Final Report

Evaluation of the Homebase Community Prevention Program

June 6, 2013

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Final Report

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1.   Introduction

Beginning in 2008, the New York City Department of Homeless Services (DHS) engaged The City University of New York and Abt Associates with subcontractor the University of the Sciences (USciences) to conduct a random assignment evaluation to estimate the effects of the Homebase Community Prevention Program on households' use of homeless shelters and mainstream services.

The Homebase program is a network of neighborhood-based homelessness prevention centers designed to help families avoid homelessness. These prevention centers are located in neighborhoods of high need throughout New York City. Homebase is designed to achieve two primary goals-- preventing homelessness from occurring and preventing repeated stays in shelter. The Homebase Community Prevention (CP) program is directed at the first goal—preventing homelessness from occurring. Applicants contact Homebase CP providers and are screened for preliminary eligibility by phone or in person. Households who are at risk of homelessness, but are not currently applying for shelter, or residing in shelter, are enrolled in Homebase CP. Eligible families are assigned a case manager, who acts quickly to help the family preserve their housing and develop a long-term plan for housing stability. The service plan is unique to each household's circumstances and is made in conjunction with active participation from the household itself. Service plans can offer direct services or referrals to an array of services to clients at risk of homelessness such as benefits advocacy, mediation, employment assistance, and legal referrals. Homebase CP can also provide limited financial assistance to pay rental or utility arrears, security deposits, or moving costs. Homebase CP assistance is intended to help clients stabilize their current housing situation or identify an appropriate alternative as well as to help clients access services and build skills to maintain housing stability and avoid shelter entry.

The purpose of this evaluation is to estimate the impact of Homebase CP on households' use of homeless shelters and their utilization of mainstream services, and to compare any benefits in reducing shelter use to the costs of offering the program. The primary research questions are:

1. Does Homebase CP affect the rate of shelter use, as defined by nights in shelter during the study period?
2. Is the cost of operating Homebase CP offset by any savings that result from its impact on reducing shelter costs?

In addition to these primary research questions, the study explores other patterns in shelter use.

In a more exploratory manner, this study also assesses possible effects of Homebase CP on two collateral municipal systems that provide child welfare and income assistance services. One study of families in the DHS shelter system found that 18% had children who received child welfare services in the five-year period following their first shelter admission, and an additional 6% had a history of having received such services before their first shelter admission.[1] While Homebase CP services were not designed to impact child welfare services, they could nonetheless impact the rates by which

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[1]   Park, Jung Min, Stephen Metraux, Gabriel Brodbar & Dennis P. Culhane (2004). "Child Welfare Involvement Among Homeless Children." Child Welfare 83(5): 423-437.

assisted families are involved with out-of-home placements and in-home prevention services through the NYC Administration for Children's Services (ACS). On one hand, if housing instability were related to higher risk of child welfare services, then Homebase CP could be associated with lower levels of ACS involvement among client families. On the other hand, if families' exposure to homeless services exposed domestic problems that increase levels of ACS involvement (i.e., a "fishbowl effect"), then Homebase CP services could also be associated with increased levels of ACS involvement.

Many homeless families also receive income assistance from three programs provided through the NYC Human Resources Administration (HRA). Temporary Assistance for Needy Families (TANF), commonly known as "welfare"; Supplemental Nutrition Assistance Program (SNAP), formerly known as "food stamps"; and targeted assistance for rent and related housing expenses, known as "one-shot" assistance, can assist homeless families who are going through financial crises. However, these three programs are also intended to be time-limited and are often coupled with programs that help families regain self-sufficiency. Homebase CP, by helping families regain housing stability, may also more generally facilitate families' financial well-being and reduce the need for these HRA assistance services. Conversely, by engaging with Homebase case management services, these families may also access resources such as TANF, SNAP and one shot assistance so that receipt of these types of assistance might instead rise.

Little is known about how child welfare and income assistance services stand to be affected by homeless prevention programs, and this study explores whether there may be such impacts and, if so, the dynamics and related cost savings (or costs) from ACS or HRA that might be attributed to Homebase CP.

Finally, this study explores whether or not Homebase CP has any impact on workforce participation by examining earnings records for families before and after involvement with Homebase CP. Research has shown that the employment rate among homeless families is lowest at the time they become homeless, and subsequently increases as they regain housing stability.[2] If prevention services facilitate a quicker return to stable housing, then this might manifest itself in higher levels of employment among assisted families.

The next section (Section 2) of this report describes the study design including how random assignment was carried out, and the research questions addressed in the CP evaluation. Section 3 describes the data sources, and Section 4 compares the characteristics of the treatment and control group at baseline. Section 5 is divided into three subsections based on outcome domain that describe the findings regarding: housing/shelter outcomes; public assistance and non-shelter social service utilization; and employment and earnings. Section 6 concludes with a discussion of the findings.

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[2]   Metraux, Stephen, Jamison Fargo, Nicholas Eng & Dennis P. Culhane. "Trends in earnings and employment before and after the first instance of homelessness: A multi-cohort analysis." Presented at the Annual Meeting of the Association of Public Policy and Management. Washington DC, Nov. 4, 2011.

2. Design

Recruitment of eligible program applicants took place between June and September of 2010. After applicants were determined to be eligible for Homebase CP services, they were offered the opportunity to provide informed consent. Participation in the study was voluntary; however, if applicants chose not to consent, they would not be eligible to receive Homebase CP services during the study enrollment period. They, along with control group members, could, however, access other homelessness prevention services offered by DHS and other city agencies.

During the study's design phase, Abt Associates worked with Homebase program staff to develop study enrollment procedures and protocols. During the study enrollment period, Homebase CP provider staff screened applicants for program eligibility, administered consent to eligible applicants, and submitted cases who agreed to enter the study to a web-based random assignment system that assigned each case to either the treatment group or the control group. Each individual's random assignment status was recorded in the information system that DHS operates for Homebase CP (and other programs), and this provided the primary analysis set for the evaluation. Using this process, 415 program applicants and their households across eleven program sites were randomly assigned at a 50:50 ratio with 208 having access to CP services in the treatment group and 207 assigned to the control group.[3] This report presents the impact findings of Homebase CP on homelessness, other housing outcomes and other service use, using data on study participants that was collected by various New York City agencies over 27 months (25 months for HRA data) following the end of the random assignment process, that is, through December 2012.

As agreed with DHS, the analysis includes only the 295 families with at least one child[4] who enrolled in the study (150 treatments and 145 controls); households without children are excluded from the analysis. Eligibility for the study did not hinge on whether a participating household had at least one child. Historically, Homebase had served primarily families with children and the study design assumed that would continue to be the case during study enrollment. However, during the study enrollment period DHS was also serving adult-only households (that is, households with one or more adults but no children) with federal funding from HUD's Homelessness Prevention and Rapid Rehousing Program (HPRP). As a result, approximately one-quarter of households enrolled in the study did not have children. Although restricting the study to families with children results in some loss of statistical precision, it will allow us to focus on results for the program's primary population of families with children. The decision mid-evaluation to focus only on families reflects the fact that the HPRP funding expired and DHS has returned to its historic norm of predominantly serving families with children. "Adult families" are qualitatively different in many respects from families with children. Specifically, the dynamics by which families with children become homeless are often different than their adult family counterparts, and the resources and services these types of families are able and/or eligible to access often differ. Including the full set of families that were randomly assigned would thus introduce an unacceptably high level of heterogeneity into this study that could confound the results.

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[3] As described below, the analysis will include only the 295 families with at least one child.

[4] Pregnant women were also included. For simplicity, hereafter we use the term "families with children" to also include pregnant women with no children.

The research questions, the exclusion of single adults and adult families, and the statistical methods used in this report were pre-specified in an analysis plan developed by Abt Associates and its subcontractor, USciences, in consultation with DHS. Adherence to the analysis plan precludes the potential for knowledge of participant outcomes to influence how we estimated program impacts and thus respects a principal tenet of rigorous scientific research. In particular, by pre-specifying how we will analyze the data before we examine it, we prevent ourselves from doing a large number of different analyses and possibly being questioned about which ones we present. An important part of the plan is making sure that we do not take advantage of testing multiple hypotheses without taking that into account in our standard of significance. That is, if we test two hypotheses for significance at the .10 level (the level we have predetermined for this study), the odds that we will find a significant effect by chance, even if there is no true impact, become greater than .10. Furthermore, the more tests we perform, the more we increase the probability that we will find an effect, even if none exists.

In order to prevent this dilution of the standard of evidence, we divide the research questions addressed in this report and stated in the analysis plan into confirmatory, or main, research questions and exploratory research questions. The analysis plan identifies two confirmatory analyses, only one of which involves a hypothesis test. Thus, we will apply a true standard of significance of .10.[5] From a statistical perspective, the confirmatory analyses should be regarded as providing strong evidence. In contrast, because we will test multiple hypotheses for exploratory outcomes without making any adjustment for their multiplicity and attendant risk of false significant results, the findings for questions classified as exploratory should be regarded as suggestive only.

For shelter outcomes, except for subgroup analyses, we test for significance at the .10 level in a one-tailed test. We use a one-tailed test because we assume that the policy consequence of finding either that CP increased shelter use or finding that it had no effect at all would be the same—the evidence would not show that the program was successful. Furthermore, our expectations are that CP will not cause shelter use to increase.[6] We also apply the .10 significance level to other tests—e.g., of effects on TANF receipt or out-of-home child placements—but with two-tails, because we have no expectations about the direction of effect. With respect to our choice to use a standard of .10, we note that both .10 and the more rigorous standard of .05 are regularly used in social policy evaluations. Given the importance of preventing homelessness and the very low risk of harm that the CP program presents should findings be spuriously favorable, we used the less stringent standard to lower the risk of failing to find an effect when one exists at the price of having a higher risk of a false positive result when no favorable effect of Homebase CP occurs.

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[5] We could have had more than one confirmatory hypothesis test, but we then would have had to adjust for this, and it would have lessened our ability to find positive effects of the treatment if they exist.

[6] This way of structuring the hypothesis test does imply that the study will be unable to determine that CP increases nights spent in shelter.

The confirmatory research questions are:

1. Does the Homebase CP program affect the rate of shelter use, as defined by nights in shelter during the study's follow-up period?
2. Do any savings that result from Homebase CP reducing shelter costs offset the cost of operating CP?

Only the first represents a hypothesis test. If we do not have a positive answer to research question 1, there is no point to addressing research question 2 since savings will not have been demonstrated.

The exploratory research questions are:

3. Are clients who are offered Homebase services less likely to:
   a. Apply for and use at least one night of shelter within 27 months than clients who are not offered Homebase services?[7]
   b. Apply for shelter within 27 months than clients who are not offered Homebase services?[8]
4. How can Homebase services be best targeted to reduce the likelihood of shelter entry, i.e., are effects larger or smaller for some subgroups than others, for example, families with histories of child welfare involvement?
5. How do Homebase services affect participants' use of mainstream services such as:
   a. Out-of-home child placements
   b. Length of time child spent in out-of-home placements
   c. Number of separately-initiated in-home prevention services
   d. Whether or not a participant received TANF at any point in the 25 months following random assignment
   e. Number of months of TANF receipt
   f. Whether or not a participant received SNAP at any point in the 25 months following random assignment
   g. Number of months of SNAP receipt
   h. Number of "one-shot" assistances
6. Do the Homebase interventions result in decreased or increased net services cost, inclusive of shelter as well as child protection and welfare services?
7. Are there changes in workforce outcomes associated with Homebase participation in terms of:
   a. Number of months of employment?
   b. Total earnings in the last 24 months?

Household-level multivariate analysis was used for all research questions except research questions 2, 6, 7a and 7b. Multivariate analysis yields more precise impact estimates because it involves the use of baseline measures and observable characteristics to explain variation in the research outcome, and the resulting reduction in the variance of the error terms increases precision in the program impact

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[7] Random assignments occurred on an ongoing basis throughout a four-month period, therefore the duration of the follow-up period varies somewhat by household.

[8] This question was not originally in the analysis plan, but DHS subsequently asked us to address it, as they believe that application by itself has programmatic importance within its system. Since the question is identified as exploratory and we had not observed the outcome, we added it.

estimate.[9] In most cases we estimated the impact of Homebase CP services on the treatment group while controlling for gender, the presence of more than one adult in a household, a shelter risk factor calculated at the baseline survey, the intervention site that processed the study applicant, and a covariate that represents the value of the dependent variable prior to random assignment. For example, for the confirmatory question that focuses on the number of nights a family spent in a shelter, we include as a covariate the family's shelter history prior to entry into this study.

