



# **City of Albuquerque Heading Home Initiative Cost Study Report Phase 1**

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## **INTRODUCTION**

The Albuquerque Heading Home (AHH) Initiative seeks to target the most vulnerable individuals within the homeless population. The program is designed to offer immediate housing to eligible persons referred from case management agencies, or more commonly, self-referral. Such individuals, who have co-occurring behavioral health problems and a history of substance abuse, must meet three criteria to qualify for the Heading Home program: 1) They must provide proof of homelessness, 2) they must provide proof of low-income, and 3) they must provide proof of a behavioral health disorder.

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), chronic homelessness refers to an “individual who has been continuously homeless for a year or more or has experienced at least four episodes of homelessness in the last three years and has a disability” (U.S. Department of Housing and Urban Development, 2012). Such individuals, in addition to those with high Vulnerability Index (VI) scores, are considered to be the most vulnerable. Developed by Common Ground, the VI is an instrument which measures and identifies the most vulnerable homeless persons. The VI features a series of variables designed to enable staff or volunteer members to quantify the degree of an individual’s risk of serious injury, illness, and death. The index scores account for the length of homelessness, the time spent on the streets, and the mental and physical status of the individual (Moreno, 2012).

As of December 2012, the AHH Initiative had surveyed over 900 individuals sleeping on the streets or in shelters using the Vulnerability Index (AHH, 2013). As of June 2013, a total of 212 individuals had been housed. The program began on January 31, 2011 and the program accepted its first client on February 1, 2011. A 2010 cost study of the Albuquerque Housing First program found a moderate net cost benefit. The moderate net cost benefit primarily derived from the large reduction in most service types (i.e. emergency room services, jail bed days, and shelter costs) compared to the cost of the Housing First Program and an increase in inpatient hospital services. We do not know if this cost benefit that has been shown for the City of Albuquerque Housing First program and in the literature for similar housing programs extends to the Albuquerque Heading Home Initiative. Ultimately, this research is designed to study the costs before and after the provision of housing for the most vulnerable chronically homeless persons in Albuquerque, New Mexico.

In time for this preliminary study we were not able to acquire all the cost data we requested. This occurred for a number of reasons. First, a couple of agencies were unable to provide the information in the requested time frame. This included emergency rescue services and cost data, some substance abuse treatment data, and some emergency shelter data. Second, because some service and cost data appeared to be incomplete (missing service dates and missing costs) it was not included. This included ambulance data and some emergency shelter

data. A number of these involved miscommunication between ISR staff regarding the request for service and cost data.

A later study will incorporate the data mentioned above. While missing official shelter data we do have and use self-reported shelter data. In the future we hope to compare the self-reported shelter data to official shelter data and hope the two will be useful in confirming emergency shelter stays.

## **LITERATURE REVIEW**

Based on some of the most recent national data on homelessness, on a single night in January 2012, approximately 633,782 people were experiencing homelessness in the United States. It is estimated that of these individuals, 200,000 are chronically homeless, and tend to have disabling health and behavioral health problems. Estimates suggest that at least 40% have substance use disorders, 25% have some form of physical disability or disabling health condition, and 20% have serious mental illnesses; often, individuals have more than one of these conditions. These factors contribute not only to a person's risk for becoming homeless but also to the difficulty he or she experiences in overcoming it. (The U.S. Department of Housing and Urban Development, 2012, SAMHSA, 2003).

Consequently, the most vulnerable individuals experiencing chronic homelessness tend to be the highest users of community services, such as emergency room visits, inpatient treatment services and outpatient treatment services. While these individuals use these services more frequently, they also require more acute care. In many cases, hospitals must provide acute services for preventable conditions which are exacerbated by the circumstances of homelessness. Within communities, criminal justice systems are also impacted by homelessness. Findings suggest that the relationship between homelessness and jail is bi-directional, meaning "people who are homeless are much more likely to be arrested and in jail than those who are housed, and without adequate discharge planning and supports, people in prison are more likely to become homeless upon release" (Gaetz, 2012). Moreover, it is not uncommon for homeless individuals to spend time in jail for minor violations of the law, such as sleeping in public, hampering the law force's ability to focus on high-risk criminals (Gaetz, 2012). Ultimately, research has shown that the heavy use of these services places a substantial financial burden on the community, and can amount to upwards of millions of dollars per year. In fact, Albuquerque spends 20 million dollars annually to provide homeless services to individuals and families. (NMCEH, 2013; Perlman & Parvensky, 2006; Mondello et al., 2007; MHSA, 2010).

Existing literature focuses on what supportive housing is, how it works, and for whom it works best with. This includes the best practices of supportive housing, target client population, community outcomes and client outcomes. Both monetary and non-monetary 'outcomes' have been and continue to be studied, and are often described as either 'beneficial' or 'costly'. While

monetary outcomes may include the cost of homelessness or the cost of housing clients, non-monetary outcomes could include the changes in mental and physical health or change in quality of life for housed clients (Waegemakers & Rook, 2012). A large body of literature focuses on studying both monetary and non-monetary benefits and costs. Ultimately, researchers are addressing the challenge of responding appropriately and compassionately to a problem that harms individuals, families and communities, while saving money. Clearly, this is a complex issue, and further examination is necessary. To have a comprehensive body of literature, more needs to be understood about the various costs and benefits of supportive housing, for both the individual experiencing homelessness and the community (Culhane et al, 2011; Culhane et al., 2007; Flaming et al., 2009; Perlman & Parvensky, 2006; Spellman et al., 2010). The next portion of the literature review will consist of a brief background overview, and a broad discussion of the existing themes within literature surrounding the cost and benefits of supportive housing.

## **Background**

It is believed that Housing First has origins from three founding programs: Houselink (1977), Beyond Shelter (1988), and Pathways to Housing (1992). The three founding programs were originally based on rapid re-housing through permanent means rather than the use of shelters. While the three programs view Housing First differently, they were all based upon the values that housing was and continues to be, a right. Today, there are several distinctive program models addressing the problem of chronic homelessness. Such programs tend to have overlapping features; however, their specific characteristics are often dependent upon the needs of the population being served.

