

**Massachusetts Healthy Families Evaluation-2:
A Randomized Controlled Trial
of a Statewide Home Visiting Program for Young Parents**

**Annual Data Report to the
Massachusetts Children's Trust Fund
Fiscal Year 2009**

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For the past decade, our team of independent researchers from the departments of Child Development and Urban and Environmental Policy and Planning at Tufts University has been contracted by the Massachusetts Children’s Trust Fund (MCTF) to evaluate the Healthy Family Massachusetts newborn home visiting program (HFM). We completed our first-cohort evaluation (the Massachusetts Healthy Families Evaluation [MHFE-1]) in 2005 and began a second-cohort evaluation (MHFE-2) in 2008. We have just completed Year 1 of data collection for MHFE-2.

This Year 1 report includes:

- a description of the background of, and context for, MHFE-2,
- an overview of the MHFE-2 study design and approach,
- a summary of evaluation activities completed through the end of FY09, and
- a preview of evaluation activities planned for FY10.

Background and Context

Healthy Families Massachusetts Program

HFM is a comprehensive, voluntary, newborn home visiting program for all¹ first-time parents ages 20 and under in the state of Massachusetts. Based on the *Healthy Families America* (HFA) model for home visiting, HFM provides parenting support, information, and services to young parents, beginning prenatally and continuing until the child’s third birthday. Since its inception, HFM has provided services to over 26,000 families. The stated goals of the program are:

- To prevent child abuse and neglect by supporting positive, effective parenting;
- To achieve optimal health, growth, and development in infancy and early childhood;
- To encourage educational attainment, job, and life skills among parents;
- To prevent repeat pregnancies during the teen years; and
- To promote parental health and well-being.

HFM program services include home visits, goal-setting activities, group-based activities, and linkages and referrals to other resources.

Massachusetts Healthy Families Evaluation Framework: The Five-Tiered Approach

Our evaluation of HFM is rooted in Jacobs’s Five-Tiered Approach to evaluation,² a developmental model that moves evaluation activities from a primary focus on descriptive and process-oriented information to an emphasis on program effects. Tier One activities produce

¹ HFM is a *universal* program, meant to serve every first-time parent under 21 in the state, and enrolls participants on a first-come, first-serve basis (unlike other programs modeled on Healthy Families America, which target “high-risk” families only). However, HFM has never had sufficient funding to meet this goal of universal services; in FY02, which represents the height of funding to date, HFM had enough funding to serve only 60% of eligible families. In subsequent years, HFM has only been funded to serve 40% of new eligible families each year.

² Jacobs, F. (2003). Child and family program evaluation: Learning to enjoy complexity. *Applied Developmental Science*, 7(2), 62-75; Jacobs, F. H. (1988). The Five-Tiered Approach to evaluation: Context and implementation. In H. B. Weiss & F. H. Jacobs (Eds.), *Evaluating Family Programs*, New York: Aldine DeGruyter; Jacobs, F., & Kapuscik, J. (2000). *Evaluating family preservation services: A guide for state administrators*. Medford, MA: Tufts University.

needs and demand assessments, and usually are conducted prior to the program's implementation. Evaluation activities at Tiers Two and Three are directed at program processes: they describe program staff, services, clients, and costs; examine program implementation compared to model standards; and provide feedback to programs for improvement. Tiers Four and Five focus on outcome evaluation activities, assessing the extent to which a program is meeting its short-term and long-term goals. The primary difference between Tier Four and Tier Five is the use of an experimental design in Tier Five; when such scientific rigor is possible, researchers are more confident that changes they observe in participants are the result of the intervention being studied.

From MHFE-1 to MHFE-2: Establishing Impacts

Our first evaluation study (MHFE-1) focused on Tiers Two, Three, and Four: program monitoring and accountability, quality review in relation to model and program standards, and measurement of outcomes. MHFE-1 employed a quasi-experimental design, relying on other sources of comparison data, such as state and nationwide historical data on key indicators and extant data from studies of adolescents and young parents. Using a mixed methods approach, data were collected from a sample of 361 HFM participants, at six-month intervals, at four different time points over a period of 18 months. An ethnographic substudy, conducted in three communities, explored participants' beliefs about parenting, childrearing, and help-seeking, and the extent to which HFM services were consonant with those beliefs.

While the findings from the first evaluation phase were promising,³ the quasi-experimental design precluded our being able to definitively attribute positive outcomes to the HFM program. In MHFE-2, evaluation activities at Tier Five have been added in an attempt to determine whether impacts can be attributed to the HFM program. This six-year evaluation study consists of two main components: an Impact Study, which, through its experimental design, will allow us to make assertions about program effects; and an Integrative Study, which focuses intently on specific issues (e.g., mental health, school experience, etc.) in participants and programs from particular communities, allowing for a more concentrated and comprehensive understanding of the contextual factors that influence participants' trajectories as they transition both to parenthood and adulthood. Increased attention to the community contexts in which these HFM programs operate — in essence, enhanced activities at Tier Three — also are being integrated into this second-cohort study as the Program Community Study. The following section explains each of these components in greater detail.

MHFE-2 Study Design

Impact Study

This large-scale randomized, controlled trial with ~500 program group participants and ~300

³ For final evaluation report, see Jacobs, F., Easterbrooks, M. A., Brady, A., & Mistry, J. (2005). *Healthy Families Massachusetts final evaluation report*. Medford, MA: Massachusetts Healthy Families Evaluation.

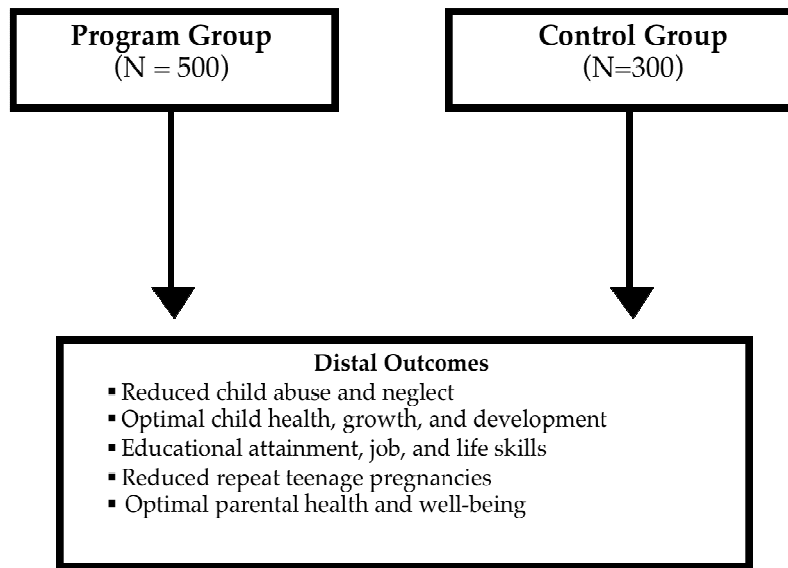
control (or non-HFM program) group participants⁴ will allow us to determine the extent to which HFM’s main program goals have been achieved, and to attribute these outcomes, with greater certainty, to the HFM program.

Impact Study Research Questions

The basic research question is: *To what extent is HFM meeting its primary, long-term goals?* This overarching research objective will be framed by the following questions:

1. Is there a difference between the program (receiving HFM; designated as the “HVS” or home visiting services sample) and control (not receiving HFM; designated as the “RIO” or referral and information only sample) group participants in the achievement of the five HFM goals, or *distal outcomes*?
2. Within the total sample, do maternal characteristics (e.g., depression, history of abuse) predict program utilization and distal outcomes?
3. Within the program group, does program utilization predict distal outcomes?
4. Within the program group, are there differences in distal outcomes as a function of program quality (specifically defined as “fidelity to the model”) and community context (defined by demographic characteristics)?

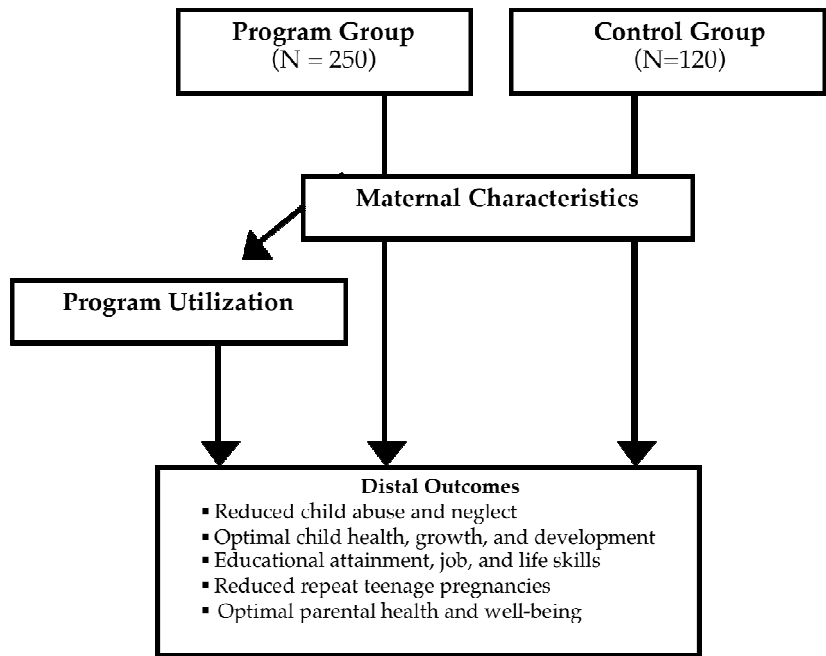
Figure 1: Impact Study Research Question #1



The first of these questions represents the standard research objectives of impact evaluations; in essence, it answers the basic question, “does the program work?”

⁴ As of the end of FY09, MHFE was still recruiting participants; these numbers represent our recruitment goal, not our actual sample size

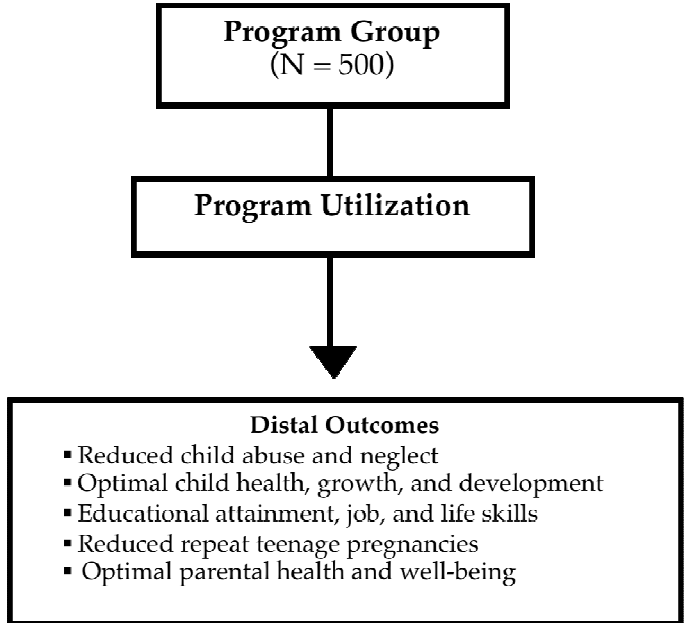
Figure 2: Impact Study Research Question #2



The second Impact Study research question represents our intention to better understand, on the same large scale, *for whom* the program works; we will investigate how individual-level factors moderate the ways in which participants use the program, and their achievement of distal outcomes.

The next two research questions, which apply to the program group only, take into account both how HFM services are implemented, and if (and how) participants in particular communities differentially utilize these services.

Figure 3: Impact Study Research Question #3



Research Question #3 asks whether participants' *patterns of program utilization* (e.g., program tenure, frequency and intensity of visitation) predict distal outcomes.

Table 1: Impact Study Research Question #4

	Community Profile Type 1 <ul style="list-style-type: none"> ▪ High population density ▪ More ethnic/racial diversity ▪ Very low-income 	Community Profile Type 2 <ul style="list-style-type: none"> ▪ Low population density ▪ Less ethnic/racial diversity ▪ Low-/Moderate-Income
High Fidelity Program	Distal outcomes <i>Communities E, G (n~125)</i>	Distal outcomes <i>Communities B,D (n~125)</i>
Low Fidelity Program	Distal outcomes <i>Communities A, C (n~125)</i>	Distal outcomes <i>Communities F, H (n~125)</i>

Research Question #4 tests MCTF’s imputed theory of change that home visiting services delivered by *high quality programs* (as prescribed by the program model) will result in improved participant outcomes *quite independent of community context*.

Impact Study Data Sources

The Impact Study includes data generated from multiple sources, including public agency administrative data; program data, generated from MCTF’s Participant Data System; and telephone interviews with individual participants. (See Appendix A for a complete list of MHFE-2 data sources, by construct.)

Administrative data. Public agency data (e.g., DCF: supported cases of child maltreatment by participant; DPH: rate of repeat birth as teen; DOE: high school graduation rate; DTA: participant receipt of public assistance) (see Appendix B for requested data points) are utilized to answer the primary research questions about the effectiveness of HFM on the five program goals. These data are collected on all MHFE-2 participants, program and control.

Participant Data System. The Participant Data System (PDS) is the web-based management information system administered and maintained by MCTF. Documented by home visitors and supervisors, data in the PDS provide information about the following areas of service utilization:

- referrals, enrollment, and service level;
- pregnancy and birth information;
- service encounter records (frequency of home visits, content of home visits, etc.);
- assessments;
- status reports (completed at six-month intervals);
- IFSP goal-setting and goal-attainment records; and
- discharge records.