In the analysis plan we selected the covariates we would use in the various analyses. In part we based this selection on the finding of an interim report that there were no baseline imbalances between the treatment and control groups for the full sample of 415. Subsequent to finalizing the analysis plan, we re-ran the baseline analysis for just the 295 families with children, and identified several measures (described below in Baseline Characteristics) in which there was more than a chance difference in characteristics potentially related to an outcome. In order to improve the precision of our estimates, we added these measures as covariates to the relevant analyses.

For the cost analysis addressing research question 2, we use the estimate of reduced nights of shelter obtained from answering question 1 multiplied by the unit cost of a night in shelter. We then compare this total to the per-household cost of providing CP services over the course of program enrollment. We base our measure of per-household cost on data reported to us by DHS regarding the Homebase CP program. Ideally, the analysis would use the *net* cost of providing services to the treatment group by subtracting the service costs that members of the control group incur from any housing assistance they receive from the costs of services received by the treatment group from all sources including Homebase CP, thereby addressing a wider range of potential costs and benefits. However, we lack access to data on the non-shelter housing services control group members received and to measures of non-Homebase CP housing services to the treatment group such as housing subsidy data, so we are unable to do this more complete analysis. As a result, we may underestimate savings resulting from Homebase CP services if the control group relied more heavily on non-shelter housing assistance than the treatment group; or we may overestimate savings if the treatment group relied more heavily on non-shelter housing assistance as a result of the Homebase CP service referrals.

Research questions 7a and 7b rely on the use of data from the New York State (NYS) Department of Labor (DOL) which was provided to us at the group level rather than the household level, so related analysis involves the examination of differences in average earnings and employment outcomes between the treatment and control groups, using a chi-squared test for employment and a t-test for earnings to identify any significant differences.

Appendix A provides additional information on the multivariate estimation model, covariate selection, treatment of missing data, and means of relating treatment-on-the-treated analysis to intent-to-treat analysis.

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[9]   Lin, Winston, "Agnostic Notes on Regression Adjustments to Experimental Data: Reexamining Freedman's Critique," *Annals of Applied Statistics* (forthcoming).

3. Data Sources

No special surveys were conducted as part of the evaluation. With the exception of the cost analyses, all data used in the evaluation are from the individual-level administrative data systems operated by three NYC municipal social service agencies and the NYS Department of Labor (DOL).[10] The municipal agencies are DHS, the Administration for Children's Services (ACS), and the Human Resources Administration (HRA). The primary data system used to capture information on the research sample is the DHS system for Homebase. The records from each of the agencies, including the DOL, were matched with the Homebase data based on social security number, name, date of birth, and gender. Several variables specified in the analysis plan were not present in the datasets themselves and were calculated or imputed; for example, most administrative service data contained service start and end dates from which we computed number of service episodes and length of service. Appendix B describes all of the calculations and imputations that were necessary. The remainder of this section provides more details on the datasets and the specific data elements that were used in this study. Even more detail is presented in Appendix B.

Department of Homeless Services Homebase Data
Baseline characteristics for the study group came from the Homebase Universal Pre-Screen form, the standard form used by Homebase providers to determine eligibility for Homebase CP services. Data elements included:

- Personal identifying information of the head of household, such as name and birthday, used only for the administrative data matching procedures

- Demographic information (e.g., gender, age, family composition, assigned Homebase district, referral information)

- Current income, employment status, and benefits received

- Past and current housing information (e.g., housing type, length of stay, rent contribution, rental subsidy status)

- Risk of homelessness (summary measure for question that asked, e.g., whether the applicant experienced domestic violence, informal eviction, non-payment eviction, holdover eviction, vacate eviction, foreclosure eviction, household discord, landlord discord, overcrowding, crime/violence that is not domestic; see Appendix B).

These data elements are the basis for the analysis of baseline equivalence between the treatment group and the control group. The elements from the Pre-Screen form are also used as co-determinants of study outcomes. Some covariates from the pre-screen dataset were missing for some families; missing categorical variables were recoded to a new value of "missing," and missing continuous variables were addressed with a dummy variable was included in the analysis that was

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[10] Although the source of the information is contained in individual-level records, DOL provided it to us in a grouped format.

equal to 1 if the value of the covariate was missing and 0 otherwise while the missing value of the original variable was replaced with a constant ("99" for numerically coded categorical variables).[11]

The Homebase administrative data also included information on whether services were rendered to each family. We used these data to check compliance with having been assigned to the treatment or control group. The Homebase service data includes a binary indicator for whether or not a household was offered case management, the number of times a household was offered financial assistance, and the total amount of financial assistance that it was offered. We used the binary variable for whether case management was offered to determine whether a treatment group household's experience was aligned with the treatment intervention, because case management is the central tenet of the intervention.

Department of Homeless Services Data on Shelter Use
The extent to which persons in the study group applied for shelter, used at least one night of shelter, and the number of nights of shelter use were assessed using administrative records provided by DHS. Shelter use records from DHS were matched with the Homebase records to produce a dataset that includes all records of family shelter stays in the New York City DHS municipal system for the two-year periods prior to and subsequent to the Homebase assignment (to either the treatment or control groups).[12] DHS either funds or operates 80% of the shelter beds in New York City, and data from DHS shelters are maintained in a DHS homeless management information system (HMIS). While an unspecified amount of homelessness may have occurred in non-DHS shelters, shelters not in New York City or in other, non-shelter settings, the DHS HMIS captures the large majority of homelessness experienced among New York City families. Specific data elements include:

- Records of applications for shelter, including the start and end dates of each shelter stay

New York City Administration for Children's Services
To address the impact of Homebase CP on child welfare involvement, study group records were matched with ACS records to identify households with such involvement. Child welfare services involvement were assessed for the two-year periods preceding and following Homebase assignment. Both the incidence of out-of-home placement and in-home prevention services, and the extent to which these services were used in the post-assignment period served as key outcomes for this domain. In particular, the ACS data elements include records on:

- Out of home placements (date, duration and number)

- In-home prevention services (date, number, and length of open case)

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[11] Puma, Michael, Robert B. Olsen, Stephen H. Bell, and Cristopher Price (2009) What do to when data are missing in group randomized controlled trials. For the National Center for Education Evaluation and Regional Assistance. NCEE 2009-0049

[12] The shelter stay data do not include information on stays in the city's adult shelter system. It is possible that adults enrolled in the study may have entered an adult shelter while their child/children stayed elsewhere. These stays are not reflected in our results.

New York City Human Resources Administration
Income Assistance, in the form of HRA Temporary Assistance for Needy Families (TANF) and
SNAP can act as key means of support for a household in the absence of other material resources. In
addition, HRA provides emergency financial assistance called a "one-shot deal," which offers eligible
families emergency financial assistance for expenses such as rent to avoid eviction, moving expenses,
or disaster-related expenses. In order to determine if having access to Homebase CP Services affected
the use of HRA public assistance or other services, administrative data in the Homebase CP system
were matched with records of TANF, SNAP and "one shot" assistance among the study group in the
two years periods prior to and subsequent to Homebase assignment were available to this evaluation.
The incidence, duration, and amounts of assistance in the post-assignment period are used as outcome
variables to assess changes in benefits receipt that is associated with Homebase assignment. Data
elements include:

- TANF receipt status, amounts, and associated dates
- SNAP receipt status, amounts, and associated dates
- "One shot" assistance amounts and associated dates

New York State Department of Labor
Quarterly employment and earnings impacts were assessed through aggregated administrative records
of Unemployment Insurance covered earnings from the NYS DOL for the study group. DOL collects
earnings records from employers and keeps quarterly records for individuals on wages earned. These
individual quarterly earnings records were matched to the study group records and then, due to
confidentiality concerns, were provided in aggregated format with cell averages (with standard
deviations) for groups based on treatment/control status, presence or absence of minor children and
the calendar quarter covered by the data. Specific data elements provided for a given group in a given
quarter were:

- Number of cases with any paid employment in the quarter
- Total earnings for the group in the quarter
- Average earnings of the employed group members in the quarter
- Standard deviation of earnings within the employed group for the quarter

Department of Homeless Services Cost Data
For the second confirmatory research question, DHS provided the research team with unit cost figures
for an average night in shelter and for CP services received by the average participating family.
Shelter costs are measured by the average reimbursement the agency makes to a shelter provider for
one night of shelter. The per-family unit cost for providing CP services is a more indirect calculation
requiring a further assumption.

Two types of costs arise from a family's enrollment in CP: operating costs, such as for case
management and referral, and financial assistance costs. The former number is derived by dividing
the total value of payments from DHS to Homebase providers for the above services by the number of
Homebase enrollees. However, although DHS has counts of families in CP, as well as counts of
those who are in the other Homebase program (i.e., After Care which address the other Homebase
goal) dollar figures reported by Homebase providers do not separate funds allocated to CP from those

allocated to After Care. Thus, we have no choice but to assume that the average cost for both programs is the same and divide total funding levels by total number of enrolled families across the two programs. This decision will understate the cost per case of providing Homebase CP if Homebase CP services require more resources than After Care, and overestimate the cost of Homebase CP if it requires fewer resources.

The second part of the unit cost of serving a family in CP is the average cost of financial assistance provided to families. This information is included in the Homebase data system and we calculated it directly for sample members in the treatment group. Since DHS provides financial assistance separately from the funds it pays Homebase providers, this cost is added to the operating cost to obtain the total unit cost per Homebase CP family in the treatment group.

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4.   Baseline Characteristics

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After the first year of the evaluation, Abt Associates produced an interim Year One Summary Report in which we reported the baseline characteristics of the individuals and families in the treatment and control groups, tested and confirmed that the two groups matched on these characteristics, and presented preliminary shelter application and entry results.

We present an analysis of baseline characteristics in this report which differs from the original report, because the final analysis sample includes only households in the original analysis sample that include at least one child. This baseline analysis is summarized in Appendix C. In the final analysis sample of families, there were again no statistically significant differences in household composition. The vast majority of families included a female head of household (89.2%), and the average age of that individual was 37.6. The average family had 1.45 adults and 1.84 children. Unlike in the previous baseline analysis on individuals and families, the family-only sample contains significant baseline differences in:

- receipt of any public assistance (treatment group 67%, control group 76%, p = .10);

- percent of those facing informal eviction (treatment group 5%, control group 1%, p = .07); among those who owe rental arrears, average amount owed (treatment group $3,923, control group $4,633, p = .07);

- likelihood of shelter application if housing issues are not resolved, case manager's opinion as measured by a Likert scale (treatment and control group had a different mix of "definitely," "very likely," "somewhat likely," and "not too likely," and "not likely at all," p .05; overall treatment group more frequently responded "definitely" or "very likely" than control group).

Like the previous baseline analysis of both individuals and families, the family-only sample contains a significant baseline difference in:

- the type of rental subsidy used by households currently receiving a rental subsidy (treatment and control groups had a different mix of housing authority section 8 assistance, non- housing authority-based rental assistance, specialty programs, and others, at p = .05)

We control for each of these baseline differences by including the corresponding covariate in the relevant regression models.

In the current report, we have additional baseline information from the three municipal agencies— DHS, ACS and HRA. On none of the service measures for the latter two agencies were there significantly different uses of services in the 24 months prior to random assignment. However, the number of nights spent in shelter in the two years prior to Homebase enrollment differed significantly between treatment and control groups (p=.02). The control group had an average of 10.4 nights in shelter prior to enrollment, and the treatment group had an average of 1.2 nights in shelter. In order to address this baseline difference between the treatment and control group, the number of nights in shelter is included as a covariate in our regression analysis of the effect of treatment on number of nights of shelter use. It is worth noting that of the 295 families enrolled in the study, only eight in the control group and five in the treatment group spent at least one night in shelter in the 24 months prior to Homebase enrollment so that the difference in the percent of families who spent at least one night in shelter is 2.2 percentage points and not significant.

With respect to the aggregate data on employment and earnings we received from New York State DOL, there were some significant pre-random assignment differences between the treatment and control groups. Given the level of aggregation of the data, we did not adjust for these prior differences, but instead describe them in conjunction with post-random assignment comparisons in the findings section.