Transitional Housing, often thought of as a “traditional” program, is intended to provide a pathway between homelessness and permanent housing. Generally, individuals are able to utilize transitional housing for up to 24 months. Transitional housing programs typically provide supportive services to individuals who do not have a history of severe mental and behavioral health issues or chemical dependencies. It is not uncommon for such programs to require sobriety or admittance to a treatment program in order to receive supportive services; in such instances, housing is contingent upon compliance of the requirements.

The Housing First Model (HFM) is designed to provide immediate independent permanent housing and individualized supportive services, such as mental health services, medical care, and supportive case management. Commonly, these services are provided by an Assertive Community Treatment (ACT) team of social workers, nurses, psychiatrists, vocational and substance abuse counselors, peer counselors, and other professionals. Consistent with the principles of the harm reduction approach, HFM's recognize the necessity for each individual to receive personalized treatment. A main feature differentiating the HFM from that of others is its lack of pre-conditions. The HFM does not require that the individual be sober or enrolled in a treatment program.

## **About the Population**

Research studies have focused on a generally wide variety of populations. Existing literature covers single adults and families experiencing homelessness, either periodically or chronically. Families experiencing homelessness generally report having difficulty accessing specific resources, such as finding or maintaining a job or finding affordable housing. In contrast, individuals experiencing chronic homelessness generally have a diagnosable mental illness, chemical dependence or dual diagnosis. Many of which are disabled or suffer from chronic health problems and subsequently report being unemployed. While some similarities may exist, these two groups of individuals clearly differ in many ways and most certainly require different supportive services. On the whole, families requiring fewer supportive services are significantly more successful in transitional housing models. On the other hand, chronically homeless individuals require more supportive services and typically have better success in permanent supportive housing, specifically Housing First (HF) models.

## **Best Practices**

With the wide-spread adoption of HFM's by diverse communities, practitioners are now questioning whether the approach could be considered a "best practice". Naturally, researchers dispute whether or not the supporting evidence is valid, reliable, or comprehensive. Some research, such as in Waegemakers & Rook (2012), argue that the emergence of supportive housing was "fuelled by some scientific evidence," such as high retention rates found in quantitative research designs, but was not actually evidence-based. In contrast, research designs which use a qualitative methodology may find more abstract yet important indicators of outcome success, such as quality of life.

## **Community & Client Outcomes**

### ***Cost-Effectiveness***

A large portion of the existing literature is dedicated to evaluating the cost-effectiveness of supportive housing, specifically HF models. Research reports such as Pathways to Housing program (Gulcur, et al., 2003; Tsemberis et al., 2004b), the REACH program that uses "Full Service Partnerships of Housing and Support Services" (Gilmer, et al., 2010; Gilmer, et al., 2009) and San Diego (Buchanan et al., 2009; Gilmer et al., 2009) all yield a small cost savings in the HF approach (Waegemakers & Rook, 2012). Unfortunately, cost studies tend to fall short due to the difficulty of data acquisition. Oftentimes, such studies are only able to provide analysis of one or two basic costs, such as shelter use or mental health care. For example, the Denver Housing First Collaborative Cost Benefit Analysis & Program Outcomes Report (Perlman & Parvensky, 2006) only provides cost analysis of health and emergency service records. Despite the numerous conflicting opinions about supportive housing and cost-effectiveness, there seems to be a general consensus that such results are ultimately incomplete. Lastly, there are various research findings that indicate supportive housing is cost-effective, or at least cost-neutral, with specific populations. Dionne Miazdyck-Shield suggests that "the studies on cost reduction apply specifically to chronically homeless people with a mental illness

who are the heaviest users of services". In other words, quantitative outcomes, such as cost savings, are seen most often within the most vulnerable populations using the Housing First supportive housing model.

### ***Improving Health and Stability, Reducing Costs***

Research suggests that the unpredictability and instability associated with homelessness interfere with the individual's ability to maintain healthy and balanced lifestyles. The provision of housing therefor does not only represent a tangible and physical structure of support, but also an emotional and social system of support. Burns suggests supportive housing results in the establishment of dependable and stable support systems, and the regular utilization of physical and behavioral health services. In addition to allowing the individual to lead a more balanced and secure life, it also reduces the costs shouldered by the community. He states, "Costs decrease markedly when individuals gain access to affordable housing with services (permanent supportive housing). Costs decline because permanent supportive housing and ongoing, on-site access to physical and behavioral health services greatly increase individuals' level of stability and greatly reduces the frequency and severity of crises in their lives"(Burns, Flaming, 2012, P.17). Additionally, many of these individuals suffer from mental and behavioral health difficulties, and consequently require more public care and supportive services. Stephen Gaetz explains that, "supportive housing models are a much more cost effective option for chronically homeless people with serious mental illness and addictions, because the cost of housing is substantially offset by the reduced use of acute care services when people have stable housing and on-going support" (Gaetz, 2012).

Individuals experiencing chronic homelessness typically depend on public services on a frequent basis. Moreover, chronically homeless individuals tend to suffer from mental health problems, or medical health problems, and many suffer from both. Consequently, these individuals, who are considered to be extremely vulnerable, are generally the heaviest users of public services. There is a large body of research which has shown that supportive housing for the chronically homeless is beneficial in several ways. Furthermore, research has shown that permanent supportive housing, such as Housing First programs, produce positive and cost-effective outcomes for both the individual who experienced homelessness, and the community. Previous research on the effectiveness of these types of programs (Larimer, Malone, Garner, et al., 2009; Sadowski, Romina, Tyler, VanderWeele, et al., 2009; Perlman and Parvensky, 2006; Mondello, Gass, McLaughlin and Shore, 2007; and Walsh, Duncan, Selz-Campbell, and Vaughn, 2007) has generally shown that programs similar to Heading Home are associated with a relative decrease in costs. Previous research studies have contributed invaluable data, allowing researchers today to take the next step in better understanding supportive housing, the individuals who depend on such systems, and the future implications of their findings, such as creating a sustainable system of housing the homeless. After all, it has already been suggested that emergency services like supportive housing are only remedial and have little effect on the

long-term cycle of homelessness. Alternatively, prevention programs offer the possibility to end homelessness. A remedy is no longer necessary because the ailment is no longer existent.