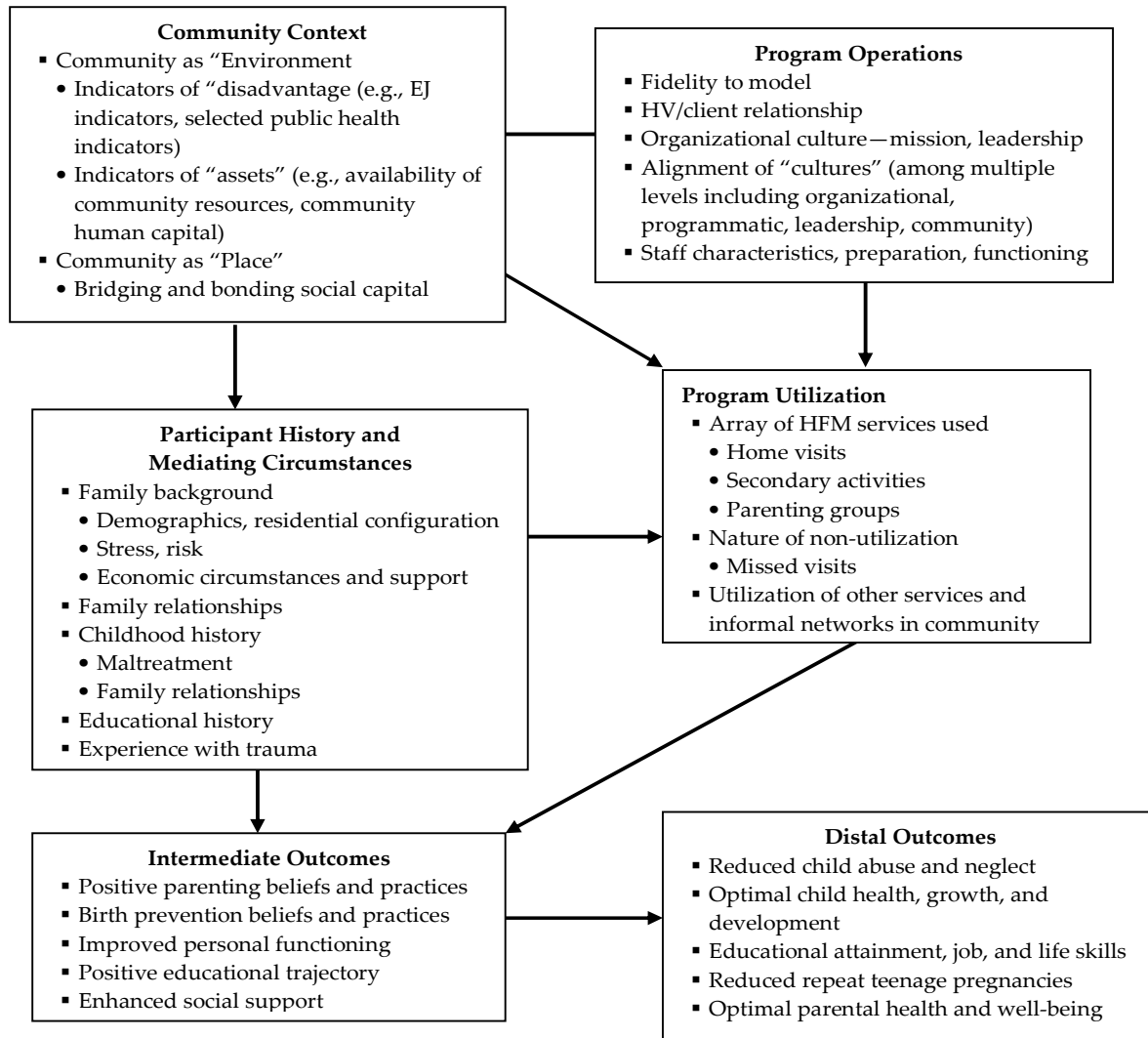
Intake Interview. The Intake Interviews consist of a 30-minute semi-structured phone interview. At each of the three annual data collection time points, we collect information that will help us to understand characteristics of MHFE participants, their contexts, and their use of social services. Participant characteristics include demographics (e.g., age, ethnic background, relationship status), family resource, residential and financial situations, involvement of the baby’s father, and well-being (e.g., stress, depression). Information about participants’ use of public assistance and social services other than

HFM will help “contextualize” the impact of HFM services relative to the array of other services that mothers in both HVS and RIO groups may receive.

Integrative Study

This study uses a mixed methods (qualitative and quantitative data) approach with a smaller sample of participants (255 from the HVS group, and 185 from the RIO group) to examine if and how program/community contexts and participant characteristics mediate the achievement of HFM’s short-term (intermediate outcomes) and long-term (distal outcomes) goals. Whereas the experimental Impact Study will answer questions about HFM’s *overall* effects, this intensive investigation of a smaller sample of participants and programs will provide information about how particular subpopulations in our sample use programs, how programs function in particular community contexts, and how these various factors interact to affect intermediate as well as distal outcomes. The conceptual model represented in Figure 4 lists examples of the constructs to be examined at the community, family, and individual levels.

Figure 4: Integrative Study Conceptual Model*



*Our ability to investigate this model at this level of detail depends, in part, on funding.

Integrative Study Research Questions

The overarching objective of the Integrative Study is to deepen our understanding of how participants' personal, family, and community contexts, and HFM program operations and utilization, influence and/or explain participants' attainment of the five HFM stated goals (also called distal outcomes), and shorter-term outcomes (also called intermediate objectives) that might mark progress toward these longer-term goals. The specific research questions are as follows:

1. Do intermediate objectives predict the attainment of distal outcomes?
 - a. Are participants' family background and circumstances related to the attainment of participant outcomes (distal outcomes, as well as intermediate objectives)?
 - b. Do participants' family background and circumstances influence the relations between participant outcomes?
2. Are program quality indicators, core service delivery processes, and program culture and context related to participant outcomes (intermediate objectives, as well as distal outcomes)?
 - a. Does program utilization predict participant outcomes?
 - b. Does program utilization influence the relations between program quality and participant outcomes? If so, how?
 - c. Do participants' family history and current circumstances explain and/or influence the relations between program utilization and participant outcomes?
3. Are community indicators of assets (e.g., homeownership, civic engagement) and potential risks (poverty, under-resourced neighborhoods) associated with participant outcomes?
 - a. Are these community indicators associated with program utilization? If so, how?
 - b. Is the relation between program quality and program utilization explained/influenced by community context indicators?
 - c. Do participants' family history and current circumstances explain/influence the relations between community risks and assets and participant outcomes?

Integrative Study Data Sources

In addition to the Impact Study Intake Interview that is conducted over the phone, MHFE participants who have enrolled in the Integrative Study are invited to participate in a research visit in their homes. The research visits include a semi-structured interview, completion of written questionnaires (see Appendix C for psychometric information), and observations of mother-child interactions, and provide data for both distal outcomes (see Appendix A, Table 1) and intermediate objectives (see Appendix A, Table 2).

During these visits, which typically last two hours, qualitative and quantitative methods are used to collect in-depth information about *program services* (HFM and other programs); *social relationships and support networks* (family/friend, father of baby, neighborhood/community); *mothers' history* of childhood care and victimization, and more recent history of intimate partner violence; *educational history*; and *personal functioning/well-being* (e.g. depression, trauma history,

stress and coping). We expect that these characteristics and contextual factors may influence how, for example, HFM program services are utilized and incorporated by participants. Since child maltreatment represents only one component of parenting – and it has negative valence – we also include other indicators of positive, effective parenting in this protocol, such as parenting attitudes and beliefs, and observations of mother-child interaction (e.g., maternal sensitivity and child responsiveness).

MHFE-2 Sampling Plan

Recruitment into the sample occurs at the HFM program level, and therefore requires considerable training, monitoring, and guidance from MCTF and Tufts, both in preparation for, and during the recruitment process. The following paragraphs provide a brief description of the MHFE-2 sampling design; a summary of the activities Tufts and MCTF engaged in to prepare programs for recruitment, and a report on how recruitment has proceeded since commencing in February 2008.

Evaluation Site Selection

Several months before recruitment was slated to begin, Tufts, in cooperation with MCTF, chose eight programs from the twenty-six program sites across the state to participate in the evaluation. These programs were chosen on the basis of three criteria:

- As a group, they represented each of the Department of Health and Human Services regions in Massachusetts;
- As a group, they offered a mix of urban and exurban/suburban communities with diverse populations; and
- As individual programs, each was large enough to accommodate evaluation enrollment within a 6-8 month period (based on FY06 MCTF referral and enrollment data).

In other words, among these eight programs there would be enough referrals to recruit 800 participants into the evaluation, and high enough program capacity to serve the 500 participants who would be enrolled in the program group. Based on its size, each of these eight programs, or “evaluation sites,” was assigned a target recruitment number, and expected to continue recruitment and enrollment until this target had been reached.

Recruitment began February 8, 2008. Within a few months of this date, it became apparent that the eight evaluation sites were enrolling participants at a much slower rate than anticipated.⁵ In response to this problem, Tufts/MCTF added program sites to the evaluation, thereby lowering the target recruitment rates for all participating sites. Over the course of 2008, based on our continued monitoring of recruitment rates across the programs, ten HFM programs were added to the original eight, bringing the final evaluation site total to 18 by the end of the 2008 calendar year (see Appendix D for evaluation sites, the months they entered the evaluation, and their

⁵ This situation resulted from a variety of factors, including regional changes in teen birth rates, decreases in agency operating budgets, and fewer referrals from community agencies. It should be noted that these lower enrollment rates characterized all of the HFM programs—not only those involved in the evaluation.

target enrollment numbers).

Recruitment into the Study

There are two “levels” of recruitment into the evaluation; the first takes place, as mentioned above, at the HFM program level, and the second is conducted by Tufts. Both are explained below.

Level 1: Initial contact by HFM, and random assignment. After each program’s recruitment start date, every participant referred to that program, provided she was eligible, is asked by the HFM Intaker⁶ to participate in the study. Eligibility requirements are as follows:

- Female⁷
- 16 years or older
- Received no HFM services in the past (i.e., no transfers or re-enrolls)
- Able to speak either English or Spanish
- Cognitively able to provide informed consent.⁸

Assuming the participant is eligible, the HFM Intaker explains the study to her: if the participant is willing to enroll in the study, she provides verbal consent, and then the HFM Intaker enters the participant’s name and information into the program’s management information system, the Participant Data System (PDS). At this point, an algorithm randomly assigns her to either the “Home Visiting Services Group” (HVS) (the program group), or the “Referrals and Information Only Group” (RIO) (the control group). This assignment is immediate.

If the participant does *not* meet these eligibility requirements, but is eligible for HFM, the HFM Intaker contacts MCTF and arranges for the participant to be enrolled directly into the HFM program.

If the participant is assigned to HVS, she will receive home visiting services as usual. If assigned to RIO, she will not be able to receive any HFM home visiting services, but rather is referred to other community services. In order to determine where each RIO participant should be referred, the Intaker conducts a MCTF-designed intake interview

⁶ We left it up to individual programs to decide who on their staff would take care of the intakes and assignment. In most of the programs it was the Program Coordinator who obtained consent and enrolled participants, but in some programs it was home visitors and or/office coordinators. All staff members involved with the evaluation were trained by Tufts and MCTF (see below for more detail).

⁷ While HFM does serve fathers, they constitute only (4%) of the statewide HFM population; random recruitment would not produce a sample of fathers large enough for results to be statistically meaningful.

⁸ The Tufts team relies on the experience and expertise of the HFM Intaker to determine whether or not the participant appeared to fully understand the study. If the HFM Intaker feels that the participant is not cognitively able to provide fully informed consent, she contacts MCTF and asks for the participant to be enrolled directly into HFM. There have been three instances in which a participant was enrolled by HFM but later withdrawn by Tufts because of an apparent cognitive delay.

that assesses the participant's need for services. Based on this interview, the Intaker provides referral information and/or resources related to the participant's needs (e.g., mental health, WIC, housing, TANF, etc.). RIO participants also receive monthly mailings from MCTF about child development.

Everyone who declines to participate in the evaluation is given the option of receiving the same intake interview and referral to services that the Control Group participants receive. They can also opt to go on a wait list; once the HFM program has enrolled its quota of participants they can let people into the program from this waitlist (provided there is space).

Level 2: Contact by Tufts, and enrollment into either the Impact or Integrative Study. Once HFM has concluded the first phase of recruitment (assigning participants to HVS or RIO), the Tufts team assumes all further responsibility for recruitment and data collection. Within a day or two of the participant's study group assignment, a trained research assistant, overseen by the Research Coordinator, contacts the participant and explains the study once again. Every participant who consents to the evaluation is considered to be in the Impact Study, and is asked to sign a consent allowing Tufts to access her administrative data from the four state agencies. At this point, the participant is given the option of participating in a ½ hour phone interview only (the Intake Interview), or of participating in the phone call *and* a 2-hour Research Visit. Depending on which she chooses, the participant is assigned to either the "Impact Study Only" (just phone call and state agency data) or the Integrative Study (phone call and state agency data *and* research visit).

Contact, Enrollment, and Retention Strategies

Contact and retention of the young mothers in our sample can be quite challenging, to say the least. This population tends to be quite transient; it is not uncommon for these young moms to move several times in one year. Further frustrating efforts to contact participants is the popular use of "prepaid" and "pay as you go" cell phones—phones that can be used for brief periods of time and then discarded—rather than landlines. To maximize tracking and retention, then, we employ these strategies:

Many forms of contact. Once we make contact with the participants, we ask for as many forms of contact as possible, including email addresses and relatives' phone numbers.

Information gathering. When we are unable to find participants using the contact information provided, we employ social networking sites such as Facebook and MySpace, in addition to people search engines such as ZabaSearch. In addition, we conduct "drop-ins" at the addresses of hard-to-reach participants, soliciting current residents and neighbors for any information they may have on the participant's whereabouts.

Incentives. We offer fairly generous incentives to women who agree to participate. Participants are given gift cards from their choice of Old Navy, Target, Walmart, or Babies r Us. The amounts are as follows: HVS participants who elect to do only the Intake Interview (i.e., to be in the Impact Study Only) receive a gift card for \$35 at Time 1, \$40 at Time 2, and \$45 at Time 3. HVS participants who elect to be in the Integrative Study—i.e., to do both the phone Intake Interview and the Research Visit—receive *two* gift cards at each time point, in the same amounts listed above. RIO participants follow the same pattern, only they receive \$15 more than the HVS participants at each time point (i.e., \$50 gift cards at Time 1, and so on). Participants definitely seem to appreciate these gift cards; in part we attribute the high enrollment rates into the Integrative Study to the amount of the incentives.

Evaluation Preparation Activities

The year preceding the launch of data collection was devoted to evaluation preparation and design. Activities during that year included: 1) securing buy-in and cooperation from the HFM program sites, and training them on the recruitment process; 2) attaining Memoranda of Agreement with the state agencies from whom we want data; 3) designing and piloting research protocols; and 4) obtaining IRB approval.

Preparing HFM Programs for the Evaluation

We understood during our planning stages that an experimental design and our proposed recruitment strategy would be both logistically and ethically challenging for HFM programs. MCTF and Tufts worked collaboratively to find strategies and incentives that would make the process as straightforward as possible for the programs that became evaluation sites.

Securing Buy-in

Over the course of the year, Tufts and MCTF held individual and group meetings with all of the HFM program personnel who would be participating in the evaluation. In addition to meeting with HFM program staff, Tufts also met with several programs' advisory boards to discuss the evaluation. These advisory board meetings, attended by lead personnel from other local human service providers (e.g., WIC, TLPs, DSS, EI, etc.), provided a forum in which both HFM program staff and providers in the community at large could ask questions about the evaluation, and its potential impact on their work and their clients. The purpose of these meetings was to explain to staff not only *how* the randomized assignment would work, but also *why* it was necessary to conduct this type of research. Our goal was to make sure that all stakeholders fully understood the study, and were committed to its smooth implementation and success.