5. Impact Findings

5.1 Effects on Nights in Shelter and Attendant Costs

Nights in Shelter

The confirmatory analysis yields a statistically significant difference in shelter use between treatment and control groups, with the treatment group families spending on average 22.6 fewer nights in shelter (9.6 versus 32.2 nights) than the control group families (p=.03; see Table 2). This impact estimate is an *intent-to-treat* analysis, and is the average estimated impact on the *complete* treatment group regardless of compliance or intensity of utilization of the Homebase CP program.

For the less definitive exploratory analysis, we estimated whether or not access to Homebase CP affected the prevalence within the population of at least one night in a homeless shelter at any point during the 27 month follow-up period (Research Question 3a). We used an OLS linear probability model to assess the likelihood of spending at least one night in shelter in the 27 months following Homebase intake, controlling for baseline characteristics. This analysis produces a statistically significant finding that families in the treatment group were 6.5 percentage points (8.0% versus 14.5%) less likely to spend at least one night in shelter (p=.04; see Table 2).

We also estimated, as a follow-up to Research Question 3a, whether Homebase CP affected the likelihood that a family would submit an application for shelter during the 27 month follow-up period. Using an OLS linear probability model to control for baseline characteristics, we found that families in the treatment group were 8.9 percentage points (9.3% vs. 18.2%) less likely to apply for shelter; the result is statistically significant (p=.02; see Table 2).

For exploratory research question 4 on the effect of treatment in various subgroups on at least one night in a homeless shelter, we conducted nine analyses covering a very large number of subgroups. As we found a significant impact on only one subgroup among this large number, we conclude that there is a high likelihood that it is simply due to chance.

Table 1. Findings: Shelter Outcomes

Research Question	Outcome	Treatment Group Average	Control Group Average (Regression Adjusted)	Estimated Effect of program	90% Confidence interval for effect of program	p-value
			Confirmatory Analysis			
1	Nights in shelter	9.6	32.2	-22.6	[-41.7, -3.4]	p=.03*
			Exploratory Analysis			
3a	Spent at least one night in shelter	8.0%	14.5%	-6.5 percentage points	[-12.8, -.002] percentage points	p=.04*
3b	Ever applied for shelter	9.3%	18.2%	-8.9 percentage points	[-15.9, -2.0] percentage points	p=.02*
Note: The regression adjusted control group average is equal to the unadjusted treatment group average minus the regression-based impact estimate.						
* Impact estimate is significantly different from zero at the .10 level using a one-tailed test.						

We also estimated the effect of the "treatment on the treated"; that is, the treatment effect associated with actually receiving Homebase services of some kind—a result not occurring universally for all members of the treatment group. Of the 150 families assigned to the treatment group, 134 received Homebase CP services of some kind, and 16 received no services. The effect of the *treatment-on-the-treated* (TOT) is determined by rescaling the original finding to attribute all impacts to the Homebase participant subset of the treatment group. This is accomplished by dividing the original effect by (1-n) where n is the proportion of treatment families who did not receive any services from Homebase (in this case, 16/150, or .1067). This analysis assumes that households that were found eligible to participate in CP and were assigned to the treatment group, but that received no services from it, were not affected by the program—an assumption we find plausible in this context. As a result, the total effect observed for the full research sample necessarily arose among those households that did participate (Bloom 1984).[13] The resulting measure of Homebase CP's impact of *treatment-on-the-treated* is then 22.6 / .893 = 25.3 nights of reduced shelter use, with the same level of significance as the *intent-to-treat* estimate (p=.05).

Costs of Community Prevention versus Savings from Reduced Nights in Shelter (Confirmatory)
The second confirmatory question is whether savings from reduced use of shelter offset the costs of providing CP services. DHS has provided the research team with an average cost of $105.08 per night of shelter (average of New York City fiscal years 2011 and 2012). Multiplying that figure by the estimate of 22.6 fewer nights in shelter implies that the average savings per treatment group member was $2,375. DHS has provided us with a figure of $1,896 for the average operating costs per treatment group member for New York City's fiscal year 2011 (July 1, 2010 through June 30, 2011), the period in which the treatment group received most of its CP services. In addition, since it is directly observed in the research sample, we calculated an average use of financial assistance of $339 over the two fiscal years 2011 and 2012. These two numbers imply an average cost of Homebase CP services to the treatment group of $2,235. Thus, the $2,375 savings from reduced nights of shelter offsets the costs of providing CP services per family served by $140. However, as we describe in the Discussion section, some uncertainty surrounds the precise number.[14]

5.2   Effects on Non-Shelter Assistance

There were no significant effects of treatment on either child protective services or public assistance through TANF and SNAP. Table 3 summarizes these results which are discussed below, and Appendix D provides full regression estimates.

Out-of-Home Placements
Of the 295 families enrolled in the trial, very few received foster care services after Homebase. Adjusting for baseline differences, the treatment group averaged .07 placements and the control group .02, a statistically insignificant difference (p=.22).

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[13]   Bloom, Howard S. (1984). "Accounting for No-Shows in Experimental Evaluation Designs." *Evaluation Review* 8(2): 225-46.

[14]   No time-discounting factor was used to discount the costs and savings that came in the later months of the follow-up period. If averted shelter stays span a larger time period than Homebase CP program costs, then these savings may be overstated.

Length of Out-of-Home Placements

The average family in the treatment group had one or more child spend a total of ten days in foster care versus seven days for those in the control group (p=.64). A regression analysis finds that the treatment effect is not significant.

Number of Separately-Determined In-Home Preventions

Very few families in either group received in-home prevention service after random assignment—an average of .04 per treatment group family and .09 per control group family (p=.20) a statistically insignificant difference

Table 2. Findings: Non-Shelter Assistance

Research Question	Outcome	Treatment Group Average	Control Group Average (Regression Adjusted)*	Estimated Effect of program	90% Confidence interval for effect of program	p-value
			Exploratory Analysis			
5a	Number of out-of-home child placements	.07	.02	0.5	[-.02, .11] percentage points	p=.22 (Not significant)
5b	Number of days child spent in out-of-home placements	10.0	7.0	3.0	[-7.6, 13.6]	p=.64 (Not significant)
5c	Number of separately initiated in-home prevention services	.04	.09	-.05	[-.12, .01]	p=.20 (Not significant)
5d	Receipt of TANF	51.0%	49.4%	1.6 percentage points	[-6.72, 9.88] percentage points	p=.75 (Not significant)
5e	Number of months of participant's TANF receipt	7.5	7.2	.30	[-1.16, 1.73]	p=.75 (Not significant)
5f	Receipt of SNAP	85.0%	86.2%	-1.2 percentage points	[-6.39, 4.06] percentage points	p=.71 (Not significant)
5g	Number of months of SNAP receipt	17.4	17.9	-.5	[-1.92, .85]	p=.53 (Not significant)
5h	Number of one-shot assistance payments	16.7	17.8	-1.1	[-5.33, 3.01]	p=.65 (Not significant)

*The regression adjusted control group average is equal to the unadjusted treatment group average minus the regression-based impact estimate.

Receipt of TANF

Fifty-two percent of treatment group members received TANF and 49 percent of control group members, a non-significant difference (p=.75).

Number of Months of TANF Receipt

Families in the treatment group averaged 7.5 months of TANF receipt versus 7.2 months for the control group, a non-significant difference (p=.75).

Receipt of SNAP

The vast majority of both groups received SNAP assistance during the follow-up period—85.0 percent for the treatment group and 86.2 for the control group, a non-significant difference (p=.71).

Number of Months of SNAP Receipt

On average the treatment group received SNAP support for about a half-month less than the control group (17.4 months versus 17.9 months). Again controlling for other factors, the difference is not statistically significant (p=.53).

Number of One-Shot Assistance Payments

The actual delivery of One-Shot assistance appears to be at odds with the connotation of its name which suggests infrequent use. On average control group households received 17.8 assistance payments and the treatment group 16.7, a non-significant reduction of 1.1 payments (p=.65).

Because we found no evidence of effect on either child protective services or public assistance, we conclude that it did not result in increased or decreased costs for child protection services or welfare assistance. Therefore, we did not pursue a quantitative answer to research question 6 regarding whether Homebase CP resulted in decreased or increased net services cost, inclusive of child protection, welfare services and shelter costs.

5.3   Effects on Labor Market Outcomes

Quarterly Employment

The treatment group showed significantly higher employment than the control group for only one quarter (Quarter 2 of 2011) after random assignment (45.3% versus 33.1%, p=.03). Aggregating across all quarters post-random assignment, treatment group employment is significantly higher than that of the control group (42.3% versus 37.3 %, p<.01). However, as shown in Exhibit 1, we also observe a similar pattern pre-random assignment, again favoring the treatment group (50.1% versus 45.7%, p=.02). Given that we don't have access to the employment data at the individual level, we have not attempted to use the pre-random assignment data to adjust the post-random assignment outcomes, but visual examination of the graph strongly suggests that Homebase CP was not the cause of the treatments group's higher average quarterly employment after random assignment.

Exhibit 1
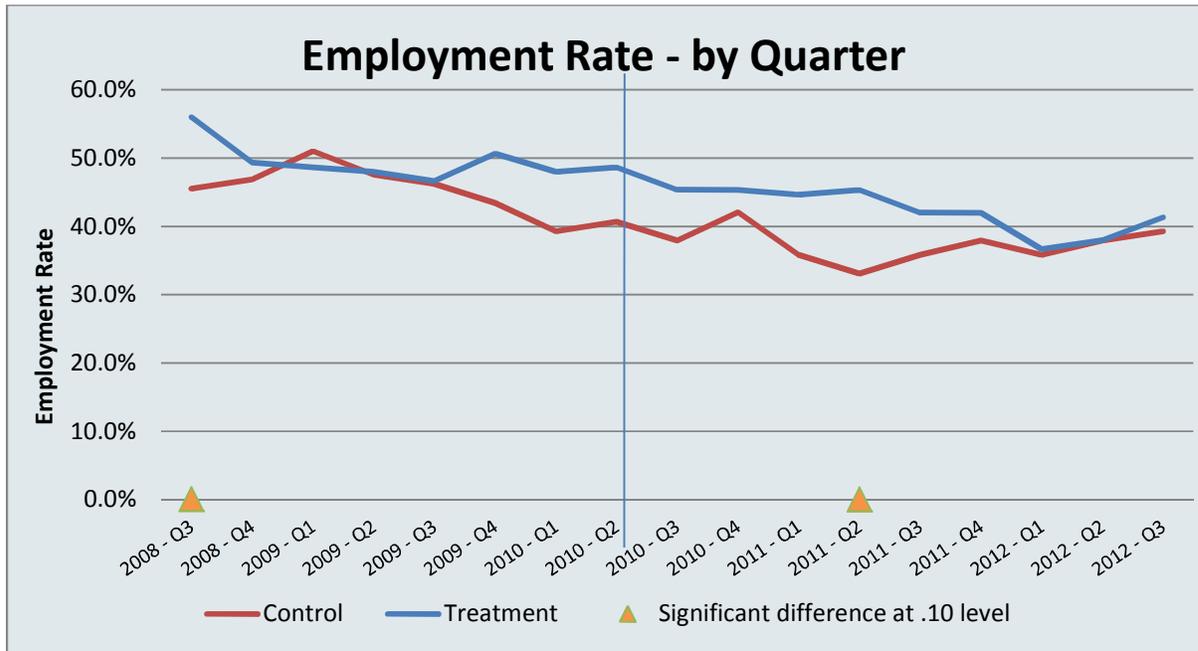
Quarterly Earnings

In four of the nine quarters after random assignment average earnings across all treatment group members were significantly higher (average of $791 across all quarters) than for the control group ($2,285 versus $1,494). However, as shown in Exhibit 2, the pattern was similar pre-random assignment strongly suggesting that the earning differential did not result from access to Homebase CP.

