e.g., opportunity to ask questions or clarify issues). Programmatic technical assistance is typically provided to the NS by a NFP-NSO Nursing Consultant. The Nursing Consultant assists sites during their startup phase (e.g., identifying referrals) and ongoing in a way that ensures fidelity to NFP. The Nursing Consultant discusses topics such as workforce issues, policies and procedures, and clinical decision-making. During annual site visits, she attends a home visit with an NHV, role plays situations if necessary, and observes case conferences.

Model Element 15 = Nurse Home Visitor and Nursing Supervisors collect data as specified by the NFP National Service Office and use NFP Reports to guide their practice, assess and guide program implementation, inform clinical supervision, enhance program quality, and demonstrate program fidelity.

NHVs and the NS collect data as specified by the NFP-NSO. The NFP-NSO uses the data to generate reports on a quarterly basis that compare local NFP data with data submitted by other NFP sites across the country (and state if applicable). The NS uses the reports to assess and guide program implementation, inform clinical supervision, and enhance program quality. PBC-NFP staff indicate that they use the reports to examine trends, identify areas of success and those in need of improvement, as well as to identify where there might be issues with data transfer. The inconsistencies in the data have precluded using the reports to their fullest extent. For example, the data summarizing the referrals into PBC-NFP include the infant referrals. As mentioned previously, these data skew the findings associated with the disposition of the referrals and the age of the referrals.

Although the quarterly reports are distributed to all NHVs, they vary as to the extent that they are reviewed. Some NHVs enjoy reading the reports and discussing the contents, whereas other NHVs do not read the reports and instead rely on the NS to discuss the highlights of the reports during team meetings. Several nurses indicate that they do not have time or interest in reading the reports and that their priority is on providing services to the client. Respondents suggest that they would like to be able

to examine the data at the individual nurse level, but have not been able to run these reports through FOCiS.

VIII. Agency

Model Element 16: A Nurse-Family Partnership Implementing Agency is located in and operated by an organization known in the community for being a successful provider of prevention services to low-income families.

"*The PBC-HD is considered a champion of prevention. It is unique in that they provide direct services and not just monitoring. Because of that, they are more connected and they understand the community better. They have their finger on the pulse of the community.*"

The PBC-HD is well-known in the community, particularly for their expertise in epidemiology, disease prevention, natural disaster preparedness and response (e.g., anthrax, hurricanes), and environmental health issues. The PBC-HD has a positive reputation for serving high-risk populations. Many low-income residents access prenatal care, family planning services, immunizations, and other health care at the PBC-HD because they receive treatment regardless of their insurance or U.S. residency status. Because the NHVs are from the PBC-HD, they have a level of credibility and trustworthiness with the clients. In fact, one NHV stated that she always wears her stethoscope to visits. When she arrives, people in the area might be violent toward each other, but they "step aside to let the nurse in". However, some clients have negative perceptions of the PBC-HD because they experience long waits for health care or do not receive the care they expected to receive. Although these perceptions are not related to PBC-NFP, NHVs sometimes explain that PBC-NFP is part of HB and do not mention that PBC-NFP is operated by the PBC-HD.

PBC-NFP is operated by the Division of Maternal and Child Health (MCH) in the PBC Health Department. The MCH Division runs three similar home visitation programs which target different populations: PBC-NFP, Healthy Beginnings Nurse Home Visitation Program (HB-HV), and the WHIN.

The implementation literature suggests that evidence-based practices and programs will not be implemented broadly with far-reaching impacts without the support of political, financial, and human service systems at the State and local levels (Schoenwald, 1997). Specifically, strong administrative support for the program and a positive working environment are critical for implementing evidence-based programs with fidelity (e.g., Fixsen et al., 2005). Although internal administrators appear to be supportive of the program, PBC-NFP experienced some challenges because of bureaucratic restrictions made by the Department of Health. At the time of interviews with PBC-NFP staff, the Department of Health was trying to balance the budget and had initiated a hiring freeze (i.e., creation of new positions). Although funding for PBC-NFP came directly from CSC (and not from the Department of Health),

the freeze prohibited the hiring of six additional NHVs to expand the number of families served by 150. Instead, NHVs from other PBC-HD programs transferred into several of the open positions. The Department of Health places limits on, and has to approve spending on things like supplies, conference fees, and travel. The Department of Health also prohibits staff from telecommuting from home and places limitations on the hours nurses can work which has significantly impacted the NHVs ability to meet some of the implementation objectives.

