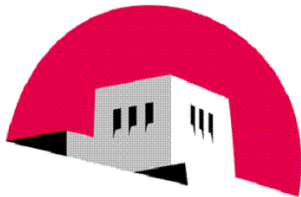


City of Albuquerque Housing First Cost Study Final Report



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INTRODUCTION

The Housing First model is designed to keep people who are chronically homeless and diagnosed with severe mental illness housed. The model differs significantly from traditional housing programs. Rather than having to move along a continuum of care, from living in group supervised settings to graduating to independent, supported housing after proving they can follow rules and comply with treatment, clients are offered immediate access to an apartment of their own and are not removed from housing for violating rules, being charged with a criminal offense, or refusing to take medication.

The primary purpose of the City of Albuquerque Housing First program is to provide rental assistance to chronically homeless persons who have behavioral health problems. The Housing First program is administered by the Supportive Housing Coalition of New Mexico. In order to qualify for Housing First, clients must meet three criteria: 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.

The Albuquerque program is a scattered site program site and houses clients across the City using more than 45 landlords and began taking clients in October 2005.

The program offers immediate housing to eligible persons referred from case management agencies. While referred persons must be in supportive services prior to receiving housing they are not removed if they are not actively engaged in services or if they leave or are released from services. Individuals cannot self-refer to this program. The only requirement of clients is that they live within the guidelines of their lease.

The goal of this research is to study the cost benefit of the Albuquerque, N.M. Housing First program. Currently it is not known if the cost benefits that have generally been shown in the literature for similar housing programs extend to the City of Albuquerque Housing First program. This research is specifically designed to study the costs before and after the provision of housing for chronically homeless persons in Albuquerque, N.M. This study has the potential to increase the national understanding of the cost effectiveness of Housing First programs and will be useful for the City of Albuquerque administrators and others to inform housing policy for the target population.

This study is designed to measure the use and cost of services (arrests, jail bookings, days in jail, emergency shelter use, hospital based emergency room and inpatient medical services, publicly funded alcohol and drug detoxification and treatment services, case management services, ambulance services, etc.) for a one year period before admission and after admission into the Housing First program. We had originally

hoped to analyze service and cost data for a longer period of time but after reviewing the collected service and cost data we determined the quality and quantity of data was not sufficient across all the agencies to make this feasible. This is discussed in more detail later.

LITERATURE REVIEW

Nationally an estimated 200,000 people who experience chronic homelessness 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 (SAMHSA, 2003). 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.

Previous research on the cost 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 Housing First programs are associated with a relative decrease in costs. Housing First programs generally target chronically homeless individuals who often times have severe alcohol problems, substance abuse problems with health care use and costs.

Homeless individuals have disproportionately poorer health, and mortality rates are 3.5 to 5 times higher than the general population with average age of death for a homeless person being 47 (MHSA, 2010). The costs chronically homeless individuals accumulate for the communities they dwell in are staggering, reaching upward of millions of dollars per year (Perlman & Parvensky, 2006; Mondello et al., 2007; MHSA, 2010). Through Housing First programs the chronically homeless population's quality of life increases and the cost incurred to the communities they reside in decrease (Perlman & Parvensky, 2006; Mondello et al., 2007; MHSA, 2010).

Cost Benefit Studies

Many studies have been performed in different cities around the nation on the cost effectiveness of housing programs modeled after the Pathways to Housing Inc.'s Housing First model. All studies reviewed for this study concluded the Housing First model saves money for communities where the program is implemented. Following are summaries of cost benefit studies for the communities of Denver, CO, Portland, ME, and Massachusetts.

Denver, CO

In Denver, CO a cost benefit analysis was performed by Perlman and Parvensky (2006) to determine if the implementation of the Housing First model combined with assertive community treatment (ACT) services would save the city of Denver money. The cost benefit analysis was conducted by comparing the costs of 7 services (emergency room, inpatient medical, inpatient psychiatric, outpatient medical, detox services, incarceration, and shelter utilization) the chronically homeless accumulated in 2 years pre-entry to the Housing First program to the cost of the 7 services plus the cost of providing housing 2 years post-entry in the program.

Initially 36 of the 150 Housing First Denver participants met the study's criteria of having been in the program for 2 consecutive years. Of the 36 potential participants for the study 19 signed releases of information, making the sample size for the Denver cost benefit analysis study 19.

It was found that the total costs of the 7 services pre-entry per person equaled \$43,239. The total cost of housing and ACT services to post-entry individuals equaled \$26,800 per person and to provide the 7 services equaled \$11,694 per person for a total post-entry cost per person of \$38,494. By subtracting the total post-entry cost from the total pre-entry cost, the savings the Housing First program provided to the city of Denver equaled \$4,745 per person. The estimated total cost savings from the 150 participating chronically homeless individuals for the city of Denver was \$711,734. There was an estimated 513 chronically homeless individuals in Denver at the time of the cost benefit analysis. If all 513 chronically homeless individuals were able to participate in the Denver Housing First program, the city of Denver would have an estimated total cost savings of \$2,434,131.

Other notable outcomes for the chronically homeless who participated in the Housing First program combined with ACT services were: 50% of the participants reported an improvement in health, 43% of the participants reported an improvement in mental health, 15% of the participants reported a decreased substance abuse, 64% of the participants reported an improvement in overall quality of life, 15% of the participants gained employment, and the average monthly income for participants rose from \$185 to \$431.