Exhibit 2
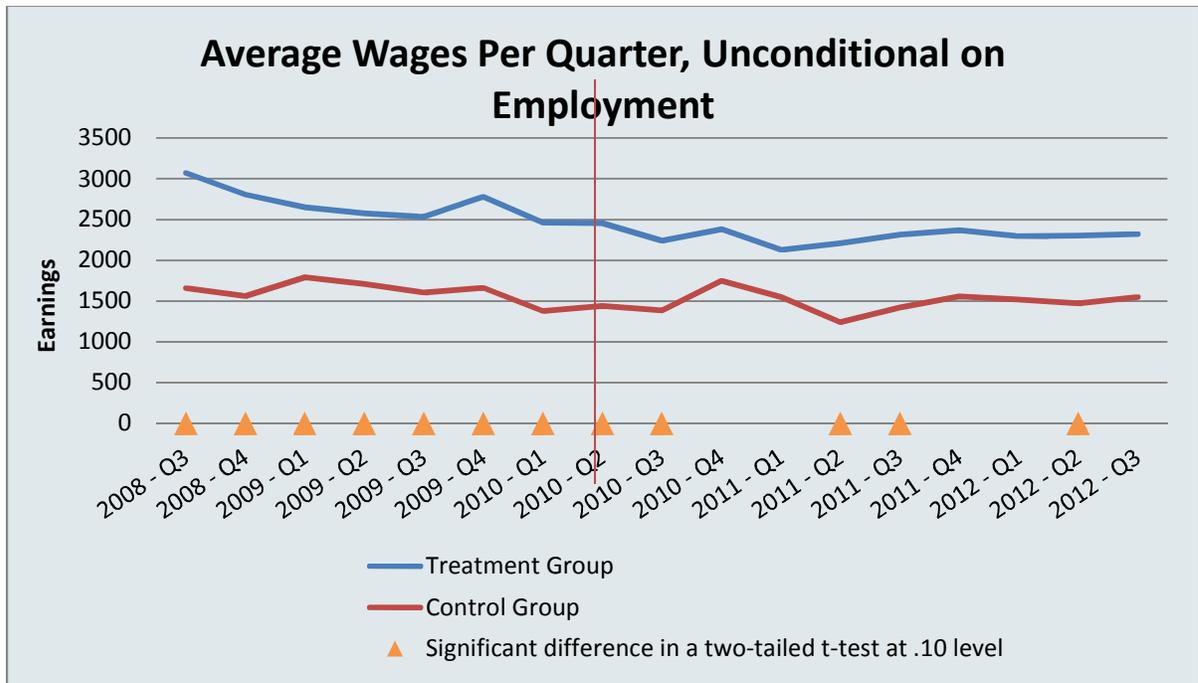
6.   Discussion

The analysis confirmed that Homebase CP reduced the average number of nights in shelter per treatment group family by an estimated 22.6 nights. In addition, it reduced the percentage of families who spent at least one night in shelter from 14.5% to 8.0% and the percentage who applied for shelter from 18.2% to 9.3%. To better understand and interpret these impacts, particularly the first (confirmatory) finding on reduced nights in shelter, we examined whether the effect was due simply to reduced shelter entry or also to cumulative nights in shelter for those who entered shelter at all.

In examining the latter factor, cumulative nights in shelter conditional upon having entered shelter at all, we found a very large discrepancy between the experimental and control groups. For those who entered shelter in the treatment group, the average nights in shelter were 120 nights, whereas the average nights in shelter for the control group totaled almost double that—233 nights. This much shorter cumulative time in shelter was in some ways unexpected given the goal of the Homebase CP program and the services it employs in seeking to achieve those goals. The stated goal of Homebase CP is to reduce shelter entry. Furthermore, it provides no services once families have entered shelter, so any reduction in nights in shelter caused by the program must result either from reducing entry to shelter by those who would have longer than average stays or by providing some service which, once a family enters shelter, causes its total time to be shorter.

With respect to shelter entry, CP did result in fewer (-6.5%) families entering shelter (p=.04). Homebase staff report that CP case managers do stress to families the importance of avoiding shelter. It is possible, if not particularly clear how, that this might have differentially prevented entry by long-staying families. With respect to reducing nights in shelter once a family has entered it, it is not obvious how the services CP delivers before shelter entry would help a family leave earlier once it enters. Most of the Homebase intervention activities focus on stabilizing participants' current housing situation, so that they can avoid using shelter. For example, housing stabilization might occur through intervention activities such as referrals to legal service, employment assistance, benefits advocacy, and limited financial assistance to pay rental arrears, moving costs, or security deposits.   Once a family is in shelter, most of these services received previously would seem to be irrelevant. Nonetheless, it is possible that exposure to CP imparts skills and attitudes which enable families who enter shelter to exit more quickly. As we have no evidence to examine this directly, it is a promising area for future research.

In addition, previous research also led to different expectations. Although the finding applies to a broader population, a Homebase study based on aggregated community data rather than individual cases estimated that Homebase has no discernible effect on length of shelter stay once a family entered shelter but reduced the rate of initial shelter entry (10 to 20 percent fewer families entering shelter).[15]

Because this differential in average nights of shelter for those who entered it was an unexpected finding, we undertook efforts both to rule out its origin in misleading data artifacts, and, if there were

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[15]   Messeri, Peter, Brendan O'Flaherty, and Serena Goodman 2011, "Can Homelessness Be Prevented? Evidence from New York City's HomeBase Program, June 8, 2011.

no such sources we could identify, to better understand the nature of the impacts on nights in shelter. Before setting forth our efforts, we note that, as described in Section 4, there was a highly statistically significant imbalance in average nights in shelter prior to random assignment that favored the treatment group, i.e., far fewer nights in shelter than for the control group, and in the same direction as post-random assignment. But this could not be responsible for the finding of an effect on nights in shelter. In making our estimate of the effect of CP on nights of shelter use, we included the pre-random assignment nights in shelter information as a covariate, thus adjusting for it in the impact estimate. Furthermore, the lack of relationship between the baseline imbalance and the impact finding is driven home by examining the data. Thirteen families spent at least one night in shelter in the 24 months prior to random assignment: eight from the control group and five from the treatment group. Of these 13 families, only one used shelter within the 27 months after random assignment. The correlation between the pre- and post-random assignment nights in shelter was -.03, so that there was almost no relationship between prior and post use of shelter.

To better understand the treatment group's lower average number of nights in shelter, we visually examined the distribution of cumulative nights in shelter after random assignment for those in the treatment and control groups that entered shelter. Doing so reveals an absence of relatively long-staying families in the treatment group—four families in the control group were in shelter between 573 and 763 nights, whereas the longest staying family in the treatment group spent 377 nights in shelter. As an approximate gauge of the contribution of Homebase CP's apparent ability to reduce the proportion of long-staying families to the overall reduction in nights in shelter, we found that 20% of control group families who entered shelter stayed the longest, increasing the average number of nights in shelter from 120 nights (roughly the average in the treatment group) to 233 nights. This analysis demonstrates that in addition to the reduction in the rate of shelter entry, Homebase CP's ability to reduce long-staying families in the treatment group also plays an important role in our finding of a significant impact on number of nights in shelter for the overall sample.[16]

In examining the four families that used the most nights of shelter, all were right-censored, i.e., none had an exit date by the end of the 27-month follow-up period. Although it was improbable that a coding error regarding exits dates would be so unevenly distributed across the treatment and control groups by chance, we examined exit codes (reasons for exit) on the assumption that having an exit code and no exit date would reveal that the absence of the latter was a coding error. None of the four cases of concern had an exit code; by that indicator, all were still in shelter in April 2013. Thus, we have no basis for rejecting the interpretation that all of these four families had very long stays in shelter, and that the CP intervention prevented correspondingly long stays in the treatment group.

That said, we have very limited information for understanding why Homebase CP might reduce the incidence of long stays in shelter. One could imagine achieving this result from interventions that

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[16]   Although these four families had the most cumulative nights in shelter by a large margin in our sample, according to DHS families with lengthy stays in shelter are not that uncommon in the population. According to March 2013 DHS data, 10 percent of families in shelter have stays of between 18 months and 24 months while an additional 16 percent of families stay more than 24 months. These figures represent individual spells in shelter, not cumulative nights, and are thus a conservative estimate of total shelter use in the population.

provide sizeable, long-term housing subsidies, but CP did not provide such subsidies during the period of the evaluation. It is also possible that CP families for some unknown reason had greater access to subsidies *after* they entered shelter. We could not fully assess this possibility since we do not have access to information on all forms of subsidy provided to the treatment and control groups. Early in the follow-up period (through the early spring of 2011), Advantage housing subsidies were available to some families in shelter and there is an exit code for those who left shelter as a result of receiving such a subsidy. We checked this code to see if this route out of shelter was disproportionately available to treatment group families, and found no evidence that it was.

As with any experiment, there is always the possibility that despite meeting the predetermined standard of significance for reducing nights in shelter, the finding of a Homebase CP effect on this outcome is due to chance alone (albeit a small chance). However, after as much exploration as our data would allow, we found no reason to doubt the result beyond this general possibility, and therefore we conclude that the analysis confirms that Homebase reduced the average nights in shelter, through a combination of reduced shelter entry and a reduction in the number of families that accumulate a large number of nights in shelter.

Based on our analysis, Homebase CP's savings in reduced nights of shelter more than offset its operating costs. This conclusion is subject to the statistical uncertainty involved in using an estimate with sampling variability when measuring the reduction in nights in shelter. This uncertainty is particularly pronounced given that the study involves only 295 families, since smaller sample sizes lend themselves to relatively greater baseline imbalances. As we describe above, there were substantial imbalances at baseline for which we corrected in the analysis. In addition, given the nature of available data, there is also uncertainty in establishing an exact per person cost for CP. Of course, in addition to any cost savings that a program produces, there may be important benefits of operating it that are not captured in the simple comparison we are able to make, such as the possibility that it offsets immeasurable costs such as familial instability, lack of continuity of children's school enrollment, or other hardship both to the families involved and their communities.

We found no significant effects, positive or negative, of Homebase CP on the more distal outcomes of use of child protective services and public assistance and conclude from this that there is no evidence that CP increased or decreased the costs of the other municipal services and assistance.

The findings from this evaluation indicate that prevention services can effectively and efficiently target and engage at-risk families before they actually become homeless. In doing so, Homebase CP has addressed the primary challenge facing homeless programs: reducing overall nights of shelter use among enough at-risk families, and at a sufficiently low cost, so that these savings exceed the cost of the assistance provided to other at-risk families who would have avoided shelter in the absence of this assistance. Among the population of Homebase-targeted families, shelter entry would have been a relatively uncommon event – an estimated 14.5% - in the absence of the CP intervention. However, even with this shelter entry rate, the combination of relatively low prevention costs and high shelter costs led to the savings found here.

A separate study of Homebase by Marybeth Shinn and Andrew Greer has produced a quick screening model that shows promise to improve the targeting rate. They find that their screening model can more precisely target families who would otherwise have become homeless, while reducing the

number of families deemed eligible who could have avoided shelter even if they did not receive services. Shinn and Greer's model led to an estimated 26% increase in the overall prevention rate for Homebase.[17] This suggests that DHS's adoption of this model in July 2012 should further raise the cost savings found in this evaluation.

Although the primary purpose of conducting an experiment is to estimate effects of an intervention, it is also useful descriptively, particularly in laying bear what happens to the control group. With respect to Homebase CP, almost all families who were eligible were believed to be at substantial risk of homelessness, but until now there was no way to confirm this. In fact, in the control group about one in five and one half families applied for shelter and about one in seven entered it. This contrasts with case managers' expectations (as assessed at program enrollment) that one-quarter would definitely enter shelter and that for another quarter it was very likely. This misalignment between frontline workers' predictions and what actually would happen to families without the program is not unique to Homebase CP and has appeared in rigorous evaluations of other prevention programs, such as those aimed at preventing foster care. Similarly, it was unknown whether families eligible for CP would become involved with child protective services and possibly have children removed from the home, but in fact it was quite rare in both the control and treatment groups. On the other hand, consistent with expectations, we observed high rates of use of public assistance, both TANF and SNAP, reflecting the very low income of families eligible for CP.

In summary, our analysis confirms that Homebase CP reduces average nights in shelter by 22.6 nights and suggests that the program saved $140 per family that had access to it. Among those who actually received services, our analysis confirms that Homebase CP reduced the average nights in shelter by 25.3 nights.

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[17]   Shinn, M., Greer, A.L., Bainbridge, J., Kwon, J., & Zuiderveen, S. (in press), Effective Targeting of Homelessness Prevention Services for Families. *American Journal of Public Health.*

Appendix A: Methods

We estimated the confirmatory and exploratory impacts on outcomes of shelter usage from DHS, child-welfare service use from ACS, and receipt of TANF, SNAP, and emergency assistance from HRA using the same regression model approach. The outcomes measured by DOL were evaluated differently because their data are provided in an aggregated format. For each, the treatment and control group we have, by quarter:

- The number employed

- Total earnings

- Of those employed, the average earnings

- Of those employed, the standard deviation of earnings

We first present how we estimated impacts on household-level outcomes, and then separately discuss how we conducted the cost-benefit analysis and the analysis of aggregate data from DOL.