Model Element 17: A Nurse-Family Partnership Implementing Agency convenes a long-term Community Advisory Board that meets at least quarterly to promote a community support system to the program and to promote program quality and sustainability.

CSC convenes a Steering Committee on a regular basis. Until October 2009, the Steering Committee met quarterly as required by NFP. Meetings were held soon after the release of the quarterly NFP-NSO reports so that the members could discuss the data. Following feedback from Steering Committee members that the meetings would be more productive if they were held less frequently, the meetings moved to a semi-annual schedule. In addition, CSC schedules the Steering Committee meetings so that they occur approximately one month after the release of the NFP-NSO quarterly reports, allowing members sufficient time to review them before the meeting.

The Steering Committee is made up of CSC program and evaluation staff, external PBC-NFP funders (Palm Health Foundation and Quantum Foundation), PBC-NFP program staff (PBC Health Department's Director of Maternal and Child Health and the two PBC-NFP supervisors), NFP-NSO representatives (nurse consultants), and often a member from the PBC school board. Steering Committee members can participate in meetings in-person or via teleconference; most non-CSC members participate via teleconference.

Although the intended function of an NFP implementing agency's advisory board is to provide a community support system for the program and to promote program quality and sustainability, NFP sites use their Advisory Boards in different ways. For example, some NFP sites use their Advisory Board meetings as an opportunity to disseminate information about their program in order to gain or maintain community buy-in. Members of Advisory Boards are often community partners who either directly refer families to the program or help raise awareness about the program within other agencies in order to promote referrals to the program. Due to the entry agency structure of HB, educating community agencies about the program is less of an issue.

Steering Committee members play a role in helping to educate the community about PBC-NFP and gain community buy-in to the program. PBC-NFP Steering Committee members indicate that the Steering Committee's primary role is to oversee/monitor implementation of NFP. Programmatic updates are intended to maintain buy-in and interest of funders in sustaining their financial support to the program. If additional funding opportunities are identified or are being pursued, they are discussed at the meeting. For example, CSC provided information about a proposal for a Health Resources and Services Administration (HRSA) grant and has discussed the possibility of billing Medicaid for NFP services.

The agenda for Steering Committee meetings is driven to a large extent by the data presented in the NFP-NSO quarterly reports. During the meeting, CSC provides an overview of the data presented in the NFP-NSO quarterly reports (e.g., client characteristics, visit statistics) and participants ask questions and discuss trends and implications of the data. Areas in which PBC-NFP exceeds the national objective or rate are highlighted, as well as areas that PBC-NFP is not meeting the national objective or is lower than the national rate. Other implementation successes and challenges are discussed. For example, the hiring freeze at the PBC-HD, challenges with enrolling clients to "full capacity", and strategies to increase referrals have been discussed.

The following are recommendations on strategies to improve the impact of the Steering Committee:

- In addition to providing an update about PBC-NFP implementation and outcomes, solicit input from Steering Committee members about potential activities or approaches that can be put into practice to increase the overall quality of implementation. Topics should be identified by any Steering Committee member, but specifically the PBC-NFP supervisors, and can center on challenges with adhering to the NFP Model Elements, NFP Implementation Objectives, or general programmatic issues. PBC-NFP should take advantage of having access to stakeholders with different perspectives on how to enhance implementation. It will be important to create an environment that does not feel punitive if the program is not meeting benchmarks, but instead uses the meeting as a vehicle for improving the program.

- Increase the diversity of topics covered during future Steering Committee meetings. Examples of such topics include:
    - Overview of the HB system. Provide general information about HB, including how well HB is meeting its objectives and how PBC-NFP is working as a component of HB.
    - HB Entry Agency. Discuss the rationale for switching to an entry agency structure and its success in identifying and enrolling PBC residents into HB services.
    - Present data for PBC-NFP clients relative to PBC overall. Steering Committee members like being able to compare data for PBC-NFP to different rates nationally (e.g., birth outcomes), but recommend presenting more local data to see how NFP

clients are similar or different with respect to client characteristics and outcomes to PBC residents overall.

- Although the frequency of Steering Committee meetings is no longer meeting the NFP objective, the quality of meetings is likely more important than the quantity.

Model Element 18: Adequate support and structure shall be in place to support Nurse Home Visitors and Nursing Supervisors to implement the program and to assure that data are accurately entered into the database in a timely manner.