Portland, Maine

This study involved a cost benefit analysis of two permanent supportive housing (PSH) providers in Portland, Maine (Mondello et al., 2007). One of the PSH programs studied was the Preble Street's Logan Place which was designed as a Housing First model. The other PSH program reviewed was the Shalom House which was not referred to as a Housing First program in the report, but described as a conglomerate of housing providers made up of Maine's Department of Health and Human Services Shelter Plus

Care (DHHS S+C) program, and various apartment building serving the homeless population operated by the Shalom House Inc. The study compared the costs of 6 services (emergency shelter, ambulance transports, emergency room visits, police contacts, Health care, mental health) the homeless individuals in the study incurred for the city of Portland 1 year pre-entry to 1 year post-entry.

Participants of the cost benefit analysis met the criteria of being in the study if they had been residents of one of the PSH programs for a minimum of 1 year, prior to entry into the PSH program they lived in a homeless situation as defined by the Department of Housing and Urban Development, and they were currently diagnosed with a long-term disability, such as a mental illness, a physical disability, a substance abuse disorder, or a co-occurring disorder. One hundred and fifty nine PSH participants met the above criteria. Of the 159 PSH participants, 99 agreed to participate in the study. Twenty-four study participants came from the Logan Place Housing First model, 70 came from the DHHS S+C program, and an additional 5 participants came from the apartments operated by the Shalom House Inc.

The cost benefit analysis found that pre-entry service costs per individual amounted to an average of \$28,045 annually. Post-entry service costs per individual averaged \$14,009 and housing costs averaged \$13,092 for an average total annual cost per participant in the PSH program of \$27,101. The average annual savings to the city of Portland, Maine per participant equaled \$944. The total annual savings to the city of Portland for all 159 PSH participants equaled \$150,096.

Additional notable outcomes revealed by the cost benefit analysis was an overall increase in the quality of life as measured by a self report by the participants on 6 different indicators (health, independence, relationships, learning, socializing, and helping others) and a mean income increase of 69%.

Massachusetts

In 2010 the Massachusetts Housing and Shelter Alliance completed a statewide progress report on the Home & Healthy for Good (HHG) Housing First program in Massachusetts which included a cost benefit analysis. The cost benefit analysis was conducted by comparing costs the chronically homeless study participants accumulated through 3 different services (Medicaid, shelters, and incarceration) pre-entry into the HHG program to the cost of providing the 3 services to the study participant post-entry in the HHG program. Participants qualified for the cost benefit study by being in HHG housing and enrolled in Medicaid for a period of 1 year. Ninety-six of the 432 HHG participants qualified to participate in the cost benefit analysis.

The cost benefit analysis revealed that pre-entry services annually cost approximately \$33,479 per chronically homeless individual. The post-entry services annually cost an

average of \$8,611 and providing HHG Housing First housing equaled \$15,468 for a total post-entry annual cost per individual of \$24,079. The annual savings of implementing the HHG Housing First program equaled approximately \$9,400 per person. It was estimated that the approximate annual savings the HHG Housing First program would have to Massachusetts for housing 432 chronically homeless individuals equaled \$4,060,800.

Conclusion

The implementation of Housing First programs save communities they are established in hundreds of thousands to millions of dollars per year in costs of services provided to the chronically homeless (Perlman & Parvensky, 2006; Mondello et al., 2007; MHSA, 2010). The quality of life for the newly housed formally chronically homeless individuals increases with the implementation of Housing First programs as well. Housing First programs modeled after Pathways to Housing Inc.'s design have proven to be the current best practice standard as shown in current literature.

RESEARCH DESIGN

This study follows generally accepted guidelines for conducting this type of cost study. This section describes the methods and data sources used to measure the costs of the Housing First Program. The studies described in the literature review have followed these general guidelines.

This study uses two methods to study the cost effectiveness of the Housing First programs. These two methods have been used in previous studies and our study uses these two methods with some slight modifications.

Interview

This method focuses on an interview with study group members who consent to take part in this portion of the study. Collected data include 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 whether study group members have a case manager. The interview is attached as Appendix A.

Service and Cost Data

This method relies on the collection of service and cost data collected and maintained by various Albuquerque 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 services, jail bookings, case management, and shelter utilization. We also collected local arrest histories to document the number of arrests pre- and post-housing.

Data Sources

To begin the study the Housing First program automated dataset, maintained by Housing First program staff, which has information on Housing First program clients was reviewed. This database includes name, admission date, discharge date, date of birth, gender, veteran status, race/ethnicity, prior living arrangements, income at admission, discharge reason, and whether the client was chronically homeless. This dataset includes personal identifiers - name and date of birth. This information was used to determine eligibility for the study and to describe the study population. Clients who had been housed a minimum of one year were eligible to participate.

After potential study group members were identified as eligible, based upon the number of days they had been housed, ISR study staff recruited them to become study group members. The recruitment process included the use of a letter and flyer (Appendix B) and study group members were recruited to participate in both parts of the study (interview and official data).

After identifying potential study group members, Housing First clients were mailed a letter to their current address on Supportive Housing Coalition letterhead. This method allowed potential study group members to voluntarily choose to contact us or not contact us. Approximately two weeks after mailing the letter, a second round of letters were mailed to potential study group members who did not respond to the first round of letters or whose letter was returned undelivered. 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. Additionally, flyers were provided to potential study group members who make their portion of the rent payment in person at the Supportive Housing Coalition offices. 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. This process provided potential study group members sufficient opportunity and time to decide whether to participate.

Following recruitment, interviews were scheduled and conducted with study group members using the interview described earlier and consents were collected allowing study staff access to their official records for the collection of service and cost information described earlier.

Table 1 provides a list of the types of data we were seeking to access with additional detail regarding the specific information and agencies.

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).

Prior to beginning the study we met with the majority of these agencies at least once 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. Almost every agency agreed to collaborate.

