Final Evaluation report Home Again

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Table of Contents

Executive Summary

In January of 2007, The Health Foundation of Central Massachusetts funded a proposal submitted by a collaborative of homeless service providers, to plan and then pilot test a Housing First-type approach to addressing chronic homelessness in Worcester, Massachusetts. Members of the collaborative included: Central Massachusetts Housing Alliance, Community Healthlink, Dismas House, Henry Lee Willis Community Center, Jeremiah's Inn, and PIP Shelter/South Middlesex Opportunity Council. The planned project was named "Home Again," and was modeled and evaluated over the course of 45 months (January 1, 2008-September 30, 2011) which covered the pilot period and full implementation period. The primary goal of the project was to reduce the number of adults in Worcester who were chronically homeless, or on the verge of becoming chronically homeless. Since 2007, The Health Foundation of Central Massachusetts has committed $2.1 million to the project.

An evaluation team from the Boston University School of Public Health monitored the project and assessed the impact of Home Again on participants. The evaluation had four components.

(#1) Randomized Trial - During the first 18 months of implementation (also called "the pilot period" in this report), a randomized controlled trial was conducted to assess whether participation in Home Again was more beneficial than participation in "Standard Care" (i.e., the services that are otherwise available through homeless service providers in the Worcester area). Specifically, the evaluation assessed whether participation in Home Again was associated with increased likelihood of remaining housed for a 6-month follow-up period, decreased alcohol use, decreased use of hospital emergency health services, improved mental health, and increased social support for participants.

(#2) Longitudinal Follow-up - After the pilot randomized controlled trial period ended, Home Again participants were followed for an additional 12-30 months in order to observe whether they remained housed and if their levels of medical care use, alcohol use, mental health scores and social support remained stable. During this period of time, four of the "standard care" or control group participants were transferred into Home Again (the second wave of enrollment in Home Again is also referred to as "the implementation year" in this report).

(#3) Case Management Services -The third component of the evaluation was to analyze the number of hours of case management provided to intervention participants and to attempt to determine if more case management was predictive of better outcomes.

(#4) Advocacy to Sustain Services -The fourth and final component of the evaluation was to assess the advocacy work of the project to change systems in order to sustain the Housing First approach and case management services after the grant concluded.

This report provides detailed information about the methodology and results of the 45-month outcome evaluation, which has involved a total of 76 unique homeless individuals.

Key Findings:

- Home Again participants were 2.5 times as likely as individuals receiving Standard Care to achieve and maintain housing over six months (98% v. 38%, p<.001).

- At baseline, 100% of the participants in Home Again were homeless, and at the 6-month follow-up 98% were housed. Of the individuals that we followed to the 18, 24, and 30-month follow-up period, 97%, 96%, and 100% remained housed, respectively.

- The mental health symptoms of Home Again participants significantly decreased from baseline to the 24- and 30-month follow-up ($p < 0.05$).

- Participants reported feeling significantly less depressed in the past month at the 18- and 30-month follow-up, compared to the baseline ($p < 0.05$).

- The proportion of participants that screened positive for a potential alcohol use problems decreased significantly from baseline to 18-month follow-up (48% to 24%, respectively, $p = 0.05$).

- Participants experienced improved health. Self-reported poor health decreased at the 18- and 30-month follow-up compared to the baseline ($p < 0.10$). The mean average number of poor health days in the past month also significantly decreased at the 18-and 30-month follow-up compared to the baseline ($p < 0.05$).

- Use of healthcare services including hospitalization, emergency room use, and ambulance use substantially decreased among Home Again participants from baseline to 24-month follow-up.

- The project achieved its advocacy goals of securing housing subsidies and case management services. MassHealth (Medicaid) has expanded its behavioral health case management services to all adults who are chronically homeless and expects to have received CMS authorization and have implemented systems by January 2013 to also provide case management services to the "dual eligible" population (i.e., those eligible for Medicare and Medicaid) of adults who are chronically homeless.

Based on the evaluation, Home Again was successful in improving housing tenure for 100% of participants and keeping them housed for at least two and a half years. In addition, the Home Again model positively affected participants' mental health and social support. In the long-term, the Home Again model has a positive impact on participants' drug and alcohol use and dependent drinking.

In 2011, Home Again was recognized by the National Alliance to End Homelessness as responsible for effectively ending chronic homelessness in Worcester, MA. At present, Worcester is the only city in the United States to reach this goal. Home Again was also honored with the *Cornerstone Award* from the Massachusetts Housing and Shelter Alliance for its success in creating permanent solutions to chronic homelessness in Worcester.

Background and Purpose

The Scope of the Problem

Homelessness impacts the health and well-being of millions of people in the United States. It is estimated that 3.5 million people in the U.S. experience homelessness each year.[1] In Worcester, a 2011 point in time count of homeless individuals identified 273 individuals (this number does not include persons in families with dependent children), and local agencies that serve the homeless estimate that there are approximately 2,000 homeless individuals in the area over the course of one year.[2]

Several studies have found that homelessness is associated with increased risk for several important health concerns, and death.[3-5] Mortality rates among homeless adults are 3 or more times that of the general population.[6,7] In addition, homeless individuals face higher-than-average risk of respiratory, skin, and dental problems, depression and substance abuse, chronic health problems such as hypertension, diabetes and peripheral vascular disease, communicable diseases, and physical and sexual violence (including homicide).[5,8,9] Importantly, individuals who experience homelessness typically have extremely limited access to primary and preventive health care services, but use acute health services at high rates.[10-12]

Homelessness is also costly for society. The federal government spends approximately $2.4 billion annually on homeless services programs. Providing emergency shelter to a single homeless individual in Massachusetts costs the state approximately $1,000 a month. According to the most recent Massachusetts Housing and Shelter Alliance Home and Healthy for Good report data (2011 report), individuals living on the street have an annual health care cost of $28,436 as compared to $6,056 for those who obtain housing. A recent analysis of the cost of homelessness in Seattle, Washington, found that the average homeless adult incurred public costs of over $4,000 per month.[13]

There is a small subset (~10%) of the homeless population that uses substantially more health care and other services than other homeless individuals—those who are "chronically homeless."   HUD defines chronic homelessness as those who are "an unaccompanied homeless individual with a disabling condition who had either been continuously homeless for a year or more or has had at least four episodes of homelessness in the past three years".[14] In 2009, this definition was amended to include families in which at least one adult met the above criteria. According to the National Alliance to End Homelessness, in 2005, chronically homeless individuals represented 39% of all homeless individuals. (NAEH 2011 report)

Homeless Services

In Worcester, Massachusetts, when an individual seeks help to end his or her homelessness, he or she typically comes to the Homeless Outreach and Advocacy Project (HOAP) at Community Healthlink.   HOAP conducts a comprehensive assessment of their needs, and enters them into a local system of services that is referred to in this report as "Standard Care." Standard Care services comprise outreach services, case management, referral to local emergency shelters, and other appropriate services including temporary or permanent housing.

Recently, a new model of services has been tested and adopted by approximately 150 cities in the United States.[15] This strategy, known as Housing First, provides permanent subsidized

housing and case management to homeless clients. This approach directly challenges the notion that homeless individuals must first achieve "housing readiness" before entering housing. At least four randomized controlled trials have found that the Housing First approach is effective.[16-19] These studies have demonstrated that chronically homeless people who participate in Housing First programs are more likely to remain housed, less likely to use emergency health services, less likely to be in jail, and less likely to be admitted to mental health facilities than chronically homeless people who receive standard services.[16-19]

Although the Housing First approach has worked for homeless individuals in cities including New York, Denver, Seattle, San Francisco, and Chicago, it was not a foregone conclusion that it would be successful in Worcester, or that it would offer a substantial improvement over standard services here.[12,13,19,20] There were two main reasons why Worcester might have been different than the other cities where Housing First had worked. First, because of the relatively robust human services system in Worcester, the usual care provided might have been as helpful as (or superior to) to the Housing First approach. It was also possible that the homeless population in Worcester was different from the homeless populations in other cities because of geographic and cultural factors, which meant that in theory there was a possibility that Worcester-based homeless people were for some reason at higher-than-average risk of being unable to maintain permanent housing. An additional reason for conducting the evaluation in Worcester was that some local elected officials, civic leaders, and activists perceived that sobriety was an appropriate precondition for housing, and they questioned whether Housing First would be an effective intervention in Worcester.

For these reasons, in January of 2007, The Health Foundation of Central Massachusetts funded a proposal submitted by a collaborative of homeless service providers to plan and then evaluate a Housing First approach to addressing chronic homelessness. Members of the collaborative include: Central Massachusetts Housing Alliance, Community Healthlink, Dismas House, Henry Lee Willis Community Center, Jeremiah's Inn, and PIP Shelter/South Middlesex Opportunity Council. The planned project was named "Home Again," and was modeled and evaluated over the course of 45 months (January 1, 2008 – September 30, 2011). The primary goal of the project was to reduce the number of adults in Worcester, Massachusetts who were chronically homeless, or on the verge of becoming chronically homeless.

Since the project's inception in 2007, The Health Foundation of Central Massachusetts has committed $2.1 million to Home Again. The Foundation supported the administration and evaluation of Home Again with $1.6 million, and provided a $492,000 low interest loan for the purchase and renovation of a 14-unit congregate housing facility.

The impact of Home Again was assessed by an evaluation team from the Boston University School of Public Health. The purpose of the evaluation was to determine whether participation in Home Again was more beneficial to chronically homeless individuals in Worcester, Massachusetts, than the standard services that were otherwise available. Specifically, the evaluation assessed whether participation in Home Again was associated with increased likelihood of remaining housed for a 6-month follow-up period, decreased alcohol use, decreased use of hospital emergency department services, improved mental health, and increased social support for participants. The evaluation also assessed whether participants in the intervention were able to sustain housing and other positive outcomes past the 6 –month point, and whether the amount of case management individuals received was predictive of better outcomes.

This report provides detailed information about the methodology and results of the 45 month outcome evaluation.

Description of the Intervention: Home Again vs. Standard Care

Home Again is a "Housing First-style" intervention; it is modeled after other successful Housing First programs in other cities, with some minor modifications that make it suitable for Worcester, Massachusetts. Home Again was first tested and evaluated against what might reasonably be called the "standard care" for homeless individuals in Worcester in 2008-09. It should be noted that Home Again participants were housed in scattered sites and in a congregate site called Spencer House. For the purpose of this report, we use the term "Standard Care" to refer to the local system of services that comprises outreach, emergency shelter, and in some cases, temporary housing that is typically predicated on achieving and maintaining sobriety.

Table 1 (below) details the major differences and similarities between Home Again and Standard Care in Worcester. Notably, while case management is central to both approaches, the ratio of case managers to clients is 1 to 10 in Home Again, while it is as high as 1 to 70 or more in Standard Care. The potential of the Housing First model to succeed rests on the lower case manager to client ratio, and thus Home Again case managers work directly with each client to achieve permanent housing early in their engagement with services. In Home Again, the goal is for clients to move into permanent subsidized housing within a few months of program engagement. In Standard Care, it can take years for clients to find permanent housing.