Not surprisingly, there was a great deal of initial resistance from the programs to the proposed recruitment design; most difficult to these service providers was the idea of having to “turn away” [i.e., assign to RIO] a participant who was in need of services. We attempted to alleviate some of their discomfort by pointing out that HFM currently is funded to serve less than 40% of

newly eligible participants each fiscal year (meaning that more than 60% of the new teen moms in MA *are not being reached by HFM*); seen from this perspective, using random assignment systematizes the process by which participants are able to enroll in the program, but does not necessarily change their chances of receiving services. We further emphasized that the total number of participants each program would be serving would not decrease; rather, we were asking programs to *over-recruit* for the program in order to generate a big enough pool of referrals to both have their program at capacity *and* fill a the control group. Finally, we explained that this experimental process also guarantees that findings concerning program effectiveness will be considered “credible” to the broadest range of constituencies, including policymakers who consult with members of the scientific community.

Recruitment Training

Tufts and MCTF partnered to conduct trainings with the staff members of each evaluation site to make sure they understood how to explain the study to participants, how to obtain consent, and how to use the PDS to enroll participants. These trainings were held on each program site prior to that program’s recruitment start date; trainings spanned the 2008 calendar year.

Obtaining Data-Sharing Agreements with Other State Agencies

The MHFE-2 Impact Study relies on administrative data from the Departments of Public Health, Education, Children and Families (formerly, Social Services), and Transitional Assistance. Each of these agencies required its own application and approval process in order to arrive at a data-sharing agreement. As of the end of FY09, Tufts and MCTF had secured agreements with all four state agencies.

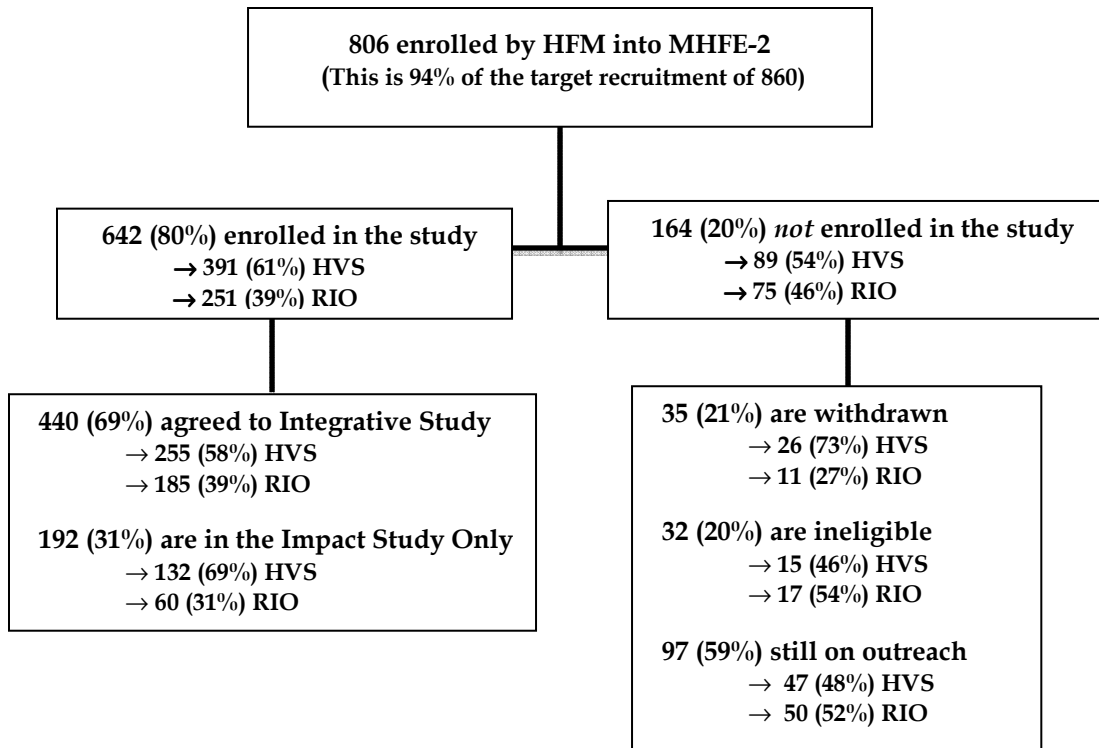
Data Collection Activities for FY09

The following sections describe activities to date, including recruitment, data collection, coding, and preliminary analyses.

Recruitment Status as of June 30, 2009

As seen in Figure 4, we are very close to concluding recruitment on the HFM program level. As of the end of FY09, we had only around 50 participants left to be enrolled by HFM into the evaluation. Of those HFM had recruited, Tufts was able to successfully contact and enroll 642 participants into the Impact Study, 440 of whom also agreed to participate in the Integrative Study. Of those who are *not* currently enrolled in the Impact Study, 35 had either asked to be withdrawn, or were withdrawn by Tufts, 32 were ineligible, and 97 were still on outreach. Each of these “not enrolled” categories is explained in greater detail below.

Figure 4: Recruitment Status as of June 30, 2009



“Withdrawn”

The majority of the participants who are withdrawn simply had asked to be removed from the study because they were not interested in participating. There were a few that did not follow that pattern, however. One participant withdrew after the Tufts interviewer filed a report with DCF on her. Tufts withdrew two participants at their respective parents’ requests, and two other participants were withdrawn due to other extenuating circumstances.⁹

“Ineligible”

There were two categories of ineligibles: participants who were ineligible for the HFM program, either at enrollment or shortly thereafter; and participants who were ineligible for the study. Each category is explained below.

Ineligible for HFM. There were three participants who were enrolled into the study who did not meet the HFM eligibility requirements of being a first-time parent. Several other participants became ineligible for the program within weeks of enrollment due to loss of their pregnancy, either through miscarriage or termination.

⁹ Describing the circumstances of these two particular withdrawals could violate the participants’ confidentiality.

Ineligible for the evaluation. While, overall, the HFM staff did an excellent job at screening referrals for evaluation eligibility, programs did enroll some participants who did not qualify for the study. Three participants were enrolled despite having had received HFM services in the past. Two participants were enrolled despite having been already assigned to RIO in a different evaluation site. Three participants were enrolled despite having no working knowledge of either English or Spanish. And finally, four participants appeared, when visited by Tufts interviewers, to be cognitively incapable of providing informed consent. All participants deemed ineligible by Tufts are withdrawn from the study.

“Still on Outreach”

In order to be in the Integrative Study, a participant must be contacted and interviewed by Tufts within three months of study enrollment. However, even after that three-month window has passed, a participant still could be enrolled in the Impact Study, since the majority of those data are not tied to a particular time-point; we allow ourselves a window of 18 months to attempt to contact those participants. Therefore, the 97 participants still on outreach include women who had just enrolled in the past three months and women who have been enrolled for more time than that, and whom we are still attempting to find.

Participant Demographics

As shown in Appendix E, Table 2, participants were, on average, 18.7 years old at the time of enrollment into the evaluation. Two-thirds were pregnant at the time of their Intake Interview with MHFE. Participants represent the racially/ethnically diverse population of teen mothers in the state of Massachusetts; 47.4% were White/Caucasian, 25.1% were of Hispanic origin, and 17.8% were Black/African American. English was the preferred language of 78.1% of participants. Finally, while the majority of mothers were born in the state of Massachusetts (68.4%), 9.8% were born within the United States but outside of Massachusetts, and 21.8% were born outside of the U.S.

Data Collection for Time 1 and Time 2

As of June 30, 2009, we conducted 632 Time 1 (enrollment) Intake interviews and 440 Time 1 Research Interviews; and 159 Time 2 (one year following the Time 1 protocol) Intake Interviews and 109 Research Interviews. Because of the timing of this report, we do not have study retention data.

Neither administrative data nor data from the PDS were collected during FY09. Administrative data will be obtained once the entire MHFE-2 sample has been recruited and valid consents have been obtained. At this time, the Data Manager has met with each of the participating agencies and methods for obtaining data have been established. MHFE-2 will provide agencies with first and last names, dates of birth, and/or social security numbers in order to obtain any agency data that may exist for a participant. PDS data will be collected and analyzed once the MCTF-administered reports have been brought up to Tufts specifications; this will most likely occur in October 2009.

Data Management and Analyses Activities: Impact and Integrative Studies

This section of the report describes the data management and analysis activities conducted through the end of FY09, both with the quantitative data (administrative data, Intake Interview data, and printed measures), and qualitative data (narratives derived from the Research Interview). Data management and analysis plans for FY10 also are included in this section.

Intake Interviews and Printed Measures

Quantitative data have been entered over an 18-month period by a group of trained research assistants, and preliminary analyses have been conducted.

Data Entry

Data were entered into four primary databases, based on the data source:

- 1) a database containing non-identifiable information from the Intake (telephone) Interview;¹⁰
- 2) a database containing non-identifiable quantitative data from the Research (at home) Interview;
- 3) a database containing information from printed measures administered during the research interview;
- 4) a database with potentially identifying information from the intake interview.

Data Cleaning

After entry, each case is cleaned by a different research assistant. If errors are found, they are corrected and documented by the research assistant cleaning the data. No patterns of data entry errors have been identified in the cleaning process to date. At this time, initial data entry for Time 1 is up-to-date, keeping pace with data collection, while approximately 2/3 of the entered Time 1 data have been cleaned.

Data Analysis: Establishing HVS/RIO Equivalence at Time 1

For this report, we ran preliminary analyses to establish equivalence between the HVS and RIO groups. Results from these initial analyses of the data available at the time of this report are presented in Tables D.1 and D.2 in the Appendices. With the exception of one variable (participants in the RIO group were more likely to report receiving mental health services at the Time 1 Intake Interview [$\chi^2(1)=4.83, p<.05$]), there are no differences between HVS and RIO participants on any of the major study constructs.

¹⁰ Once data have been obtained from the intake interview, potentially identifying information is transferred over to a face sheet that is kept separate from participants' non-identifiable data. The original information from the intake interview is "blacked-out" and the face sheet is used to enter the potentially identifying information into the appropriate database. This database is stored and maintained separately (see database type #4 in this list), and only non-identifiable data associated with a participant are merged into the overall evaluation database.

Data Management and Analysis Plans for FY10

The data management plans for the current fiscal year include the completion of Time 1 data entry. The date of data entry completion will depend wholly on the data of Time 1 data collection completion. The data management team is also working to complete the baseline analysis plan that includes data obtained by MHFE-2 along with interagency data. In the Fall of 2009, data for a random sample of 100 participants will be used to pilot the process for obtaining data with the agencies and for any recoding that is needed to be done on these data. Finally, the Time 2 analysis plan will be completed during the current fiscal year and we will begin the data entry and cleaning process for these data.

Research Interview (RI)

The narratives elicited during the RI are coded and analyzed following steps that are typical in interpretive (qualitative) analysis methods, as described below.

Storing and Transcribing the Interviews

Interviews are digitally recorded, and audio files are downloaded on a password protected drive. Each interview is transcribed, indexed, and then uploaded into an Atlas-ti database (software for qualitative analysis).

Transcription guidelines and protocol have been developed, and transcribers are trained by the qualitative data analyst. Transcripts are checked for accuracy at random against the digital audio recordings. The Atlas-ti database is managed by that qualitative data analyst. As of June 20, 2009, we had transcribed 225, or 40% of the 440 interviews.

Coding the Interviews

The first step in this analytic process was “open coding” a sample of 31 interview transcripts. (The function of open coding is to generate inductively derived – that is, grounded in data – categories representing the properties and dimensions of the phenomena of interest.) Codes fell into the following domains:

- Background information
- Living arrangements
- Relationships
- Personal functioning
- Perceived stress
- Support: Types, sources
- CA/N; domestic violence
- Early childbearing history
- Educational goals, engagement, status,
- Concepts, models, and representations of good parenting
- Life changes, lessons learned, hopes and dreams
- Program participation.

We also coded the timeframe as follows:

- BP: Before pregnancy, i.e., circumstances and relationships one year prior to pregnancy
- CH: Childhood history: Earlier than one year before pregnancy
- EH: Educational history
- PH: Pregnancy history – i.e., until baby is born
- PN: Parenting – refers to time after baby is born.

The next step was the development of an initial coding paradigm or system (representing a deductive, consolidation process) in the fall of 2008; by March 2009 we had revised the system and finalized the plan of analysis.

Analysis Plans for the Interview Data

We have planned two types of qualitative analysis for the research interviews.

Analysis of Categorizing Constructs

The purpose of the first type of analysis is to code the full sample of interviews on a basic set of categorizing constructs that would enable identifying and grouping cases on domains of interest such as living arrangements, family type, CA/N or not, educational trajectory, presence of potential risk factors, individual vs. network relationships, early childbearing history (see Appendix F for codebook). For example, the set of codes for child abuse and neglect are as follows:

- CAN: Yes: Neglect
- CAN: Yes: Phys Ab (physical abuse)
- CAN: Yes: Sex Ab (sexual abuse)
- CAN: No
- CAN: Perp: [Identity] (perpetrator identity)
- CAN: State def: No (according to the state's definition)
- CAN: State def: Neglect
- CAN: State def: Phys Ab
- CAN: State def: Sex Ab
- Fam viol: Inter-partner (family violence/partner)
- Fam viol: Other

The first four codes represent the participants' perception of having experienced abuse or neglect, while the CAN: State... codes represent experiences the participant describes that would be considered abuse by MA state definitions, even if the participant does not perceive it as such. These codes derived from the research interviews can be used in the following types of analysis, including mixed methods types (i.e., integrating data from the standardized measures and the qualitative codes):

- To compare child abuse and neglect as generated from the standardized measure (i.e., Conflict Tactics Scale scores) and the codes generated from the research interviews for triangulation, and because the research interview codes might provide complementary

or supplementary information. An example of how the research interview codes provide additional information not available from the standardized measure is delineated in the next bullet point.

- To construct categories of participants, such that these can be used as grouping categories for subsequent quantitative or qualitative analysis. For example, based on the codes listed above, the following categories can be constructed:
 - Participants who report childhood experiences that they perceive as abuse (or neglect), but the experiences do not fit state definitions of abuse (or neglect)
 - Participants who report childhood experiences that they perceive as abuse (or neglect), and the experiences fit state definitions as well.
 - Participants who report childhood experiences that they do not perceive as abuse (or neglect), but the experiences fit state definitions of abuse (or neglect)
 - Participants who report experiences that do not they perceive as abuse (or neglect) and the experiences do not fit state definitions of abuse (or neglect)
- Once these groups are constructed, we can conduct further qualitative analysis. For example, we can compare how participants in each group think about parenting.
- These groups can be assigned numerical codes (e.g., group 1, 2, 3, 4), which can be integrated into the quantitative database, for example, to examine if there differences between groups on emotional availability, or AAPI scores, and so on.