Table 1 Official Data Collection

Type of Data	Requested Information	Agencies
Jail bookings	Arrival date, release date, booking charge(s), and cost per day	Bernalillo County Metropolitan Detention Center
Substance abuse treatment	Number and type of services and cost	Albuquerque Metropolitan Central Intake, Bernalillo County Metropolitan Assessment Treatment Services, Albuquerque Health Care for the Homeless, St. Martins Hospitality Center
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, Presbyterian Hospital, Lovelace Hospital, and Veterans Hospital
Arrests	Date(s) of arrest, charge(s), and cost of arrest	Albuquerque Police Department and Bernalillo County Sheriffs 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
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, etc

Once our recruitment period was completed we contacted participating agencies to request service and cost information for study group members. Because participating agencies collect and maintain service and cost information in a variety of format and they had varying abilities to provide us electronic information we collected service information from a number of agencies from hard copy records.

When collecting from hard copy records we used a standardized data collection form. The form was designed to collect the agency, the service begin date, the service end date, the service type, and the service cost. We requested that agencies providing electronic data provide service and cost data in a similar format. After completing data collection we combined serviced data from all collaborating agencies into a single electronic data file. This file was used for the cost analyses.

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 (calculator chosen)
- <http://www.coinnews.net/tools/cpi-inflation-calculator/>
- <http://www.usinflationcalculator.com/>

Cost Analysis

This study focuses on a cost analysis that compares the cost before study group members entered the Housing First program to the cost after study group members entered the Housing First program. The program began accepting clients in October 2005 and our study included any clients who had been in the program a minimum of 1 year and who had not been discharged from the program. Following initial analyses we also decided to exclude any clients who had been admitted within the first 12 months of the program opening. The reasons for this are discussed in detail later.

STUDY SAMPLE DESCRIPTION

This section describes the study sample. Since the program began in October 2005 301 clients have been enrolled through mid-March 2011. One hundred thirty-four clients have been discharged from the program. Of the remaining 167 active clients, 134 active clients met the criteria of being in the program for 365 day or more for inclusion in the study. Thirty-three active clients had been in the program less than 365 days and so were not eligible.

At the conclusion of our approximately 4 week recruitment period we recruited 33 study group members. We had hoped to recruit more study group members.

Table 2 Final Sample

Housing First Client Count Type	Count	Percent
Housing First Clients	301	100%
Potential study group members	134	100%
Recruited	33	24.6%

Slightly more than 50% of our study group members were male. Almost 50% of the study group members were Hispanic, 37.5% were White, 12.5% were American-Indian, and 1 study group member was African-American. Only 1 study group member self-reported they were a veteran.

Table 3 Demographics

Variable	Count	Percent
Age		
Average Age	41.8	
Gender		
Female	18	54.5
Male	15	45.5
Ethnicity		
White	12	37.5
Hispanic	15	46.9
African-American	1	3.1
American-Indian	4	12.5
Veteran Status		
Yes	1	3.1
No	31	96.9
Time Housed		

Prior to becoming housed in the Housing First program 46.9% reported they were living in an emergency shelter or were in transitional housing for homeless persons, 21.9% reported they had no housing, 12.5% reported they were living with relatives/friends, 12.5% have other living arrangements, 4 reported 'other' living arrangements, and 1 study group member each was in a jail and substance abuse treatment facility. We do not know what 'other' living arrangements included.

Table 4 Prior Living Arrangements

Prior Living Arrangements	Count	Percent
No housing (street, park, car, bus station, etc.)	7	21.9
Emergency shelter	12	37.5
Transitional housing for homeless persons	3	9.4
Psychiatric facility	0	0
Substance abuse treatment facility	1	3.1
Hospital	0	0
Jail/prison	1	3.1
Domestic violence situation	0	0
Living with relatives/friends	4	12.5
Rental housing	0	0
Other	4	12.5

Missing – 1

Table 5 reports monthly income at program admission. Equal numbers (10) and percents (30.3%) of study group members reported they had no income or incomes between \$501 and \$1,000. Thirteen study group members reported incomes between \$151 and \$500.

Table 5 Monthly Income at Entry

Monthly Income at Entry	Count	Percent
No income	10	30.3
\$1 - \$150	0	0
\$151 - \$250	6	18.2
\$251 - \$500	7	21.2
\$501 - \$1,000	10	30.3
\$1,001 - \$1,500	0	0
\$1,501 - \$2,000	0	0
\$2001 +	0	0

INTERVIEW FINDINGS

This section describes results from the interviews. One of the 33 study group members was not able to complete the interview and so the results reported here primarily include information from 32 interviews. As noted earlier the interview includes 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 whether study group members have a case manager. The interview was intended to supplement the service and cost data.

One of the first questions we asked study group members was how longed they had lived in Albuquerque. This was done in order to understand if study group members had lived in Albuquerque before they became clients of the Housing First program. This was necessary so we would know if we should expect to find study group members receiving services at Albuquerque agencies prior to becoming a client. On average, study group members had lived in Albuquerque almost 22 years (21.98 years) with a range of 1.75 years to 57.92 years. After accounting for the amount of time study group members had been in the Housing First program, 9 study group members had lived in Albuquerque less than two years prior to admission into the Housing First program.

Study group members reported being homeless an average of 2.76 years before entering the program with a range of 3 months to 16.83 years. Eighteen reported having a case manager. Average education was reported as 11.4 years (range 2 years to 16 years). Interestingly, study group members reported an average monthly income of \$392.03 prior to entering the program and an average income of \$689.45 at the time of the interview.