## **METHODOLOGY**

This study followed generally accepted guidelines for conducting this type of cost study. This section describes the data sources and methods used to measure the costs of the Heading Home Initiative.

This study focuses on a cost analysis that compares the cost of a wide variety of different services, which are described later for a year before study group members entered the Heading Home Initiative program to the cost of services after study group members entered the Heading Home Initiative program for a similar time period. The cost-effectiveness analysis is a reliable and valid framework to assess the costly problem of chronically homeless individuals and their heavy use of public services, while acknowledging the existence of intangible costs.

This study uses two methods to study and measure the cost effectiveness of the Heading Home Initiative, an interview and record review. These methods are described in more detail later.

The Heading Home Initiative also provided us access to information collected from their Vulnerability Index (VI) Survey. The VI is used in homeless enumeration counts in numerous locations in the United States and it is designed to identify and prioritize the homeless population for housing based on their health. This survey provided information on vulnerability, length of time lived on the street, homelessness in the past three years, health status, substance abuse history mental health, insurance, veteran status, gender, race/ethnicity, citizenship, and highest grade completed. Importantly the VI can be used to provide a measure of vulnerability of the Heading Home Initiative target population, the population housed under the initiative, and our study group.

These data were used to describe the client population and compare our study group to the total population of homeless individuals who were assessed with the VI. Heading Home client enrollment data was also used to select the clients eligible to become study group members.

### **Client Recruitment**

After potential study group members were identified as eligible, based upon their housing date, ISR study staff recruited them to become study group members. The recruitment process included the use of a letter and flyer and required the help of Heading Home Initiative staff. Study group members were recruited to participate in both parts of the study (interview and official data).

Because of the number of potential study group members the recruitment of study group members was divided into “waves” or groups. In this initial recruitment phase potential study group members were assigned into three waves, each lasting approximately six weeks for a total of approximately five months. For each wave, an initial letter was mailed to the most

current client address on record on Heading Home Initiative letterhead. Wave 1 letters were mailed the second week of November 2012, wave 2 letters were mailed the first week of January 2013, and wave 3 letters were mailed the last week of March 2013.

Table 1 provides the initial (original) number of clients recruited in each wave, the number of individuals rolled over and added to the subsequent wave, the total eligible study group members in each wave we attempted to recruit, the number of study group members recruited, the number of individuals removed from each wave, and the number of individuals who declined to participate.

For this study we attempted to recruit 95 eligible study group members and were able to recruit 54 study group members. We were unable to make contact with 39 potential study group members and two individuals we contacted declined to participate.

<b>Table 1 Eligible Study Group Members Wave Organization</b>			
Client Count	Wave One	Wave Two	Wave Three
Original Clients	42	26	27
“Rolled Over” and Added to the next wave Clients		11	1
Total Clients Eligible	42	37	28
Interviewed	29	17	8
Removed	0	19	20
Declined	2	0	0

Potential study group members were then able to either contact ISR staff using listed phone numbers to schedule and complete the interview, or ask their Case Manager to arrange an interview with us. The Case Managers were then able to either call or email us to schedule an interview. This method allowed potential study group members to voluntarily choose to contact us or not contact us. At approximately the same time flyers were delivered in person or to the addresses of potential study group members who did not respond to the initial letter.

The process was intended to provide potential study group members sufficient opportunity and time to decide to voluntarily participate. These extra steps were taken to attempt contact with potential study group members because we believed individuals would be interested in participating, and we did not want potential study group members to be missed.

During the initial stages of recruiting study group members several issues surfaced. First, we discovered that the Heading Home Initiative was sometimes lacking some pieces of information useful for recruiting study group members. This included complete addresses for mailing letters and delivering flyers and. Second, we discovered the program did not always have complete

information on the agency case managing the client and/or the case manager if the agency and/or case manager were not one of the four case managers contracted to the Heading Home Initiative. Third, we discovered the program was at times missing housing dates for clients. This was an important issue because we were hoping to recruit study group members using their housing date to determine who had been housed a minimum of one year and hence was eligible. After beginning recruitment several other issues arose. This primarily centered on our inability to accurately track who had been mailed a letter and who had received a flyer. For this reason it was difficult, with certainty, to know which potential study group members had actively been recruited. For this reason some potential study group members were rolled into a subsequent recruiting wave. This is indicated in Table 1.

These issues required us to extend the recruitment phase. Nevertheless, in time for this preliminary report we were able to recruit 54 study group members. In general, ISR staff, Heading Home Initiative staff, and the case managers were able to communicate and schedule client interviews.

### **Client Interview**

This method focused on an interview with study group members who consented to take part in this portion of the study. Clients who had been housed a minimum of one year were eligible to participate. Collected data includes questions about military service (to determine if study group members were veterans), study group member's medical status, employment/support status, legal status, drug/alcohol use, family/social relationships, psychiatric status, and length of time lived in Albuquerque, date of birth, and race/ethnicity.

All client interviews were completed in one session, and took between 60-75 minutes to complete. The location of the interview was agreed upon at the time the interview was scheduled. Locations include public locations, such as cafes and fast food restaurants, our offices, and private residences, most often the clients' apartment. At or around the scheduling time of the interview, the case manager was able to communicate any concerns or issues regarding the client, which sometimes influenced how and where the interviews were scheduled. Additionally, depending on the case manager recommendations and other factors, interviewers were able to request that a second staff member accompany them to the interview to act as an observer.

Once it was determined that wave 3 would produce no further interviews, we moved forward with the second part of the cost study which consisted of a review of study group members service records. Importantly, for the cost study, the interviews allowed us to supplement and confirm data collected in the official review of client records at the large array of agencies in the study.

### ***Event History Calendar (EHC)***

An essential aspect of the interview included a retrospective life experiences count data collection section that was designed to provide data, such as housing status, emergency room

use, inpatient hospital use [medical and behavioral health], and outpatient medical/mental health/substance abuse services use, for an approximately two-year period prior to the date the study group member enrolled in the AHH program. This information was intended to supplement the data described in the next section. The interview is attached as Appendix A.