In Home Again, case managers accompany clients as they search for a place to live, and in some cases, are able to direct them towards housing units, some of which were owned by agencies represented on the Home Again Steering Committee. In Standard Care, case managers do not accompany clients on housing searches and do not generally have housing stock to offer to clients. Further, in Home Again, case managers will deliver the exact services that the client needs in the most efficient way possible; for example, they will drive to the client's home to meet with them, drive them to their appointments, or supply them with taxi vouchers. Clients in Standard Care typically must find their own transportation to appointments. Perhaps most importantly, in Home Again, case management services are provided even after the client is housed. Clients in Standard Care who are housed may not necessarily continue to receive needed case management services.

Perhaps the most widely-known feature of Home Again is that clients need not be sober (*i.e.*, refrain from drinking alcohol or using drugs) in order to participate. Instead, case management and other services are provided to clients in order for them to develop a harm-reduction action plan and achieve a healthy lifestyle. In Standard Care, most providers require clients to achieve sobriety before they are eligible for housing—and to maintain sobriety when housed.

Table 1. Home Again details compared to Standard Care

Feature	Home Again	Standard Care
Case management	✓	✓
Case manager: client ratio	1:10	1:≥70
Case management appointments at home	✓	⊗
Sobriety/abstinence is not required to receive housing*	✓	⊗
No mental health treatment pre-requisite for housing	✓	⊗
Mental Health treatment at home	✓	⊗
Permanent subsidized housing	✓	⊗
Average wait for permanent housing	<3 months	>2-5 years (unless client can afford market-rate housing)
Case management support after housed	✓	No, unless specific housing program provides it
Housing retained during temporary departure (e.g. treatment facility or hospitalization)	✓	⊗

✓ = the program has this feature
⊗ = the program does not have this feature
* note that there is one exception: sobriety is not required of Standard Care individuals who obtain market housing

Evaluation Design and Methods

Evaluation design

There were four components of the outcome evaluation of Home Again. Each of the three components are described below. All aspects of the evaluation research were approved by the Human Subjects Committees at the Boston University School of Public Health and the University of Massachusetts Medical School.

Randomized Trial - A randomized controlled design was used to assess changes in housing status, substance abuse, mental health, physical health, use of emergency health care services, self-care skills, and social support among those in Home Again as compared to those receiving Standard Care over a six month period. This is referred to as "the pilot period" in this evaluation report. Initially, 60 homeless individuals were enrolled and randomized to receive either Home Again or Standard Care services; 29 were enrolled in the intervention, and 31 were in standard care. A trained interviewer administered baseline assessment surveys, and follow-up surveys at

three and six months following baseline to all participants. Enrollment and follow-ups occurred on a "rolling" basis—that is, individuals entered the program and were followed-up on a first-come, first-served basis rather than all at the same time. Detailed information about the randomization and data collection methods for this component of the evaluation are provided in the first evaluation report, which is available from the authors or at this website: http://people.bu.edu/erothman/reports/homeagain.pdf

Longitudinal Follow-up- In September 2009 the randomized trial (*i.e.,* Home Again pilot period) was discontinued because there was sufficient data to demonstrate that Home Again offered a benefit over Standard Care. Therefore, it was unethical to withhold the Home Again intervention from eligible clients. When the randomized trial ended, those who had been enrolled in the Home Again pilot were followed further to see what happened to them over time. In addition, in 2010, four of the individuals originally assigned to standard care were enrolled to the intervention group, and 16 other individuals were also enrolled in the intervention for a total of 49 intervention group participants. This is referred to as "the implementation year" in this evaluation report. By September 2011 24- and 30-month follow-up data had been collected on 83% and 69% of the original cohort of 29 participants, respectively. The reason why follow-up data was collected for less than 100% is that the study used a "rolling" enrollment. Individuals could enroll at any time over a 2.5-year period, and as a result, many participants had not yet been involved for 30 months by the time this report was written.

Figure 1. Total enrollment in pilot, standard care, and implementation year samples (N=76)[a]

	Home Again pilot sample (2008-2009)	Standard Care sample (2008-2009)	Implementation year sample (2009-2011)	Total Home Again sample[b] (2008-2011)
	n=29	n=31	n=20 (4 participants from Standard Care group)	n=49[c]
Baseline survey	100% (29)	100% (31)	100% (20)	100% (49)
6 month follow-up	100% (29)	84% (26)	75% (15)	90% (44)
Loss to follow-up		Unable to contact/no show n=3; declined to participate n=2	Unable to contact/no show n=5;	
12 month follow-up	No data collection for this group	N/A	70% (14)	
Loss to follow-up			Deceased n=1; Unable to contact/no show n=5	
18 month follow-up	79% (23)	N/A	50% (10)	67% (33)
Loss to follow-up	Deceased n=1; incarcerated n=3; unable to contact/no show n=2		Deceased n=1; incarcerated n=1;	
24 month follow-up	83% (24)		See [c]	83% (24)
Loss to follow-up	Deceased n=1; incarcerated n=2; unable to contact/no show n=2			
30 month follow-up	69% (20)		See [c]	69% (20)
Loss to follow-up	Deceased n=1; incarcerated n=1; unable to contact/no show n=7			

[a]includes 29 pilot year + 31 standard care + 16 implementation year participants; count 4 individuals who were standard care participants and later enrolled in Home Again only once.
[b]includes 29 pilot year + 20 implementation year participants in Home Again
[c]the study did not continue long enough for all participants to complete all follow-up assessments due to rolling enrollment

Case Management Services- Each Home Again intervention participant received case management services from case managers who were employed by Community Healthlink.   Some participants received more sessions and/or more hours of case management than others. The effect of the number of case management contacts received on outcomes such as mental health, alcohol use, and emergency room visits were assessed.

Advocacy to Sustain Services- The Steering Committee for the Home Again project engaged in substantial advocacy efforts from July 2010 to July 2011 to accomplish two goals: 1) to create sustainable housing subsidies from federal or state government sources, and 2) to create sustainable case management subsidies from federal or state government sources. The advocacy activities efforts were tracked monthly to assess progress towards the above goals.

Evaluation Study Sample

The evaluation study sample was drawn from the population of homeless individuals living in Worcester who requested services from Community Healthlink, the lead administrative and fiscal agent for the grant which funded Home Again. The recruitment procedure was as follows: homeless individuals requesting services were asked if they were interested in the participating in an evaluation study. If so, they were screened for eligibility. Individuals were considered eligible for the study if they met the HUD definition for being chronically homeless (see background section), or if they were considered to be at a high risk for becoming chronically homeless (see Table 2). People were considered at high risk if they had been incarcerated as an adult, met the federal poverty guidelines, were over age 29, and had been homeless for 9 months or less.

Table 2. Who was eligible for the study?

	Eligibility criteria
Chronically homeless	• Not seeking to live with dependent children • With a disabling condition • Either continuously homeless for ≥ 12 months OR has had at least four episodes of homelessness in the past three years
High-risk for becoming chronically homeless	• Not seeking to live with dependent children • Have been incarcerated as an adult • Meet the federal poverty guidelines • Age 30 or older • Homeless < or = 9 months

In total, 76 unique individuals have been enrolled in this evaluation study as participants. Forty-nine individuals have been in Home Again (29 in the pilot period, and 20 in the implementation year), and 31 have been enrolled in standard care. Note that 4 of the original standard care participants were transferred to Home Again after 6 months. These 4 individuals

were excluded from the standard care group in the six month analysis. Two of the Home Again participants died between the 6 and 18 month follow-up point.

The demographic characteristics of the sample are detailed in Table 3. Eighty-three percent of the sample were male. Over half (57%) were White, 17% were Hispanic, 21% were Black, and less than 4% were multiracial or other. The average age of individuals in the evaluation sample was 48 years. Forty-four percent did not have a high school diploma or equivalent, 37% had graduated from high school, and approximately 19% of participants received some education after high school. These demographic characteristics are consistent with HUD data on the homeless population in the U.S., and with previous studies that estimate that the majority of homeless individuals are men who are 31 to 50 years old.[21]

Table 3. Participant Demographics at Baseline

Characteristic	Baseline % (n)		
	Full Sample	Home Again*	Standard Care
Total	100% (76)	100% (49)	100% (27)
Gender			
Male	83% (63)	82% (40)	85% (23)
Female	17% (13)	18% (9)	15% (4)
Age (yrs.)			
Mean	48	48	47
Race			
White	57% (43)	57% (28)	58% (16)
Hispanic	17% (13)	20% (10)	12% (3)
Black	21% (16)	20% (10)	23% (6)
Other	4% (3)	3% (1)	7% (2)
Education			
< HS Diploma	44% (33)	41% (20)	50% (14)
HS Diploma/GED	37% (28)	43% (21)	27% (7)
> HS Diploma	19% (14)	16% (8)	23% (6)

* Includes pilot period and implementation year participants

Measures

A complete list of measures used on the baseline and follow-up assessment surveys is provided in Table 7. A brief description of each of the outcome measures utilized for this evaluation report, including psychometric properties, is contained in this section.

Housing tenure was assessed via a single original item: "Are you currently homeless?" Participants who indicated that they were homeless were asked subsequent questions about how long they had been homeless, where they had spent the previous night, how long they had been staying in that location, how long ago it was when they most recently had a permanent home, and why they were no longer able to stay there. For Home Again clients, responses to the homelessness question were verified by the case manager supervisor employed by Community Healthlink, because she had personal working knowledge of each person's housing status.

Standard Care clients' responses were also verified by the supervisor who was able to determine from the pattern of responses to the question set whether an individual was housed or homeless at the time of the assessment.

Alcohol and Drug Use were assessed using selected questions from the Addiction Severity Index.[22] Questions asked about alcohol and drug use in the past 30 days and over the client's lifetime. Example questions from the alcohol and drug sections include, "In the past 30 days, how many days did you use any alcohol at all?" and "Over your lifetime, how many years have you regularly used heroin?" This measure has good validity and reliability (α= 0.62-0.81).

Problem drinking was assessed using the CAGE questionnaire in reference to the preceding 90 days.[23] The CAGE comprises four questions, including, "Have you ever felt you should cut down on your drinking?" This measure is scored from 0-4 and a score of 2 or more indicates a problem with alcohol. The CAGE questionnaire has good validity and reliability (α= 0.52-0.90).

Mental Health was assessed using the Modified Colorado Symptom Index.[24] The index contains 14 items which ask about how often in the past month an individual has experienced a variety of mental health symptoms including, loneliness, depression, anxiety, and paranoia. Participants respond to each item using a Likert-scale from 0-4 (0-not at all, 1-once, 2-several times during the month, 3-several times a week, 4-at least every day). An index score for this scale is calculated by summing each response. Higher scores indicate higher likelihood of mental health problems. We used the scores on this index in a continuous manner for some analyses, and we also created a cutpoint to use this variable dichotomously. The cutpoint selected was 30, where those with a score above 30 were classified as having good mental health, and those below with having fair to poor mental health. This cutpoint and classification scheme has been used in a prior study.[24] This instrument has a reported α= 0.85-0.90.