Table 6 reports self-reported income sources before study group members became Housing First program clients and after study group members became clients. The table reports all the sources listed by study group members meaning individual study group members often had multiple sources. In general after becoming housed study group members reported more stable income sources. While 11 study group members reported asking for money before being housed only 1 study group member reported this as a source of income after becoming housed. This trend is further indicated by the reduction in the number of study group members reporting family or friends and selling blood/plasma as sources after becoming housed and a greater number of study group members reporting SSDI, SSI, Medicaid, and Medicare as sources after they were housed. Interestingly, fewer study group members reporting having a job after becoming housed. One interviewee noted that because of SSDI and SSI restrictions on

how much income he could earn in order to be eligible he was forced to quit his job after he became housed. This issue deserves further exploration.

Table 6 Income Sources Before and After Becoming Housed

Income Sources	Income Sources Before		Income Sources After	
	Count	Percent	Count	Percent
Asking for money on the street	11	33.3	1	3.0
Child support	1	3.0	0	0
Families or friends	14	42.4	5	15.2
Food stamps	24	72.7	22	66.7
General assistance from the state	15	45.5	2	6.1
Job	4	12.1	1	3.0
Medicaid	8	24.2	18	54.5
Medicare	4	12.1	11	33.3
Pension	0	0	0	0
Selling blood/plasma	6	18.2	0	0
Sex work	1	3.0	0	0
Social Security	0	0	4	12.1
Social Security Disability Income (SSDI)	9	27.3	18	54.5
Supplemental Security Income (SSI)	3	9.1	9	27.3
Temporary Assistance for Needy Families	2	6.1	0	0
Unemployment	2	6.1	1	3.0
Veterans benefits	0	0	0	0
Vocational rehabilitation	0	0	0	0

Table 7 describes study group members perceived changes in measures of daily living from the time before they were housed to the time of the interview. In general we were interested in knowing, from the study group member's perspective, how their life had changed. The table reports the question in each row and the average response (1= strongly disagree to 5= strongly agree). On average study group members reported that since becoming housed they were very satisfied with the program and their quality of life had improved greatly. On almost all the measures study group members reporting improvement either saying they agreed or strongly agreed with the statements. On a single measure of whether study group members felt that their learning ability had improved study group members were more neutral and neither agreed or disagreed with the statement.

Study group members were also asked about their satisfaction with their housing situation since entering the program and whether their quality of life had improved since entering the program. On average, study group members reported their housing situation had improved “a lot” and their quality of life had improved “a lot”.

Table 7 Study Group Daily Living Measures

	Average
Client deals more effectively with daily problems	4.0
Client is better able to control their life	4.0
Client is not using drugs as much	4.5
Client is not using drugs at all	4.7
Client is not using alcohol as much	4.3
Client is not using alcohol at all	4.1
Client’s physical health has improved	4.0
Client’s mental health has improved	4.1
Client’s relationships have improved	3.8
Client feels more part of the community	3.9
Client has increased contact with family members	3.5
Client feels better about self	4.3
Client’s overall quality of life has improved	4.3
Client has a greater sense of independence	4.3
Client feels they are socializing more	3.8
Clients feel their learning has improved	3.4
Client notices they are helping others more	4.2
Client has a greater sense of freedom	4.2
Client is eating healthier	4.7

Study group members were also asked about their usual employment pattern in the previous three years before they were housed and about their current employment. Previous to the housing program 8 study group members reported their usual employment pattern as full-time in the previous three years, 11 reported being retired/disabled, 8 reported they were unemployed, 3 reported part-time employment, and 3 reported they were in a controlled environment (i.e. jail or hospital). At the time of the interview 0 study group members reported being employed full time and 1 study group member reported part time employment. This was a reduction of 10 study group members from their usual employment 3 years previous to entering the Housing First program. Almost 75% (24) of study group members reported being retired/disabled at the time of the interview.

Table 8 Employment Patterns

	Previous 3 Years		Current	
	Count	Percent	Count	Percent
Full time	8	24.2	0	0
Part time	3	9.1	1	3.0
Retired/disabled	11	33.3	24	72.7
Unemployed	8	24.2	8	24.2
In Controlled Environment	3	9.1	0	0

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. Because of human subject review concerns we were not able to collect information from the local Veteran’s Administration hospital and initially from a large provider of healthcare services for the homeless population. The local Veteran’s Administration hospital required that we use a second consent form, which we were not able to incorporate into our study timeframe. Only one study group member reported they were a veteran which suggests leaving out the local Veteran’s Administration hospital did not cause a problem. After reviewing our human subject approval the large provider of healthcare services for the homeless requested changes to our approved consent form. After incorporating these changes and gaining approval from the University of New Mexico Institutional Review Board (IRB), which oversees human subject research, we sought to re-contact study group members to gain consent to review their records at this service provider. Eventually we were able to gain consent from 11 of 17 study group members who received services from this provider. We were not able to make arrangements with another of the local hospitals to gain access to service and cost data and so information from this hospital is also not included. In the end 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.

An additional issue we took into account was how long study group members had lived in Albuquerque prior to become a Housing First program client, how long study group members self-reported being homeless, and when study group members became Housing First program clients.

Interestingly, 5 (15.6%) study group members reported they had been homeless less than 1 year before entering the Housing First program and 7 (21.2%) study group members reported they had lived in Albuquerque less than 1 year prior to entering the Housing First program. Upon combining the two groups we found there were 10 study group members who either reported they had been homeless less than one year (3), they had lived in Albuquerque less than 1 year prior to entering the Housing First program (5), or they had been homeless less than one year and they had lived in Albuquerque less than one year prior to entering the Housing First program (2). These 10 study group members account for 30.3% of the 33 study group members.

Both of these situations pose problems for the study. First, our study uses a one year time frame pre and post admission to the Housing First program. Study group members who accurately self-reported not living in Albuquerque would not be expected to have services in the pre-study time period. Second, we also would not expect to find as extensive services for study group members who reported they were not homeless for the one year prior to entering the Housing First program.