## **Record Review**

This method relies on the collection of service and cost data collected and maintained by various agencies. This includes emergency room, inpatient medical, inpatient behavioral health, outpatient medical, outpatient behavioral health, detoxification services, ambulance services, fire department response services, Assertive Community Treatment (ACT) services, jail bookings, case management, and shelter utilization. We also collected local arrest histories to document the number of arrests pre- and post-housing.

For the record review, we contacted participating agencies to request service and cost information for study group members. Our goal was to recruit all four large local hospitals, the local county detention center, the City of Albuquerque and Bernalillo County substance abuse treatment agencies, the different agencies that provide ambulance transports, all local emergency shelters, local law enforcement agencies for a count of arrests, and other agencies that provide a variety of services (i.e. case management services, social services, medical/dental services, substance abuse treatment services, and nursing services).

The initial communication was used to describe the study, answer any questions, discuss what information they might be able to provide, explain our human subject review, and find out how they store and maintain individual level information. Every agency we contacted agreed to collaborate and most of these agencies were able to provide requested information in time to be included in this preliminary study. In a later study we hope to recruit additional study group members, collect service and cost data for a longer study period, and maybe include additional agencies not included in this study.

Participating agencies collect and maintain service and cost data in a variety of formats, mainly electronic automated formats or in hard copy paper files. We were provided service and cost data in primarily electronic formats. Because service and cost data was provided in a variety of formats it was necessary to systematically organize these data into a single format for this study. All of these data are stored in a secure database system. Hard copy data we collected was automated in the secure database.

Table 2 provides a list of the types of data we were seeking to access with additional detail regarding the specific information and agencies from January 2009 through approximately June 2013.

<b>Table 2 Official Data Collection</b>		
Type of Data	Requested Information	Agencies
Jail bookings	Booking date, release date, and booking charges	Bernalillo County Metropolitan Detention Center
Substance abuse treatment	Assessment date and results, any referral information to other substance abuse treatment providers, detoxification services, case management services, number and type of services, and cost of services	Albuquerque Metropolitan Central Intake, Bernalillo County Metropolitan Assessment Treatment Services, Albuquerque Health Care for the Homeless
Ambulance pickups and transports	Date of pickup, location of the transport, and cost of service	Albuquerque Ambulance Service, Albuquerque Fire Department, and Bernalillo County Fire Department
Emergency room, inpatient, outpatient, and clinic medical and mental health services	Begin date of service, end date of service, number and type of services, cost of services	University of New Mexico Hospital, University of New Mexico Psychiatric Center, Presbyterian Hospital, Lovelace Hospital
Arrests	Date(s) of arrest, charge(s), and cost of arrest	Albuquerque Police Department and Bernalillo County Sheriff's Department
Emergency shelter	Date(s) of sheltering and cost per day	Albuquerque Opportunity Center, Albuquerque Rescue Mission, Brothers of the Good Shepherd, Joy Junction, Barrett House
Meal Sites	Date(s) of any meal, the meal type (breakfast, lunch, dinner), and the cost of the meal	Project Share, Albuquerque Rescue Mission, Brothers of the Good Shepherd, and Noon Day
Other services	Ancillary services that could include case management services, social services, medical/dental services, and nursing services and cost per service	Albuquerque Healthcare for the Homeless, St. Martins Hospitality Center, Assertive Community Treatment teams

## **Annual Follow-Up Interview**

Our study also includes an annual follow-up interview. In time for this preliminary study no client was eligible for their follow-up interview, as it is conducted approximately 12 months after the intake interview. As clients become eligible, they will be asked to complete the follow-up interview, which will take approximately 15 minutes. The follow-up interview will include quality of life questions, satisfaction with services, and indicators of social stability. The interview is attached as Appendix B.

## **Adjusting Costs from Previous Years and the Current Year**

In order to compare the cost of care provided to study group members in previous years to the current year it is necessary to normalize the costs. A 2009 Wall Street Journal (WSJ, 2009) article noted that after Medicare and Medicaid were established in 1965 the cost of medical care has inflated 2.3 times faster than any other cost in the economy. In a 2011 report released by the United States Department of Labor Bureau of Labor Statistics (BLS) the inflation rate of medical costs was reported to have risen 3.0% compared to 2.1 % for all items (BLS CPI, 2011). The inflation rates reported by BLS and WSJ both agree that medical costs inflate at a greater rate than the inflation rate of the consumable dollar (BLS CPI, 2011; WSJ, 2009).

Due to time and budget constraints we decided to inflate previous years' costs to current year levels by using the U.S. currency inflation rate rather than try to determine a medical cost inflation rate. Results from several U.S. currency inflation rate calculators were similar suggesting stability in the method chosen. Using U.S. currency inflation rates which are lower than the inflation rates of medical costs also allow the study's results to remain conservative and not over estimate costs incurred by clients in past years (BLS CPI, 2011; WSJ, 2009). We chose to use the BLS inflation calculator (BLS, 2011).

Below is a listing of U.S. currency inflation rate calculators used to compare for the study:

- [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm) (calculator chosen)
- <http://www.coinnews.net/tools/cpi-inflation-calculator/>
- <http://www.usinflationcalculator.com/>

## **STUDY SAMPLE DESCRIPTION**

This section describes the study sample. Since the program began on January 31, 2011 212 clients have been enrolled through early-June 2013. Through June 2013 46 clients have left the program; 9 have died while in the program, 14 clients successfully discharged (i.e. moved to other permanent housing, left Albuquerque, no longer needed services, or self-discharged) and 23 clients were unsuccessfully discharged (i.e. evicted, jailed for more than 90 days, lost to contact [abandoned apartment/no contact for more than 90 days]). Approximately 95 clients met the criteria of being in the program for 365 day or more for inclusion in the study. At the time of recruitment approximately 103 active clients had been in the program less than 365 days and so were not eligible.

At the conclusion of our approximately 8 week recruitment period we recruited 54 out of 95 eligible study group members. We had hoped to recruit more study group members.

The next two sections describe the individuals screened using the Vulnerability Index, individuals accepted into the AHH Initiative, and study group members.