Health care services use was assessed using two questions adapted from the Behavioral Risk Factor Surveillance System Survey (BRFSS) questionnaire.[25] Participants were asked, "During the past three months, how many times did you visit a doctor, nurse or healthcare clinic of any kind, including the emergency room?" and "During the past three months how many times did you visit an emergency room or urgent care center?". Responses were analyzed continuously. A comprehensive study on the reliability and validity of the BRFSS by Nelson et al. reported that the original BRFSS questions were moderately to highly reliable and valid.[26]

Social support was measured with the Interpersonal Support Evaluation List (ISEL-12).[27] The ISEL-12 is composed of a list of 12 statements and participants report how true each statement is for them based on a Likert scale of 1-4 (1-definitely false, 2-probably false, 3-probably true, 4-definitely true). For the purposes of this study, items #8 and 12 were deleted because they referenced home and housing. The ISEL-12 is typically used as a continuous measure. For the purpose of this evaluation, scores ranged from 10-40. Because we wanted to create a binary variable representing either "good" or "poor" social support, we selected to look at those with the best possible social support in this sample (*i.e.,* those in the top 25%) against those with less good social support (*i.e.,* those in the bottom 75%). For this scale, Cronbach's α= 0.80- 0.90.

Statistical analysis

All analyses were conducted using SAS version 9 (SAS Institute, North Carolina).

Randomized Trial- Home Again participants from the pilot period and implementation year were combined and treated as the intervention group. These participants were compared to those in the Standard Care group in terms of age, gender, race, education, citizenship, marital status, primary language and employment. There were no differences in any of these factors between the two groups at baseline, which is an indication that the randomization procedure was successful. Next, outcomes of interest reported on the 6 month follow-up were compared. These analyses were conducted both uncontrolled and adjusting for baseline levels of the conditions of interest. For example, when assessing alcohol use at the 6 month follow-up point, differences in alcohol use among participants were assessed in each group, and then re-assessed controlling for the baseline level of alcohol use. Finally, changes from baseline to follow-up for particular outcomes of interest were assessed in order to determine whether those changes were greater among Home Again or Standard Care participants. For example, if it was observed that the mental health of participants in both groups improved during the six months of this evaluation period, it was then determined if the participants in Home Again improved more than the participants in Standard Care on this outcome. For all analyses, statistical significance was set to the $p<.05$ level. Because this evaluation study was not originally powered to detect statistically significant differences on all outcomes of potential interest, there was an attempt to identify (and present) differences of clinical relevance as well as those that achieved statistical significance.

Longitudinal Follow-up- To assess whether Home Again intervention participants maintained housing, and other positive changes, beyond the 6-month follow-up point, we continued to collect data from them at certain six month intervals. At the writing of this report, we have 18-month data from 33 individuals (67%). Only the Home Again participants from the pilot year were followed for longer than 24 months. Twenty-four month data was collected from 24 individuals (83%). Thirty month data was collected from 69% of the participants (20). We calculated the proportion of participants who remained housed at each of these time points. Subsequently, we examined long-term outcomes for alcohol and drug use, mental health, health care services, social support, self-esteem, and instrumental functioning scores for each time point to see if they remained stable or changed over time.

Case Management Services- A graphing program (STATA v. 10) was used to plot each individual participant's number of case management hours or sessions against continuous outcome measures, including mental health score, number of days when physical health was poor, alcohol problem score, instrumental functioning, health care utilization, self-esteem and social support scores. Linear regression analyses were conducted to determine if the number of case management hours (or sessions) were associated with better outcome scores.

Advocacy to Sustain Services- A graphing program (STATA 10.0) was used to analyze the monthly contacts around the two advocacy goals: : 1) to create sustainable housing subsidies from federal or state government sources, and 2) to create sustainable case management subsidies from federal or state government sources. Qualitative data that was collected between July 2010 and June 2011 was analyzed to assess the most effective parts of the advocacy of the project.

Evaluation Component 1 Results: The randomized controlled trial (6-month follow-up with comparison group)

Six-month follow-up data was obtained from 90% (n=44) of the individuals who participated in the Home Again group, and 84% (26) of those in the Standard Care group. The five individuals who were not able to be followed in the Standard Care group either declined to participate (n=3), or could not be contacted (n=2).

Housing

At baseline, 100% of participants in the study were homeless. At the 6-month follow-up, 98% of the participants in Home Again had achieved and maintained housing, as compared with 38% of participants in Standard Care ($p<.001$). In other words, Home Again participants were 2.5 times as likely as individuals receiving Standard Care to achieve and maintain housing over six months. It should be noted that approximately half of the Home Again participants were housed in scattered sites and the other half in a congregate site.

Participants in Home Again were equally able to achieve and maintain housing regardless of their alcohol use or mental health status. In contrast, participants in Standard Care were not as likely to be housed at follow-up if they used alcohol or had poor mental health.

Table 4. Percent of sample housed at 6-month follow up, by randomization group and by risk factors of interest as assessed at baseline (N=76)

	Intervention	Standard Care	p-value
Total	98%	38%	p<.001
No alcohol use at baseline	95%	64%	--
Any alcohol use at baseline	100%	20%	--
Poor mental health at baseline	100%	29%	--
Good mental health at baseline	96%	40%	--

Alcohol Use

At the 6-month follow-up, participants in Home Again were no more likely than individuals in Standard Care to have a problem with alcohol (41% vs. 40%), even adjusting for their level of alcohol use at baseline.

Seventy percent of Home Again participants reported any alcohol use in the past month on the 6-month follow-up survey. Only 42% of Standard Care clients reported any alcohol use in the past month. This difference was statistically significant, adjusting for baseline level of alcohol use (p<.05).

Table 5. Proportion of clients using alcohol or with alcohol problems at 6-month follow-up, controlling for baseline use (N=76)

	Intervention	Standard Care	Relative Risk
Total	100% (49)	100% (27)	n/a
Used alcohol at all	70% (34)	42% (11)	1.7 (1.1 - 2.6)
Had an alcohol problem	41% (20)	40% (10)	1.0 (0.6 - 1.9)

Health Care Services

At the 6-month follow-up, Home Again and Standard Care participants were equally likely to report that they had used health care services in the preceding three months, even controlling for their baseline level of health care usage (81% vs. 75%). They were also equally likely to report that they had used a hospital emergency department or urgent care center, specifically, in the preceding three months (34% vs. 36%). However, we also assessed the average number of emergency visits clients each group reported that they made in the three months preceding the 6-

month follow-up survey; Home Again clients reported an average of 1.6 fewer visits than they had reported at baseline, and Standard Care clients reported an increase of 0.5 visits as compared to their baseline use. The difference was not statistically significant, but this could be due to the small sample size.

To summarize the information presented in the table below, Home Again participants reported 104 unique emergency visits in the three months preceding their baseline survey, and only 37 visits in the three months preceding their 6-month follow-up survey. On the other hand, Standard Care clients reported 61 unique emergency visits in the three months preceding their baseline survey, and 74 visits in the three months preceding their 6-month follow-up survey.

Table 6. Number of emergency health care visits in the past three months, by randomization group (N=55)

	Baseline		6-month follow-up	
	Home Again # visits	Standard Care # visits	Home Again # visits	Standard Care # visits
Emergency health care use, past 3 months	104	61	37	74

Mental Health

In both groups, participants' scores on the mental health index decreased from baseline to the 6-month follow-up, which means that their mental health status improved. While the mental health of participants in both groups improved from baseline to the 6-month follow-up, the mental health of the clients in Home Again improved more. In the Home Again group, the mean average score decreased 3 points from baseline to follow-up, whereas in the Standard Care group the mean average score decreased 2.31 points. In other words, the mean index score of the participants in Home Again decreased 30% more than the mean index score of participants receiving Standard Care. While the difference in the degree of change between the participants in the two groups did not reach statistical significance, it is nevertheless an indicator that Home Again may have had a positive impact on clients' mental health.

Social Support

"Social support" is a term used to describe the extent of an individual's social connectedness, or the number and quality of their social relationships. In other words, a person with many close friends or family members upon whom he/she can depend has good social support. At the 6-month follow-up, Home Again participants were nearly twice as likely as participants receiving Standard Care to have good social support (30% vs. 19%). Home Again participants' score on the social support scale increased substantially from baseline to the 6-month follow-up (from 27.06 points to 28.25 points), while the social support score for individuals receiving Standard Care did not change during that time.

Evaluation component 2 results: The long-term follow-up of 49 Home Again participants

Of the 49 participants in Home Again, two died and therefore did not contribute data to the assessment past the 6 month mark. We are still able to contact all other participants including one who has moved out of supported housing into a private apartment and is no longer receiving any services from Home Again. Of the remaining 47 participants, we have collected 18-month follow-up data from 67%, 24-month data from 83%, and 30 month data from 69%. The majority of participants were enrolled in Home Again in the latter part of our enrollment period, so the primary reason we did not collect 18- and 24-month data from more individuals was that they hadn't been enrolled in the program for long enough.

At baseline, 100% of the participants in Home Again were homeless, and at the 6-month follow-up 98% were housed. Of the individuals that we followed to the 18, 24, and 30-month follow-up period, 97%, 96%, and 100% remained housed, respectively.
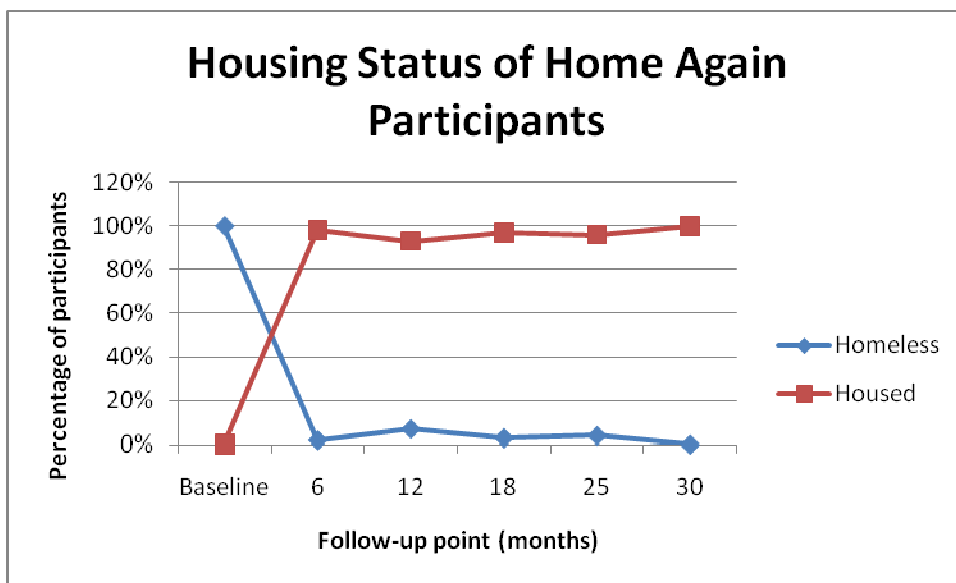
There was a steady decline in the average number of days of alcohol use by Home Again participants over the 2 1/2-year period: **participants reported an average of 4.5 days of alcohol use in the preceding month when they first entered the program, but only 2 days by the 18-month and 2.5 days by the 24-month follow-up periods**. These differences are not statistically significant, but have clinical relevance (see discussion section). In addition, the proportion of participants that screened positive for a potential alcohol use problem (*i.e.,* scoring 2 or more on the CAGE 4-question measure as it pertained to the prior 3 months) decreased significantly from baseline to 18-months (48% to 24%, respectively; p=0.05).