PBC-NFP employs a Data Control Processing Specialist to support the NS and NHV in implementing NFP. Although he was initially hired to assist with entering data into FOCiS, his role has evolved over time to meet the needs of the program. The Data Specialist provides general programmatic support for the program, including assigning nurses to new clients based on zip codes, managing supplies and materials for the program, and entering some data. In addition, the Data Specialist developed and manages two databases (Excel and Access) with client-level data. Monthly reports are generated from these databases to monitor program implementation (e.g., referrals received by PBC-NFP, attrition from program, etc.) because the reports generated through FOCiS were not always accurate.

Although the NFP-NSO recommends that an individual(s) other than the NHV enter data, NHVs in PBC enter the majority of their own data. Most NHVs report that they prefer to enter the data themselves because of concerns about accuracy and timeliness. If NHVs are behind in entering data or do not have time to enter the data, and the Data Specialist is available, he will enter the data. When NHVs are only in the office once a week, some believe it is more efficient to enter the data themselves (at the office or library), while others need assistance from the Data Specialist.

Most NFP sites collect data and enter the data directly into CIS. In PBC, staff enter data into the FOCiS data system maintained by CSC. Data extractions are uploaded monthly from FOCiS to CIS. The NFP-NSO provide feedback regarding any data entry issues (e.g., outliers) which are corrected by CSC and PBC-NFP.

PBC-NFP staff indicated that their ability to enter data in a timely manner is impacted by the size and engagement level of the NHV's caseload. If all clients are regularly participating in services, it is difficult for the NHV to find time to enter data. Currently, NHVs are prohibited from entering data at home, and must go to the office or library to enter the data. NHVs try to avoid entering data at the

library because they do not like transporting the data to and from the library, and have to pack up the data and log-off the computer if they receive a call or need to use a restroom.

PBC-NFP staff state that one of the biggest challenges with entering data is that FOCiS is very slow (e.g., it can take several minutes for a CIS form to load). In addition, FOCiS does not operate correctly sometimes (e.g., the system shuts down so data need to be re-entered, data do not appear in the system after they are saved, forms do not load properly), making the data entry process time consuming and frustrating.

PBC-NFP staff report that the requirements of multiple agencies (i.e., CSC, Health Department, and NFP-NSO) takes away from time they could be spending with clients and can be burdensome. Between the agencies, five tabs/forms must be completed after each home visit is completed (not including NFP assessment forms): Client Activity Tab (e.g., date, location, and length of visit); Progress Notes; CIS Home Visit Encounter Form; Home Visit Form; and the corresponding Visit Checklist (phase-specific). The agencies also differ in who they consider the client, which results in double-charting. For example, the mother is still considered to be the client after the birth of the baby for NFP, so documentation needs to be completed for her; the baby is considered the client for the PBC-HD, so documentation also needs to be completed for him/her. There is a concern that the documentation requirements may lead to staff burnout.

The following are recommendations for improving the accuracy and timeliness of data entry:

- Replace FOCiS. CSC is aware of the issues pertaining to FOCiS and is currently developing a new data system. The new data system should incorporate features that will increase the functionality of the data/usability: validation rules; linking of families in a logical manner; auto-populate fields with data from other forms; and improve the ease of running reports. It will be critical for CSC to communicate with NFP-NSO as they are both revising their data systems so revisions are informed by each other's revisions.
- Permit NHVs to enter (encrypted) data from home. All NHVs are in possession of a PBC laptop which can be used for entry.
- Employ additional staff who are dedicated to data entry so the data can be accurately entered in a timely manner.
- Eliminate redundancies in data collection and entry (i.e., pull data from other forms so staff do not need to re-enter data).

Conclusions

Implementation and operational fidelity were examined in six areas which included: referrals and enrollment, client characteristics, intervention context, staff development and support, program

monitoring and use of data, and agency support. PBC-NFP successfully implemented the core components of the NFP model with a high level of fidelity. An overview of adherence is presented in Appendix A. Green bullets indicate criteria for which PBC-NFP meets or exceeds the NFP objectives. Yellow bullets indicate criteria for which PBC-NFP performs slightly below the objective. Red bullets indicate areas of concern. PBC-NFP met or exceeded objectives for 32 of the 42 NFP Model Elements and Implementation Objectives (81%). The levels of implementation for three additional criteria were only slightly below the NFP target objectives.