### **Vulnerability Index (VI) Data Findings**

This section describes the population of individuals screened using the VI and compares them to those individuals who became clients.

Table 3 shows the differences between the clients housed by AHH and those that have been identified as homeless, but not yet housed on both vulnerability measures and demographic variables. Individuals who become AHH clients were overwhelmingly more vulnerable than those that did not become part of the AHH Initiative. The average 8-point overall vulnerability rating for housed clients (2.72) is over 1.5 points higher than that for those who were identified as homeless, but not provided housing (1.19). Furthermore, we see that those housed by AHH are significantly more vulnerable on all of the measures except whether or not the individual has been to the ER in the last year and the percent with some form of health insurance. Specifically, AHH clients are more likely to have a higher tri-morbid rating, to have been to the ER more times in the past three months, and to have a serious health condition. Additionally, those not yet housed are less likely to use illicit substances, to have been a victim of an attack while homeless, and to have a permanent disability. These results provide evidence that AHH is providing housing to the more vulnerable individuals. The bottom half of Table 3 examines the differences in the demographic variable means across the housed and homeless populations. In general these results show that there are no significant differences across the two groups except for age at start of homelessness and overall age. This finding is encouraging because it suggests that demographic factors and other factors not directly linked to vulnerability are not impacting housing decisions.

**Table 3. Comparing Differences in Vulnerability Measures and Demographic Means between the Clients Housed by AHH and Those Identified as Homeless**

	Housed	Homeless	Difference (Housed - Homeless)
<b>Vulnerability Measures</b>			
Overall Vulnerability Rating	2.72	1.19	1.53 ***
Tri-Morbid Rating	0.70	0.38	0.32 ***
Number of Times Been to ER (Last 3 Months)	0.72	0.31	0.40 ***
% Been to ER in Last Year	0.95	0.96	0.00
% With Serious Health Condition	0.93	0.69	0.25 ***
% Any Substance Use	0.85	0.77	0.08 *
% Frequent Substance Use	0.72	0.31	0.40 ***
% With Mental Health and Substance Abuse	0.73	0.52	0.22 ***
% With Any Mental Health Problems	0.85	0.63	0.21 ***
% Have Been Victim of Attack Since Homeless	0.66	0.50	0.16 ***
% With Permanent Disability Limiting Mobility	0.56	0.33	0.23 ***
% With Some Form of Health Insurance	0.76	0.62	0.15 ***
<b>Demographic Information</b>			
Age at Start of Homelessness	41.98	39.13	2.85 **
Age	50.87	46.19	4.69 ***
% Female	0.37	0.34	0.03
% African American	0.12	0.11	0.01
% Hispanic	0.29	0.27	0.01
% Native American	0.12	0.16	-0.04
% White	0.40	0.35	0.05
Education Level (5-point scale)	3.09	3.06	0.02
Times Homeless & Housed Again (Last 3 Years)	1.26	1.42	-0.15
Number of Days Homeless	3403.34	3612.20	-208.86
% Most Frequently Sleep - Other	0.20	0.24	-0.04
% Most Frequently Sleep - Shelters	0.44	0.38	0.06
% Most Frequently Sleep - Streets	0.36	0.37	-0.02
% Ever Been in Jail	0.85	0.81	0.04
% Ever Been in Prison	0.29	0.28	0.01
% Served in the Military	0.16	0.17	-0.01

Note: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 4 reports the differences between the AHH housed study group members and those that have been housed and who are study group members on both vulnerability measures and demographic variables. This analysis is used to examine whether the results obtained from the sample of interviewed clients can be reasonably generalized to the total population of housed individuals. Only one out of the twenty eight variables (whether or not the individual has been a victim of attack since becoming homeless) is significantly different between the two groups. Consequently, these results provide evidence that the sample of housed individuals is representative of the total population of housed individuals.

**Table 4. Comparing Differences in Vulnerability Measures and Demographic Means between the Clients Housed and Not Interviewed and Those That Have Been Housed and Interviewed**

	Housed: And Study Group Members	Housed: and Not Study Group Members	Difference (Study Group – Not Study Group)
<b>Vulnerability Measures</b>			
Overall Vulnerability Rating	2.69	2.74	-0.05
Tri-Morbid Rating	0.75	0.68	0.07
Number of Times Been to ER (Last 3 Months)	0.75	0.70	0.05
% Been to ER in Last Year	0.98	0.94	0.04
% With Serious Health Condition	0.96	0.92	0.04
% Any Substance Use	0.88	0.84	0.04
% Frequent Substance Use	0.75	0.70	0.05
% With Mental Health and Substance Abuse	0.77	0.72	0.05
% With Any Mental Health Problems	0.85	0.85	0.01
% Have Been Victim of Attack Since Homeless	0.52	0.72	-0.20 *
% With Permanent Disability Limiting Mobility	0.50	0.58	-0.08
% With Some Form of Health Insurance	0.75	0.77	-0.02
<b>Demographic Information</b>			
Age at Start of Homelessness	43.88	41.22	2.66
Age	52.27	50.31	1.96
% Female	0.40	0.36	0.03
% African American	0.09	0.13	-0.04
% Hispanic	0.36	0.26	0.11
% Native American	0.13	0.11	0.02
% White	0.36	0.42	-0.06
Education Level (5-point scale)	3.15	3.06	0.09
Times Homeless & Housed Again (Last 3 Yrs)	1.33	1.24	0.10
Number of Days Homeless	3057.42	3545.26	-487.84
% Most Frequently Sleep - Other	0.15	0.22	-0.08
% Most Frequently Sleep - Shelters	0.48	0.42	0.06
% Most Frequently Sleep - Streets	0.38	0.35	0.02
% Ever Been in Jail	0.88	0.84	0.03
% Ever Been in Prison	0.23	0.32	-0.09
% Served in the Military	0.08	0.20	-0.11

Note: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

## Population Demographics

This section describes the study sample using data from the VI and to a more limited extent information collected from the client interview described earlier. Since the program began in January 2011 and through June 2013, 198 clients were enrolled in the AHH Initiative, whether or not they were case managed through AHH or another agency. Of these clients, approximately 103 had been in the program less than 365 days and were therefore not eligible, leaving a total of 95 active eligible clients.