Table 9 Self-Reported Time Homeless, Time lived in Albuquerque, and Time in Housing First Program

	Mean in Months	Median in Months	Less than 1 Year
Time Homeless Before Housing First Program	33.09	22	5
Time Lived in Albuquerque	263.73	216	7
Time in Housing First Program	34.37	34.2	0

Table 10 reports total costs and the cost per service type for study group members 1 year before they were in the Housing First program compared to the 1 year after they were admitted to the Housing First 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 (2011) costs it was necessary to normalize costs. To normalize costs we decided to inflate previous years' costs to 2011 calendar years costs by using the U.S. currency inflation calculator discussed earlier.

Considering the different cost types, the one year post-Housing First program costs were \$27,149 or 3.8% less than the one year pre-Housing First program costs. This amounted to an average savings of \$905 per study group member.

Utilization of emergency room care, ambulance transports, medical outpatient, mental health inpatient, substance abuse outpatient, detoxification, emergency shelters, and jails were reduced by participation in the program. Medical inpatient and mental health outpatient experienced increases from the one year pre-time period to the one year post-time period.

Housing and Shelter Costs

Because there were no equivalent housing costs for the pre-period there was a 100% increase in housing costs of \$200,451. The Housing First program accounted for 29.1% of the total one year post-study time period service costs. This is the one-year cost of housing study group members in the Housing First program. During the post-study time period study we also documented \$6,740 in shelter housing costs. We don't know why study group members who were housed in the Housing First program would have used an emergency shelter.

We were not able to collect equivalent housing information and costs for study group members who were in some type of subsidized housing or shelter in the pre-study time period. This occurred because we were not able to completely determine where study group members lived in the year prior to being admitted to the Housing First program. Using information collected from Albuquerque shelters and information from the Housing First program files of study group members we re-constructed, to the extent possible, where study group members had lived in the year prior to entering the Housing First program. During the year prior to being admitted to the program study group members reported living in shelters, in vehicles, in motels, on the streets, with family, and with friends. Some study group members reported being in jail or prison and having spent time in substance abuse treatment facilities, half-way houses, and mental health inpatient facilities. For most study group members we were not able to completely re-construct their housing arrangements for the year prior to entering the

Housing First program. For this reason pre-Housing First program shelter and housing costs are conservative.

Further, as noted earlier, we found there were 10 study group members who either reported they had been homeless less than one year (3), they had lived in Albuquerque less than 1 year prior to entering the Housing First program (5), or they had been homeless less than one year and they had lived in Albuquerque less than one year prior to entering the Housing First program (2).

We were able to document 3,350 shelter night stays for the 30 study group members in the pre-time period compared to 353 shelter night stays in the post-time period. The pre-time period costs declined from \$89,488 to \$6,740 in the post-time period for a decrease of 93%.

Health Related Costs

Study group members used emergency room services a total of 70 times in the pre-period compared to 28 times in the post-period. This is a decrease of 42 visits or 60% after entry into the program. The costs of emergency room costs declined from \$131,115 to \$44,732, a decrease of \$86,383 or 65.9%.

Study group members had 0 inpatient hospital visits in the pre-time period compared to 3 inpatient hospital visits by two study group members with a cost of \$102,233 in the post-study period. This resulted in a 100% increase.

In the pre-time period study group members had 2 inpatient mental health hospital visits with a total cost of \$50,410 compared to 0 inpatient mental health hospital visits in the post-study period. This resulted in a decrease of 100%.

During the pre-time period study group members used outpatient medical services a total of 219 times and 158 time in the post-time frame. Outpatient medical visits decreased by \$48,451 and 40%.

Mental Health Related Costs

In the pre-study period study group members accounted for 2 mental health inpatient hospital visits that cost \$50,410 and there were 0 mental health inpatient visits in the post-time period.

Mental health outpatient visits costs increased slightly from \$238,660 in the pre-study time period to \$241,839 in the post-time period. This was an increase of \$3,179 or 1.3%. Because we were not able to collect accurate service begin and end dates we are not able to report the number of treatment episodes or days of treatment.

Substance Abuse Costs

Substance abuse outpatient costs decreased from \$28,636 to \$15,921 from the pre-time period to the post-time period. This was a reduction of \$12,715 or 44.4%. Because we were not able to collect accurate service begin and end dates we are not able to report the number of episodes of treatment or days of treatment. We were also able to document a reduction in detoxification costs from \$1,746 to \$87 or 95% in the two time periods.

Ambulance Transports

Ambulance transport costs decreased 77.5% from \$10,630 in the pre-time period to \$2,395 in the post-time period.

Jail Costs

Information for the jail comes from the Bernalillo County Metropolitan Detention Center. Jail costs decreased from \$45,251 in the pre-time period to \$1,839 in the post-time period. This is a decrease of 95.9% and \$43,412.

Table 10 Housing First Program 1 Year Pre and 1 Year Post Program Costs

	1 Year Pre-Housing First Program Cost	1 Year Post-Housing First Program Cost	Cost Difference	Percent Difference
Total Cost with Housing First Program Costs	\$717,006	\$689,858	-\$27,148	-3.8%
Hospital Inpatient	\$0	\$103,233	\$103,233	100.0%
Emergency Room	\$131,115	\$44,732	-\$86,383	-65.9%
Medical Outpatient	\$121,072	\$72,621	-\$48,451	-40.0%
Mental Health Inpatient	\$50,410	0.00	-\$50,410	-100.0%
Mental Health Outpatient	\$238,660	\$241,839	\$3,179	1.3%
Substance Abuse Outpatient	\$28,636	\$15,921	-\$12,715	-44.4%
Detoxification	\$1,746	\$87	-\$1,649	-95.0%
Ambulance	\$10,630	\$2,395	-\$8,235	-77.5%
Shelter	\$89,487	\$6,740	-\$82,747	-92.5%
Jail	\$45,251	\$1,839	-\$43,412	-95.9%
Housing First Program	\$0	\$200,451	\$200,451	

Table 11 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 \$23,900. The average service cost in the one year post-period was \$16,313 and the average Housing First program housing cost was \$6,682 for a total cost of \$22,995. Total costs including housing costs decreased an average of \$905 or

3.8% per study group member from the pre-study to the post-study time period. The total estimated annual cost savings for the 134 eligible study group members was \$121,270.