Home Again participants' long-term alcohol use

Y-axis: Number of days in the past month
X-axis: Follow-up point (months) — Baseline, 6, 12, 18

Legend:
- mean number of days used alcohol
- median number of days
- mean number of days used alcohol to feeling the effects

Home Again participants with an alcohol problem

Y-axis: Percentage of participants
X-axis: Follow-up point (months) — Baseline, 6, 12, 18, 24, 30

Marijuana and other drug use were low among participants, and remained stable from baseline through 24 months. However, the proportion of participants that screened positive for a potential drug use problem (*i.e.,* scoring 2 or more on a modified CAGE 6-question measure as it pertained to the prior 3 months) decreased significantly from baseline to 18-months (24% to 15%, respectively; $p<0.05$).

Home Again participants with a drug use problem
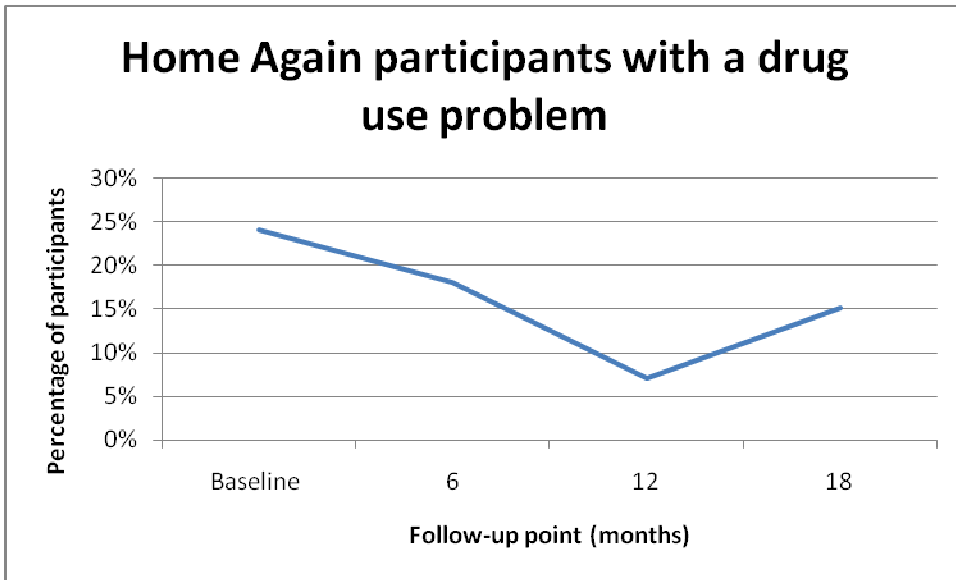
Using a mental health score to indicate a mental health problem, the proportion of participants with a mental health problem also significantly decreased from 28% at baseline to 25% at the 24- and 30-month follow-up (p<0.05). At the 18- and 30-month follow-up, participants also reported feeling significantly less depressed in the past month compared to the baseline. (p<0.05)

Home Again Participants and Mental Health
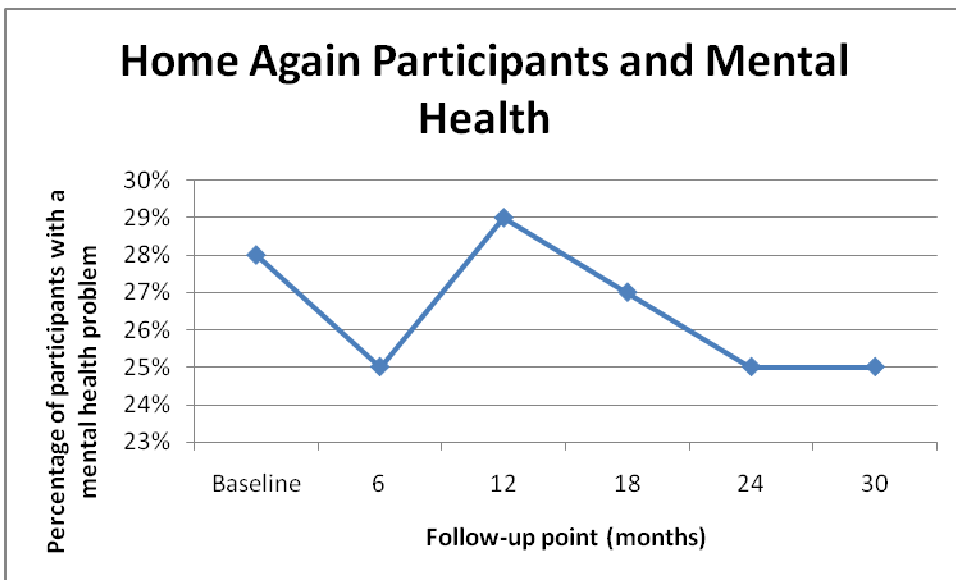
Twenty-two percent of participants reported poor health at baseline. The prevalence of this outcome decreased to 15% at the 18 month follow-up and 5% at the 30-month follow-up (p<0.10). At baseline, the mean average number of poor health days in the past month was 11, and decreased to less than 5 days at the 18-month follow-up and less than 7 days at the 30-month follow-up (p<0.05).
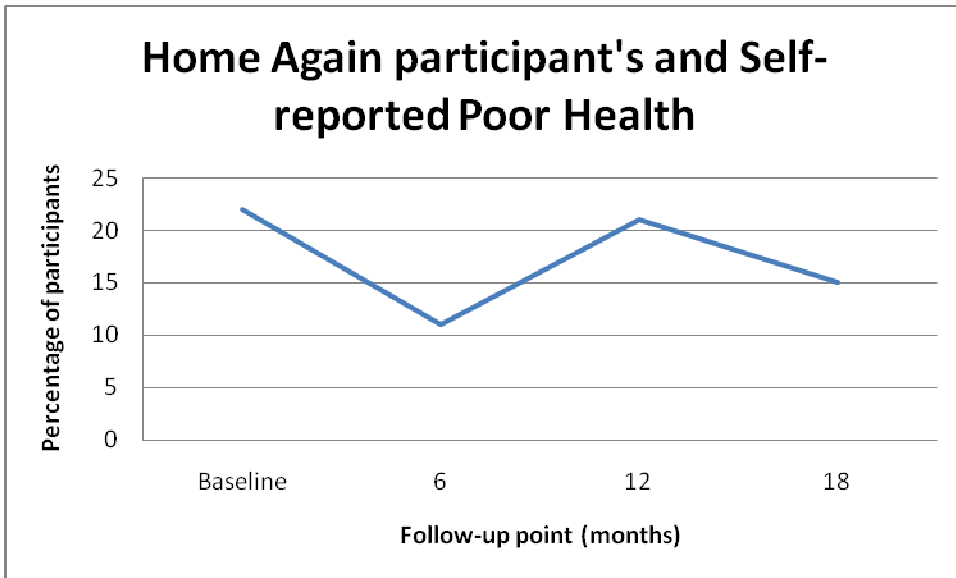
Home Again participant's and Self-reported Poor Health

Use of healthcare services including hospitalization, emergency room use, and ambulance use substantially decreased among Home Again participants from baseline to 24-month follow-up.

Home Again participants' and Health Care Services
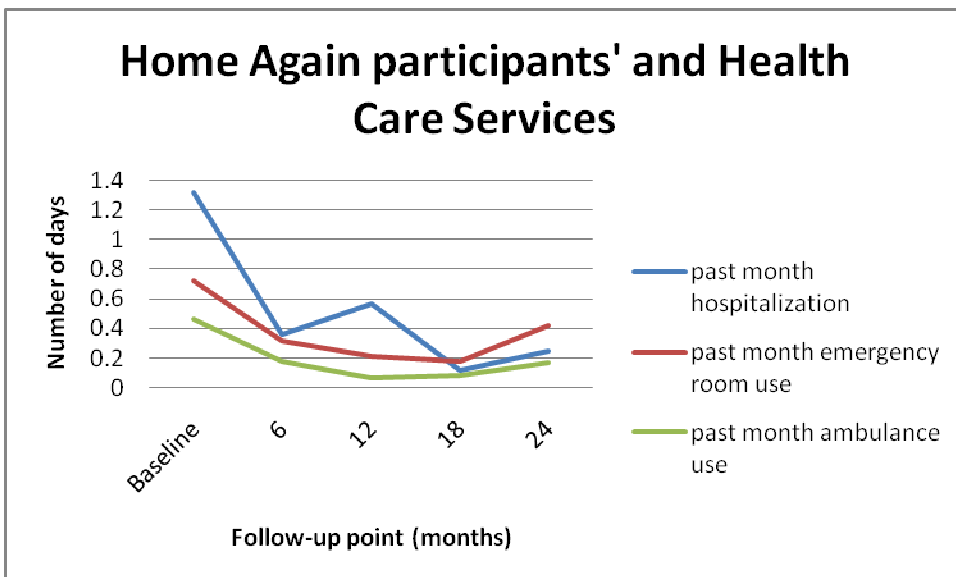
The social support of Home Again participants improved over the course of follow-up. The proportion of participants with good social support significantly increased from baseline to 30-month follow-up (28% v. 30%, p<0.01)

Home Again Participants and Social Support
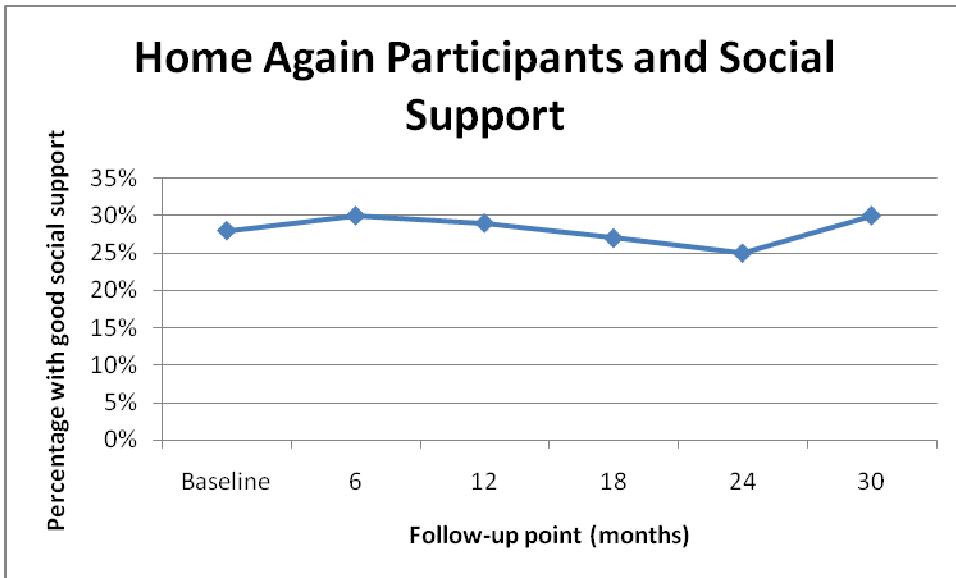
From baseline to the 30-month follow-up, no substantial improvements in instrumental functioning, or self-esteem were detected (see appendix). Some positive changes in self-reported physical health and health care usage, that were detected from baseline to 6 months disappeared by the 24-month follow-up, but this happening may be attributable to the small number of individuals who contributed data at the 24-month time point.