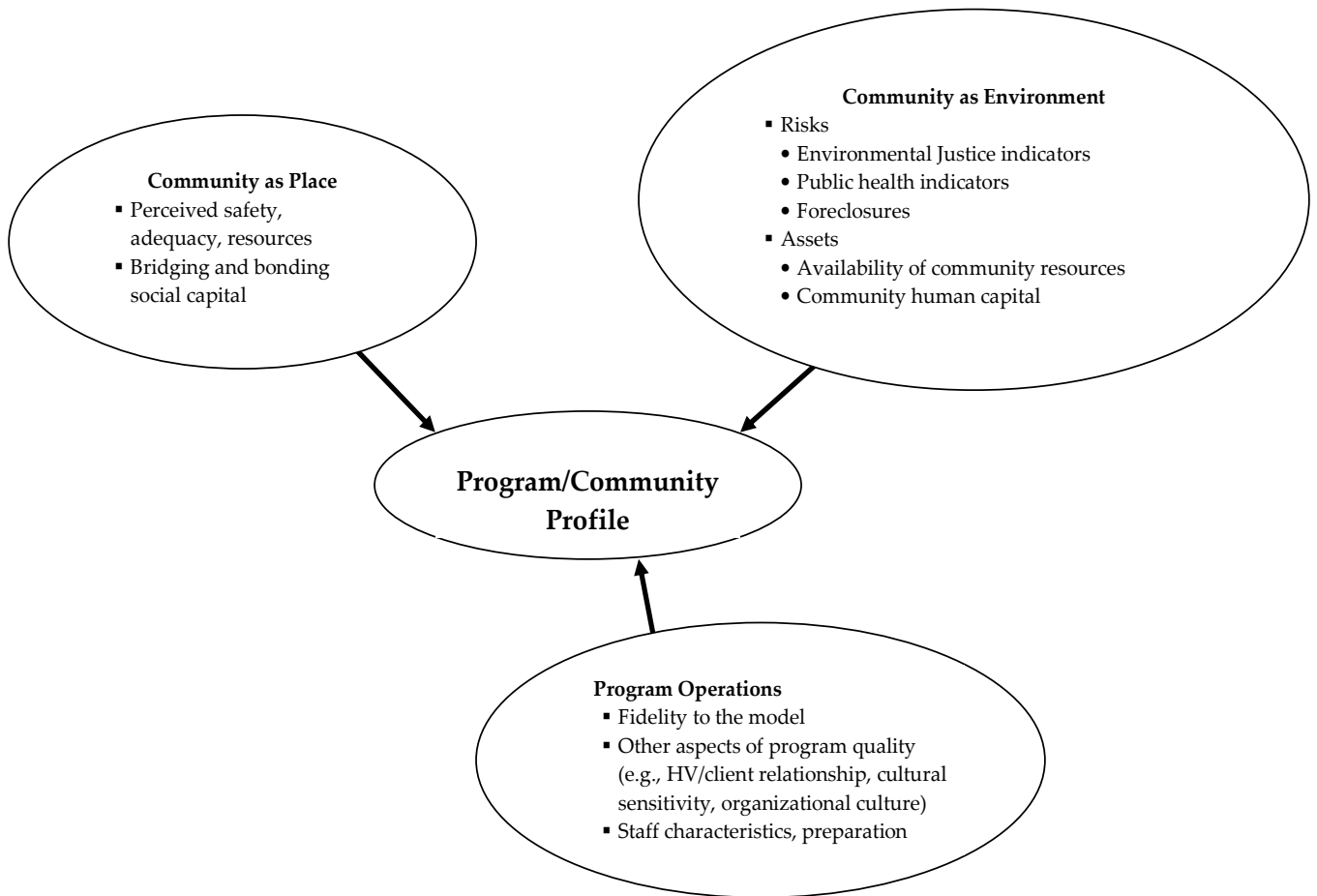
Question-Driven Qualitative Analysis

The second type of analysis is question-driven – that is, it results from specific interests of individual researchers and likely requires an extension of the coding system. We intend to recruit young investigators (e.g., current graduate students, recent PhD recipients searching for datasets to analyze, etc.) to undertake these types of question driven analyses. For an example of this genre of analysis—using the educational attainment of participants as the focus—see Appendix G.

Program Community Study

The Program/Community Study (PCS) is designed to provide detailed information on the nature and characteristics of HFM programs as they operate within their particular communities. *Program operations, including program quality, and community context* are key aspects of this study, and our activities directed toward examining those components – both during the past year and in the year to come – are summarized below. By understanding these two clusters of factors better, we expect to be able to offer a clearer picture of how they relate to program utilization and ultimately, program outcomes (see Figure 5).

Figure 5: Proposed Program Community Study Conceptual Model



Program Operations: Defining Program Quality

A majority of evaluations of home visitation programs define program quality narrowly as fidelity, or adherence, to “model standards” – that is, the extent to which the program as it is operating matches the program model’s design. This approach is based on the assumption that full implementation of programs, *as designed*, is required to attain the expected results. On the other hand, most researchers also agree that successful programs necessarily, even wisely, adapt some aspects of their program’s operations to reflect larger organizational (or institutional) and community values and “ways of doing business.” This tension between fidelity to the stipulated standards and a need for adaptation and consideration of community context is commonplace among interventions, and evaluators must be adept at capturing it.

Our approach to measuring the quality of Healthy Families Massachusetts programs consists of three levels of investigation, ranging from the most basic to the most nuanced:

- (1) evaluating the level of fidelity to MHF standards;

- (2) describing/understanding the nature of the program (program processes at each site); and
- (3) ascribing valence and dimension to specific characteristics of the programs, e.g., quality of home visitor-client relationships, sensitivity to cultural variations, work environment, and organizational culture.

During FY09 we focused primarily on the first level of the above evaluation plan—developing a composite measure of fidelity to the model to determine the degree to which the programs deliver services as intended. For this work, we rely primarily on data collected through the HFM Participant Data System. These data are available to us via Cognos reports, and our ability to complete these first level activities is dependent on the quality of these report data. Because MCTF is still in the process of refining these reports, much of our activity during this fiscal year were directed toward testing and evaluating the data, and suggesting “fixes” and/or new specifications to the reports based on these analyses.

The MHFE Approach to Understanding Fidelity to the Model

Fidelity to the model is an important component of program quality. We define *fidelity* in this context as the degree to which programs are being implemented as designed, i.e. services are delivered in accordance with the HFM critical elements and other programmatic guidelines. Initial guidance in this area was provided by the descriptions of the core elements listed in the 2003 HFA Self-Assessment Tool, 2003 HFM program benchmarks and FY08 HFM Policy Manual. A review of these documents allowed us to identify a cohort of standards that, taken as a whole, represent the core elements of the model. They included:

- **Standard 1.** Initiating services prenatally or at birth.
- **Standard 2.** Using a standardized assessment tool to systematically identify families who are most in need of services.
- **Standard 3.** Offering services voluntarily and using positive, persistent outreach efforts to build family trust.
- **Standard 4.** Offering services intensely (i.e. at least once a week) with well-defined criteria for increasing or decreasing intensity of service over the long term.
- **Standard 5.** Offering services that are culturally competent.
- **Standard 6.** Supporting the parent(s) as well as supporting parent-child interaction and child development.
- **Standard 7.** All families should be linked to a medical provider.
- **Standard 8.** Services should be provided by staff with limited caseloads.
- **Standard 9.** Service providers should be selected because of their personal characteristics, their willingness to work in or their experience working with culturally diverse communities, and their skills to do the job.
- **Standard 10.** All service providers should receive basic training in areas such as cultural competency, substance abuse, reporting child abuse, domestic violence, drug-exposed infants, and services in their community.
- **Standard 11.** Service providers should receive intensive role specific training.

- **Standard 12.** Service providers should receive ongoing, effective supervision.

The process of assessing adherence to standards, however, is not as straightforward as it may seem. Are all these standards of equal importance, of equal weight? Some sites, for instance, may excel if the key measure of fidelity were a 90% acceptance rate, while a different cohort of sites may be ranked higher if the key measure was having at least 60% of referrals occur prenatally. The matter is further complicated by the inevitable interactions across specific fidelity standards. For instance, putting more emphasis on providing intensive services may lead programs to overload staff caseloads, while a program with reasonable caseloads may not be able to maintain the necessary intensity of service delivery. Therefore, computing one global measure of fidelity by placing equal weight on each standard may lead to a situation in which unique program differences may get lost. For example, if one program receives a high score (e.g., 1) for meeting the intensity of services standard and a low score (e.g., 0) for not meeting the staff caseload standard, and a different program gets the same scores but in a reverse direction, both programs would have the same fidelity to the model score of 1, a score that would be fairly meaningless to one interested in learning how these programs were actually performing.

A different way to approach the measurement of program fidelity is to assume that some indicators contribute more to the measurement than others. By weighing the scores for meeting specific performance criteria differently, we will be able to take the relative contribution of each indicator into consideration when calculating the final score.

Further Detailing Program Operations: Plans for FY10

Once we have derived the variables that pertain to fidelity to the model and community context, as described above, we will be able to conduct statistical analyses that consider them in illuminating patterns of program usage and other program-related processes (e.g. retention, recruitment, satisfaction, content of home visits, etc.), and the attainment of intermediate objectives. This work represents the most basic aspect of program quality, however, and does not fully address the dynamic program processes and diverse stakeholders' perspectives on program quality. Our next steps, therefore, would include attention to other facets of the program, such as:¹¹

- **Organizational characteristics** (leadership, effectiveness of the administrative structure,);
- **Home visitor characteristics** (demographic characteristics, professional and educational history and motivations, field-specific knowledge, interpersonal skills);
- **Nature of home visitor-client relationships;**
- **Record-keeping;**
- **Work environment** (staff retention, job satisfaction, effectiveness of supervision);

¹¹ Our ability to make progress in these areas is dependent, in part, on our operating budget. At the time of this writing, our FY10 budget is still in flux.

- **Organizational culture** (support of innovation, support to staff to ensure well-being and positive atmosphere); and
- **Local service linkage and collaboration.**

Data would be collected on these topics using MHFE-developed instruments – written questionnaires, interview and focus group protocols, and possibly, observational measures.

Understanding the Community Context

Our focus on community context is based on the assumption that adaptation and consideration of community context is commonplace among interventions, and that this is particularly true of HFM in light of Standard #5, ensuring cultural competence in service delivery. In this context, the overarching research question is to examine how program operations and outcomes are influenced by community context. Similar to our approach towards program quality, we are implementing a multi-layered investigation of community context:

- assessing community context in terms of aggregate demographic characteristics of program catchment areas;
- examining and understanding the context within which each program operates in terms of community-based circumstances, assets, and risks; and
- determining the specific community-based circumstances and characteristics that mediate program operations and utilization, as well as intermediate and distal outcomes.

During FY08 and FY09, we have focused on identifying community-based characteristics that can be used to profile communities in terms of demographic features (addressing #1) and in terms of community-based assets and potential risks (addressing #2). We focused on these tasks in the service of addressing **Research Question #4** of the **Impact Study**: Are there differences in distal outcomes as a function of program quality (specifically defined as “fidelity to the model”) and community context (defined by demographic characteristics)?

In FY08, we examined various public databases to explore potential indicators of community demographics, and community-based assets and risk. Based on extant literature, we identified indicators of ethnic diversity, population density, and income levels as relevant features of community context that may moderate program utilization and thereby attainment of HFM outcomes. MASSGIS proved to be a rich source of data for generating demographic community profiles (<http://www.mass.gov/mgis/massgis.htm>). One set of indicators from MASSGIS that we found particularly useful is called Environmental Justice (EJ) indicators. EJ populations are defined as those segments of the population that Massachusetts Executive Office of Environmental Affairs (EOEA) has determined to be most at risk of being unaware or unable to participate in environmental decision-making or to gain access to state environmental resources. Neighborhoods (i.e., census block groups) that meet one or more of four criteria are identified as EJ communities. The indicators are: median annual household income is at or below 65% of the state median; 25% or more residents are minority; 25% or more residents are foreign-born; 25% or more residents lack English proficiency. We have adapted the cut-off

percentages based on initial assessment of the distribution of MHFE-1 participants in various locations.

Currently we are in the process of geo-coding MHFE-2 participants (using their addresses to locate them on the map) and generating maps that will show any variation in the community contexts within which participants in various program areas reside. To determine if program fidelity to model and community context moderate outcomes, we expect to be able to characterize programs and community contexts into 2 or 3 modal profiles, as illustrated in Table 2:

Table 2: Impact Study with PCS integrated: 2 (PF) X 2 (CC) X 2 (RAG) Design

<i>Fidelity to the HFM Model by Program in Catchment Area</i>	Community Profile Type 1		Community Profile Type 2	
	HVS Group	RIO Group	HVS Group	RIO Group
High Fidelity Program Catchment Area	➤ Intermediate ➤ Distal	➤ Intermediate ➤ Distal	➤ Intermediate ➤ Distal	➤ Intermediate ➤ Distal
Low Fidelity Program Catchment Area	➤ Intermediate ➤ Distal	➤ Intermediate ➤ Distal	➤ Intermediate ➤ Distal	➤ Intermediate ➤ Distal

Analysis will test the null hypotheses that: *There will be no differences between groups on intermediate and distal outcomes – i.e., no main effects for Community Context, Program Fidelity, or Randomized Assignment Group (HVS, RIO)*

The second and third level investigations of community context in the PCS study are designed to address **Research Question #3** of the **Integrative Study**: Are community context indicators of assets and risks associated with intermediate outcomes, as well as with distal outcomes?

- Are community level indicators of assets and risks associated with program utilization? If so, how?
- Is the relationship between program quality and program utilization mediated by community context indicators of risks and assets?
- Do participants’ family history and current circumstances mediate the relationship between community risks and assets and intermediate, as well as distal outcomes?