Household-Level Outcomes
In a randomized experimental design, valid impact estimates can be based on simple comparisons of means and proportions of outcomes between the treatment and control groups using bivariate analyses. The precision of these estimates (i.e. their standard errors), however, can be improved by controlling for the baseline characteristics of the study members that are related to outcomes in multivariate analyses. Multivariate analyses yield more precise impact estimates in that they allow us to achieve higher levels of statistical power by removing variation in the outcomes that can be explained by baseline measures and characteristics from the error terms of regression models (Bloom et al., 2007, Raudenbusch, 1997).[18]

We therefore analyzed whether there are statistically significant differences in the outcomes of interest between the treatment and control groups using multivariate analyses that employ baseline measures and characteristics as covariates. We employed an Ordinary Least Squares (OLS) linear regression model for research questions with continuous outcomes and OLS linear probability models for research questions with binary (or dichotomous) outcomes.[19] The distribution of some of the outcomes was skewed (e.g., "nights in shelter" has a large number of zeros). In these cases, we accounted for the nonstandard distribution of the error term by computing robust standard errors for the regression coefficients. As robust standard errors are known to have higher sampling variability,

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[18] Bloom, H. S., Richburg-Hayes, L., and Black, A. R. (2007). Using Covariates to Improve Precision for Studies That Randomize Schools to Evaluate Educational Interventions. *Educational Evaluation and Policy Analysis,* vol 29 no. 1 pp 30-59

Raudenbush, S. W. (1997). Statistical analysis and optimal design for cluster randomized trials. *Psychological Methods, 2*(2), 173-185.

[19] The analysis plan specified that logistic regressions would be used. We estimated both OLS and logit regressions and find that the findings do not differ appreciably. But the derivation of results from the OLS linear probability model is simpler to follow than the logistic derivation so we focus on the linear findings. In Appendix D, we report the full set of coefficients for both the linear probability models and the logistic models.

we reported the maximum of the robust standard error and the conventional standard error (Angrist and Pischke 2009).[20]

The following is a prototypical model we used to estimate the impact of community prevention, with number of nights in shelter as an example outcome measure, and including the covariates mentioned above:

$$Y_i = \beta_0 + \beta_1 T_i + \sum_{k=1}^{K} \beta_{k+1} X_i^k + \sum_{s=1}^{9} \beta_{K+1+s} D_i^s + \varepsilon_i$$

where:

Y_i =number of nights in shelter of household i

T_i =an indicator variable denoting whether household i has been randomly assigned to the treatment group (T_i =1) or the control group (T_i =0),

X_i^k =k^{th} covariate (e.g. baseline measure of shelter stays or one of the baseline characteristics, k=1,2,…,K) of household i

D_i^s =an indicator variable denoting whether household i was enrolled in the study by the sth local provider (D_i^s =1) or not (D_i^s =0). Since the model includes an intercept we include an indicator variable for nine of the ten local providers,

ε_i = error term, no distributional assumption.

In this model, β_1 is the coefficient of interest, which can be interpreted as the estimated average *intent-to-treat (ITT)* impact of community prevention on duration of shelter stays. The ITT analysis includes households randomly assigned to be offered Homebase CP services *even if they do not take advantage of the services* (the "no-shows"). ITT analyses are informative about the impact of the program as it is actually offered and implemented in the field, although with cross-overs it is a lower bound on this impact because the average outcome of the control group households would be more favorable if some households in the control group benefit from the treatment.[21]

For the statistical significance tests, we tested whether β_1 was significantly greater than zero (a one-sided hypothesis test) for shelter outcomes, and significantly different from zero for non-shelter outcomes (a two-sided hypothesis test), as explained in Section 2 of this report. As discussed in Section 2, we accepted a 10% chance of a falsely significant result, i.e. mistakenly concluding that β_1 is positive (for shelter outcomes) or non-zero (for other outcomes) when it is not

A treatment-on-the-treated (TOT) impact measures how much on average the program affects those *who actually use its services* (i.e., are treated by the Homebase CP intervention). To obtain this

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[20] Angrist, J.D. and Pischke J.S. (2009). Mostly Harmless Econometrics: An Empiricist's Companion. Princeton University Press.

[21] There were no crossovers in the Homebase CP study.

estimate, we divided the ITT estimate by 1-n where n is the share of treatment group members who are service non-participants, or "no-shows" (Bloom 1984).[22]

Treatment of missing data in multivariate regression models
Outcome and covariate data that describe service receipt are based on administrative records, therefore we interpreted "missing" service data as zero, e.g., no service received. For covariates such as household education level and employment status, missing values were handled by (1) creating a dummy variable that equals one if the value of the variable is missing and zero otherwise, (2) adding the dummy variable to the impact model as a covariate, and (3) replacing the missing value of the original variable with any constant, such as zero or the mean for non-missing cases. This method is adopted by many researchers and shown to produce unbiased impact estimates in RCTs through carefully designed simulations (Puma, Olsen, Bell, & Price, 2009).[23]

Cost Analysis (Confirmatory Research Question 2, Exploratory Research Question 6).
For the cost analysis, we calculated per-case operating expenses, such as for case management and referral, and financial assistance costs for the cases in the treatment group. We compared this cost to the regression-adjusted estimated impact of CP on nights in shelter multiplied the average cost to DHS of providing a night in shelter.

Because we found no evidence of effect on either child protective services or public assistance, we did not explicitly answer research question 6 on whether Homebase CP resulted in decreased or increased net services cost, inclusive of child protection, welfare services and shelter costs.

Research Question 7: Employment and Earnings Impacts
Homelessness is often a direct or indirect result of lost earnings and employment, and interventions addressing homelessness may ameliorate those issues concurrently. Because DOL does not provide individual-level data, we received four aggregate measures for the 150 treatment group and 145 control group members. We report post-assignment differences between treatment and control groups in:

1) amount of quarterly earnings for [#] of quarters following program entry
2) quarterly employment status

Because the data were received in an aggregated format, they were evaluated through comparison of means and contingency table analyses, and not with any regression models. The earnings data were provided only for those who were employed, but we adjusted those data to reflect all group participants, unconditional on employment status. Differences in amount of earnings were evaluated with a one-sided t-test, and employment status was tested using a one-sided Pearson's chi-square.

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[22] Bloom, Howard S. (1984). "Accounting for No-Shows in Experimental Evaluation Designs." *Evaluation Review* 8(2): 225-46.

[23] Puma, Michael, Robert B. Olsen, Stephen H. Bell, and Cristopher Price (2009) What do to when data are missing in group randomized controlled trials. For the National Center for Education Evaluation and Regional Assistance. NCEE 2009-0049

Appendix B: Data Calculations and Imputations

Pre-Analysis Data Calculations and Imputations

Dependent or Independent Variable	Variable Name	Data Source	Calculation/Imputation
Dependent	The number of nights spent in a homeless shelter.	CARES	We subtracted the shelter start date "Effective date" from the shelter exit date "Checkout Date" for each shelter stay, and summed the length of all shelter stays within a family. Where there is no shelter exit or the shelter exit occurred more than 27 months after Homebase enrollment, the variable was calculated by subtracting the shelter entry date from the date 822 days (27 months) after Homebase enrollment.
Dependent	Whether or not a family spent at least one night in a homeless shelter.	CARES	This variable is equal to one if the number of nights spent in a homeless shelter (see row above) is greater than or equal to one.
Dependent	Whether or not a family applied for shelter	CARES	This variable is equal to one if the family had an application submission date in the follow-up period.
Independent	Whether or not a family applied to shelter within the 12 months prior to Homebase enrollment	CARES	This variable is equal to one if the family had an application submission date in that timeframe.
Independent	The number of nights spent in shelter in the 24 months prior to Homebase enrollment	CARES	This is calculated by subtracting the shelter start date from the shelter exit date. Where an exit date occurs within the study timeframe but the shelter start date is prior to the 24-month cutoff, the shelter start date is left-censored at 730 days prior to Homebase enrollment.
Independent	Binary variable for the presence of more than 1 adult	Pre-screen survey	This variable is equal to "1" where 2 or more adults are indicated, and "0" elsewhere.
Independent	Homeless shelter use "Risk Factor"	Pre-screen survey	This factor is the sum of all risk factors indicated in Question 19 of the PreScreen.[24]
Dependent	Number of out-of-home child placements	ACS Out-of-Home Services	Number of out-of-home child placements was calculated by counting the number of placement start dates within 27 months of random assignment where service type = "Foster." In instances in which the same family had multiple placements on the same date, each placement was counted separately.
Dependent	The length of an out-of-home placement	ACS Out-of-Home	This was calculated by subtracting the placement start date from the placement end date. Where there was no end date or the end date occurred more than 27 months after Homebase enrollment, the variable was calculated by subtracting the start date from the date 822 days (27 months) after Homebase enrollment.

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[24] This question asked the case manager to check each reason for which the applicant is at risk of being homeless: domestic violence, informal eviction, non-payment eviction, holdover eviction, vacate eviction, foreclosure eviction, household discord, landlord discord, overcrowding, crime/violence that is not domestic, apartment conditions, or discharge from facility.

Dependent or Independent Variable	Variable Name	Data Source	Calculation/Imputation
Dependent	Number of separately initiated in-home prevention services	ACS In-Home	This was calculated as the number of times within 27 months of random assignment where the service type = "Prevention." Instances in which the same family had multiple placements on the same date were counted as distinct placements. When a family had an in-home prevention service during its Homebase enrollment, this was counted as a service prior to and not subsequent to treatment.
Independent	Number of out-of-home placements for the study group in the 24 month period prior to random assignment.	ACS Out-of-Home	This variable was dropped from our analysis because there were no out-of-home placements for the study group in the 24 month period prior to random assignment in either the treatment or the control group.
Independent	Number of in-home prevention services prior to Homebase enrollment	ACS In-Home	The number of in-home prevention services prior to Homebase enrollment was calculated by counting the number of start dates with a service type of "prevention" within the 24 months prior to Homebase enrollment.
Dependent	Whether or not a household member received TANF payments	HRA	Whether or not a household had a TANF pay period that included the study period, based on the start date of the TANF payment period. (Paymt_Period_From).
Dependent	Number of months of TANF receipt	HRA	Number of months receiving TANF was calculated by (1) isolating cases with Issue Type Descriptions of "PA Recurring" or "PA Recurring SP," (2) collapsing periods of receipt with overlapping days, (3) calculating the length of time of each payment period, and (4) aggregating records by the study ID.
Dependent	Whether or not a household member received food stamps (SNAP)	HRA	Whether or not a household had a SNAP receipt period that included the study period, based on the start date of the TANF payment period. (Paymt_Period_From).
Dependent	Number of months receiving SNAP	HRA	Number of months receiving SNAP was calculated by (1) isolating cases with Issue Type Descriptions of "FS Recurring" or "FS Single Issue," (2) collapsing periods of receipt with overlapping days, (3) calculating the length of time of each payment period, and (4) aggregating records by the study ID.
Dependent	Number of one-shot assistances	HRA	Number of one-shots received was calculated by (1) isolating cases with Issue Type Descriptions of "PA SINGLE ISSUE," (2) collapsing periods of receipt with overlapping days, and (4) aggregating records by the study ID. Inclusion of receipt of a one-shot in the study period was based on the start of the one-shot payment period (Paymt_Period_From).
Independent	Number of months of TANF receipt in the 24 months prior to random assignment	HRA	The number of months of receipt of TANF and SNAP and the number of one-shots received in the 24 months prior to random assignment was calculated by (1) isolating each service, (2) isolating services with a start period in the time period to be used, (3) collapsing periods of receipt with overlapping days, (4) aggregating records by study ID.
Independent	Number of months of SNAP participation in the 24 months prior to random assignment	HRA	
Independent	Number of one-shot assistances in the 24 months prior to random assignment	HRA	

Appendix C: Assessment of Baseline Equivalence between the Treatment and Control Groups

Summarizing the results presented in the tables below, there are significant baseline differences in:

- number of nights spent in shelter in the two years prior to Homebase enrollment (treatment group 1.2 nights, control group 10.4 nights, p = .02). (There was not a significant difference in the percent of families who spent at least one night in shelter in the 24 months prior to Homebase enrollment.)