The effect of the number of case management sessions, or the amount of time a participant spent receiving case management over the duration of his or her program involvement, was examined in relation to the outcomes of interest measured at the latest possible point per participant. In other words, if a participant had 6 months' of data, the 6 month report was used as the outcome. If a participant had 24 months' of data, the 24 month report was used as the outcome. The hypothesis was that a greater amount of case management (measures as either sessions, or in minutes) would predict better outcomes. To assess this hypothesis, a series of linear regression analyses were conducted. Case management time was plotted against particular outcomes of interest, including mental health improvement, alcohol problems, instrumental functioning, self-esteem, health care utilization, and social support in order to illustrate the findings.

Using a subset of 26 respondents on whom total case management data was available, the number of case management sessions ranged from 10-454 sessions, which translated to 9 to 180 hours of service. Respondents received a mean average of 124 sessions (66 hours); the median was 87 sessions (69 hours) of case management services. The majority (51%) of case management sessions are to assist clients with housing, life skills, or income-related issues. On average, Home Again clients receive between two and five case management sessions per month, although the number of sessions delivered per month ranges from 0-34. Over time, there was a statistically significant difference in both the number of minutes of case management and the number of sessions of case management that participants experienced.

Average number of case management sessions by month of client's involvement in Home Again
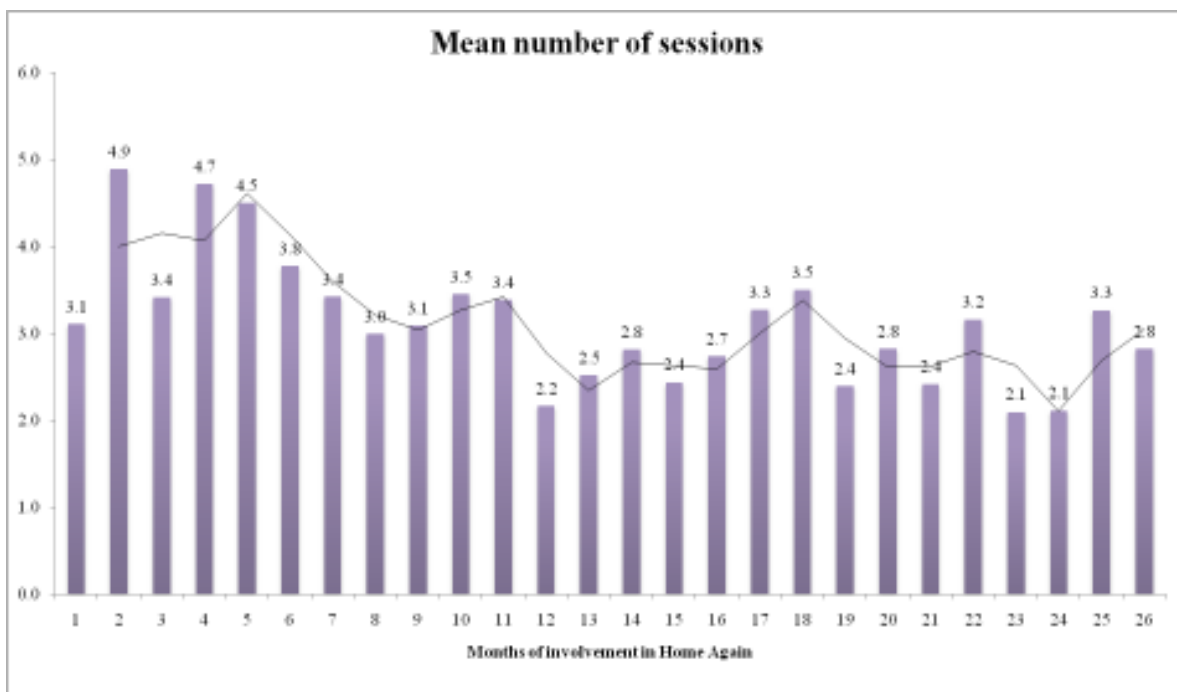
Average number of case management minutes by month of client's involvement in Home Again
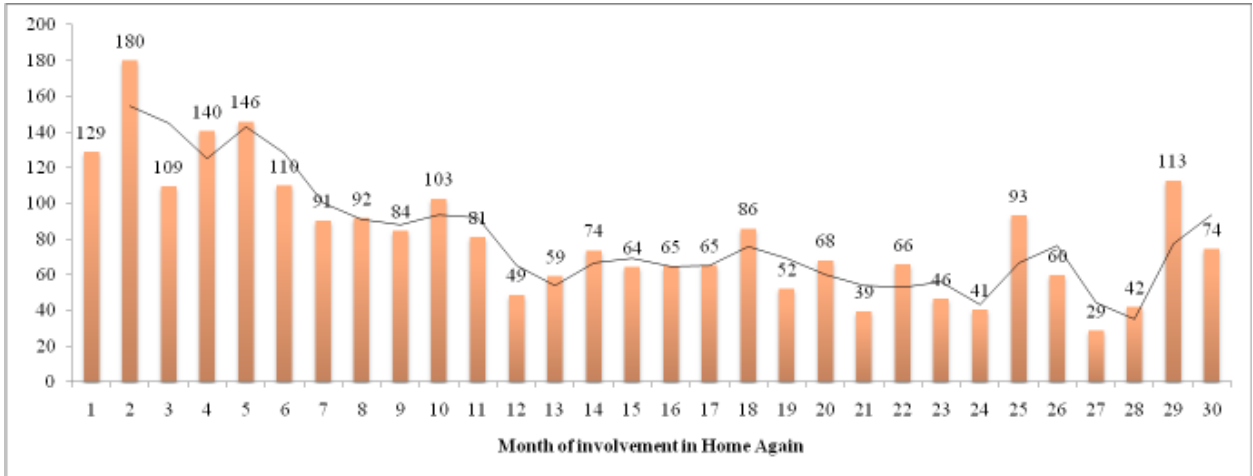
Most of the outcomes appeared to be unrelated to the amount of case management received. We did not observe better alcohol problem, instrumental functioning, health care utilization or social support scores for those who received more case management (measured as sessions, and alternatively as minutes). However, **there was a statistically significant relationship between the amount of case management received and an individual's improvement in mental health.** For every 0.05 increase in total case management sessions provided, we see a corresponding 1 point increase in mental health difference score (p=.10).
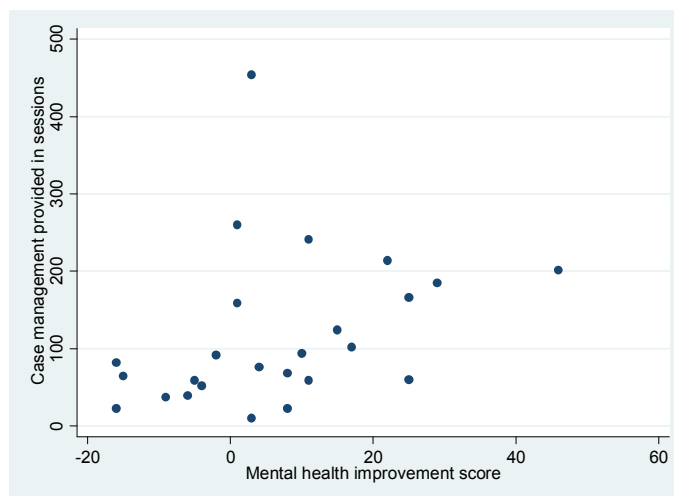
Evaluation component 4 results: Sustainability and Systems Change

The Home Again project identified an advocacy agenda regarding public policy and budgetary priorities. Two goals were identified in order to achieve sustainability of Housing First and case management services after the end of the Home Again multi-year grant funding. The first priority was to create sustainable housing subsidies from federal or state government sources. The second priority was to create sustainable case management services from federal or state government sources. Members of the project Steering Committee were the principal actors related to advocacy efforts.

In order to document and improve the advocacy work of the Home Again project, an online advocacy survey was initiated in July 2010. The survey was sent to the Steering Committee members on a monthly basis. The survey was successful in capturing advocacy efforts related to the agenda

This section summarizes the advocacy efforts from July 2010 through March 2011.

Survey response

The response rate for the survey was consistently 100%. Only the surveys in December 2010 and March 2011 had a response rate of lower than 100%.

There were three particularly key relationships that influenced the ability of Home Again advocacy efforts to be successful:

1) The support of the Interagency Council on Housing and Homelessness (ICHH) chaired by the Massachusetts Lieutenant Governor Tim Murray
2) The partnership with the Massachusetts Housing and Shelter Alliance
3) The partnership with the National Alliance to End Homelessness

Goal 1: Create sustainable housing subsidies from federal or state government sources

Advocacy action was reported for this goal every month except for December 2010. Action around this goal focused on lobbying related to several pieces of federal legislation: Federal Medical Assistance Percentages, the Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act, and Transportation-HUD appropriations.

The chart below shows the monthly contact with federal and state legislators regarding key pieces of legislation

Home Again Advocacy Action: Legislator Contact 2010-2011

Number of contacts

- Federal
- State

July 2010, August 2010, Sept 2010, Oct 2010, Nov 2010, Dec 2010, Jan 2011, Feb 2011, March 2011
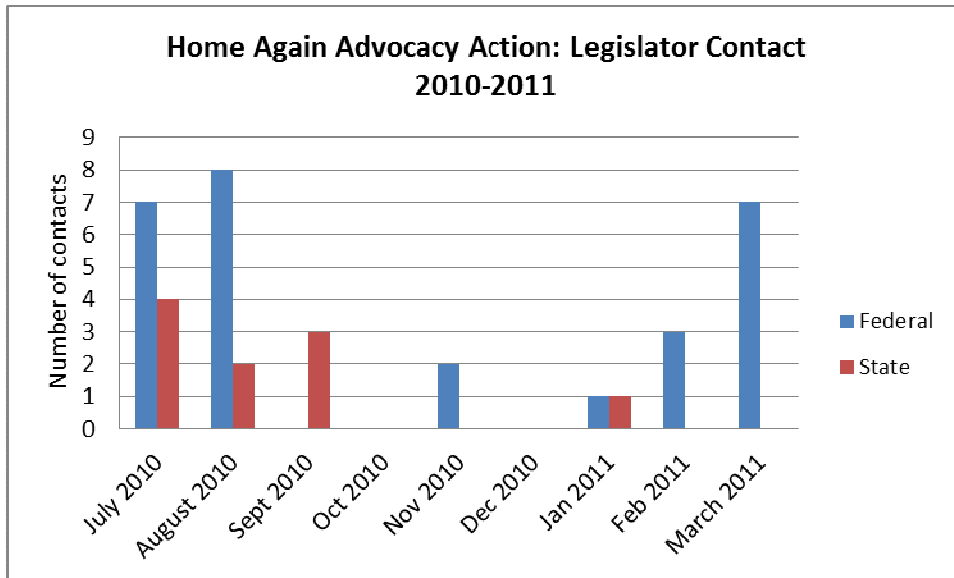
Federal legislation was the primary target so contact with federal legislators happened more often compared to contact with state legislators. On average, three legislator contacts were made each month at the federal level, and one contact was made at the state level.