Community Context: Plans for FY10

For FY10, our plan is to explore and examine the context within which each program operates in terms of community-based circumstances, assets, and risks, while also examining participants’ perceptions of their neighborhoods (which have been assessed by the “My

Neighborhood” Survey¹² administered to Integrative Study participants at Time 1). We hope to be able to determine whether and how selected neighborhood constructs may mediate the attainment of intermediate participant outcomes. Toward this analytic objective, we have planned the following steps:

- Use EJ indicators, selected Public Health indicators, and the Home Mortgage Approval Data (identified in the literature as a parsimonious measure of neighborhood risk) as measures of “environment” dimension of community context that represents extent or estimate of potential neighborhood risk. Based on the literature, we have identified these indicators as potential correlates or predictors of some of the Participant History constructs (such as personal functioning, educational history).
- Select or develop a measure of Community Resources and Assets: One of the variations we noted in MHFE-1 was that there was variation in the utilization of secondary activities by programs. There were two potential hypotheses regarding these variations: (a) that it had something to do with cultural beliefs – e.g., high minority communities rely on personal networks rather than formal services; or alternatively, (b) that it has something to do with proximity and/or access to a number of other services in addition to HFM. In speculating about proximity and population density, we hypothesized that participants in communities in which participants are geographically isolated will tend to use groups more. In speculating about proximity and access to other services, we hypothesized that we might observe more missed visits in those areas with high density and accessibility of other services, compared to those in which people are isolated and rely on HFM for support. Therefore, in MHFE-2, we plan to construct a measure of Community Resources and Assets as a potential predictor of program utilization constructs, which in turn might be related to existing or improved social support and other intermediate outcomes. During FY08, two research assistants examined public databases to construct such a measure, however getting access to an appropriate database was an issue. Therefore, this may require some data collection at the community level.
- At the participant level, we have included a measure of participant perceptions of their neighborhood (My Neighborhood Survey at Time 1). Based on ongoing literature review, we also became interested in measures of social capital, and have included a revised My Neighborhood Survey in the Time 2 protocol that includes measures of different types of social capital.¹³ We hypothesize that these measures might be potential predictors of program utilization constructs.

¹² This survey, constructed and piloted by the evaluation team, captures the following three constructs: safety and neighborhood risk, awareness of community resources, and neighborhood connections.

¹³ For the Time 2 version of our Neighborhood scale we added social capital items that had been added in 2003 to the Northern Ireland Continuous Household survey (NICHS), administered by the Central Survey Unit of the Northern Ireland Statistics and Research Agency (NISRA). Our Time 2 neighborhood measure examines the following constructs: awareness of community resources; and social capital, as defined by bridging, bonding, and linking.

- To achieve the proposed analytic objectives illustrated thus far, we plan to integrate community level indicators that are GIS based with participant level data from the Integrative Study. As a major task for FY10, we are working with consultants at the Tufts GIS lab to integrate data from GIS, the Impact Study databases (SPSS based), and the Integrative Study databases (both SPSS and Atlas-coded data). We are in the process of setting up databases that will enable us to import data from SPSS into GIS, as well as import data from GIS into SPSS.

Evaluation Timeline

	Year 1 (FY07)	Year 2 (FY08)	Year 3 (FY09)	Year 4 (FY10)	Year 5 (FY11)	Year 6 (FY12)	Year 7 (FY13)
Recruit and train HFM Evaluation Sites	x	X					
Design and pilot interview protocols	x	X					
Use interagency data, census tract information, PDS data, and GIS to create community/program profiles		X	x	x			
Pilot interagency data-use by conduct longitudinal data analyses on first-cohort sample	x	X					
Obtain data sharing agreements with state agencies		X	x				
Participant recruitment		X	x	x			
Time 1 data collection		X	x	x			
Time 2 data collection			x	x	x		
Time 3 data collection				x	x	X	
Annual data dumps from state agencies			x	x	x	X	x
Data coding and analysis			x	x	x	X	x
Final Evaluation Report							x

Publications, Presentations, and Graduate Student Products

Below are listed all MHFE products from 2007 to date (the years of this current study).¹⁴

Published Papers and Reports

Chaudhuri, J. H., Easterbrooks, M. A. & Davis, C. R. (2009). The relation between emotional availability and parenting style: Cultural and economic factors in a diverse sample of young mothers. *Parenting: Science and Practice*, 9(3), 277-299.

Driscoll, J. R. & Easterbrooks, M.A. (2007). Young mothers' play with their toddlers: Individual variability as a function of psychosocial factors. *Infant and Child Development*, 16 (6), 649-670.

¹⁴ A full list of publications, presentations, and student theses produced by MHFE-1 and MHFE-2 staff is available on the MHFE website (<http://ase.tufts.edu/mhfe>).

Easterbrooks, M. A., Barrett, L. R., Brady, A. E., & Davis, C. R. (2007). Complexities in research on fathering: Illustrations from the Tufts study of young fathers. *Applied Developmental Science, 11*(4), 214-220.

Jacobs, F & Goldberg, J. (2008). Evaluating contemporary social programs: Challenges and opportunities. In M.E. Kenney, L.E. Reese, A.M. Horne, & P. Orpinas (Eds.), *Handbook of Prevention: Promoting Health and Social Justice*. Washington, DC: American Psychological Association.

Mistry, J.M., Jacobs, F., Goldberg, J., Easterbrooks, M.A., Davis, C.R., & Jimenez, I. (2007). *A longitudinal study of repeat births in a sample of adolescent mothers: Follow-up results from the Massachusetts Healthy Families Evaluation*. Medford, MA: Tufts University.

Mistry, J., Jacobs, F., & Jacobs, L. (2009). Cultural relevance as program-to-community alignment. *Journal of Community Psychology, 37*(4), 487 – 504.

Riley, S., Brady, A., Goldberg, J., Jacobs, F., & Easterbrooks, A. (2008). Once the door closes: Understanding the parent-provider relationship. *Children and Youth Services Review, 30*(5), 597-612.

Presentations and Testimony

Bartlett, J.D., & Easterbrooks, M.A. (2009, April). *Who's not minding the child and why? Correlates of child neglect among the children of young mothers*. Poster session presented at the Biennial Meeting of the Society for Research in Child Development, Denver, CO.

Davis, C. R., Miranda-Julian, C., Goldberg, J., & Easterbrooks, M. A. (2008, March). *Resilient functioning across competing developmental demands of young mothers*. Poster session presented at the annual meeting of the Society for Research on Adolescence, Chicago, IL.

Diez, V. & Mistry, J. (2009). *Motherhood in the borderlands: Trajectories into adulthood among Puerto Rican teen mothers on the mainland*. Paper presented at the Biennial Conference of the Society for Research in Child Development, April 1st – Apr. 4th, 2009, Denver, CO

Jacobs, F. (July, 2008). Keynote address: First National Research Conference on Child and Family Programs and Policies, Bridgewater, MA. *Working together: Integrating home visiting research, practice, and policies*.

Jacobs, F., Mistry, J., Easterbrooks, A., & Goldberg, J. (September, 2009). *The Massachusetts Healthy Families Evaluation: A multilevel investigation of a home visiting program for young parents*. Presentation to Rep. Kay Khan, State Representative for the 11th Middlesex District; House Chair of the Joint Committee on Children, Families and Persons with Disabilities. Massachusetts State Legislature, Boston, MA.

Miranda-Julian, C., Davis, C. R., & Easterbrooks, M. A. *Grandmother caregiving support among a sample of adolescent mothers*. (2009, August). Poster session presented at the annual conference of the American Psychological Association, Toronto, Canada.

Tan, E. T., Davis, C. R., Easterbrooks, M. A., & Goldberg, W. A. (2009, March) *Young fathers' involvement: Individual and contextual antecedents*. Poster session presented at the biannual meeting of the Society for Research in Child Development, Denver, CO.

Student Papers

Joan Driscoll (2008, PhD dissertation). *Is what young mothers do more important than how they feel? An exploration of relationships among maternal depressive symptoms, maternal-child emotional availability and child persistence*. Eliot-Pearson Department of Child Development, Tufts University, Medford, MA.

Student Grants

Claudia Miranda (2008-2010). *Posttraumatic stress and parental functioning in a sample of adolescent mothers*. Pre-dissertation grant awarded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, USDHHS.

Appendix A: MHFE-2 Constructs and Data Sources

Table A.1: Constructs and Data Sources Corresponding to the Five Program Goals for Healthy Families Massachusetts

Program Goal		Impact Study			Integrative Study	
		Public Agency Administrative Data (see Appendix B for details)	Intake Interview	Participant Data System (HVS Only)	Research Interview	Standardized Questionnaires and Observations (see Table X for details)
#1: Positive and Effective Parenting	Child abuse and neglect	DCF	X		X	Conflict Tactics Scale-Parental Discipline
	Positive parenting attitudes				X	Adult-Adolescent Parenting Inventory
	Mother involvement in parenting classes and groups		X	X	X	
	Health care for child	DPH	X	X	X	
	Mother-child Interaction				X	Observation of emotional availability in play and teaching interactions
	Parenting stress				X	Parenting Stress Index
	Cognitive representations of parenting				X	
#2: Optimal Health, Growth, and Development	Immunizations	DPH		X		
	Assessments, Screening and referrals	DPH	X	X		
	Early Intervention	DPH	X			
#3: Educational Attainment, Job, and Life Skills among Parents	Educational attainment	DOE	X		X	
	Job skills (training programs, employment, etc.)	DTA, DOE	X			
	Life skills (has health insurance, primary care provider, etc.)	DTA	X		X	
#4: Repeat Pregnancy in the Teenage Years	Occurrence of repeat pregnancy	DPH	X		X	
	Pregnancy spacing	DPH	X		X	

Program Goal		Impact Study			Integrative Study	
		Public Agency Administrative Data (see Appendix B for details)	Intake Interview	Participant Data System (HVS Only)	Research Interview	Standardized Questionnaires and Observations (see Table X for details)
	Use of birth control		X	X	X	
#5: Parental Health and Well-being	Depression		X			Center for Epidemiological Studies Depression Scale
	Trauma				X	University of California, Los Angeles Post Traumatic Stress Disorder
	Health risk behaviors		X			Youth Risk Behavior Survey
	Stress		X		X	Parenting Stress Index/Short Form

Table A.2: Constructs and Data Sources for the Intermediate Objectives and Mediating/Moderating Factors

Intermediate Objectives		Impact Study			Integrative Study	
		Public Agency Administrative Data (see Appendix B for details)	Phone Interview	Participant Data System (HVS Only)	Research Interview	Standardized Questionnaires and Observations (see Table X for details)
Individual Characteristics	Demographic information (race, age, language, birthplace, etc.)	DPH, DOE, DTA, DCF	X	X	X	
Relationships: Support and Quality	Relationship status with father of baby (FOB)		X		X	
	Quality of relationships with FOB and other partners (including measure of IPV)				X	Quality of Relationships Inventory (QRI)
						Conflict Tactics Scale-Revised Partner Version
	Social support systems		X		X	Personal Network Matrix
	Father Involvement/Care provided by FOB				X	
	Quality of social support systems and relationships				X	"My Friends" (adaptation of Deviant Peers)
					Social Connections (adapted from Measure of Positive Youth Development [PYD] (4-H Study of PYD) Short Form Questionnaire	
Financial Support and Public Assistance	FOB, MGM, and other informal forms of support		X		X	
	Public Assistance	DTA	X		X	
Social Service Usage	HFM Program Usage		X	X	X	
	Services other than HFM (e.g., mental health, DSS, etc.)	DPH, DOE, DTA	X	X	X	

Intermediate Objectives		Impact Study			Integrative Study	
		Public Agency Administrative Data (see Appendix B for details)	Phone Interview	Participant Data System (HVS Only)	Research Interview	Standardized Questionnaires and Observations (see Table X for details)
Environmental context	Household Income and Resources/Financial stability		X			Family Resources Scale
	Family/Residential configuration		X			
Childhood History	History of maltreatment as childhood victim	DCF	X		X	Conflict Tactics Scale -Adult Recall version
	Quality of early relationships with primary caregivers		X		X	Parental Bonding Instrument
Financial Support and Public Assistance	FOB, MGM, and other informal forms of support		X		X	
	Public Assistance	DTA	X		X	
Social Service Usage	HFM Program Usage		X	X	X	
	Services other than HFM (e.g., mental health, DSS, etc.)	DPH, DOE, DTA	X	X	X	
Environmental context	Household Income and Resources/Financial stability		X			Family Resources Scale
	Family/Residential configuration		X			
	Community context (demographics, access to resources, educational programming, civic engagement, etc.)	DOE	X		X	
	Neighborhood Cohesion/ Characteristics/Social Capital					My Neighborhood and My Neighbors
						Neighborhood Social Capital Scale

Appendix B: Administrative Data Points

Agency	Data Elements	
DPH	Demographic information	Maternal health information
	hospital locale	date of first prenatal visit
	mother's residence	month in which prenatal care began
	child name	number of prenatal care visits
	mother's race	prenatal adequacy of care index
	mothers' birthplace	number of cigarettes daily pre-pregnancy
	father's name	number of cigarettes during pregnanc
	father's age	mother's total weight gain and loss
	father's education status	Child health information
	mother's marital status	risk factors associated with pregnancy (yes/no)
	Repeat birth information	gestational age
	Child date of birth	complications of labor and delivery (yes/no)
	date of last live birth	birthweight in grams
	Parity	Apgar score at 5 minutes
	Plurality	congenital anomalies (yes/no)
	Live births now living	abnormal condition of newborn (yes/no)
	live births now deceased	baby alive (yes/no)
	Gravidity	mother is breastfeeding
	number of terminations	Early Intervention participation
	Fetal death information	immunizations
Education and economic information		
Education		
type of insurance		
DSS	Both <i>reported</i> and <i>supported</i> cases of maltreatment against <i>child of mother</i>	Both <i>reported</i> and <i>supported</i> cases of maltreatment against <i>mother as child</i>
	Dates	Dates
	Reporter (mandated vs. nonmandated)	Reporter (mandated vs. nonmandated)
	Perpetrator	Perpetrator
	Type of Maltreatment	Type of Maltreatment
	Case disposition	Case disposition
DOE	Attendance records	
	Bilingual Education /English Language Learner Program status	
	Chapter 74 program participation and competency attainment	
	Graduation records	
	MCAS scores	
	Post-graduate plans	
	Special education assignments/plans (e.g., nature of disability, services, need level)	
	Suspensions (in- and out-of-school)	
	TBE scores/number of years in program	
	Whether participant received GED (and date)	
DTA	Start- and end-dates for receipt of TANF	
	Amount(s) of assistance participant received during each enrollment period	
	Whether or not the participant was employed during that year, and for how long	
	Whether or not the participant received job training during that year, and for how long.	
	Participant sanctioned and/or terminated for some form of noncompliance? What was noncompliance?	