- receipt of any public assistance (treatment group 67%, control group 76%, p = .10);

- percent of those facing informal eviction (treatment group 5%, control group 1%, p = .07);among those who owe rental arrears, average amount owed (treatment group $3,923, control group $4,633, p = .07);

- likelihood of shelter application if housing issues are not resolved, case manager's opinion as measured by a Likert scale (treatment and control group had a different mix of "definitely," "very likely," "somewhat likely," and "not too likely," and "not likely at all," p .05; overall treatment group more frequently reported as "definitely" or "very likely" than the control group).

- the type of rental subsidy used by households currently receiving a rental subsidy (treatment and control groups had a different mix of housing authority Section 8 assistance, non-housing authority-based rental assistance, specialty programs, and others, p = .05)

The implications of these imbalances and how they are treated in the analysis is discussed in the main report.

	Treatment Group	Control Group	Total
# of Adults in Family	**150**	**145**	**295**
0	1	2	3
	1.10%	2.04%	1.59%
1	64	67	131
	70.33%	68.37%	69.31%
2	55	41	96
	60.44%	41.84%	50.79%
3	23	27	50
	25.27%	27.55%	26.46%
Greater than 3	7	8	15
	7.69%	8.16%	7.94%
Missing	0	0	0
Mean	1.49	1.41	1.45
Median	1	1	1

# of Children in Family	Treatment Group N=150	Control Group N=145	Total N=295
Mean	1.85	1.83	1.84
Median	2	2	2

Currently Employed	Treatment Group 148	Control Group 141	Total 289
Yes	73	67	140
	49.32%	47.52%	48.44%
No	75	74	149
	50.68%	52.48%	51.56%
Missing	2	4	6

Receiving Any Public Assistance	Treatment Group 149	Control Group 141	Total 290
Yes	100	107	207
	67.11%	75.89%	71.38%
No	49	34	83
	32.89%	24.11%	28.62%
Missing	1	4	5

Type of Public Assistance Among Recipients of Any Public Assistance *	Treatment Group 100	Control Group 107	Total 207
Food stamps	95	104	199
	95.00%	97.20%	96.14%
Cash assistance	36	37	73
	36.00%	34.58%	35.27%
Medical assistance	36	41	77
	36.00%	38.32%	37.20%
Missing Information	1	4	5

Among those not receiving any public assistance, lost benefits	Treatment Group	Control Group	Total
	44	30	74
Yes	8	7	15
	18.18%	23.33%	20.27%
No	36	23	59
	81.82%	76.67%	79.73%
Missing	5	4	9

Type of Public Assistance Lost Among Those Who Lost of Any Public Assistance	Treatment Group	Control Group	Total
	8	7	15
Food stamps	7	6	13
	87.50%	85.71%	86.67%
Cash assistance	3	2	5
	37.50%	28.57%	33.33%
Medical assistance	1	2	3
	12.50%	28.57%	20.00%
Missing information*	0	0	0

Current Living Situation	Treatment Group	Control Group	Total
	149	N=140	284
Doubled up with Family	2	1	3
	1.34%	0.71%	1.04%
Doubled up with Friends	2	0	2
	1.34%	0.00%	0.69%
House/ apartment owned by client	7	7	14
	4.70%	5.00%	4.84%
House/apartment rented by client	134	128	262
	89.93%	91.43%	90.66%
Renting a room	1	2	3
	0.67%	1.43%	1.04%
Hotel/motel	0	0	0
Institutional facility	1	1	2
	0.67%	0.71%	0.69%
Conditional Emergency Shelter	0	0	0
Emergency Shelter	0	0	0
Place not meant for habitation	0	0	0
Other	2	1	3
	1.34%	0.71%	1.04%
Missing information	1	5	6

Length of Stay	Treatment Group N=146	Control Group N=137	Total N=283
Less than a week	0	1	1
	0.00%	0.73%	0.35%
1 week to 1 month	3	3	6
	2.05%	2.19%	2.12%
1 month to less than 3 months	6	7	13
	4.11%	5.11%	4.59%
3 months to less than 6 months	7	3	10
	4.79%	2.19%	3.53%
6 months to 1 year	8	14	22
	5.48%	10.22%	7.77%
Over 1 year	122	110	232
	83.56%	80.29%	81.98%
Missing information	4	8	12

Is applicant making rent contribution?	Treatment Group N=147	Control Group 140	Total N=287
Yes	143	135	278
	97.28%	96.43%	96.86%
No	3	5	8
	2.04%	3.57%	2.79%
Missing information	4	5	9

Amount of rent contributions among those making rent contributions	Treatment Group 138	Control Group 128	Total 266
Mean	$827.00	$843.53	$834.93
Median	$778.00	$860.80	$807.75
Min	$50.00	$48.40	$48.40
Max	$10,000	$6,720	$10,000.00
Missing information	12	17	29

	Treatment Group	Control Group	Total
Currently receiving a rental subsidy	**147**	**137**	**284**
Yes	42	28	70
	28.57%	20.44%	24.65%
No	105	109	214
	71.43%	79.56%	75.35%
Missing Information	3	8	11

	Treatment Group	Control Group	Total
Amount of rental subsidies among those who received rental subsidies	**31**	**22**	**53**
Mean	$632.34	$683.83	$653.71
Median	$634.50	$711.88	$660.00
Min	$161.92	$73.50	$73.50
Max	$1,410.00	$1,150.00	$1,410.00
Missing Information	11	6	17

	Treatment Group	Control Group	Total
Type of rental subsidy among those who received rental subsidies	**37**	**28**	**65**
Advantage	1	1	2
	2.70%	3.57%	3.08%
Housing Authority/Section 8	15	18	33
	40.54%	64.29%	50.77%
Rental Assistance	19	7	26
	51.35%	25.00%	40.00%
Specialty Programs	0	1	1
	0.00%	3.57%	1.54%
Other	2	1	3
	5.41%	3.57%	4.62%
Missing Information	5	0	5

	Treatment Group	Control Group	Total
Lost rental subsidy in the past 5 years	**144**	**132**	**276**
Yes	24	24	48
	16.67%	18.18%	17.39%
No	120	108	228
	83.33%	81.82%	82.61%
Missing Information	6	13	19

	Treatment Group	Control Group	Total
Reason for being at-risk of homelessness	**144**	**133**	**277**
Eviction: Total	**143**	**127**	**270**
	99.31%	**95.49%**	**97.47%**
Informal	7	1	**8**
	4.86%	**0.75%**	**2.89%**
Non-Payment	125	121	**246**
	86.81%	**90.98%**	**88.81%**
Holdover	8	5	**13**
	5.56%	**3.76%**	**4.69%**
Vacate	2	0	**2**
	1.39%	**0.00%**	**0.72%**
Foreclosure	1	0	**1**
	0.69%	**0.00%**	**0.36%**
Discord: Total	**5**	**1**	**6**
	3.47%	**0.75%**	**2.17%**
Household	1	0	**1**
	0.69%	**0.00%**	**0.36%**
Landlord	4	1	**5**
	2.78%	**0.75%**	**1.81%**
Overcrowding	1	0	**1**
	0.69%	**0.00%**	**0.36%**
Domestic Violence	1	1	**2**
	0.69%	**0.75%**	**0.72%**
Crime/Violence (Non DV)	1	0	**1**
	0.69%	**0.00%**	**0.36%**
Apartment Conditions	7	2	**9**
	4.86%	**1.50%**	**3.25%**
Discharged from Facility	1	0	**1**
	0.69%	**0.00%**	**0.36%**
Missing Information	6	12	**18**

	Treatment Group	Control Group	Total
Owing rental arrears	**146**	**134**	**280**
Yes	134	123	257
	91.78%	91.79%	91.79%
No	12	11	23
	8.22%	8.21%	8.21%
Missing information	4	11	15

	Treatment Group	Control Group	Total
Amount of rental arrears among those who owed rental arrears	**127**	**109**	**236**
Mean	$3,923.38	$4,633.78	$4,251.49
Median	$3,455.07	$3,680.00	$3,592.50
Min	$279.00	$7.00	$7.00
Max	$14,476.00	$18,064.00	$18,064.00
Missing Information	23	36	59

	Treatment Group	Control Group	Total
Young head of household (under age 24, with children)	**145**	**133**	**278**
Yes	18	16	34
	12.41%	12.03%	12.23%
No	127	117	244
	87.59%	87.97%	87.77%
Missing Information	5	12	17

	Treatment Group	Control Group	Total
Applicant Pregnant (Females only)*	**145**	**133**	**278**
Yes	6	5	11
	4.14%	3.76%	3.96%
No	139	128	267
	95.86%	96.24%	96.04%
Missing Information	5	12	17

Ever been in Foster Care	Treatment Group	Control Group	Total
	144	132	276
Yes	7	4	11
	4.86%	3.03%	3.99%
No	137	128	265
	95.14%	96.97%	96.01%
Missing Information	6	13	19

Highest level of education	Treatment Group	Control Group	Total
	146	135	281
Less than high school	44	38	82
	30.14%	28.15%	29.18%
High School/GED	63	62	125
	43.15%	45.93%	44.48%
Higher education in progress	10	12	22
	6.85%	8.89%	7.83%
Associates degree or higher	26	21	47
	17.81%	15.56%	16.73%
Post high school training certificate	3	2	5
	2.05%	1.48%	1.78%
Missing information	4	10	14

Applied to DHS shelter within the past 12 months	Treatment Group	Control Group	Total
	146	134	280
Yes	4	6	10
	2.74%	4.48%	3.57%
No	142	128	270
	97.26%	95.52%	96.43%
Missing information	4	11	15

Likely application to shelter	Treatment Group	Control Group	Total
	144	132	276
Definitely	45	34	**79**
	31.25%	25.76%	28.62%
Very likely	52	36	**88**
	36.11%	27.27%	31.88%
Somewhat likely	27	35	**62**
	18.75%	26.52%	22.46%
Not too likely	11	22	**33**
	7.64%	16.67%	11.96%
Not likely at all	9	5	**14**
	6.25%	3.79%	5.07%
Missing information	6	13	**19**

If shelters application is likely, how quickly must the housing issues be solved?	Treatment Group	Control Group	Total
	119	111	230
Already applying for shelter	1	2	**3**
	0.84%	1.80%	1.30%
Less than 1 week	16	9	**25**
	13.45%	8.11%	10.87%
1 week or 2 weeks	0	0	**0**
2 weeks to 1 month	33	38	**71**
	27.73%	34.23%	30.87%
1 to 3 months	42	40	**82**
	35.29%	36.04%	35.65%
More than 3 months	4	4	**8**
	3.36%	3.60%	3.48%
N/A – Shelter entry not likely at all	23	18	**41**
	19.33%	16.22%	17.83%
Missing Information	31	34	**65**

Results of Statistical Testing

Social Services in months prior to random assignment.	Treatment Group	Control Group	p-value	Effective Sample Size
% with Prior Application	2.67%	0.69%	0.37	295
% with any shelter days in prior 24 months	3.33%	5.52%	0.36	295
# of days in shelter in prior 24 months	1.27	10.37	0.05	295
% with Prior ACS Prevention	6.67%	3.45%	0.21	295
# of Days Receiving Prevention Services	15.86	13.54	0.81	295
% Receiving SI	70%	64.14%	0.28	295
# of Receipts of Single Issue	5.4	4.9	0.53	295
% Receiving FS	76.67%	75.86%	0.87	295
# of Months Receiving FS	17.07	17.37	0.79	295
% Receiving TANF	34.67%	29.66%	0.36	295
# of Months Receiving TANF	1.39	1.11	0.26	295

Number of Respondents	Treatment Group	Control Group	Total	
	150	**145**	**295**	
	51%	49%		

Baseline Characteristic Client Information	Treatment Group Mean or % yes (# missing)	Control Group Mean or % yes (# missing)	p-value	Effective Sample Size
# of adults in case	1.49	1.41	0.33	295
	(0)	(0)		
# of children in case	1.85	1.83	0.87	295
	(0)	(0)		
Income Information				
Currently Employed	49.32%	47.52%	0.76	289
	(2)	(4)		
Receiving Any Public Assistance	67.11%	75.89%	0.1	289
	(2)	(4)		
Among those receiving any public assistance, the type of assistance received				
Food Stamps	95.00%	97.20%	0.32	207
	(1)	(4)		
Cash Assistance	36.00%	34.58%	0.83	207
	(1)	(4)		
Medical Assistance	36.00%	38.32%	0.73	207
	(1)	(4)		
Among those not receiving any public assistance, the % who lost benefits	19.18%	14.06%	0.59	74
	(5)	(4)		