At the conclusion of our recruitment period, we recruited 54 study group members (56.8% of 95 eligible study group members). We had hoped to recruit more study group members.

<b>Table 5 Final Sample</b>		
Heading Home Initiative Client Count Type	Count	Percent
Heading Home Initiative Clients	198	100%
Potential study group members	95	100%
Recruited	54	56.8%

Almost 60% of our study group members were male, 35.2% of the study group members were Hispanic, 35.2% were White, 13% were American-Indian, and 7.4% was African-American. Five clients self-reported they had served in the military. It does not appear that any of our study group members were military veterans.

<b>Table 6 Demographics</b>		
Variable	Count	Percent
<b>Age</b>		
Average Age	43.8	
<b>Gender</b>		
Female	22	40.7%
Male	32	59.3%
<b>Ethnicity</b>		
White	19	35.2%
Hispanic	19	35.2%
African-American	4	7.4%
American-Indian	8	13.0%
Mixed Race	3	5.6%
Other	1	1.9%
<b>Military Service</b>		
Yes	5	9.3%

Table 7 reports the education level of study group members. The largest number and percent of study group members were high school graduates or had a GED (40.8%), followed by some college (31.5%), and some high school (20.4%).

<b>Table 7 Education</b>		
Education Level	Count	Percent
K – 8	2	3.7%
Some High School	11	20.4%
GED/High School Graduate	22	40.8%
Some College	17	31.5%
College Graduate	1	1.9%
Post-Graduate	1	1.9%

Table 8 reports information on study member’s prior living arrangements. Slightly more than 80% of the study group members reported living in shelters (46.3%) or on the streets (35.2%). Two study group members reported living in a motor vehicle and 8 study group members reported an ‘other’ living arrangement (camp, couch surfing, garage, hospital, motels, and multiple living arrangements).

<b>Table 8 Prior Living Arrangements</b>		
Prior Living Arrangements	Count	Percent
Motor Vehicle	2	3.7%
Shelters	25	46.3%
Streets	19	35.2%
Other	8	14.8%

Table 9 reports information on study member's contacts with different parts of the criminal justice system and public health system. Almost 90% of study group members self-reported ever being in jail and 24% reported every being in prison. Similarly, large percents of study group members reported ever receiving treatment for mental health issues (87%) and ever being treated for drug or alcohol use (87%) as ever being in jail. Almost all study group members were observed to have signs or symptoms of a serious physical health condition by the surveyors at the time of their VI. The large majority of study group members also reported 3 or more emergency room visits in the past year and inpatient hospitalizations in the past year. A small minority of study group members reported ever being in foster care (22.2%) or daily alcohol use in the last month (9.3%).

<b>Table 9 System Contacts</b>		
Variable	Count	Percent
Ever been in Jail	47	87.0%
Ever been in foster care	12	22.2%
Ever been in prison	13	24.0%
Daily alcohol use in the last month	5	9.3%
Ever been treated for drug or alcohol abuse	47	87.0%
Observed signs or symptoms of a serious physical health condition	52	96.3%
Ever received treatment for mental health issues	47	87.0%
3 or more hospitalizations or emergency room visits in past year	40	74.1%
Inpatient hospitalization in the past year	44	81.5%

Table 10 reports sources of income at the time of the VI. Four study group members reported no income. Study group members were able to report multiple sources of income and the count and percent is derived from the total of 54 study group members.

Almost two-thirds of the study group members reported receiving food stamps, followed by SSDI/SSI (18.5%), working off the books (14.8%), recycling (14.8%), public assistance (13.0%), and panhandling (13.0%). Smaller numbers of study group members reported

earning income through “working on the books” (3.7%), working in the sex trade (1.9%), drug trade/dealing (5.6%) and other (hustle, child support, and unemployment) (3.7%).

Type of Work	Count	Percent
Work on Books	2	3.7%
Work off Books	8	14.8%
Panhandling	7	13.0%
Veterans Benefits	0	0
Pension/Retirement	0	0
SSDI/SSI	10	18.5%
Food Stamps	35	64.8%
Public Assistance	7	13.0%
Recycling	8	14.8%
Drug Trade/Dealing	3	5.6%
Sex Trade	1	1.9%
Other (Hustle, Child Support, Unemployment)	2	3.7%

***Homeless Information***

Homeless information was also collected via the VI. Study group members were asked how many times they had been homeless and then housed again in the prior three years. On average, study group members reported being homeless and then housed 1.3 times with more than half the study group members reporting one or more times and one study group member reporting being homeless and then housed 6 time in the prior three years. Twenty-three study group members reported 0 times.

Total lifetime homeless days were also collected. On average, study group members reported being homeless 8.59 years (3,136.1 days). A median of 5.66 years (2,065 days), which measures the point at which half the scores or high and half the scores are lower, is also reported. The lowest lifetime homeless days reported was 577 days and the highest was 26.66 years (9,731 days).

### ***Medical Information***

Limited medical information was also collected by the VI. Ten study group members reported no ER visits in the past three months. Slightly more than 20% of the study group members reported 3 visits and 18.5% of the study group members reported 4 or more visits with one study group member reporting 15 visits to the ER.

Study group members were also asked to report inpatient hospitalizations in the past year and the surveyors were asked to note any observed signs or symptoms of serious physical health conditions. Forty-four study group members reported at least one inpatient hospitalization in the past year (range 1 – 6). As noted earlier, observed signs or symptoms of serious physical health conditions were noted for 52 of the 54 study group members.

Number of Visits	Count	Percent
No ER visits	10	18.5
1	9	16.7
2	14	25.9
3	11	20.4
4+	10	18.5

### ***Arrest Information***

As part of our study we requested and received from the Albuquerque Police Department contact data for study group members. Contact information includes contacts made by both the Albuquerque Police Department (APD) and the Bernalillo County Sheriff's Department (BCSO). Together these two agencies account for the large majority of police contacts in Bernalillo County. This section only reports arrest and citation information. By statute (NM Statute 31-1-6) a law enforcement office who arrests a person without a warrant for a petty misdemeanor or any offense under Chapter 17 NMSA 1978 may offer the person the option of accepting a citation to appear in lieu of jail. Table 10 reports the arrest and citation information provided by APD information for the 54 study group members. This information is reported by the pre-housing study time period of one year and the post-housing one-year time frame.