Highlights of the advocacy work for goal 1 include:
- Successfully opposing a proposed reduction in the Massachusetts Rental Voucher Program.
- Successfully opposing a ballot question to reduce the state sales tax in September 2010 which, if passed, would have substantially limited state funding to many programs, including programs that serve chronically homeless individuals.
- Successful lobbying for housing subsidy funding through the U.S. Department of Housing and Urban Development. The total number of subsidy funds received by Home Again from 2008-2010 is expected to be over $450,000.
- Lobbying in partnership with the National Alliance to End Homelessness for housing subsidies under the HEARTH Act. Appropriation was still pending as of this report.

Goal 2: Create sustainable case management subsidies from federal or state government sources

Advocacy action was reported every month for this goal, and the range of individuals who reported working on this objective ranged by month from 20% to 100%. Action around this goal focused on lobbying for case management services for homeless individuals through MassHealth (Medicaid).

Action on Case Management Subsidy Priority, 2010-2011
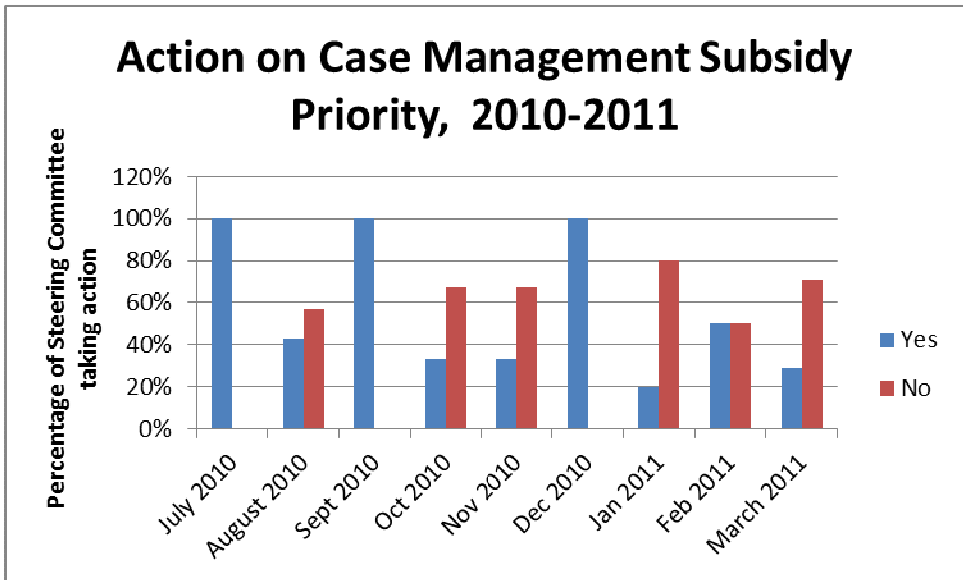
Steering Committee members engaged with high ranking officials from multiple organizations and agencies in working toward this goal including the Interagency Council on Housing and Homelessness, MassHealth, Massachusetts Behavioral Health Partnership (MBHP), Massachusetts Housing and Shelter Alliance (MHSA), Massachusetts Executive Office of Health and Human Services (EOHHS), and federal and state government legislators and their staff. The table below outlines the officials with which the Steering Committee members engaged.

Agency/Organization	Rank./Title of official
Interagency Council of Housing and Homelessness (ICHH)	Executive Director, Massachusetts ICHH
	Housing First Coordinator
Center for Medicare and Medicaid Services	Director of Medicaid for Massachusetts
	New England Regional Director
	Associate Administrator, New England Region
Massachusetts Behavioral Health Partnership	Chief Executive Officer
	Vice President of Clinical Operations
Massachusetts Housing and Shelter Alliance	Leadership (not specified)
Massachusetts Executive Office of Health and Human Services	Assistant Secretary for Disability Services
MassHealth (Medicaid)	Director, Deputy Director, Director Behavioral Health

Highlights of the advocacy work for goal 2 include:

- Successfully gaining the support of Lt. Governor Murray to change the system so that case management services for could be provided for chronically homeless individuals through MassHealth (Medicaid), including individuals with Medicare and Medicaid (dual eligibles).
- In January 2011, MassHealth expanded its behavioral health case management services to all adults who are chronically homeless and expects to have received by

January 2013 CMS authorization and have implemented systems to also provide case management services to the "dual eligible" population (i.e., those eligible for Medicare and Medicaid) of adults who are chronically homeless.

Discussion

This evaluation found that **Home Again participants were 2.5 times as likely as individuals receiving Standard Care to achieve and maintain housing over six months (98% v. 38%, p<.001), and that 100% of the individuals in Home Again who were followed for 18- and 24-months remained housed.** It also found that Home Again had a positive impact on participants' mental health and alcohol use over a 2.5 year period.

Case management services are an important component of the Housing First model and Home Again, and the results suggest that case management has a positive effect on the mental health of participants, but not other measured outcomes. There are many possible reasons for this, including that the participants with the most severe problems may be the ones who sought out and received more case management. Overall, the majority (51%) of case management sessions assisted clients with housing, life skills, or income-related issues. On average, Home Again clients received between two and five case management sessions per month, although the number of sessions delivered per month ranged widely from 0-34.

In addition, it is possible that the measures used in the evaluation were not able to capture the impact of case management services. The interaction between the participant and case manager it certainly nuanced and complex. Therefore, survey questions may be unable to capture the benefits of case management. Investigating the benefit of case management services using qualitative methods would be valuable. Because the case manager to client ratio remains small in Home Again, the finding that over time there was a significant decline in both the number of minutes of case management and the number of sessions of case management that participants experienced may suggest that participants become more independent and functional over time. Individuals may differ in their needs over time substantially, and it may also be important for case managers to work to keep individuals engaged.

Taken collectively, these findings suggest that the Home Again intervention did confer positive benefits with regard to housing tenure, mental health, and alcohol use. The findings suggest that the program had a positive effect on participants' physical health by decreasing self-reported poor health; there is no clear indication that the program had a positive impact on participants' physical health or use of health care services at this time. It is possible that the gains in housing stability, mental health and alcohol use that were observed might, in the longer-term, result in additional benefits that include improved physical health and reduced healthcare use. However, there are also reasons why self-reported physical health and healthcare use might *increase* as a result of the program; participants who are housed and begin to emerge from a crisis state may then begin to pay more attention to their own physical health problems. As a result, they may seek more healthcare and report being less well on evaluation surveys because their physical health problems have become more of a priority. In addition, it should be noted that homeless individuals may develop chronic health problems while they are without homes that are unlikely to resolve immediately when they become housed.

Conclusions

Based on the evaluation, Home Again was successful in improving housing tenure for adults who had been chronically homeless during the 6-month evaluation period and keeping them housed for up to 2.5 years. In addition, Home Again positively affected participants' mental health and social support over a 2.5 year follow-up period. On-going case management was observed to lead to further improvements in mental health. In the long-term, the Home Again model had a positive impact on participants' alcohol use and dependent drinking.

It is possible for chronically homeless individuals to be housed and remain housed. The results from this evaluation are consistent with others in cities around the United States. The findings strongly suggest that the Housing First model of services is a successful model for ending chronic homelessness and improving the lives of chronically homeless individuals.

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Appendices

A. Logic Model

B. Measures

C. Data from baseline through 30-month follow-up

A. Logic Model

Inputs	Outputs		Outcomes-Impact		
	Activities	Participants	Short Term	Medium Term	Long Term

SITUATION

Worcester serves 2,000 unduplicated homeless individuals annually.

10-20% of these are chronically homeless

Inputs

Community Health Link

Health Foundation Of Central MA

Local homeless shelters

Outputs — Activities

30 units of housing

Case management with no more than 10 clients per case manager

Outputs — Participants

20 chronically homeless individuals

10 homeless Individuals at risk for chronic homeless-ness (pre-chronic)

Short Term

Increase drug and alcohol services usage

Increase health care utilization

Increase mental health care service utilization

Increase educational training

Increase job training services usage

Medium Term

Improve capacity for self-care (functioning)

Improve social support

Decrease symptoms of depression and mental health problems

Decrease arrests

Decrease use of emergency health care services

Decrease drug and alcohol use

Long Term

Increase ability to maintain housing

Improve physical health

Improve quality of life

Increase employment

GOAL

Chronically homeless individuals and those at-risk for chronic homelessness will achieve housing stability

B. Measures

Construct	Name of Measure	Citation	Number of items	Modifications	Validity/ Reliability of the instrument
Demographics	n/a	Original	6	n/a	n/a
Housing	n/a	Original	12	n/a	n/a
Choice in Housing**	n/a	Nelson, G, Sylvestere, J, Aubry, T, et al. (2007). Housing Choice and Control, Housing Quality, and Control over Professional Support as Contributors to the Subjective Quality of Life and Community Adaptation of People with Severe Mental Illness. *Adm Policy Ment Health.* 34: 89-100.	23	n/a	n/a
Alcohol & Drug Use	Addiction Severity Index Lite	McLellan, AT, Cacciola, JS, Alterman, AI, Rikoon, SH & Carise, D. (2006). The Addiction Severity Index at 25: origins, contributions and transitions. *American Journal of Addiction.* 15 (2) (113-24).	3	questions #1-13 in alcohol and drug section of instrument used	Alcohol: α= 83-0.87; Drug: 0.62-0.81
Alcohol Use	CAGE	Ewing JA. (1984). Detecting Alcoholism: the CAGE Questionnaire. *Journal of the American Medical Association,* 252: 1905-1907.	4	none	α= 0.52-0.90
Drug Use	Sub-scale of the PDSQ	Zimmerman, M. and Mattia, J.I., 2001. The Psychiatric Diagnostic Screening Questionnaire: Development, reliability and validity. Comprehensive Psychiatry 42, pp. 175–189	6	n/a	α= 0.89
Mental Health	Modified Colorado Symptom Index	Conrad KJ, Matters MD, Yagelka J, et al: Reliability and validity of a Modified Colorado Symptom Index in a national homeless sample. Mental Health Services Research 3:141–153, 2001	14	none	α= 0.85-0.90; test-retest reliability: 0.71
Medical Status	Taken from the BRFSS	Centers for Disease Control and Prevention [25]. *Behavioral Risk Factor Surveillance System Survey Questionnaire.* Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2007.	5	n/a	n/a
Services Received	Treatment Service s Review	McLellan A.T., Alterman A.I., Cacciloa, J., Metzger D. & O'Brien, C.P. (1992). A new measure of substance abuse treatment: Initial studies of the Treatment Service Review. *Journal of Nervous and Mental Disease, 180,* 101-110.	35	Some items deleted	n/a