Baseline Characteristic Client Information	Treatment Group Mean or % yes (# missing)	Control Group Mean or % yes (# missing)	p-value	Effective Sample Size
Among those not receiving any public assistance and who lost any public assistance, the type of assistance lost				
Food Stamps	87.50%	85.71%	1	15
	(0)	(0)		
Cash Assistance	37.50%	28.57%	1	15
	(0)	(0)		
Medical Assistance	12.50%	28.57%	0.57	15
	(0)	(0)		
Housing Information				
Current Living Situation				
Doubled up with Family	1.34%	0.71%		
Doubled up with Friends	1.34%	0.00%		
House/ apartment owned by client	4.70%	5.00%		
House/apartment rented by client	89.93%	91.43%		
Renting a room	0.67%	1.43%		
Hotel/motel	0	0		
Institutional facility	0.67%	0.71%		
Conditional Emergency Shelter	0	0		
Emergency Shelter	0	0		
Place not meant for habitation	0	0		
Other	1.34%	0.71%	0.92	284
	(1)	(5)		
Length of Stay				
Less than a week	0.00%	0.73%		
1 week to 1 month	2.05%	2.19%		
1 month to less than 3 months	4.11%	5.11%		
3 months to less than 6 months	4.79%	2.19%		
6 months to 1 year	5.48%	10.22%		
Over 1 year	83.56%	80.29%	0.47	283
	(4)	(8)		
Applicant is Responsible for the rent or a rent contribution	97.28%	96.43%	0.49	287
	(4)	(5)		
Amount of rent/rent contribution among those responsible for rent/rent contribution	$827.00	$843.53	0.86	266
	(12)	(17)		
Applicant currently receives a rent subsidy	28.57%	20.44%	0.11	284
	(3)	(8)		
Among those who receive a rental subsidy, the amount of the subsidy	$632.34	$683.83	0.55	53
	(11)	(6)		

Baseline Characteristic Client Information	Treatment Group Mean or % yes (# missing)	Control Group Mean or % yes (# missing)	p-value	Effective Sample Size
Among those who receive a rental subsidy, the type of the subsidy				
Advantage	2.38%	3.57%	0.05	65
Housing Authority/Section 8	35.71%	64.29%		
Rental Assistance	45.24%	25.00%		
Specialty Programs	0.00%	3.57%		
Other	4.76%	3.57%		
	(5)	(0)		
Applicant lost a rental subsidy in the past 5 years	16.67%	18.18%	0.74	276
	(6)	(13)		
Risk of homelessness				
Eviction: Total	99.31%	95.49%	0.36	
	(6)	(12)		
Informal	4.86%	0.75%	0.07	
	(6)	(12)		
Non-Payment	86.81%	90.98%	0.98	
	(6)	(12)		
Holdover	5.56%	3.76%	0.36	
	(6)	(12)		
Vacate	1.39%	0.00%	0.5	
	(6)	(12)		
Foreclosure	0.69%	0.00%	1	
	(6)	(12)		
Discord: Total	3.47%	0.75%	0.37	
	(6)	(12)		
Household	0.69%	0.00%	1	
	(6)	(12)		
Landlord	2.78%	0.75%	0.37	
	(6)	(12)		
Overcrowding	0.69%	0.00%	1	
	(6)	(12)		
Domestic Violence	0.69%	0.75%	0.74	
	(6)	(12)		
Crime/Violence (Non DV)	0.69%	0.00%	1	
	(6)	(12)		
Apartment Conditions	4.86%	1.50%	0.17	
	(6)	(12)		
Discharged from Facility	0.69%	0.00%	1	
	(6)	(12)		
Owes Rental Arrears	91.78%	91.79%	1	280
	(4)	(11)		

Baseline Characteristic Client Information	Treatment Group Mean or % yes (# missing)	Control Group Mean or % yes (# missing)	p-value	Effective Sample Size
Among those who owe rental arrears, amount owed	$3,923.38	$4,633.78	0.07	236
	(23)	(36)		
Young head of household (under age 24, with children)	12.41%	12.03%	0.92	278
	(5)	(12)		
Pregnant (Females only)	4.14%	3.76%	0.87	278
	(5)	(12)		
Foster Care	4.86%	3.03%	0.55	276
	(6)	(13)		
Highest Level of Education				
Less than high school	30.14%	28.15%		
High School/GED	43.15%	45.93%		
Higher education in progress	6.85%	8.89%		
Associates degree or higher	17.81%	15.56%		
Post high school training certificate	2.05%	1.48%	0.92	281
	(4)	(10)		
Applied to DHS shelter within the past 12 months	2.74%	4.48%	0.53	280
	(4)	(11)		
Likelihood of application to shelter if housing issues are not resolved				
Definitely	31.25%	25.76%		
Very likely	36.11%	27.27%		
Somewhat likely	18.75%	26.52%		
Not too likely	7.64%	16.67%		
Not likely at all	6.25%	3.79%	0.05	276
	(6)	(13)		
If shelter application is likely, how quickly must housing issues be solved?				
Already applying for shelter	0.84%	1.80%		
Less than 1 week	13.45%	8.11%		
1 week or 2 weeks	0	0		
2 weeks to 1 month	27.73%	34.23%		
1 to 3 months	35.29%	36.04%		
More than 3 months	3.36%	3.60%		
N/A – Shelter entry not likely at all	19.33%	16.22%	0.7	230
	(31)	(34)		

Appendix D: Full Regression Results

Research Question 1: Do the Homebase community prevention interventions affect the rate of shelter use, as defined by days in shelter during the study period? **OLS Regression with Robust Standard Errors**

OLS Regression of Post-Homebase Nights in Shelter					
Covariate	Coefficient	Standard Error	P>|t|	90% Confidence Interval	
Treatment	-22.56	11.61	0.05	-41.72	-3.41
Female	13.73	18.08	0.45	-16.11	43.57
Presence of more than 1 adult	-11.17	11.81	0.35	-30.66	8.33
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant			
Risk Factors	-11.21	16.47	0.50	-38.40	15.98
Length of shelter stays in 12 months prior to random assignment	-0.15	0.14	0.30	-0.38	0.09
Arrears owed	0.00	0.00	0.47	0.00	0.01
Case manager's assessment of family's likelihood of applying for shelter:					
Likelihood - Not at all likely	-6.93	28.04	0.81	-53.20	39.35
Likelihood - Not very likely	-30.84	22.48	0.17	-67.95	6.26
Likelihood - Somewhat likely	-10.17	19.54	0.60	-42.42	22.08
Likelihood - Very likely	7.43	15.71	0.64	-18.50	33.36
Constant	34.24	36.74	0.35	-26.41	94.88

Research Question 3: Are clients who are offered Homebase services less likely to apply for and use at least one night of shelter within 27 months than clients who are not offered Homebase services? **OLS (preferred) and Logit Regression (as planned in analysis plan).**

				90% Confidence Interval	
Covariate	**Coefficient**	**Standard Error**	**P>|t|**		
Treatment	-0.07	0.04	0.09	-0.13	0.00
Female	0.05	0.06	0.38	-0.05	0.15
Presence of more than 1 adult	-0.03	0.04	0.52	-0.09	0.04
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant	.	.	.
Housing type					
Doubled up with friends	-0.71	0.30	0.02	-1.21	-0.21
Doubled up with family	-0.25	0.24	0.29	-0.65	0.14
Rented house/apartment	-0.17	0.12	0.18	-0.38	0.04
Institutional facility	-0.60	0.29	0.04	-1.08	-0.11
Other	0.47	0.36	0.19	-0.12	1.07
Renting a room	-0.01	0.31	0.96	-0.53	0.50
Time in Current Housing					
1 week to 1 month	0.10	0.21	0.62	-0.24	0.45
3 months to less than 6 months	0.13	0.20	0.51	-0.20	0.46
6 months to 1 year	-0.13	0.11	0.23	-0.32	0.05
Less than 1 week	0.99	0.38	0.01	0.36	1.63
Greater than 1 year	-0.04	0.09	0.63	-0.19	0.10
Rent contribution	-0.34	0.19	0.08	-0.65	-0.03
Received subsidy	0.02	0.05	0.72	-0.06	0.09
Lost subsidy	0.14	0.06	0.03	0.03	0.24
Owes arrears	0.08	0.11	0.45	-0.10	0.26
Risk Factors	0.01	0.06	0.93	-0.09	0.10
Amount of arrears	0.00	0.00	0.31	0.00	0.00
Case manager's assessment of family's likelihood of applying for shelter:	.	.	.	.	.
Likelihood - Not at all likely	0.02	0.12	0.84	-0.17	0.22
Likelihood - Not very likely	-0.06	0.07	0.33	-0.18	0.05
Likelihood - Somewhat likely	-0.02	0.05	0.73	-0.11	0.07
Likelihood - Very likely	0.11	0.05	0.04	0.02	0.19
Family applied for shelter during 12 months prior to random assignment	0.14	0.17	0.41	-0.14	0.41
Length of shelter stays in 12 months prior to random assignment	0.00	0.00	0.06	0.00	0.00
Constant	0.50	0.28	0.07	0.05	0.96

OLS Model of Application for At Least One Night of Shelter

Logistic Regression for Spent at Least One Night in a Homeless Shelter			
Covariate	**Point Estimate**	**90% Wald**	
		Confidence Limits	
Treatment	0.32	0.11	0.98
Female	6.00	0.69	52.48
Presence of more than 1 adult	0.54	0.19	1.54
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant	
Family applied for shelter during 12 months prior to random assignment	>999.999	<0.001	>999.999
Housing type			
Doubled up with family	0.00	<0.001	>999.999
Doubled up with friends	<0.001	<0.001	>999.999
Houes/apartment rented	0.03	0.00	0.26
Institutional facility	<0.001	<0.001	>999.999
Other	13.37	0.35	515.92
Renting a room	<0.001	<0.001	21.63
Time in Current Housing			
1 week to 1 month	1.15	0.10	13.55
3 months to less than 6 months	2.97	0.22	39.22
6 months to 1 year	<0.001	<0.001	>999.999
Less than 1 week	>999.999	<0.001	>999.999
Over 1 year	0.32	0.05	2.22
Responsible for rent	0.01	<0.001	0.45
receiving subsidy	1.16	0.36	3.79
lose subsidy	4.76	1.53	14.80
Risk Factors	0.87	0.19	4.01
Rental arrears owed	0.81	0.07	9.92
Amount of arrears owed	1.00	1.00	1.00
Case manager's assessment of family's likelihood of applying for shelter			
Likelihood of shelter -not at all	4.34	0.46	41.28
Likelihood of shelter - not too likely	0.18	0.02	1.40
Likehood of shelter - somewhat likely	0.39	0.07	2.13
likelihood of shelter - very likely	7.87	1.86	33.37
Length of shelter stays in 12 months prior to random assignment	0.62	0.25	1.54

OLS Model of Application for Shelter					
Covariate	**Coefficient**	**Standard Error**	**P>|t|**	**90% Confidence Interval**	
Treatment	-0.09	0.04	0.04	-0.16	-0.02
Female	0.03	0.07	0.65	-0.08	0.15
Presence of more than 1 adult	-0.01	0.04	0.77	-0.09	0.06
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant			
Housing Type					
Doubled up with friends	-0.73	0.34	0.03	-1.28	-0.17
Doubled up with family	-0.23	0.27	0.40	-0.67	0.21
Rented house/apartment	-0.18	0.14	0.19	-0.41	0.05
Institutional facility	-0.64	0.29	0.03	-1.12	-0.16
Other	0.48	0.37	0.20	-0.13	1.08
Renting a room	0.02	0.35	0.97	-0.57	0.60
Time in Current Housing					
1 week to 1 month	0.05	0.21	0.83	-0.30	0.40
3 months to less than 6 months	0.14	0.19	0.46	-0.18	0.46
6 months to 1 year	-0.16	0.12	0.19	-0.37	0.04
Less than 1 week	0.90	0.43	0.04	0.19	1.61
Greater than 1 year	-0.09	0.11	0.44	-0.27	0.10
Rent contribution	-0.27	0.22	0.22	-0.63	0.09
Received subsidy	0.02	0.05	0.73	-0.07	0.11
Lost subsidy	0.08	0.07	0.22	-0.03	0.19
Owes arrears	0.18	0.13	0.16	-0.03	0.39
Risk Factors	0.06	0.07	0.39	-0.05	0.17
Amount of arrears	0.00	0.00	0.07	0.00	0.00
Case manager's assessment of family's likelihood of applying for shelter:					
Likelihood - Not at all likely	0.02	0.13	0.88	-0.19	0.22
Likelihood - Not very likely	-0.05	0.08	0.54	-0.17	0.08
Likelihood - Somewhat likely	-0.05	0.06	0.43	-0.15	0.05
Likelihood - Very likely	0.13	0.06	0.03	0.03	0.22
Family applied for shelter during 12 months prior to random assignment	-0.09	0.14	0.53	-0.32	0.14
Length of shelter stays in 24 months prior to random assignment	0.00	0.00	0.23	0.00	0.00
Constant	0.37	0.34	0.27	-0.18	0.92