Eleven of the 54 study group members are represented in Table 12 and accounted for the 16 arrests and citations in the pre-housing time period and 3 arrests/citations in the post-housing time period. In time for this report we were not able to analyze the types of crimes.

<b>Table 12 Arrests and Citations</b>			
	1 Year Pre-Housing Time Period	1 Year Post-Housing Time Period	Difference
	Count	Count	Count
Arrests	12	2	10
Citations	4	1	3
Total	16	3	13

### **COST ANALYSIS**

This section reports on the cost analysis which was the focus of the study. As noted earlier we attempted to collect service and cost information on a wide range of services study group members may have received during the study period. With a few exceptions we were able to collect this information. In time to be included in this preliminary study we were able to collect the majority of service and cost information from the majority of agencies we targeted for this study.

Because agencies collect and maintain service and cost information in a variety of formats it was necessary to collect and receive information in a number of different formats and then to standardize these various service and cost formats for analysis and reporting. In order to compare real dollars across time it was also necessary to use an inflation calculator. The reasons for doing this and the method used were discussed earlier.

Because agencies collect and maintain service and cost information in different formats we were not always able to provide an accurate and reliable count of service visits and/or number of days services were provided. This impacts our ability to report service visits and service days. While we were able to provide an accurate cost per service we know the costs provided by service agencies were derived using different methods. For example, while some agencies provided us actual costs per service or day other agencies provided us a cost per service or day that was calculated by dividing the number of service days or services into their total budget.

During the course of interviewing study group members we discovered 5 study group members self-reported different AHH housing dates that were later than what we were provided. This means these 5 study group members had not been housed one year or longer and for this reason these study group members are excluded from the information reported below. In addition, 1 study group member who had been housed less than one year was incorrectly included in our sample. Cost information is presented below for 48 study group members. Future analyses will include these study group members.

Table 13 reports total costs and the cost per service type for study group members 1 year before they were housed by the Heading Home Initiative program compared to the 1 year after they were housed by the Heading Home Initiative program. Costs are reported as real costs and not actual costs. As noted earlier, in order to compare the costs of services received by study group members in previous years to the current year (2013) costs it was necessary to normalize costs. To normalize costs we decided to inflate previous years' costs to 2013 calendar years costs by using the U.S. currency inflation calculator discussed earlier.

Considering the different cost types, the one year post-Heading Home Initiative program costs were \$615,920.49 or 31.6% less than the one year pre-Heading Home Initiative program costs. This amounted to an average savings of \$12,831.68 per study group member.

Utilization of hospital inpatient, emergency room care, medical outpatient, mental health outpatient, emergency shelters, jail based treatment, and jails were reduced by participation in the program. Mental health inpatient and social service costs experienced increases from the one year pre-time period to the one year post-time period. Because Heading Home housing costs and client service costs did not exist in the one year pre-time period these costs also increased.

### **Housing and Shelter Costs**

Because there were no equivalent housing costs for the pre-period there was a 100% increase in housing costs of \$309,706.37. This is the one-year cost of housing study group members in the Heading Home Initiative program. The Heading Home Initiative program also accounted for \$106,473.07 in service costs for the post-study time period. This included case management and outreach costs. Service costs were calculated by dividing the entire service budget (four case managers and two outreach workers) by the approximate number of clients who were housed during the study time period. During the pre-study time period study we documented via the self-report interviews \$117,948.92 in shelter housing costs. In the future we hope to compare the self-report interview data to official shelter data. In time for this preliminary report we were not able to fully collect and analyze shelter data from all the local shelters.

### **Health Related Costs**

#### ***Emergency Room Visits***

Study group members used emergency room services a total of 127 times in the pre-period compared to 81 times in the post-period. This is a decrease of 46 visits or 36.2% after entry into the program. The costs of emergency room costs declined from \$208,439.74 to \$181,272.62, a decrease of \$27,167.12 or 13.0%.

#### ***Inpatient Medical and Mental Health Visits***

Study group members had 18 inpatient hospital visits by 11 study group members in the pre-time period with a cost of \$946,874.22 and 221 bed days. This is compared to 7 inpatient hospital visits by 5 study group members with a cost of \$153,003.48 and 40 bed days in the

post-study period. This resulted in an 84.2% decrease in costs. In the pre-time period study group members had 1 inpatient mental health hospital visit (3 days) with a total cost of \$21,732.62 compared to 1 inpatient mental health hospital visit (31 days) in the post-study period with a cost of \$54,089.00. This resulted in an increase of 34.3% in costs.

### ***Outpatient Medical and Behavioral Health Visits***

During the pre-time period study group members used outpatient medical services a total of 423 times and 250 times in the post-time frame. Outpatient medical visits decreased by \$204,856.59 and 39.1%. In the pre-time period study group members had 102 outpatient behavioral health visits with a total cost of \$47,391.66 compared to 110 outpatient behavioral health visits with a total cost of \$31,790.87 in the post-study period. This resulted in a decrease of 32.9%.

### ***Social Service Costs***

Social service costs consist of case management, outreach, and social work services provided to study group members. Social service costs increased from \$27,272.36 and 73 services from the pre-time period to \$155,264.74 and 470 services the post-time period. This was an increase of \$127,992.38 or 469.3%.

### ***Emergency Rescue/Ambulance Transports***

In time for this preliminary report we were not able to obtain emergency rescue information or ambulance transport costs. These data will be reported in a later report.

### ***Jail Costs***

Information for the jail comes from the Bernalillo County Metropolitan Detention Center. Jail costs decreased from \$51,540.30 in the pre-time period to \$18,448.89 in the post-time period. This is a decrease of 64.2% and \$33,091.41.

In the pre-time period 13 study group individuals spent 766 days in the MDC and in the post-time period 4 study group members spent 281 days in the MDC.