Appendix C: Psychometrics for Printed Measures

Measure	Description of Measure	Subscales	Administration	Utilization	Reliability	Validity	Standardized
Adult-Adolescent Parenting Inventory (AAPI) (Bavolek, 1984)	Identify adolescents at risk for abusive parenting attitudes and child rearing. Divided into 4 constructs associated with abusive parents	Inappropriate parental expectations of child; inability of parent to be empathetically aware of the child's needs; strong parental belief in the value of punishment; and role reversal.	32 statements; parents select of 5 point scale (SA=strongly agree, A=agree, U=uncertain, D=disagree, SD=strongly disagree).	Use with teen parent and adult parents. Suggested as screening tool with adolescents and new parents to screen for risk of abusive behavior (Daro, Abrahams, & Casey, 1990)	Internal consistency good; fairly good reliability	Content validity excellent based on expert judgments, construct validity based on different types of analysis.	Yes. Norm tables are by age (adult and adolescent), sex (male, female and combined), race (Black, White and combined), and status (abused/non-abused and abusive/non-abusive).
Center for Epidemiological Studies Depression Scale ("Feelings Questionnaire") (Radloff, 1977)	Developed to be appropriate for use in epidemiological studies of symptoms of depression in the general population.	None.	20 questions. Respondents asked how often they felt this way during the past week" and asked to choose from a four-point scale ranging from "1" rarely or none of the time to "4" most or all of the time.	Used in both clinical and psychiatric settings.	Good internal consistency. Fair test-retest stability.	Excellent concurrent validity.	Norms established with 3574 white respondents of both sexes from the general population and a sample of 105 psychiatric patients.
Conflict Tactics Scale-Revised (Straus, Hamby, Boney-McCoy, & Sugarman, 1996)	Measures the extent to which partners in a dating, cohabiting, or marital relationship engage in physical attacks on each other and their use of reasoning or negotiation to deal with conflicts.	5 subscales: negotiation; psychological aggression; physical assault; sexual coercion; injury scale.	78 questions on 7-point scale: 1=once in past year; 7= not in past year but has happened. Also 0=never happened	Used in many studies since development. Over 400 papers published on its use. Used with diverse ethnic and cultural groups	Internal consistency=.79 -.95	Construct validity is good. Findings indicate good discriminant validity.	Not normed. Preliminary psychometric analyses conducted with 317 college students.

Measure	Description of Measure	Subscales	Administration	Utilization	Reliability	Validity	Standardized
Parent-Child Conflict Tactics Scale (CTSPC; Straus, Hamby, Finkelhor, Moore & Runyan, 1998)	Measures the extent to which a parent has carried out specific acts of psychological or physical aggression regardless of whether the child was injured.	3 subscales: Nonviolent discipline; Psychological aggression; Physical assault; and 3 supplemental subscales: Discipline in the previous week; Neglect; Sexual abuse.	31 questions on 8 point scale: 0= never happened; 6= more than 20 times that year; 7= not in that year but did happen. 4 questions from the sexual abuse subscale (answers range from Once to Never)	Used in about 100 published studies, including national surveys and cross-national studies.	Internal consistency= .55 -.70	Some research indicates good construct and discriminant validity.	No.
Parent-Child Conflict Tactics Scale -Adult Recall version (CTSPC-CA; Straus, Hamby, Finkelhor, Moore & Runyan, 1995)	Used with adults reporting on the behavior of their parents toward them when they were children (either 13 years old or during the last year they lived at home with their parents).	3 subscales: Nonviolent discipline; Psychological aggression; Physical assault; and 1 supplemental subscale: Neglect	27 questions on 8 point scale: 0= never happened; 6= more than 20 times that year; 7= not in that year but did happen		Cronbach's alphas have been reported from .41 to .96		No.
Family Resources Scale (Dunst & Leet, 1987)	Measures an individual's perception of resource adequacy for their household, across specific areas. Created to assess the adequacy of resources in households with young children.	6 subscales: Growth & Support; Necessities & Health; Physical Necessities & Shelter; Intrafamily support; Child Care; Personal Resources	30 items on a 5-point scale: 1 = not at all adequate; 5 = almost always adequate.	Clinical work and research with families of young children. Used in about 30 published studies, including comprehensive evaluations of children's mental health services.	Established with initial sample of 45 mothers of preschool age children. Cronbach's alpha coefficient (from average correlation with items) of .92	Initial validity established with correlational analysis predicting well-being ($r = .57, p < .001$) and maternal commitment ($r = .63, p < .001$). Research using the FRS suggest links between family resources and children's cognitive and social development	No.

Measure	Description of Measure	Subscales	Administration	Utilization	Reliability	Validity	Standardized
"My Friends" (adaptation of Deviant Peers)	Measures peer support and peer involvement with risky and positive behaviors such as dropping out of school, stealing, violence, working, volunteering, and involvement with religion.	None.	12 questions on a four-point scale from "none" to "all".		No.	No.	No.
Parental Bonding Instrument (Parker, Tupling, & Brown, 1979)	Measures quality of childrearing experiences with family of origin	2 scales: Parental care and Parental overprotection	50 questions on likert scale	Used in research on predictors of parenting ability	Test-retest=.63 (overprot.) & .76 (care) Split-half=.879 (care) & .74 (overprot)	Good concurrent validity	Yes. Normed with 410 normal adults (mean age-36, range =12-74)
Parenting Stress Index/Short Form (Abidin, 1995)	Designed to measure stress in the parent-child system; can be administered in less than 10 minutes	Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child			Internal test-retest reliability established.	Validity indicator derived from the full-length PSI	Yes. Normal ranges for Total Stress and for the three subscales.
Personal Network Matrix (Trivette & Dunst, 1988)	Provides a basis for identifying needs, sources of support and resources for meeting needs.	None.	3- part measure. Part I – persons with whom one has contact; Part II – persons who help provide for listed needs; part III – dependability of network members.	Developed as an assessment tool for intervention purposes.	Not established.	Not established.	No.

Measure	Description of Measure	Subscales	Administration	Utilization	Reliability	Validity	Standardized
Quality of Relationships Inventory (QRI) Pierce, Sarason, & Sarason, 1991	Assesses self-reported perceptions of dyadic relationships	3 subscales measure levels of emotional support, ongoing conflict and depths (emotional investment) in dyadic relationships	25 questions of a 4-point scale ranging from "not at all" to "a lot".	Has been used to assess any significant relationship in a person's life (e.g. parents, spouses, friends)	Has high internal consistency (.70s-.90s) and test-retest reliability	Has high high levels of construct, convergent, predictive, and discriminate validity	No.
University of California, Los Angeles Post Traumatic Stress Disorder Reaction Index for DSM IV - adolescent version (Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998)	Screens for exposure to traumatic events and for all DSM-IV PTSD symptoms in adolescents who report traumatic stress	endorsement of exposure to a traumatic event; A1 and A2 DSM-IV criteria that encompass objective and subjective features of the traumatic exposure; PTSD symptoms	Can be administered as a self administered paper and pencil measure or by one-on-one verbal administration. 27 items are scored as either present or absent and 22 items rate the frequency of occurrence of post-traumatic stress symptoms during the past month (rated from 0=none of the time to 4=most of the time).	This instrument is meant to serve as a brief screening tool to provide information regarding trauma exposure and PTSD. It has been broadly used in clinical evaluation, trauma research, and post-disaster screening and recovery programs across the US and around the world.	Excellent internal reliability (.90s) and test-retest reliability have been reported	Excellent validity has been reported.	No

Measure	Description of Measure	Subscales	Administration	Utilization	Reliability	Validity	Standardized
Youth Risk Behavior Survey (Centers for Disease Control, 1992)	Measures youth safety, violence, alcohol and drug use, sexual behavior and body weight.	None.	Includes 29 multiple-choice questions.	National school-based survey used grades 9-12 in 39 states and Puerto Rico. Has been conducted biennially since 1991 by the Centers for Disease Control and Prevention.	Has good reliability. Test-retest studies showed that the majority of items had at least "substantial" reliability (kappas $\geq 61\%$), and 93.1% had at least "moderate" reliability (kappas $\geq 41\%$)		

Appendix D: Evaluation Sites, Catchment Areas, and Target Recruitment

Program	Catchment Area	When Added	Target	
			HVS	RIO
Berkshire County	Adams, Alford, Becket, Cheshire, Clarksburg, Dalton, Egremont, Florida, Great Barrington, Hancock, Hinsdale, Lanesborough, Lee, Lenox, Monterey, Mount Washington, New Ashford, New Marlborough, North Adams, Otis, Peru, Pittsfield, Richmond, Sandisfield, Savoy, Sheffield, Stockbridge, Tyringham, Washington, Williamstown	Feb 08	18	11
Blue Hills	Braintree, Canton, Cohasset, Hingham, Hull, Milton, Norwell, Norwood, Quincy, Randolph, Scituate, Sharon, Weymouth	Jun 08	19	11
Boston Neigh.	Boston, Back Bay, Allston, Kenmore, Brighton, Brookline, Roslindale, Hyde Park, Mattapan. W. Roxbury	Apr 08	26	16
Brockton	Abington, Avon, Bridgewater, Brockton, East Bridgewater, Easton, Holbrook, Stoughton, West Bridgewater, Whitman	Feb 08	50	31
Cambridge/Somerville	Cambridge, Somerville	Apr 08	17	11
Cape Cod	Barnstable, Bourne, Brewster, Chatham, Chilmark, Dennis, Eastham, Edgartown, Falmouth, Gay Head, Gosnold, Harwich, Mashpee, Nantucket, Oak Bluffs, Orleans, Otis, Provincetown, Sandwich, Tisbury, Truro, Wellfleet, West Tisbury, Yarmouth	Jun 08	21	13
Fall River	Fall River, Somerset, Swansea, Westport	Apr 08	20	12
Framingham /Milford	Ashland, Bellingham, Blackstone, Douglas, Foxborough, Framingham, Holliston, Hopkinton, Hudson, Marlborough, Maynard, Medfield, Millis, Natick, Norfolk, Northborough, Plainville, Sherborn, Southborough, Stow, Sudbury, Walpole, Wayland, Westborough, Wrentham	Feb 08	33	20
Harbor	Chelsea, Revere, East Boston, Charlestown, Winthrop, North End, West End	Feb 08	33	21
Haverhill	Amesbury, Boxford, Georgetown, Groveland, Haverhill, Merrimac, Newbury, Newburyport, Rowley, Salisbury, West Newbury	Jun 08	16	10
Holyoke	Chester, Chicopee, Holyoke, Huntington, Ludlow, Westfield	Apr 08	26	16
Lawrence	Andover, Lawrence, Methuen, Middleton, North Andover	Sep 08	13	6
Lowell	Billerica, Chelmsford, Dracut, Dunstable, Lowell, Tewksbury, Tyngsborough, Westford	Feb 08	33	20
New Bedford	Acushnet, Dartmouth, Fairhaven, Freetown, Marion, Mattapoissett, New Bedford, Rochester, Wareham	Feb 08	31	19
Plymouth	Carver, Duxbury, Halifax, Hanover, Hanson, Kingston, Marshfield, Pembroke, Plymouth, Plympton, Rockland	Oct08	31	19
Taunton	Attleboro, Berkley, Dighton, Lakeville, Mansfield, Middleborough, North Attleborough, Norton, Raynham, Rehoboth, Seekonk, Taunton	Apr 08	28	17
Urban Neigh.	Dorchester, S. Boston , Jamaica Plain, Roxbury, South End	Feb 08	65	39
Worcester	Ashburnham, Ashby, Auburn, Ayer, Barre, Berlin, Bolton, Brimfield, Boylston, Brookfield, Charlton, Clinton, Dudley, East Brookfield, Fitchburg, Gardner, Grafton, Groton, Hardwick, Harvard, Holden, Holland, Hubbardston, Lancaster, Leominster, Leicester, Lunenburg, Millbury, New Braintree, North Brookfield, Oakham, Oxford, Paxton, Pepperell, Princeton, Rutland, Shirley, Shrewsbury, Southbridge, Spencer, Sterling, Sturbridge, Templeton, Townsend, Wales, Warren, Webster, West Brookfield, West Boylston, Westminster, Worcester	Feb 08	54	34

Appendix E: Sample Descriptives and Group Equivalences

Table E.1: Sample Descriptives and Group (HVS/RIO) Equivalence Testing According to the Five MHFE Goals

Goal	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)	
#1: Positive and Effective Parenting	Child abuse and neglect	DCF; Conflict Tactics Scale-Parental Discipline	Data unavailable for this report				
	Positive parenting attitudes	Adult-Adolescent Parenting Inventory					
		Inappropriate Expectations		N=99; M=20.29 (4.93; 7-32)	n=64; M=20.34 (5.17)	n=35; M=20.20 (4.51)	$t(97)=0.14$, ns
		Lack of Empathy		N=99; M=36.35 (6.13; 15-50)	n=64; M=36.09 (6.25)	n=35; M=36.83 (5.97)	$t(97)=-0.57$, ns
		Corporal Punishment		N=99; M=41.62 (6.72; 20-55)	n=64; M=41.65 (6.65)	n=35; M=41.54 (6.95)	$t(97)=0.08$, ns
		Reversing Parent-Child Roles		N=99; M=21.60 (5.14; 8-34)	n=64; M=21.31 (5.02)	n=35; M=22.11 (5.38)	$t(97)=-0.74$, ns
		Oppressing Children		N=99; M=14.27 (2.48; 5-22)	n=64; M=14.33 (2.82)	n=35; M=14.17 (1.72)	$t(97)=0.34$, ns
	Mother involvement in parenting classes and groups	Self-report Attends Parenting Education Classes		No=207 (84.5%) Yes=38 (15.5%)	No=91 (85.8%) Yes=15 (14.2%)	No=116 (83.5%) Yes=23 (16.5%)	$\chi^2(1)=0.26$, ns
		Self-report Attends Parenting Groups		No=230 (93.5%) Yes=16 (6.5%)	No=99 (93.4%) Yes=7 (6.6%)	No=131 (93.6%) Yes=9 (6.4%)	$\chi^2(1)=0.00$, ns
	Health care for child	Self-report Has Pediatrician for Child		No=127 (51.8%) Yes=118 (48.2%)	N=60 (56.6%) Yes=46 (43.4%)	No=67 (48.2%); Yes=72 (51.8%)	$\chi^2(1)=1.70$, ns
	Mother-child Interaction	Observation of Emotional Availability in Play and Teaching Interactions	Data unavailable for this report				
	Parenting Stress	Parenting Stress Index	Data unavailable for this report				