Logistic Regression for Application for Shelter			
Covariate	**Point Estimate**	**90% Wald** **Confidence Limits**	
Treatment	0.26	0.10	0.64
Female	1.72	0.43	6.81
Presence of more than 1 adult	0.75	0.32	1.77
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant	
Family applied for shelter during 12 months prior to random assignment	0.12	0.01	2.80
Housing type			
Doubled up with family	0.02	<0.001	>999.999
Doubled up with friends	<0.001	<0.001	>999.999
House/apartment rented	0.10	0.02	0.45
Institutional facility	<0.001	<0.001	>999.999
Other	57.13	1.81	>999.999
Renting a room	1.26	0.02	69.59
Time in Current Housing			
1 week to 1 month	1.27	0.14	11.13
3 months to less than 6 months	3.05	0.29	32.04
6 months to 1 year	0.06	0.00	1.07
Less than 1 week	>999.999	<0.001	>999.999
Over 1 year	0.36	0.07	1.74
Responsible for rent	0.02	0.00	0.23
Receiving Subsidy	1.30	0.48	3.47
Lost subsidy	1.95	0.73	5.23
Risk factors	2.80	0.92	8.53
Owes arrears	8.90	1.02	77.61
Amount of arrears	1.00	1.00	1.00
Case manager's assessment of family's likelihood of applying for shelter:			
Not likely at all	2.64	0.33	20.97
Not too likely	0.49	0.10	2.47
Somwhat Likely	0.46	0.11	1.92
Very Likely	6.37	2.07	19.60
Length of shelter stays in 24 months prior to random assignment	1.00	0.99	1.01

Research Question 5a: How do Homebase services affect out-of-home child placements? **OLS Regression with Robust Standard Errors**

OLS Regression for Out-of-Home Placement					
Covariate	**Coefficient**	**Standard Error**	**P>|t|**	**90% CI**	
Treatment	0.01	0.02	0.38	-0.01	0.04
Presence of more than 1 adult	-0.01	0.02	0.65	-0.04	0.02
Female	-0.05	0.04	0.25	-0.12	0.02
Age	0.00	0.00	0.97	0.00	0.00
12 Site (Block) Fixed Effects	Included, Not Reported			None Significant	
Risk Factors	0.06	0.06	0.34	-0.04	0.16
Constant	0.01	0.06	0.93	-0.09	0.10

Research Question 5b: How do Homebase services affect length of out-of-home child placements? **OLS Regression with Robust Standard Errors.**

OLS Regression of Length of Out-of-Home Child Placements					
	Coefficient	**Standard Error**	**P>|t|**	**90% Confidence Interval**	
Treatment	2.98	6.44	0.46	-7.64	13.61
Presence of More than 1 Adult	-6.91	7.09	-0.98	-18.61	4.78
Female	-28.95	21.89	-1.32	-65.07	7.17
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant			
Risk factors	32.80	31.72	1.03	-19.55	85.14
Constant	-3.62	30.64	-0.12	-54.20	46.95

Research Question 5c. How do Homebase services affect the number of separately-initiated instances of in-home prevention services? **OLS Regression with Robust Standard Errors.**

OLS Regression for Number of Separately-Initiated in-Home Prevention Services					
	Coefficient	Standard Error	P>|t|	90% Confidence Interval	
Treatment	-0.05	0.04	-1.29	-0.12	0.01
Presence of More than 1 Adult	-0.06	0.04	-1.26	-0.13	0.02
Female	0.02	0.07	0.31	-0.09	0.13
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant			
Risk factors	-0.02	0.06	-0.36	-0.12	0.07
Constant	0.10	0.10	0.95	-0.07	0.27

Research Question 5d. How to Homebase services affect whether or not a participant received TANF at any point in the 25 months following random assignment? **OLS (preferred) and Logit Regression (as planned in analysis plan).**

OLS Regression of TANF Receipt					
Covariate	Coefficient	Standard Error	p<|t|	90% Confidence Interval	
Treatment	0.016	0.050	0.754	-0.067	0.099
Female	0.099	0.081	0.224	-0.035	0.233
Presence of More than 1 Adult	0.003	0.054	0.961	-0.086	0.091
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant			
Currently employed	0.012	0.055	0.832	-0.079	0.102
Prior employment	-0.101	0.078	0.197	-0.229	0.028
Associate's Degree	-0.049	0.072	0.491	-0.168	0.069
Higher Education in progress	-0.033	0.097	0.730	-0.193	0.126
Less than HS	0.006	0.062	0.927	-0.097	0.108
Post HS training certificate	0.407	0.206	0.050	0.066	0.747
Prison	0.072	0.080	0.366	-0.059	0.204
Risk Factors	0.009	0.075	0.908	-0.115	0.132
Receipt of TANF in 12 months prior to random assignment	0.611	0.056	0.000	0.518	0.705
Constant	0.257	0.170	0.131	-0.023	0.537

Logistic Regression for Whether Participant Received TANF			
Covariate	Odds Ratio	90% Confidence Interval	
Treatment	1.142	0.666	1.959
Female	1.017	0.566	1.827
other_adult	1.87	0.739	4.73
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant	
Currently employed	1.049	0.608	1.81
Previous work experience	0.49	0.201	1.194
Associates degree	0.725	0.337	1.561
Higher education in progress	0.805	0.291	2.226
Less than HS	1.03	0.52	2.039
Post-HS certificate	>999.999	<0.001	>999.999
Ever convicted	1.987	0.816	4.838
Risk factor	1.306	0.513	3.321
Previous PA	32.489	15.257	69.186

Research Question 5e. How to Homebase services affect the number of months a person received TANF during the 25 months following random assignment? **OLS regression with robust standard errors.**

OLS Regression for Months of TANF Receipt					
Covariate	Coefficient	Standard Error	p<|t|	90% Confidence Interval	
Treatment	0.306	0.832	0.714	-1.068	1.680
Female	0.172	1.369	0.900	-2.088	2.432
Presence of More than 1 Adult	0.194	0.929	0.835	-1.340	1.728
12 Site (Block) Fixed Effects	Included, Not Reported	4 Significant			
Currently employed	-1.451	0.895	0.106	-2.929	0.027
Previously employed	-2.487	1.427	0.083	-4.843	-0.131
Associate's Degree	-1.656	1.043	0.114	-3.378	0.066
Higher Education in progress	-1.457	1.400	0.299	-3.768	0.855
Less than HS	0.718	1.166	0.539	-1.207	2.642
Post HS training certificate	1.483	2.707	0.584	-2.985	5.950
Prison	0.244	1.372	0.859	-2.021	2.509
Risk factors	1.221	1.410	0.387	-1.106	3.549
Number of months TANF receipt in 12 months prior to random assignment	2.408	0.244	0.000	2.005	2.810
Constant	4.828	2.789	0.085	0.225	9.431

Research Question 5f. How to Homebase services affect whether or not a participant received SNAP at any point in the 25 months following random assignment? **OLS (preferred) and Logit Regression (as planned in analysis plan).**

OLS for TANF Receipt					
Covariate	Coefficient	Standard Error	p<|t|	90% Confidence Interval	
Treatment	-0.012	0.032	0.712	-0.064	0.041
Female	-0.028	0.064	0.662	-0.135	0.078
Presence of More than 1 Adult	0.080	0.038	0.035	0.018	0.142
12 Site (Block) Fixed Effects	Included, Not Reported	2 Significant			
Currently employed	0.016	0.032	0.626	-0.037	0.068
Prior employment	-0.002	0.050	0.965	-0.084	0.080
Associate's Degree	0.006	0.058	0.916	-0.090	0.102
Higher Education in progress	0.086	0.071	0.231	-0.032	0.203
Less than HS	-0.040	0.035	0.251	-0.097	0.017
Post HS training certificate	-0.088	0.086	0.306	-0.229	0.054
Prison	0.008	0.052	0.873	-0.078	0.095
Risk Factors	0.072	0.055	0.188	-0.018	0.162
Receipt of SNAP in 12 months prior to random assignment	0.631	0.059	0.000	0.535	0.728
Constant	0.315	0.122	0.010	0.114	0.517

Logistic Regression for Whether or Not Participant Received SNAP Benefits			
Covariate	Odds Ratio	90% Confidence Interval	
Treatment	1.122	0.4	3.145
Female	0.733	0.192	2.796
other_adult	4.702	1.556	14.212
12 Site (Block) Fixed Effects	Included, Not Reported	None Significant	
Currently employed	0.857	0.293	2.503
Previous work experience	0.438	0.082	2.352
Associates degree	2.178	0.487	9.745
Higher education in progress	5.444	0.977	30.325
Less than HS	0.408	0.114	1.469
Post-HS certificate	365.212	<0.001	>999.999
Ever convicted	1.187	0.299	4.722
risk_factors	5.643	1.246	25.556
Previous Foodstamps	363.266	95.276	>999.999

Research Question 5g. How to Homebase services affect the number of months of SNAP receipt during the 25 months following random assignment? **OLS regression with robust standard errors.**

OLS Regression for Number of Months of SNAP Receipt					
Covariate	Coefficient	Standard Error	p<|t|	90% Confidence Interval	
Treatment	-0.47	0.80	0.56	-1.79	0.86
Female	-0.55	1.30	0.67	-2.70	1.60
Presence of More than 1 Adult	1.41	0.85	0.10	0.01	2.81
12 Site (Block) Fixed Effects	-0.25	1.42	0.86	-2.59	2.09
Currently employed	-0.27	0.81	0.74	-1.60	1.06
Prior employment	-0.76	1.23	0.54	-2.79	1.26
Associate's Degree	-0.66	1.42	0.64	-3.00	1.69
Higher Education in progress	1.45	1.71	0.40	-1.38	4.27
Less than HS	-0.36	0.89	0.68	-1.83	1.10
Post HS training certificate	0.24	1.69	0.89	-2.55	3.04
Prison	-0.92	1.25	0.46	-2.99	1.14
Risk Factors	0.25	1.19	0.83	-1.71	2.21
Receipt of SNAP in 12 months prior to random assignment	2.72	0.17	0.00	2.43	3.01
Constant	5.73	2.72	0.04	1.24	10.22

Research Question 5h. How to Homebase services affect the number of one-shot assistance payments during the 25 months following random assignment? **OLS regression with robust standard errors.**

OLS Regression for Number of One-Shot Assistance Payments					
Covariate	Coefficient	Standard Error	p<|t|	90% Confidence Interval	
Treatment	-1.05	2.45	0.67	-5.09	3.00
Female	-0.40	4.90	0.94	-8.48	7.68
Presence of More than 1 Adult	-0.67	2.66	0.80	-5.06	3.71
12 Site (Block) Fixed Effects	-4.03	4.42	0.36	-11.32	3.27
Currently employed	-4.05	2.49	0.11	-8.16	0.06
Prior employment	-1.31	4.12	0.75	-8.11	5.48
Associate's Degree	-7.22	2.93	0.01	-12.06	-2.38
Higher Education in progress	-5.08	3.43	0.14	-10.75	0.58
Less than HS	2.63	3.63	0.47	-3.37	8.62
Post HS training certificate	5.08	8.87	0.57	-9.57	19.73
Prison	0.19	3.92	0.96	-6.28	6.67
Risk Factors	1.97	3.67	0.59	-4.10	8.03
Receipt of SNAP in 12 months prior to random assignment	1.82	0.30	0.00	1.34	2.31
Constant	3.56	8.54	0.68	-10.54	17.66