Referrals and Enrollment: PBC-NFP enrolled a substantially higher percentage of eligible referrals (91.7%) than the National NFP sites (66.2%) and, therefore, exceeded the National NFP objective to enroll 75% of eligible referrals. Moreover, compared to the National NFP sites, a larger percentage of referrals made to PBC-NFP met the eligibility criteria and fewer declined enrollment. Although PBC-NFP initially experienced challenges generating referrals, the zip codes targeted for recruitment efforts were expanded and full capacity was reached within one year. The entry agency structure was a key factor in PBC-NFP's referral and enrollment success, but also contributed to a few challenges. Recommendations focus on improving management of referral data (e.g., entering referral disposition codes in FOCiS) and increasing the efficiency and effectiveness of the referral process by the entry agency (e.g., identifying more pregnant adolescents).

Client Characteristics: PBC-NFP met three of the five criteria related to the characteristics of clients. Approximately 54% of clients were enrolled at 16 weeks gestation or less, which is lower than the NFP objective of 60%. The gestation age at which at-risk pregnant women in Palm Beach County typically disclose their pregnancy or seek prenatal care has impacted PBC-NFP's ability to enroll women early in their pregnancy. In addition, three clients were less than 28 weeks pregnant when they enrolled; however, after they enrolled in PBC-NFP their due dates changed such that their modified due dates suggested that they were greater than 28 weeks at enrollment. Recommendations focus on implementing strategies to encourage pregnant clients to disclose their pregnancies or seek prenatal care earlier in their pregnancies (e.g., continue broadcasting "silent" commercials that encourage women to seek prenatal care).

Intervention Context: The implementation of 19 of the 23 criteria associated with the intervention context met or exceeded the NFP objectives. Although the data may shift as more clients move through the infancy phase, the data suggest that the percentage of expected visits completed during the infancy phase for PBC-NFP clients is 49%, which is lower than the NFP objective of 65%. PBC-NFP is, however, more effective at completing the expected number of visits during infancy than the

National NFP sites of 39%. The finding that clients complete fewer than the expected number of visits is common to home visitation programs. For example, a study of Hawaii Healthy Start found that only half of the clients received the core home visitation services as intended (Duggan et al., 2000). Following the delivery of their infants, many clients have less time available (e.g., they return to work or school) so they are unable to meet the expected frequency of visits.

Client attrition is a common challenge across programs for high-risk families. Similar to National NFP sites, client attrition has been higher than the objective established for NFP. Specifically, client attrition during the pregnancy phase in PBC-NFP is 21%, which is higher than the NFP objective of 10%. Many of the clients left during the pregnancy phase because they had a miscarriage or moved out of Palm Beach County. Client attrition during the infancy phase in PBC-NFP is 33%, which is higher than the NFP objective of 20%. The main reasons client's cases were closed during the infancy phase is that the Nurse Home Visitors (NHV) were unable to locate the clients. Client attrition during the toddler phase is low, but in the current dataset, only 16 clients had completed visits during the toddler phase. Recommendations for improving the number of expected visits that are completed, as well as improving client retention focused on flexibility for the NHVs (e.g., allowing "flex" time) and for the clients (e.g., schedule visits according to clients' preferences), as well as streamlining the documentation process for NHVs (e.g., reduce redundancies across systems). The employment of a Mental Health Consultant was also recommended to increase support to the NHVs around infant and maternal health issues.

Staff Development and Support: Eight of the nine criteria related to staff development and support were met. The exception was the employment of registered nurses with a minimum of a bachelor's degree in nursing; not all PBC-NFP nurse home visitors (NHV) have a bachelor's degree. Although PBC-NFP staff indicate that they receive comprehensive, ongoing training, a few topics are recommended for future training workshops (e.g., infant and maternal health).

Program Monitoring and Use of Data: PBC-NFP is successfully implementing the criteria to collect data as specified for NFP and use the reports generated by the NFP National Service Office to guide their practice, assess and guide program implementation, inform clinical supervision, enhance program quality, and demonstrate fidelity. However, errors with the data have precluded using the reports to their fullest extent.

Agency: Two of the three criteria related to the agency were met. For the first year and a half of implementation, PBC-NFP met the criterion to conduct quarterly advisory board meetings; however,

PBC-NFP recently modified the schedule to meet on a semi-annual basis, asserting that the quality of meetings is more important than meeting the expected frequency of meetings.