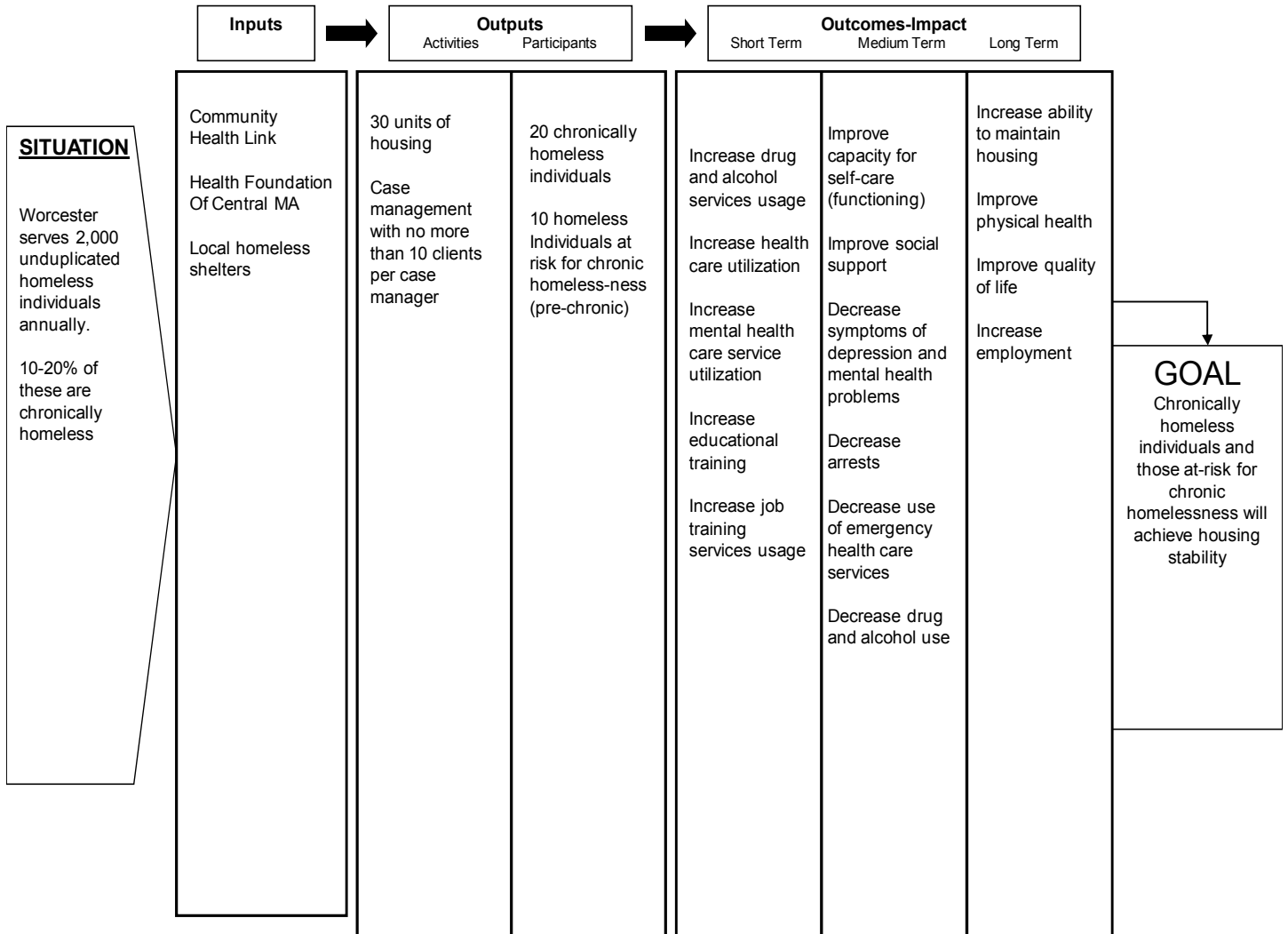| Construct	Name of Measure	Citation	Number of items	Modifications	Validity/ Reliability of the instrument
Self-Esteem	Rosenberg's Self-Esteem Index	Rosenberg, Morris. 1989. *Society and the Adolescent Self-Image.* Revised edition. Middletown, CT: Wesleyan University Press.	10	none	α= 0.74-0.80;
Self-Care	Brief Instrumental Functioning Scale	Sullivan G., Dumenci L., Burnam A., Koegel P. (2001). Validation of the Brief Instrumental Functioning Scale in a Homeless Population . *Psychiatr Serv* 52:1097-1099.	6	none	α= 0.86
Social Support	Interpersonal Support Evaluation List (ISEL-12]	Cohen, S., & Hoberman, H. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology*, 13, 99-125. Electronic version available: http://www.psy.cmu.edu:16080/~scohen/	12	Questions #8 and 12 were deleted	α= 0.80-0.90 test-retest reliability intraclass correlation coefficients (ICC): 0.631-0.847
Quality of Life	Quality of Life Scale (QOLS)	Burckhardt CS, Woods SL, Schultz AA, Ziebarth DM (1989). Quality of life of adults with chronic illness: A psychometric study. *Research in Nursing and Health*, 12, 347-354.	16	none	α= 0.82-0.92

**measure used for three and six month follow-up only

Table 2. Housing-related variables

Characteristic	Baseline	6 Month	12 month	18 month	24 month	30 month
Total	100% (50)	100% (44)	100%(14)	100% (33)	100%(24)	100% (20)
Lived in Worcester all of life						
Yes	68% (34)	-	-	-	-	-
No	32% (16)	-	-	-	-	-
No response	0% (0)	-	-	-	-	-
Time living in Worcester this time (days)						
Mean	3,472	-	-	-	-	-
Median	1,825	-	-	-	-	-
Range	14-17,520	-	-	-	-	-
Number of towns/cities lived in past 5 years						
Mean	2	-	-	-	-	-
Median	2	-	-	-	-	-
Range	1-7	-	-	-	-	-
Number of times homeless since age 18						
Mean	5	-	-	-	-	-
Median	3	-	-	-	-	-
Range	1-30	-	-	-	-	-
Currently homeless						
Yes	100% (50)	2% (1)	7% (1)	3% (1)	4% (1)	0% (0)
No	0% (0)	98% (43)	93% (13)	97% (32)	96% (23)	100% (20)
No response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
Where did you spend last night?						
Abandoned building	2% (1)	0% (0)	0% (0)	0% (0)	0% (0)	-
On the street/other outdoor place	16% (8)	0% (0)	100% (1)	0% (0)	0% (0)	-
Emergency shelter	71% (36)	100% (1)	0% (0)	100% (1)	100% (1)	-
Someone else's apt/house	4% (2)	0% (0)	0% (0)	0% (0)	0% (0)	-
Other*	6% (3)	0% (0)	0%(0)	0% (0)	0% (0)	-
No response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	-

*Medical Respite

Table 2. Housing-related variables (cont.)

Characteristic	Baseline	6 Month	12 month	18 month	24 month	30 month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	-
Time since lived in house, apt (days)						
Mean	1,431	130	910	37	4	-
Median	791	130	910	37	4	-
Range	44-7,301	-	-	-	-	-
Don't Know/No response	4% (2)	-	-	-	-	-
Never lived in house, apt	4% (2)	-	-	-	-	-
<u>Why no longer living there</u>						
Couldn't afford it/lost job	35% (17)	0% (0)	0% (0)	0% (0)	0% (0)	-
Rent went up	4% (2)	0% (0)	0% (0)	0% (0)	0% (0)	-
Lease ran out	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	-
Evicted	12% (6)	0% (0)	0% (0)	0% (0)	0% (0)	-
Left to look for work in another city	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	-
Bored/Tired with the place	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	
Couldn't get along with the people there	10% (5)	0% (0)	0% (0)	0% (0)	0% (0)	
Divorce, separation, or break up	10% (5)	0% (0)	0% (0)	0% (0)	100% (1)	-
Other*	29% (14)	100% (1)	100% (1)	0% (0)	0% (0)	-
No response	2% (1)	0% (0)	0% (0)	0% (0)	0% (0)	-

*Reasons given:
Baseline-

- Went to jail
- Apartment was a crack house
- Parents sold the house in Puerto Rico
- Foreclosure
- Person never had a place
- Health problems
- Decided to leave/just up and left (4)
- Building was condemned
- Relapsed then chose to leave
- Lived with mom and she went to a nursing home
- Moved to Worcester

6 month-

- Just up and left

12 month-

- Code violations

18 month-

- Went to jail

Table 3. Choice in Housing

Characteristic	Baseline	6 Month	18 Month	24 Month
Total	100% (50)	100% (44)	100% (33)	100% (24)
Overall, how much choice did you have over the place you currently live?				
No choice	-	6% (2)	3% (1)	13% (3)
Almost no choice	-	3% (1)	3% (1)	4% (1)
Some choice	-	14% (5)	18% (6)	4% (1)
A fair amount of choice	-	19% (7)	21% (7)	33% (8)
A great deal of choice	-	58% (21)	55% (18)	46% (11)
How much choice did you have about the neighborhood you moved into?				
No choice	-	6% (2)	3% (1)	8% (2)
Almost no choice	-	8% (3)	3% (1)	4% (1)
Some choice	-	19% (7)	12% (4)	17% (4)
A fair amount of choice	-	19% (7)	21% (7)	25% (6)
A great deal of choice	-	47% (17)	61% (20)	46% (11)
How much choice did you have over the specific place you moved into?				
No choice	-	3% (1)	3% (1)	8% (2)
Almost no choice	-	6% (2)	9% (3)	4% (1)
Some choice	-	14% (5)	12% (4)	13% (3)
A fair amount of choice	-	28% (10)	12% (4)	25% (6)
A great deal of choice	-	50% (18)	64% (21)	50% (12)

Table 4. Alcohol and Drug Use

Characteristic	Baseline	6 Month	12 Month	18 Month	24 Month	30 Month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
In the past 30 days...						
Days used alcohol						
Mean	10	9.6	7.71	6.12	8.71	7.95
Median	4.5	3.5	3.50	2	2.50	4
Range	0-30	0-30	0-30	0-30	0-30	0-30
Days used alcohol to point of feeling the effects						
Mean	9	7.8	5.07	4.91	5.83	3.75
Median	0	1	0	0	0.5	0
Range	0-30	0-30	0-30	0-30	0-30	0-27
Over your lifetime...						
Years used alcohol regularly						
Mean	16	16	-	-	-	-
Median	18	15	-	-	-	-
Range	0-45	0-40	-	-	-	-
Years use alcohol to point of feeling the effects						
Mean	15	14	-	-	-	-
Median	15	12	-	-	-	-
Range	0-45	0-40	-	-	-	-
Age at first drink (years)						
Mean	14	-	-	-	-	-
Median	14	-	-	-	-	-
Range	7-25	-	-	-	-	-
No alcohol in lifetime except sips	4% (2)	-	-	-	-	-
In the past 30 days, number of days used						
Marijuana						
Mean	0.6	0.43	0.07	0.94	0.50	1.75
Median	0	0	0	0	0	0
Range	0-14	0-12	0-1	0-30	0-4	0-30
Cocaine/crack						
Mean	0.34	0.68	2.21	0.21	0.58	0.25
Median	0	0	0	0	0	0
Range	0-10	0-30	0-30	0-4	0-8	0-2
Heroin/oxycontin						
Mean	0.94	0.68	2.14	0.12	0.25	0.20
Median	0	0	0	0	0	0
Range	0-30	0-30	0-30	0-2	0-6	0-2

Table 4. Alcohol and Drug Use (cont.)