Table 11 Housing First Program Costs per Study Group Member

	Cost
Average 1 Year Pre-Housing First Program	\$23,900
Average 1 Year Post-Housing First Program	\$16,313
Average 1 Year Housing First Program Cost	\$6,682
Difference Between Pre and Post Costs Including Housing First Program	-\$905
Percent Difference Between Pre and Post Costs Including Housing First Program	-3.8%

Table 12 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 service information. Where possible this information is provided below and described. Available service information tracks with the findings in Table 10 that reported costs per service type.

While the number of mental health outpatient services increased from the pre-time period to the post-time period the average cost per service decreased from \$1,024 to \$330. While we were able to collect cost information we were not able to accurately collect the number of substance abuse visits or episodes and so this information is not reported below.

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, medical outpatient visits, mental health inpatient visits, detoxification visits, ambulance transports, shelter bed day stays, and bookings into the local jail and jail bed days.

Hospital inpatient services increased from the pre-time period to the post-time period. In the pre-time period there were no hospital inpatient visits and in the post-time period there were three visits by three different study group members.

Table 12 Housing First Program Services and Days

Service Type	One Year Prior		One Year Post	
	Number of Service Visits	Number of Days	Number of Services	Number of Days
Hospital Inpatient	0	0	3	12
Emergency Room	70	-	28	-
Medical Outpatient	219	-	158	-
Mental Health Inpatient	2	25	0	0
Mental Health Outpatient	-	-	-	-
Substance Abuse Outpatient	-	-	-	-
Detoxification	4	24	1	2
Ambulance Transports	30	-	8	-
Shelter	-	3350	-	353
Jail	17	674	4	31

DISCUSSION AND CONCLUSION

The primary purpose of this study was to report on the cost effectiveness of the Housing First 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 whether study group members have a case manager. The second, and most important method, relied on the collection of service and cost data collected and maintained by various Albuquerque agencies. This includes emergency room, inpatient medical, inpatient mental health, outpatient medical, outpatient mental health, outpatient substance abuse, detoxification, ambulance services, jail bookings, and shelter utilization. We also collected local arrest histories to document the number of arrests pre- and post-housing. To describe the study group members we also collected client demographic information from the Housing First program as well as the interview of study group members.

At the end of the recruitment period we were able to recruit 33 or 24.6% of 134 eligible Housing First program clients. We had hoped to recruit a larger number of clients.

Slightly more than 50% of our study group members were male. Almost 50% were Hispanic, 37.5% were White, 12.5% were American-Indian, and 1 study group member was African-American. Only 1 study group member self-reported they were a veteran.

Prior to becoming housed in the Housing First program 46.9% reported they were living in an emergency shelter or were in transitional housing for homeless persons, 21.9% reported they had no housing, 12.5% reported they were living with relatives/friends, 12.5% reported 'other' living arrangements, and 1 study group member each was in a

jail and a substance abuse treatment facility. We do not know what 'other' living arrangements included.

Equal numbers (10) and percents (30.3%) of study group members at admission reported they had no income or incomes between \$501 and \$1,000 and 13 study group members reported incomes between \$151 and \$500.

Study group members reported being homeless an average of 2.76 years before entering the program with a range of 3 months to 16.83 years and on average, study group members, at the time of the interview, had lived in Albuquerque almost 22 years (21.98 years) with a range of 1.75 years to 57.92 years. Eighteen reported having a case manager. Average education was reported as 11.4 years (range 2 years to 16 years). Study group members reported an average monthly income of \$392 prior to entering the program and an average income of \$689 at the time of the interview.

In general, after becoming housed study group members reported more stable income sources. While 11 study group members reported asking for money before being housed only 1 study group member reported this as a source of income after becoming housed. This trend is further indicated by the reduction in the number of study group members reporting family or friends and selling blood/plasma as sources after becoming housed and a greater number of study group members reporting SSDI, SSI, Medicaid, and Medicare as sources after they were housed. Interestingly, fewer study group members reporting having a job after becoming housed. One interviewee noted that because of SSDI and SSI restrictions on how much income he could earn in order to be eligible he was forced to quit his job after he became housed. This issue deserves further exploration. Study group members also reported that since becoming housed they were very satisfied with the program and their quality of life had improved greatly.

Study group members were also asked about their satisfaction with their housing situation since entering the program and whether their quality of life had improved since entering the program. On average, study group members reported their housing situation and their quality of life had improved "a lot".

Study group members were also asked about their usual employment pattern in the previous three years before they were housed and about their current employment. Previous to the housing program 8 study group members reported their usual employment pattern as full-time in the previous three years, 11 reported being retired/disabled, 8 reported they were unemployed, 3 reported part-time employment, and 3 reported they were in a controlled environment (i.e. jail or hospital). At the time of the interview 0 study group members reported being employed full time and 1 study

group member reported part time employment. Almost 75% (24) of the study group members reported being retired or disabled.