Perceptions of NFP Model

"They're always at capacity for a reason."

"NFP taught us so much about how people can change. We can really see them succeed-- may not be a straight line."

Client responsiveness and engagement are known to impact implementation (Carroll et al., 2007). Interview respondents report that NFP is a good fit for the target population and that most clients (especially adolescent clients) respond positively to PBC-NFP. The implementation literature also suggests that staff and community perceptions of the potential benefits of a program contribute to the quality of implementation. PBC-NFP staff and partners report that they believe the program is making positive changes in birth outcomes and self-sufficiency measures (e.g., return to school or employment). PBC-NFP staff highlighted strengths of PBC-NFP over other home visitation programs they have implemented: NHVs receive more intensive training; NHVs carry a smaller caseload (25) compared to HB-HV (prior to 2009 caseloads could have been up to 120 clients); PBC-NFP is well-structured and organized; and PBC-NFP emphasizes relationship-building, motivational interviewing, open-ended questions and discussion through a long-term intervention (approximately 2 ½ years), whereas HB-HV provides a lot of information to clients a short period of time (a few visits). NHVs are highly satisfied with the NFP model and wish it could be expanded statewide to serve more families.

Implications and Next Steps

Given the high level of adherence to the majority of the NFP Model Elements and Implementation Objectives, we would expect PBC-NFP to produce outcomes similar to the initial trials. However, ongoing evaluation of implementation and client-level outcomes will be important. Further analyses examining relationships between client- and staff-level characteristics and the level of implementation will contribute to more refined recommendations regarding implementation. It is unclear, even at the National level, what level of implementation is necessary to produce positive outcomes. As such, analyses examining whether fidelity moderates outcomes will be extremely important as PBC-NFP moves forward with expansion. In addition, the level of risk is higher for clients in PBC-NFP compared to National NFP sites (and likely compared to the initial NFP trials),

which may impact the realization of outcomes such as birth outcomes, subsequent births, child maltreatment, maternal self sufficiency, child performance in school (CSC, 2010).

In summary, the evaluation findings suggest that PBC-NFP was successful in targeting its intended clients and meeting or exceeding the implementation objectives for the majority of NFP Model Elements and Implementation Objectives. As the program moves forward with expansion, PBC-NFP staff and community partners should collaborate to identify and implement strategies to identify and enroll clients early in their pregnancies and to increase the engagement of clients, especially during the infancy phase.

Appendix A: Overview of Fidelity to NFP Model Elements and Key Implementation Activities

Overview of Fidelity to NFP Model Elements and Key Implementation Activities[1]

NFP Element	Program Indicator	Performance Objective	PBC-NFP	Performance Rating
Referrals & Enrollment				
NA[2]	Eligible referrals enrolled in program	75%	91.7%	
Client Characteristics				
1	Voluntary participation	100%	100%	
2	First-time mother status	100%	100%	
3	Low-income criteria	100%	100%	
4	Gestational age at enrollment ≤ 16 weeks	60%	54%	
	Gestational age at enrollment ≤ 28 weeks	100%	98.8%	[3]
Intervention Context				
5	Services provided one on one	---	---	
6	Services provided in home	---	90.7%	
NA	Services involve client's social network, as appropriate	---	<10%	
7	Visit frequency by guidelines (% of expected visits completed):			
	Pregnancy phase	80%	80.7%	
	Infancy phase	65%	49%	
	Toddler phase	60%	NA	NA
NA	Visit duration ≥ 60 minutes (Mean)			
	Pregnancy phase	60 min.	79.8 min.	
	Infancy phase	60 min.	82.2 min.	
	Toddler phase	60 min.	NA	NA
10	Visit content by guidelines:			
	Pregnancy			
	Personal health	35-40%	40.6%	
	Environmental health	5-7%	8.6%	
	Life course development	10-15%	12.0%	
	Maternal role	23-25%	24.5%	
	Family and friends	10-15%	14.2%	
	Infancy			
	Personal health	14-20%	21.2%	
	Environmental health	7-10%	8.7%	
	Life course development	10-15%	12.9%	
	Maternal role	45-50%	44.5%	
	Family and friends	10-15%	12.7%	
	Individualize services based on strengths and challenges of family	---	---	

[1] Green bullets reflect criteria for which PBC-NFP implemented at or above the NFP benchmark; yellow bullets identify criteria for which implementation almost met the benchmark; red bullets identify criteria for which the benchmark was not achieved.