Characteristic	Baseline	6 Month	12 month	18 month	24 month	30 month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)-
Methadone use in past 30 days						
Yes	4% (2)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
No	96% (48)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Suboxone use in past 30 days						
Yes	10% (2)	13% (2)	14% (2)	18% (6)	13% (3)	10% (2)
No	90% (19)	87% (13)	86% (12)	82% (27)	87% (21)	90% (2)
Other addiction medication use in past 30 days						
Yes	-	0% (0)	0% (0)	3% (1)	0% (0)	0% (0)
No	-	100% (15)	100% (14)	97% (32)	100% (24)	100% (20)
Other opiates/analgesics use in past 30 days						
Yes	12% (6)	11% (5)	0% (0)	3% (1)	4% (1)	5% (1)
No	88% (44)	89% (39)	100% (14)	97% (32)	96% (23)	95% (19)
Barbiturates use in past 30 days						
Yes	2% (1)	2% (1)	0% (0)	0% (0)	0% (0)	0% (0)
No	98% (49)	98% (43)	100% (14)	100% (33)	100% (24)	100% (20)
Other sedatives, hypnotics, tranquilizers use in past 30 days						
Yes	2% (1)	2% (1)	14% (2)	0% (0)	0% (0)	0% (0)
No	100% (49)	98% (43)	86% (12)	100% (33)	100% (24)	100% (20)
Amphetamines use in past 30 days						
Yes	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
No	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
<u>In the past 30 days, how many days did you use</u>						
Methadone						
Mean	4.5	0	0	0	0	0
Median	4.5	0	0	0	0	0
Range	4-5	n/a	n/a	n/a	n/a	n/a
Other opiates, analgesics						
Mean	11	28	30	1	6	2
Median	3	30	30	1	6	2
Range	1-30	21-30	30	n/a	n/a	n/a
Barbiturates						
Mean	30	30	0	0	0	0
Median	30	30	0	0	0	0
Range	n/a	n/a	n/a	n/a	n/a	n/a
Other sedatives, hypnotics, ,tranquilizers						
Mean	7	11	0	0	0	0
Median	7	11	0	0	0	0
Range	n/a	n/a	n/a	n/a	n/a	n/a
Suboxone						
Mean	30	30	30	30	25	25.5
Median	30	30	30	30	30	25.5
Range	n/a	n/a	30	n/a	15-30	21-30

Table 4. Alcohol and Drug Use (cont.)

Characteristic	Baseline	6 Month	12 month	18 month	24 month	30 month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Section C Q5-10 Modified CAGE * (Drug use)						
Mean	1	0.73	0.36	0.42	0.79	1
Median	0	0	0	0	0	0
Range	0-6	0-6	0-4	0-4	0-5	0-4
% with drug problem (cutoff =2)	24% (12)	18% (8)	7% (1)	15% (5)	17% (4)	35% (7)
Section C Q11-14 CAGE ** (Alcohol use)						
Mean	1.4	1.20	1.29	0.79	0.92	0.9
Median	1	0	0.5	0	0	0
Range	0-4	0-4	0-4	0-4	0-3	0-4
% with alcohol problem (cutoff=2)	48% (24)	41% (18)	36% (5)	24% (8)	29% (17)	25% (5)

* The modified CAGE is scored on a scale from 0 to 6. A score of 2 or more indicates a potential drug use problem. Higher scores indicating a greater chance of drug abuse.

** The CAGE is scored on a scale from 0 to 4. A score of 2 or more indicates a potential alcohol use problem. Higher scores indicating a greater chance of drug abuse.

Source: Buchsbaum DG, Buchanan RG, et al. (1991).   Screening for Alcohol Abuse Using CAGE Scores and Likelihood Ratios. *Ann Intern Med* 115(10): 774-7.

Reynaud M, Schwan R, Loiseaux-Meunier MN, Albuisson E , Deteix P. (2001). Patients admitted to emergency services for drunkenness: moderate alcohol users or harmful drinkers? *American Journal of Psychiatry*. 158(1):96-9.

Table 5. Mental Health Index

The score can range from 0 to 56. Higher scores indicate greater mental illness symptoms.

	Baseline	6 Month	12 month	18 month	24 month	30 month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Mean	21	19.66	19.57	16	16	18.75
Median	20	17.5	20.50	13	12	18.50
Range	1-47	0-41	3-41	1-43	0-36	0-35
% with Mental health problem (cutoff* = 32)	28% (14)	25% (11)	29% (4)	27% (9)	25% (6)	25% (5)

*3rd quartile

Table 6. Medical Status

Characteristic	Baseline	6 Month	12 month	18 month	24 month	30 month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Self-reported health						
Excellent	6% (3)	11% (5)	7% (1)	9% (3)	8% (2)	10% (2)
Very good	14% (7)	16% (7)	14% (2)	18% (6)	17% (4)	15%(3)
Good	26% (13)	20% (9)	29% (4)	27% (9)	29% (7)	15% (3)
Fair	32% (16)	41% (18)	29% (4)	30% (10)	29% (7)	55% (11)
Poor	22% (11)	11% (5)	21% (3)	15% (5)	17% (4)	5% (1)
No response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
Past 30 days, number of days physical health not good						
Mean	11	7	6	4.52	7.38	6.6
Median	6.5	2	1	2	0	1
Range	0-30	0-30	0-30	0-30	0-30	0-30
No response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
Past 30 days, number of days poor health interfered with activities						
Mean	5	5	3	3.48	3.63	2.95
Median	0	1.5	0	0	0	0
Range	0-30	0-30	0-20	0-30	0-28	0-30
No response	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
How many times did you visit a doctor, nurse, or HC clinic including the ER in the past 3 months?						
Mean	8	5	9	11	11.70	9.25
Median	5	4	6	4	8	5.5
Range	0-30	0-20	0-31	0-90*	1-92*	0-63*
No response	0% (0)	2% (1)	0% (0)	0% (0)	0% (0)	0% (0)
How many times did you visit and emergency room or urgent care center in the past 3 months?						
Mean	2	0.84	0.36	0.82	0.92	1.55
Median	1	0	0	0	0	0
Range	0-24	0-10	0-2	0-4	0-8	0-22
No response	2% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)

*one participant requires a visiting nurse daily/almost daily

Table 7. Treatment Services Review

Type of Service	Baseline	6 Month	12 Month	18 Month	24 Month	30 Month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
How many times in the past 30 days…						
Substance Abuse Treatment Services						
Attended AA/NA/CA or 12 step session						
Mean	8.5	2.4	3.5	2.67	2.96	2.8
Median	0	0	0	0	0	0
Range	0-40	0-20	0-30	0-25	0-30	0-24
Legal Services						
How many times been arrested?						
Mean	0.12	0.05	0.14	0.03	0	0
Median	0	0	0	0	0	0
Range	0-2	0-1	0-2	0-1	n/a	n/a
How many times incarcerated?						
Mean	0	0.34	0	0.85	1.13	0
Median	0	0	0	0	0	0
Range	0-1	0-15	n/a	0-28	0-27	n/a
Healthcare Services						
Hospitalization						
Mean	1.32	0.36	0.57	0.12	0.25	0.75
Median	0	0	0	0	0	0
Range	0-21	0-8	0-8	0-4	0-4	0-9
Emergency Dept. use						
Mean	0.72	0.32	0.21	0.18	0.42	0.20
Median	0	0	0	0	0	0
Range	0-5	0-5	0-1	0-2	0-4	0-2
Medical care by a nurse or doctor						
Mean	2.8	1.2	1.1	3.42	2.63	2.45
Median	1.5	0	0	0	0	0
Range	0-21	0-8	0-8	0-30	0-30	0-20
Taken to the hospital by ambulance						
Mean	0.46	0.18	0.07	0.09	0.17	0.10
Median	0	0	0	0	0	0
Range	0-5	0-4	0-1	0-1	0-2	0-1
Employment Services						
Number of times paid for working						

Mean	0.32	0.95	0.36	0.18	0.08	0
Median	0	0	0	0	0	0
Range	0-4	0-30	0-4	0-4	0-2	0
Number of times in school/training program						
Mean	0.26	0	0	0.24	0	0.05
Median	0	0	0	0	0	0
Range	0-12	n/a	n/a	0-8	n/a	0-1

Table 8. Self-Esteem Index

Scores can range from 10 to 40. Scores between 25 and 35 are usually considered to be within normal range. Scores below 25 suggest low self-esteem. (see: http://www.wwnorton.com/college/psych/psychsci/media/rosenberg.htm)

	Baseline	**6 Month**	**12 Month**	**18 Month**	**24 Month**	**30 Month**
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Mean	21	19.9	20.29	20.12	19.71	19.60
Median	20.5	19.5	21	20	19.50	19
Range	10-30	12-28	15-25	14-33	14-26	15-26
% with good self-esteem (cutoff* = 35)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
% with fair self-esteem (cutoff**= 25)	24% (12)	16% (7)	7% (1)	18% (6)	13% (3)	15% (3)

*upper end of normal range
**lower end of normal range

For comparison:

In a study of college students, the average score was 38 with most falling between 35 and 40. (see: http://www.everything2.com/index.pl?node_id=1388339)

Table 9. Brief Instrumental Functioning Scale (BIFS)
Scores can range from 0 to 6. A high score indicates a high level of functioning.

	Baseline	6 Month	12 Month	18 Month	24 Month	30 Month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Mean	1.7	1.6	1.79	1.58	2.29	2.10
Median	1	1	2	1	2.5	2.50
Range	0-6	0-5	0-4	0-5	0-5	0-6
% with good level of functioning (cutoff* = 4)	14% (7)	11% (5)	14% (2)	12% (4)	33% (8)	25%
% with good level of functioning (cutoff** = 3)	30% (15)	30% (13)	36% (5)	30% (10)	33% (8)	25% (5)

*average of scores from studies below
**3rd quartile

For comparison:
In a previous study with homeless individuals, the mean±SD scores on the BIFS ranged from 5.30±1.19 for participants who had no mental illness to 4.95±1.12 for those who had both a mental illness and substance dependence (F=4.43, df=1, 508, p≤.004). Greer Sullivan, M.D., M.S.P.H., Levent Dumenci, Ph.D., Audrey Burnam, Ph.D. and Paul Koegel, Ph.D.Validation of the Brief Instrumental Functioning Scale in a Homeless Population. *Psychiatr Serv* 52:1097-1099, August 2001.

Another study reported a BIFS score among homeless individuals of 3.5. John Fortney, Greer Sullivan, Keith Williams, Catherine Jackson, Sally C Morton, and Paul Koegel. Measuring Continuity of Care for Clients of Public Mental Health Systems**.** *Health Serv Res.* 2003 August; 38(4): 1157–1176.

Table 10. Social Support (ISEL-12)
Scores can range from 10 to 40. A high score indicates a high level of social connectedness. A low score indicates a low level of social connectedness.

	Baseline	6 Month	12 Month	18 Month	24 Month	30 Month
Total	100% (50)	100% (44)	100% (14)	100% (33)	100% (24)	100% (20)
Mean	27	28	26	29	29.33	29.1
Median	28	27	28	29	28	29
Range	12-40	11-40	14-37	12-40	18-40	20-40
% with good social support (cutoff *=29)	28% (14)	30% (13)	29% (4)	27% (9)	25% (6)	30% (6)

*3rd quartile

For comparison:
A Longitudinal Study of patients with AIDS/HIV found scores on the ISEL-12 were 37.85 and 37.77.
Kelly M. Trevino, Kenneth I. Pargament, Sian Cotton, Anthony C. Leonard, June Hahn, Carol Ann Caprini-Faigin, Joel Tsevat. Religious Coping and Physiological, Psychological, Social, and Spiritual Outcomes in Patients with HIV/AIDS: Cross-sectional and Longitudinal Findings. *AIDS Behav*.