In addition, there were three study group members in the pre-time period who were in the Jail's Addiction Treatment Program (ATP) 57 days at a cost of \$3,844.79 compared to 2 study group members in the post-time period for 63 days and a cost of \$4,133.67. This was a cost increase of \$288.88 (7.5%).

**Table 13 Heading Home Initiative Program 1 Year Pre and 1 Year Post Program Costs**

	1 Year Pre-Heading Home Initiative Cost	1 Year Post-Heading Home Initiative Cost	Cost Difference	Percent Difference
Total Cost with Heading Home Initiative Program Costs	\$1,949,814.78	\$1,333,894.29	-\$615,920.49	-31.6%
Hospital Inpatient	\$946,874.22	\$153,003.48	-\$793,870.74	-83.8%
Emergency Room	\$208,439.74	\$181,272.62	-\$27,167.12	-13.0%
Medical Outpatient	\$524,568.17	\$319,711.58	-\$204,856.59	-39.1%
Mental Health Inpatient	\$21,732.62	\$54,089.00	\$32,356.38	148.9%
Mental Health Outpatient	\$47,391.66	\$31,790.87	-\$15,600.79	-32.9%
Ambulance/Emergency Rescue	0	0	0	0
Shelter	\$117,948.92	0	-\$117,948.92	-100.0%
Jail	\$51,540.30	\$18,448.89	-\$33,091.41	-64.2%
Jail Based Treatment	\$3,844.79	\$4,133.67	\$288.88	7.5%
Social Services	\$27,272.36	\$155,264.74	\$127,992.38	469.3%
Heading Home Initiative Housing Costs	0	\$309,706.37	\$309,706.37	100.0%
Heading Home Initiative Client Services Costs	0	\$106,473.07	\$106,473.07	100.0%

Table 14 reports available service information. Because of the way electronic information was provided, how hard copy paper information was stored and collected, and the consistency and quality of the service information we were not able to accurately collect and report all service information. Where possible, this information is provided below and described. Available service information tracks with the findings in Table 11 that reported costs per service type.

In line with the decrease in costs from the pre-time period to the post-time period there was a reduction in services for emergency room visits, hospital inpatient visits and days, shelter bed day stays, medical outpatient visits, jail based treatment visits, and bookings into the local jail and jail bed days. There was a single mental health inpatient stay in the pre-time and post-time periods, a small increase in mental health outpatient visits, and a very large increase in social service visits (e.g. case management and outreach).

<b>Table 14 Heading Home Initiative Program 1 Year Pre and 1 Year Post Program Services</b>				
	1 Year Pre-Heading Home Initiative Services	1 Year Post-Heading Home Initiative Services	Service Difference	Percent Difference
Total Cost with Heading Home Initiative Program Costs	824	1,026	202	24.5%
Hospital Inpatient	18	7	-11	-61.1%
Emergency Room	127	81	-46	-36.2%
Medical Outpatient	423	250	-173	-40.9%
Mental Health Inpatient	1	1	0	0.0
Mental Health Outpatient	102	110	8	7.8%
Ambulance/Emergency Rescue	0	0	0	0.0
Shelter	48	0	-48	-100.0%
Jail	29	9	-20	-69.0%
Jail Based Treatment	3	2	-1	-33.3%
Social Services	73	470	397	543.8%
Heading Home Initiative Program	0	48	48	-100.0%
Heading Home Client Services	0	48	48	-100.0%

Table 15 reports the average costs per study group member for the one year pre- and post-study periods.

The average service cost per study group member in the one year pre-period was \$40,621.14. The average service cost in the one year post-period, including the average Heading Home Initiative program housing and service cost was \$27,789.46.

Total costs including housing costs decreased an average of \$12,831.68 or 31.6% per study group member from the pre-study to the post-study time period.

The average Heading Home Initiative program cost (rental assistance, utilities, and program services) was \$8,670.41.

<b>Table 15 Heading Home Initiative Program Costs per Study Group Member</b>	
	Cost
Average 1 Year Pre-Heading Home Initiative Program	\$40,621.14
Average 1 Year Post-Heading Home Initiative Program	\$27,789.46
Difference Between Pre and Post Costs Including Heading Home Initiative Program	\$12,831.68
Percent Difference Between Pre and Post Costs Including Heading Home Initiative Program	-31.6%

## **DISCUSSION AND CONCLUSION**

The primary purpose of this study was to report on the cost effectiveness of the Heading Home Initiative program using two methods that have been used in previous studies. First, we interviewed study group that included questions about study group member's income status and employment, quality of life, length of time lived in Albuquerque, date of birth, race/ethnicity, lifetime homelessness, and shelter utilization.

The second, and more important method, relied on the collection of service and cost data maintained by various Albuquerque agencies. This included emergency room, inpatient medical, inpatient mental health, outpatient medical, outpatient behavioral health, ambulance services, jail bookings, shelter, and meal site utilization. We also collected local arrest histories to document the number of arrests pre- and post-housing. At the completion of recruiting for this phase one study, we were able to recruit 54 or 56.8% of 95 eligible Heading Home Initiative program clients.

Considering all the cost types the one year post-Heading Home costs were 31.6% less than the one year pre-Heading Home program costs. This amounted to an average savings of \$12,831.68 per study group member.

Utilization of emergency room care, medical outpatient, hospital inpatient, emergency shelters, behavioral health outpatient, and jails were reduced by participation in the program. Mental health outpatient, jail based treatment, and social service costs increased from the one year pre-time period to the one year post-time period.

Similar to other studies and the previously completed Housing First Cost Study (2011) this study found a net cost benefit. The estimated benefit is fairly large and is conservative. With more

complete information (i.e. emergency medical services and ambulance transports) we believe this benefit would have been greater.

Future research includes a longer cost study time period, more complete service and cost data, a larger study group, and client follow-ups to collect additional self-report data include measures of satisfaction and indicators of life improvement

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## **APPENDICES**

**Appendix A: Heading Home Initiative Cost Study Interview**

**Appendix B: Heading Home Initiative Recruitment Letter and Flyer**

**Appendix C: Heading Home Initiative Consent for Interview**

**Appendix D: Heading Home Initiative Consent for Record Review**

**Appendix E: Inflation Cost Calculation Table**