[2] Several activities identified in the NFP Implementation Logic Model that are not specified as NFP Elements are also included in this table.

[3] Three clients were enrolled prior to 28 weeks whose due dates changed after they were enrolled such that their gestation age at intake was greater than 28 weeks.

NFP Element	Program Indicator	Performance Objective	PBC-NFP	Performance Rating
NA	NHV coordinates services based on client's identified needs, referring to available community resources, as needed	---	---	
11	NHV applies theoretical framework that underpins the program through current clinical methods	---	---	
NA	Participant attrition			
	Cumulative through child's second birthday	40%	NA	NA
	Pregnancy phase	10%	21%	
	Infancy phase	20%	33%	
	Toddler Phase	10%	6%	
Staff Development & Support				
8	Registered nurse with minimum BA/BS in nursing	---	---	
9	Complete core NFP training	---	---	
12	NHV full-time staff caseload ≤ 25 active cases	---	---	
13	Full-time NS provides supervision to ≤ 8 NHV	---	---	
14	NS provide NHV clinical supervision with refection, demonstrate integration of the theories, and facilitate professional development essential to the NHV role	---	---	
	NS supervisory activities:			
	One on one clinical supervision	≥ 1/week	1/week	
	Case conferences	≥ 2/month	2/month	
	Team meetings	≥ 2/month	2/month	
	Field supervision (i.e., home visit)	≥ 1 quarterly	1 quarterly	
Program Monitoring & Use of Data				
15	NHV and NS collect data as specified by the NFP-NSO and use NFP reports to guide their practice, assess and guide program implementation, inform clinical supervision, enhance program quality, and demonstrate fidelity	---	---	
Agency				
16	PBC-NFP located in and operated by an organization known in community for being a successful provider of prevention services to low-income families	---	---	
17	Community Advisory Board meets at least quarterly to promote a community support system to the program and to promote program quality and sustainability	4/year	2/year[4]	
18	Adequate structure (at least .5 FTE per 100 mothers enrolled) in place to support NHV and NS to implement the program and assure that the data are accurately entered into the database in a timely manner	---	---	

[4]Prior to winter of 2009, the Steering Committee met quarterly. Currently, the Steering Committee meets on a semi-annual basis.

Appendix B: Client Attrition Case Example

Client Attrition Case Example

- 11/6/08: Last completed visit = at 32 weeks gestation

- 11/3/08: Arrived at client's home for home visit. Client states that she is having abdominal pain and has called the clinic. Client states that she is leaving to go to clinic as walk in. Client denies any vaginal bleeding and states that she feels baby moving. Client will call nurse after seeing Dr. X visit rescheduled for 11/17/08 @ 11:00am.

- 11/17/08: Scheduled home visit attempted at 11am. Occupant states that client went to Ft Lauderdale and will be home at 3pm.

  3pm. Nurse arrived at client's home and client came outside and states that she has to leave. Client's mom locked her out of the house and client called the police. Client and her mom started argument. Client states that she will call nurse to reschedule.

- 11/24/08: Call made to client. Message left on voicemail for client to call NFP nurse.

- 11/26/08: Arrived at client's house for scheduled home visit at 1:30pm. Client's sister states that client is in Miami with boyfriend and won't be home until late tonight. Message left for client to call NFP nurse.

- 12/8/08: Attempted home visit. Client's mom states that client just left to go to corner store and will be back soon. NFP nurse waited for 20 minutes and left message that NFP nurse will come back tomorrow at 1pm. Nurse left message for client to call if that was not convenient.

- 12/9/08: Home visit attempted. Client was not home. NFP nurse left business card in door with a note to call NFP nurse.

- 12/15/08: Home visit attempted. Client not at home. NFP nurse left business card in door with note to call NFP nurse.

- 12/23/08: Home visit attempted. Client's mother was sitting outside the apt and states that client is sleeping and it would be better if she wasn't woken up. Nurse left message for client to call HSHFN and that nurse would stop by tomorrow.

- 12/24/08: Home visit attempted. Client not home. NFP nurse left business card in door.

- 12/29/08: Unable to contact client after several attempts. First disengagement sent to client.

- 1/9/09: 2nd disengagement letter sent to client.

- 2/10/09: Case inactive with NFP.

Appendix C: References

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