Housing Cost Analysis

Originally we had hoped to analyze service and cost data for a longer period of time and for that reason collected available service and cost data back to January 2000. Because of the lack of reliable and complete service and cost data we eventually decided to restrict our cost study to one year prior to admission to the Housing First program and one year after admission to the program. In a preliminary review using four years and two years pre- and post-admission there were sufficient gaps in the service and cost data to warrant us to limiting the analysis to one year. During the review of the service and cost data we also decided to exclude study group members whose admission date was within the first 12 months of the program opening. This was done because we wanted to give the program a sufficient amount of time to be implemented and we discovered that the clients admitted in the first 12 months had less complete service and cost information. The less complete service and cost data was primarily a result of these study group members having admission dates in 2005 and early 2006, which meant their pre-admission service and cost data went back to 2004 when data was less complete. Removing study group members who had been admitted within the first year of the program opening reduced our study group for this portion of the study to 30.

For several reasons the costs in this report are conservative. First, as discussed earlier we were not able to collect complete shelter and subsidized housing data for the 1 year pre-time period. Second, we were unable to gain consent for all study group members for one service provider. Based on the available data for this service provider we were able to collect for consenting study group members we believe the pre-study costs would have increased compared to the post-study costs if we had been able to collect information for all study group members. Third, two hospitals did not participate in the study. One of the two hospitals required another consent form we were not able to get approved for this study and the second hospital chose not to participate. Fourth, several study group members self-reported not being homeless the entire year previous to entering the program and several reported not living in Albuquerque the year previous to entering the program.

Costs are reported as real costs and not actual costs, which is an improvement upon prior studies. Considering all the cost types the one year post-Housing First program costs were \$27,149 or 3.8% less than the one year pre-Housing First program costs. This amounted to an average savings of \$905 per study group member. The total estimated annual cost savings for the 134 eligible study group members was \$121,270.

Utilization of emergency room services, medical outpatient, mental health inpatient, substance abuse outpatient, detoxification, emergency shelters, and jails were reduced by participation in the program. Mental health outpatient services experienced a small increase and medical inpatient services experienced a large. The large increase in medical inpatient services was caused by two study group members who received services. The largest increase in services was a result of the Housing First program itself with a cost of \$200,451. The Housing First program accounted for 29.1% of total one year post-study time period service costs.

Utilization of emergency room care, ambulance transports, medical outpatient, mental health inpatient, substance abuse outpatient, detoxification, emergency shelters, and jails were reduced by participation in the program. Medical inpatient and mental health outpatient experienced increases from the one year pre-time period to the one year post-time period.

Similar to other studies that have been completed in different cities around the nation on the cost effectiveness of housing first programs this study found a net cost benefit. While the estimated benefit is moderate the methods used to calculate this benefit are conservative. With more complete information we believe this benefit would have been greater. Importantly, not only is the program cost effective but we also found positive client outcomes as indicated by the study group member interviews. Together these two findings can be used to inform public policy regarding the Housing First program.

About The Institute for Social Research

The Institute for Social Research is a research unit at the University of New Mexico. The Institute includes several centers including the Center for Applied Research and Analysis, the Statistical Analysis Center, and the New Mexico Sentencing Commission. The Institute for Social Research conducts high quality research on a variety of local, state, national, and international subjects. The critical issues with which the Institute works includes traffic safety, DWI, crime, substance abuse treatment, education, homeland security, terrorism, and health care.

**This and other ISR reports can be found and downloaded from the Institute for Social Research, Center for Applied Research and Analysis web site:
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APPENDICES

Appendix A: Housing First Cost Study Interview

Appendix B: Housing First Recruitment Letter and Flyer

Appendix C: Inflation Cost Calculation Table

Appendix A: Housing First Cost Study Interview

Housing First Cost Study Interview

Date of interview _____ Interviewer _____
(mm) (dd) (yy)

Interview Codes: Use as designated or the following: 77- Interviewee doesn't know
88- Not applicable
99- Missing

This interview is being conducted as a part of a cost study of the City of Albuquerque Housing First Program. Your participation in the program and in this interview will provide us with information that will help to assess the cost effectiveness of the program. We will ask you questions concerning your, employment/support status, housing situation and quality of life.

1) Client Name

_____ (Last) (First) (Middle)

2) Do you sometimes go by another name(s)?

_____ (Last) (First) (Middle)

_____ (Last) (First) (Middle)

_____ (Last) (First) (Middle)

3) How long have you lived in Albuquerque, New Mexico? _____
(Yrs.) (Mos.)

4) Date of birth _____
(Mo.) (Day) (Yr.)

5) Race _____

1- White (Not of Hispanic origin)

2- Black (Not of Hispanic origin)

3- American Indian

4- Alaskan Native

5- Asian or Pacific Islander

6- Hispanic

7- Other (specify) _____

6) Social Security Number _____

7) How long had you been homeless before entering this program? _____

8) Are you currently working with a case manager?

0 - No

1 - Yes

If yes: Name of Case Manager: _____ Agency: _____

INCOME STATUS

1) What sources of income did you have prior to entering this program? *(mark all that apply)*

- Asking for money on streets
- Child support
- Family or friends
- Food stamps
- General Assistance from the state
- Job (# of hours/week _____)
- Medicaid
- Medicare
- Pension
- Selling blood/plasma
- Sex work
- Social Security
- Social Security Disability Income (SSDI)
- Supplemental Security Income (SSI)
- TANF (cash assistance)
- Unemployment
- Veteran's Benefits
- Vocational Rehab
- Other: _____

2) What sources of income do you have now? *(mark all that apply)*

- Asking for money on streets
- Child support
- Family or friends
- Food stamps
- General Assistance from the state
- Job (# of hours/week _____)
- Medicaid
- Medicare
- Pension
- Selling blood/plasma
- Sex work
- Social Security
- Social Security Disability Income (SSDI)
- Supplemental Security Income (SSI)
- TANF (cash assistance)
- Unemployment
- Veteran's Benefits
- Vocational Rehab
- Other: _____

3) What was your average monthly income prior to entering this program? _____

4) What is your current average monthly income? _____

5) What was your usual employment pattern the three years prior to being in this program? _____

- 1 - Full-time (40 hrs./week)
- 2 - Part-time
- 3 - Student
- 4 - Service
- 5 - Retired/disabled
- 6 - Unemployed
- 7 - In controlled environment

6) What is your current employment status? _____

- 1 - Full-time (40 hrs./week)
- 2 - Part-time
- 3 - Student
- 4 - Service
- 5 - Retired/disabled
- 6 - Unemployed
- 7 - In controlled environment

7) Education completed? (GED = 12) _____(yrs.)