Goal	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)
	Cognitive representations of parenting		Data unavailable for this report			
#2: Optimal health, growth, and development	Immunizations	DPH	Data unavailable for this report			
	Assessments, Screening, and Referrals		Data unavailable for this report			
	EI	Self-report Early Intervention for Child	No=71 (86.6%) Yes=11 (13.4%)	No=30 (88.2%) Yes=4 (11.8%)	No=41 (85.4%) Yes=7 (14.6%)	Unavailable
#3: Educational attainment, job, and life skills among parents	Educational attainment	Self-report Is in School or Has Completed HS/GED	No=53 (22.1%) Yes=187 (77.9%)	No=26 (26.0%) Yes=74 (74%)	No=27 (19.3%) Yes=113 (80.7%)	$\chi^2(1)=1.53$, ns
	Job skills (training programs, employment, etc.)	Self-report Is Employed	No=186 (75.6%) Yes=60 (24.4%)	No=79 (74.5%) Yes=27 (25.5%)	No=107 (76.4%) Yes=33 (23.6%)	$\chi^2(1)=0.12$, ns
	Life skills (has health insurance, primary care provider, etc.)	Self-report Has Health Insurance	No/Doesn't Know=11 (4.5%) Yes=235 (95.5%)	No/Doesn't Know=5 (4.7%) Yes=101 (95.3%)	No/Doesn't Know=6 (4.3%) Yes=134 (95.7%)	$\otimes\chi^2(1)=0.03$, ns
		Self-report Has Primary Care Provider	No=55 (22.8%) Yes=186 (77.2%)	No=18 (17.1%) Yes=87 (82.9%)	No=37 (27.2%) Yes=99 (72.8%)	$\chi^2(1)=3.41$, ns
#4: Prevent repeat pregnancy in the teenage years	Occurrence of repeat pregnancy	Self-report Has Become Pregnant Since Birth of First Child	No=73 (29.9%) Yes=6 (2.5%)	No=33 (94.3%) Yes=2 (5.7%)	No=40 (90.9%) Yes=4 (9.1%)	Unavailable
		Self-report Has had Another Baby Since Birth of First Child	No=72 (100%)	NA	NA	NA
	Pregnancy spacing	DPH	Data unavailable for this report			
	Use of birth control	Self-report Use of Birth Control	No=71 (33.0%) Yes=144 (67.0%)	No=28 (32.9%) Yes=57 (67.1%)	No=43 (33.1%) Yes=87 (66.9%)	$\chi^2(1)=0.00$, ns
#5: Parental health and well-being	Depression	Center for Epidemiological Studies Depression Scale				
		Depression Sum Score	N=497; M=14.89 (11.23; 0-55)	n=323; M=14.19 (10.95)	n=174; M=16.18 (11.64)	t(495)=-1.89, ns

Goal	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)
		Above/Below Clinical Cut-Off	Below=303 (61.0%) Above=194 (39.0%)	Below=202 (62.5%) Above=121 (37.5%)	Below=101 (58.0%) Above=73 (42.0%)	$\chi^2(1)=.96$, ns
	Trauma	University of California, Los Angeles Post Traumatic Stress Disorder Index	Data unavailable for this report			
	Health Risk Behaviors	Youth Risk Behavior Survey	N=347; M=14.60 (8.20; 4-45)	n=214; M=14.06 (8.05)	n=133; M=15.47 (8.38)	t(345)=-1.56, ns
	Stress	Parenting Stress Index/Short Form	Data unavailable for this report			

Table E.2: Sample Descriptives and Group (HVS/RIO) Equivalence Testing According to Intermediate Objectives and Mediating/Moderating Factors

Category	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)	
Individual Characteristics	Demographic information (race, age, language, birthplace, etc.)	Self-Report Parenting/Pregnancy Status at Intake	Pregnant=164 (66.4%); Parenting=83 (33.6%)	Pregnant=72 (67.9%); Parenting=34 (32.1%)	Pregnant=92 (65.2%); Parenting=49 (34.8%)	$\chi^2(1)=.19$, ns	
		Mother Age at Enrollment	N=567; M=18.66 (1.30; 16.07-21.11)	n=351; M=18.61 (1.32)	n=216; M=18.73 (1.28)	$t(565)=-1.11$, ns	
		Self-Report Mother's Ethnic Category					
		South/East Asian	2 (0.8%)	1 (0.9%)	1 (.7%)	Unavailable	
		Black/African American	44 (17.8%)	19 (17.9%)	25 (17.7%)		
		White	117 (47.4%)	43 (40.6%)	74 (52.5%)		
		Hispanic/Latina	62 (25.1%)	32 (30.2%)	30 (21.3%)		
		Multi-racial	15 (6.1%)	6 (5.7%)	9 (6.4%)		
		Cape Verdean	7 (2.8%)	5 (4.7%)	2 (1.4%)		
		Self-Report Mother's Preferred Language					
		English	193 (78.1%)	78 (73.6%)	115 (81.6%)	Unavailable	
		Spanish	7 (2.8%)	4 (3.8%)	3 (2.1%)		
		English and Spanish	31 (12.6%)	17 (16.0%)	14 (9.9%)		
		English and Another Language (not Spanish)	11 (4.5%)	5 (4.7%)	6 (4.3%)		
		Three or More Languages (including English)	3 (1.2%)	1 (0.9%)	2 (1.4%)		
Language(s) Other than English or Spanish	2 (0.8%)	1 (0.9%)	1 (0.7%)				

Category	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)
		Self-Report Mother's Birthplace				
		Massachusetts	154 (68.4%)	154 (68.4%)	Data unavailable for this report	Unavailable
		Within United States (outside Massachusetts)	22 (9.8%)	22 (9.8%)		
		Outside US	49 (21.8%)	49 (21.8%)		
Relationships: Support and Quality	Relationship status with FOB	Self-Report Relationship Status				
		Single	62 (25.2%)	30 (28.6%)	32 (25.2%)	Unavailable
		Dating Someone Other Than Baby's Father	8 (3.3%)	3 (2.9%)	5 (3.5%)	
		Dating Baby's Father	31 (12.6%)	11 (10.5%)	20 (14.2%)	
		Engaged/Committed Relationship with Someone Other Than Baby's Father	13 (5.3%);	3 (2.9%)	10 (7.1%)	
		Engaged/Committed Relationship with Baby's Father	126 (51.2%)	56 (53.3%)	70 (49.6%)	
		Married to Someone Other Than Baby's Father	1 (0.4%)	0 (0.0%)	1 (0.7%)	
		Married to Baby's Father	4 (1.6%)	1 (1.0%)	3 (2.1%)	
		Other	1 (0.4%)	1 (1.0%)	0 (0.0%)	
	Quality of relationships with FOB and other partners (including measure of IPV)	Quality of Relationships Inventory (QRI)				
Support		N=381; M=3.16 (0.97; 1-4)	N=235; M= 3.16 (0.95)	n=146; M=3.14 (0.90)	t(379)=.19, ns	
Conflict		N=381; M=2.07 (0.61; 1.07-3.79)	n=235; M=2.03 (0.56)	n=146; M=2.13 (0.57)	t(379)=-1.60, ns	

Category	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)
		Depth	N=379; M=3.18 (0.95; 1-4)	n=234; M=3.20 (0.91)	n=145; M=3.14 (0.94)	$t(377)=.55$, ns
		Conflict Tactics Scale-Revised Partner Version	Data unavailable for this report			
	Social support systems	Personal Network Matrix				
		MNA Family Support	N=387; M=2.73 (0.75; 0.4-4)	n=240; M=2.76 (0.73)	n=147; M=2.67 (0.77)	$t(385)=1.17$, ns
		MNC Family Support	N=385; M=2.49 (0.82; 0-4)	n=239; M=2.50 (0.79)	n=146; M=2.47 (0.76)	$t(383)=.43$, ns
	Father Involvement/Care provided by FOB	Financial/Material Support to Mom and/or Baby	No= 88 (37%) Yes= 150(63%)	No=36 (37.7%) Yes=66 (64.7%)	No=52 (38.2%) Yes=84 (61.8%)	$\chi^2(1)=.22$, ns
		Emotional Support to Mom and/or Baby	No=48 (20.3%) Yes=189 (79.7%)	No=20 (19.6%) Yes=82 (80.4%)	No=28 (20.7%) Yes=107 (79.3%)	$\chi^2(1)=.05$, ns
		Physical Support to Mom and/or Baby	No= 57(25%) Yes=171 (75%)	No=25 (26.6%) Yes=69 (73.4%)	No=32 (23.9%) Yes=102 (76.1%)	$\chi^2(1)=.22$, ns
	Quality of social support systems and relationships	"My Friends" (adaptation of Deviant Peers)	Data unavailable for this report			
		Social Connections (adapted from Measure of Positive Youth Development [PYD] (4-H Study of PYD) Short Form Questionnaire	Data unavailable for this report			
	Childhood History	History of maltreatment as childhood victim	Conflict Tactics Scale - Adult Recall version	Data unavailable for this report		
Quality of early relationships with primary caregivers		Parental Bonding Instrument	Data unavailable for this report			

Category	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)	
Financial Support and Public Assistance	FOB, MGM, and other informal forms of support	Husband/Boyfriend/ Partner (not FOB)	No=25 (73.5%) Yes=9 (26.5%)	No=12 (85.7%) Yes=2 (14.3%)	No=13 (65.0%) Yes=7 (35.0%)	Unavailable	
		Mother's Own Parents	No=47 (20.9%) Yes=178 (79.1%);	No=22 (22.7%) Yes=75 (77.3%)	No=25 (19.5%) Yes=103 (80.5%)	$\chi^2(1)=.33$, ns	
		Parents of Father of Baby	No=174 (77.3%) Yes=51 (22.7%)	No=76 (78.4%) Yes=21 (21.6%)	No=98 (76.6%) Yes=30 (23.4%)	$\chi^2(1)=.10$, ns	
	Public Assistance	Self Report Public Assistance					
		Welfare:	No=200 (81.6%) Yes=45 (18.4%)	No=87 (82.9%) Yes=18 (17.1%)	No=113 (80.7%) Yes=27 (19.3%)	$\chi^2(1)=0.18$, ns	
		Food Stamps	No=176 (72.1%) Yes=68 (27.9%)	No=77 (73.3%) Yes=28 (26.7%)	No=99 (71.2%) Yes=40 (28.8%)	$\chi^2(1)=.13$, ns	
		WIC	No=55 (22.4%) Yes=191 (77.6%)	No=23 (21.7%) Yes=83 (78.3%)	No=32 (22.9%) Yes=108 (77.1%)	$\chi^2(1)=.05$, ns	
		Childcare Vouchers	No=6 (2.4%) Yes=11 (4.5%)	No=4 (66.7%) Yes=2 (33.3%)	No=2 (18.2%) Yes=9 (81.8%)	Unavailable	
		Teen Living Program/Group Home for Teens/Shelter	No=218 (92.0%) Yes=19 (8.0%)	No=95 (92.2%) Yes=8 (7.8%)	No=123 (91.8%) Yes=11 (8.2%)	$\chi^2(1)=0.02$, ns	
		SSI	No=226 (94.2%) Yes=14 (5.8%)	No=100 (97.1%) Yes=3 (2.9%)	No=126 (92.0%) Yes=11 (8.0%)	Unavailable	
		Housing Vouchers	No=243 (98.8%); Yes=3 (1.2%)	No=104 (98.1%) Yes=2 (1.9%)	No=139 (99.3%) Yes=1 (%)	Unavailable	
Other Public Assistance		No=238 (97.1%) Yes=7 (2.9%)	No=103 (97.2%) Yes=3 (2.8%)	No=135 (97.1%) Yes=4 (2.9%)	Unavailable		
Social Service Usage	HFM Program Usage	Data unavailable for this report					
	Services other than HFM (e.g., mental health, DSS, etc.)	Self-Report Involvement in DYS	No=223 (97.9%) Yes=5 (2.1%)	No=99 (98.0%) Yes=2 (2.0%)	No=134 (97.8%) Yes=3 (2.2%)		
		Self-Report Baby/Child Enrolled in Early Head Start	No= 84 (100%)	NA	NA	NA	

Category	Construct	Data Source/Measure	MHFE Category n (%) / Sample Mean (Standard Deviation; Range)	HVS Category n (%) / Sample Mean (Standard Deviation)	RIO Category n (%) / Sample Mean (Standard Deviation)	χ^2/t -value (df)	
		Self-Report Receives Mental Health Services	No=172 (75.4%) Yes=56 (24.6%)	No=81 (82.7%) Yes=17 (17.3%)	No=91 (68.1%) Yes=39 (31.9%)	$\chi^2(1)=4.83^*$	
		Self-Report Receives Non-HFM Home Visiting Services	No=170 (71.4%) Yes= 68 (28.6%)	No=75 (74.3%) Yes=26 (25.7%)	No=95 (69.3%) Yes=42 (30.7%)	$\chi^2(1)=.68$, ns	
Environmental context	Household Income and Resources/Financial stability	Family Resources Scale	N=492; M=2.39 (.31; 1.55-3.62)	n=319; M=2.40 (.31)	n=173; M=2.39 (.31)	$t(490)=.37$, ns	
	Family/Residential configuration	Self-Report Residential Description Self Report					Unavailable
		Alone	10 (4.1%)	4 (3.9%)	6 (4.3%)		
		With Partner (no parents/guardian)	21 (8.7%)	8 (7.8%)	13 (9.4%)		
		With Parent(s)/Guardian/Older Relative (no Partner)	149 (61.6%)	67 (65.0%)	82 (59.0%)		
		With Partner and Parent(s)/Guardian/Older Relative	31 (12.8%)	11 (10.7%)	20 (14.4%)		
		Institution	13 (5.4%)	6 (5.8%)	7 (5.0%)		
		Other	18 (7.4%)	7 (6.8%)	11 (7.9%)		
	Community context (demographics, access to resources, educational programming, civic engagement, etc.)		Data unavailable for this report				
Neighborhood Cohesion/Characteristics/Social Capital	My Neighborhood and My Neighbors	Data unavailable for this report					
	Neighborhood Social Capital Scale	Data unavailable for this report					