8) Vocational or technical education completed? _____(yrs.)

9) Do you have a profession, trade or skill? _____

- 0 - No
- 1 - Yes _____
(specify)

QUALITY OF LIFE

1) Overall, to what extent has your quality of life improved since entering this program?

◇A lot ◇Somewhat ◇A little ◇Not at all

2) Overall, how satisfied are you with your housing situation since entering this program?

◇A lot ◇Somewhat ◇A little ◇Not at all

2) Circle the response that best represents the extent that the respondent AGREES or DISAGREES with each statement. Use the space provided for any added comments.

Since becoming housed...	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Comments
I deal more effectively with daily problems.	5	4	3	2	1	
I am better able to control my life.	5	4	3	2	1	
I am not using drugs as much.	5	4	3	2	1	
I am not using drugs at all	5	4	3	2	1	
I am not using alcohol as much	5	4	3	2	1	
I am not using alcohol at all	5	4	3	2	1	
My physical health is improved.	5	4	3	2	1	
My mental health is improved.	5	4	3	2	1	
My personal and family relationships have improved.	5	4	3	2	1	
I feel more a part of my community.	5	4	3	2	1	
I have increased contact with family members.	5	4	3	2	1	
I feel better about myself.	5	4	3	2	1	
I have a greater sense of freedom.	5	4	3	2	1	
My overall quality of life has improved.	5	4	3	2	1	
I have a greater sense of independence.	5	4	3	2	1	
I feel that I am socializing more..	5	4	3	2	1	
I feel that my learning ability has improved.	5	4	3	2	1	
I notice myself helping others more.	5	4	3	2	1	
My eating habits have improved.	5	4	3	2	1	
I am eating healthier food.	5	4	3	2	1	

3) How could the Housing First program be more helpful to individuals in your situation?

4) What has been the most important change in your life since entering this program?

5) Is there anything else you would like to add?

That concludes our interview. I would like to thank you for your time and participation.

COMMENTS

Appendix B: Housing First Recruitment Letter and Flyer



The University of New Mexico

Dear **ADD NAME HERE**

The University of New Mexico's Institute for Social Research and the Supportive Housing Coalition would like to invite you to participate in a study of the City of Albuquerque's Housing First Program. You have been chosen to participate in this study because you have been a client in the program for at least one year. If you participate in the interview part of the study you will receive a \$15 gift card to Wal-Mart.

What is the study about?

The purpose of the study is to see how well the Housing First Program works. The City of Albuquerque is funding the University of New Mexico's Institute for Social Research to see if your life has improved since you began participating in the Housing First Program and to see if the Housing First Program is saving the city money. If you choose to participate in this study you will be helping the Housing First Program to know how they are doing.

What will I have to do if I choose to volunteer for the study?

If you choose to volunteer for the study you will be asked to participate in an approximately 30 minute interview. During the interview we will ask you questions about your income status and employment, your quality of life, how long you have lived in Albuquerque, your date of birth, your race, how long you were homeless before entering the program, and whether you currently have a case manager.

We will also ask you to sign a consent form. This consent form will allow us to contact specific places you may have been to in the past and collect records about you from them. The places we will ask you to sign the consent of release form for are local hospitals, local ambulance services, local public behavioral health providers, local law enforcement agencies, the local jail, and local emergency shelters.

Your participation in the study will remain confidential

Any information we gather on you from the places we contact about you and the information you tell us during the interview will remain anonymous and confidential. This means that only our research staff will have access to any information you tell us, we cannot share any information you tell us or that we collect about you with anyone at anytime, and your name will not be tied to any of the information you give us or we collect about you. These rules for confidentiality have been set by the Federal Government and we have to strictly follow these rules.

Again, anything you tell us will remain completely confidential.

Who do I call if I wish to volunteer for the study?

If you wish to volunteer for the study call Paul Guerin at 238-4405 or Dan Cathey at 280-0242 between 8 a.m. and 5 p.m. Monday thru Friday for an appointment.

If you are unsure if you want to be a part of the study and have more questions, please call Paul or Dan at the above phone numbers and they will be happy to give you more information.

Appendix C: Inflation Cost Calculation Table

US Currency Inflation (http://www.usinflationcalculator.com/)			
Year	\$1 spent in that year	Equals value in 2011	Rate of inflation change
1995	\$1	\$1.48	47.6%
1996	\$1	\$1.43	43.3%
1997	\$1	\$1.40	40.1%
1998	\$1	\$1.38	38.0%
1999	\$1	\$1.35	35.0%
2000	\$1	\$1.31	30.6%
2001	\$1	\$1.27	27.1%
2002	\$1	\$1.25	25.0%
2003	\$1	\$1.22	22.2%
2004	\$1	\$1.19	19.1%
2005	\$1	\$1.15	15.2%
2006	\$1	\$1.12	11.6%
2007	\$1	\$1.08	8.5%
2008	\$1	\$1.04	4.5%
2009	\$1	\$1.05	4.8%
2010	\$1	\$1.03	3.1%
2011	\$1	\$1.00	0.0%

The calculator uses the latest US government CPI data released on May 13, 2011