Appendix F: MHFE Research Interview Codebook

DOMAIN	PROPERTY	DIMENSIONS	CODES
Codes that are common across BP, CH, PH, PN (All codes in this section to be preceded by BP, CH, PH, or PN)			
Living Arrangements (LA)	Lived with whom	<ul style="list-style-type: none"> ○ PNuc** (e.g. bio, foster, adopted, step parents) ○ BNuc** ○ Ext ○ NFam ○ Single parent/two-parent ○ Alone ○ With FOB/BF** ○ Other (Homeless, Shelter, Residential Prog) [<i>specify</i>] <p><i>**PNuc = Participant's nuclear family</i> <i>**BNuc = Baby's nuclear family (i.e. participant, baby and FOB)</i> <i>**FOB = Father of the baby</i> <i>**BF = Boyfriend (if not FOB)</i></p>	LA: PNuc LA: BNuc LA: Ext LA: NFam LA: single parent OR two-parent LA: With FOB OR BF LA: Alone LA: Other: Homeless OR Shelter OR Residential program, etc.
Positive Relationships with individual <ul style="list-style-type: none"> ○ Nuclear ○ Extended ○ Non-Family 	<ul style="list-style-type: none"> ○ Adult ○ Peer 	<i>none</i>	Pos Rel: Nuc Pos Rel: Nuc: Peer Pos Rel: Ext Pos Rel: Ext: Like parent Pos Rel: Ext: Peer Pos Rel: NFam Pos Rel: NFam: Like parent Pos Rel: NFam: Peer
Positive Relationships with Kith and Kin Groups	Any age or combination of ages	<i>none</i>	Pos Rel: Kith and Kin
Appraisal	<ul style="list-style-type: none"> ○ Situation appraisal ○ Strategy appraisal 	<i>none</i>	Appraisal: Situation Appraisal: Strategy
Reappraisal	<ul style="list-style-type: none"> ○ Situation reappraisal ○ Strategy reappraisal 	<i>none</i>	Reappraisal: Situation Reappraisal: Strategy
Personal functioning strategies	Strategies directed at the self	<ul style="list-style-type: none"> – Acceptance/positive emotionality (A/PE) – Motivation – Self-confidence and pride (Conf/pride) – Independence (e.g., not feeling 	Pers func: Self: A/PE Pers func: Self: Motivation Pers func: Self: Conf/pride Pers func: Self: Independ Pers func: Self: Spirituality

DOMAIN	PROPERTY	DIMENSIONS	CODES
Codes that are common across BP, CH, PH, PN (All codes in this section to be preceded by BP, CH, PH, or PN)			
			Stress: Comm: Racism Stress: Comm: Trauma
Support	From Type of support Domain	<ul style="list-style-type: none"> ○ Self ○ Kith and Kin ○ School (.g. school program or school staff) ○ Other Institution (e, HF, Religious/cultural, private or state agency) ○ Instrumental (i.e., helping with tasks) ○ Emotional (Emot) ○ Informational (Info) ○ Work ○ House ○ Health ○ Child Care (ChCare) ○ Material goods (Material) ○ Personal functioning (Pers func) ○ Daily living ○ Pregnancy/parenting 	Supp: Self Supp: Kith and Kin Supp: School Supp: Other Supp: Instrumental Supp: Emot Supp: Info Supp: Work Supp: House Supp: Health Supp: ChCare Supp: Material Supp: Pers func Supp: Daily living
CH: Childhood History (All codes in this section to be preceded by CH)			
CA/N reported by participant	<ul style="list-style-type: none"> ○ Yes/No ○ Type ○ Who 	Neglect Physical abuse Sexual abuse Emotional abuse	<ul style="list-style-type: none"> ○ CAN: Yes: Neglect ○ CAN: Yes: Phys Ab ○ CAN: Yes: Sex Ab ○ CAN: Yes: Emot Abuse ○ CAN: No ○ CAN: Perp: [Identity]
CA/N as defined by DCF	<ul style="list-style-type: none"> ○ Type 	Neglect Physical abuse Sexual abuse Emotional abuse	<ul style="list-style-type: none"> ○ CAN: State def: Neglect ○ CAN: State def: Phys Ab ○ CAN: State def: Sex Ab
Family Violence (not CA/N)	<ul style="list-style-type: none"> ○ Inter-partner ○ Other 	<i>none</i>	Fam viol: Inter-partner Fam viol: Other
EC: Early Childbearing History (All codes in this section to be preceded by EC)			
Teen Parent Models	<ul style="list-style-type: none"> ○ Nuclear Family ○ Extended ○ Friends/Classmates ○ Other (e.g., neighbor, family friend, teacher) 	<i>none</i>	EC: Nuc EC: Ext EC: Peers EC: Other
Prior	<ul style="list-style-type: none"> ○ Participant 	Prior pregnancy resulting in miscarriage	EC: Prior pregnancy: Miscarriage

DOMAIN	PROPERTY	DIMENSIONS	CODES
Codes that are common across BP, CH, PH, PN (All codes in this section to be preceded by BP, CH, PH, or PN)			
pregnancies/children	<ul style="list-style-type: none"> o FOB 	Prior pregnancy resulting in abortion	EC: Prior pregnancy: Abortion EC: FOB: Other children
EH: Educational History (All codes in this section to be preceded by EH)			
Participant's Parents' Education	<ul style="list-style-type: none"> o Less than high school o High school/GED o Beyond high school 	<i>none</i>	Par Ed: Less than HS Par Ed: HS/GED Par Ed: Beyond HS
Participant's Educational Status or Attainment	P's attainment of education	<ul style="list-style-type: none"> o Dropped Out o In HS/GED o Completed HS/GED o In Post HS Training/College o Completed post HS training/College 	Status: Dropped Status: In HS/GED Status: Comp HS/GED Status: In Post HS/Coll Status: Comp Post HS/Coll
Educational Trajectory	Continuity	<ul style="list-style-type: none"> o Stayed on track; o On/Off (i.e. veered but returned/resumed); o Discontinued 	EH: Ed Traj: On Track EH: Ed Traj: Interrupt-Res EH: Ed Traj: Interrupt-Dis
Intersection of pregnancy and education history	Timing (when became pregnant)	<ul style="list-style-type: none"> o Before High School o During High school/GED o After completing high school/GED o After dropping out of school o Before dropping out of school 	EH: Timing: Bef HS EH: Timing: Dur HS/GED EH: Timing: After HS/GED EH: Timing: After Dropped HS/GED EH: Before Dropped HS/GED
Engagement History	Level of engagement	<ul style="list-style-type: none"> o Engaged o Disengaged o Attendance issues o Changed because of pregnancy 	Engage: Engaged Engage: Not engaged Engage: Attendance issues Engage: Changed w/ preg
Performance History	Level of achievement	<ul style="list-style-type: none"> o Did well o Didn't do well o Average, Okay o Perceived as difficult o Changed because of pregnancy 	Perf: Good Perf: Not good Perf: Avg Perf: Difficulties Perf: Changed w/ preg
PH: Pregnancy History (All codes in this section to be preceded by PH)			
Planned?	<ul style="list-style-type: none"> o Both partners wanted o One or other wanted o Unplanned 	<i>none</i>	Planned: Both wanted Planned: One wanted Planned: No
Reactions and Feelings in response to pregnancy	Participant's reactions	<ul style="list-style-type: none"> o Positive o Negative o Mixed 	P reactions: Pos P reactions: Neg P reactions: Mixed
Relationship with FOB	Relationship Status	<ul style="list-style-type: none"> o Committed o Not committed 	Rel: FOB: Committed Rel: FOB: Not committed
Work/family balance	Issues related to work/family	<ul style="list-style-type: none"> o Planning childcare o Prioritizing child 	Work/Fam: Planning childcare Work/Fam: Prioritize child

Appendix G: Example of an Integrated Dataset Analysis Plan

The overarching **research questions and sub-questions** are as follows:

1. Does the HFM program have an impact on the educational attainment of the teen mothers?
 - a. Are there differences between groups of participants with varying educational trajectories (e.g., those whose trajectories are interrupted vs. those who stay on track in school) at baseline (T1)?
 - b. Are there differences between groups at T2, T3?
2. Are there program and/or community variations in program effects on educational attainment?
 - a. Are there differences between programs (e.g., those with high fidelity to model vs. those with low fidelity to model) and community profile categories (e.g., communities with high ethnic diversity, low income, and high population density vs. communities with low ethnic diversity, moderate income, and low population density) at baseline (T1)?
 - b. Do specific types of programs (e.g., high fidelity to model vs. low fidelity to model), and/or specific types of community profiles predict High School (or GED) completion?
3. Does program utilization mediate educational attainment outcomes?
4. What are explanations for results observed on previous questions?

Ultimately our interest is in examining if, and in what ways, HFM contributes to maintaining educational trajectories to achieve high school completion. The circumstances and history in terms of whether participants were on track educationally or not prior to pregnancy, as well as circumstances such as residential mobility, engagement, support etc., may mediate the potential and effectiveness of HFM interventions to promote high school completion. Existing research¹⁵ (Ream & Stanton-Salazar, 2007) suggests that relative to many other student groups, scholastic success among many Latino youth from immigrant households is much more dependent upon resourceful relationships with non-familial adults outside the home. School personnel are identified as critical institutional agents who can be helpful to second-generation Latino students in working class homes embedded in stressful ecological conditions. Further, there is evidence that high rates of residential mobility and school transience make it harder for participants to develop social support networks and relationships in schools, which then impacts their academic achievement.

Hence, we are interested in the circumstances under which educational trajectories are maintained or not. Based on the literature, we are particularly interested in examining how school context (e.g., high drop out rates, transience rates), available supports, and participants'

¹⁵ See Ream, R.K., & Stanton-Salazar, R.D. (2007). The mobility/social capital dynamic: Understanding Mexican American families and students. In S.J. Paik & H.J. Walberg (Eds.), *Narrowing the achievement gap: Strategies for educating Latino, Black, and Asian students*. New York, NY: Springer.

histories of engagement intersect in their educational trajectories. It is in addressing this overarching question that we intend to integrate GIS (Geographic Information System-based, Research Interview based data, and Impact Study analysis. The specific questions that drive our analysis are:

- Does school context come into play in educational trajectories and if so, how?
- How does support from various sources (kith and kin, school, HFM) come into play in the trajectories?
- Are there variations across communities?

The plan of analysis to answer these questions illustrates the intersection of data from DOE, GIS, Intake Interviews, and Research Interviews. We begin by listing specific analytic objectives for data from each of the various study components (i.e., DOE, GIS, Intake, and RI), and then explain how we intend to integrate analysis across components.

DOE data (Impact Study, i.e., full sample): The first research question (see Research Question #1 in previous section) we intend to answer from the DOE database is to determine if there are differences between HVS and RIO groups on Educational Outcome variables at T1 (and eventually at T2 and T3). We will examine differences in Enrollment Status, Educational Attainment (Graduation) Status, and MCAS scores. In addition, we will examine if school mobility indicators at the school district level (School Transfer status) serve as a moderator of educational attainment for the full sample. The rationale for our interest in school mobility is described in a later section.

Research Question #3 focuses on examining if program variables moderate and mediate educational attainment. These analyses will be conducted on the HVS sample; for example to examine if there are variations in high school attainment by program fidelity; and by program utilization variables.

Intake data (Impact Study, i.e., full sample): Research Question #1 will also be addressed from Intake data. Differences between HVS and RIO will also be assessed using data from the Intake Interviews on whether participants report being Employed, In School, or Both. These data will (a) enable us to triangulate data reported by participants with that derived from school records, and (b) complement the analysis with additional data (e.g., by documenting whether participants who are not in school are actually employed, and hence not in school). Data from the Intake Interview will also enable us to document their hopes and aspirations for the future.

GIS Data (Impact Study, i.e., full sample): Research Question #2 focuses on examining variations in current status and circumstances of educational trajectories in the context of variations in eco-cultural circumstances of communities. Based on research mentioned earlier (Ream & Stanton-Salazar, 2007), we hypothesize there might be variations in educational attainment by community profile; for example, there may be variations in educational attainment among immigrant/culturally diverse communities compared to less diverse communities (e.g., in EJ vs. Non EJ community contexts). Therefore, we plan to examine

educational attainment, school mobility (transfer/transience) from DOE data at the community level and plot these data through GIS for our sample communities. We will then be able to answer specific sub-questions about our full sample, such as:

- Are there variations in school mobility (transience) rates in high school districts serving HFM communities in EJ vs. Non EJ communities? Transience rate as described in Ream and Stanton-Salazar (2007) is measured as the proportion of students who entered after school started or left before school ended – transience rate of over 30 or 35% are considered high (excluding dropouts).
- Are there variations in drop-out rates in EJ vs. Non-EJ communities; or by program catchment areas?
- Are there variations in school initiated vs. family initiated mobility?
- How do the statistics on school drop-outs, transience, high school completion for our samples in EJ vs. Non-EJ communities compare to national and state level averages, in the HVS and RIO samples?
- Are there differences in these rates by racial/ethnic groups, SES indicators, nativity status (rather than by EJ vs. Non-EJ communities)?

Research Interviews (Integrative Study): The primary analytic objective for data on education from the research interview is to address Research Question #4, that is, explore potential explanations for results that emerge in response to the prior research questions. For example, if there appear to be no program effects on educational attainment, we would be interested in examining if participants' prior educational performance predicts educational outcomes over and above any other factors. Or, if there are differences in educational attainment by community profile, we may explore the hypotheses derived from Ream and Stanton-Salazar (2007), that residential mobility or school mobility impacts school achievement because it hinders formation of social support. Within these communities, we can then examine the role that HFM plays, if any, in facilitating formation of instrumental support relationships with school personnel.

In the interests of developing a sample analysis plan, we have conducted pilot analysis of the sample of 31 interviews coded using qualitative methods. As a first step, we examine if there was variation in how educational trajectories intersected with pregnancy. We noted the following variation:

HVS Group (n=19):

- 6 participants have completed HS: 5 got pregnant after completing HS; 1 dropped HS, got GED, then got pregnant
- 9 participants are in HS: 8 participants got pregnant in HS, but stayed on track; 1 participant dropped HS, got pregnant, but resumed GED
- 3 participants have dropped: 2 participants got pregnant while in HS and discontinued; 1 participant dropped out, then got pregnant and never resumed.

RIO Group (n=12):

- 2 participants have completed HS: 1 got pregnant after completing HS; 1 dropped HS, got pregnant, then got GED
- 9 participants are in HS: 4 participants got pregnant in HS, but stayed on track; 2 dropped HS, got pregnant, then resumed; 3 got pregnant in HS, interrupted, but then resumed
- 1 participant has dropped: This participant got pregnant while in HS and discontinued.

As a next step, we have also coded the following constructs from the Research Interviews:

- Relationships and support from school personnel (developing trust, positive affect and mutual emotional investment, beliefs about help-seeking, self-reliance, social capital)
- Stressful ecological circumstances
- Family or Student initiated mobility
- Immigrant, second-generation, ethnic/racial background
- Performance history
- Engagement history (risky peers, behaviors)

Since there is variation in how pregnancy intersects with educational trajectories, the next step in the analysis is to examine the circumstances under which educational trajectories are interrupted or maintained. Therefore, subsequent steps in analysis are as follows:

- To plot participant trajectories against the backdrop of community profiles (representing the intersection of RI based data with GIS based data): For example, this will help us understand whether our sample participants' trajectories reflect community level trends (e.g., graduation rates, drop-outs, retentions, school mobility/transience) in the school districts in which they reside.
- In-depth analysis of cases in which there have been interruptions of educational trajectories: For example, to note whether prior performance history, risky behaviors, ecological stress, availability of support etc. came into play along with or regardless of pregnancy in influencing decision-making around dropping out or interrupting schooling.