Rebuilding Lives Updated Strategy
Columbus and Franklin County, Ohio

Integrated Utilization Report

October 26, 2007

Prepared for:
Rebuilding Lives Updated Strategy Steering Committee

Prepared by:
Stephen Metraux, Ph.D.
University of the Sciences in Philadelphia

Introduction

A key function of permanent supportive housing (PSH) created under the auspices of Rebuilding Lives (RL) is to move persons who are long-term users of shelter services out of the shelters and into housing where they will have the adequate supports necessary to facilitate maintaining this living situation. Moving these long-term shelter users to PSH, on one hand, will reduce the demand for and cost of shelter services while, on the other hand, will provide a more humane and stable living arrangement for those persons placed into PSH.

This chapter looks at the intersection of the PSH and the shelter systems. Specifically, it assesses the following key assumptions:

- that PSH-RL targeted heavy users of shelter services;

- that PSH-RL placements reduced the demand for emergency shelter.

In order to evaluate these assumptions, this study draws upon utilization data that were collected through Columbus' homeless management information system (HMIS) database on shelter use and PSH placements. The focus will be individuals placed in PSH and their shelter use before and after this placement. Part of doing this will be to compare this group to a group with similar shelter use and demographic characteristics who were sheltered but who did not have a record of a PSH placement.

In addition, this chapter presents results from a data match between HMIS data and another housing program that targets homeless individuals and families – the Shelter Plus Care (S+C) program administered through the Columbus Metropolitan Housing Authority (CMHA). Here the focus is on the extent to which tenants in S+C:

- have recent histories of shelter use; and

- return to shelters after being placed in housing.

The results of this data match can help assess the extent to which S+C contributes to the approach endorsed by RL to have PSH and other forms of housing supplant the demand for shelter services.

<u>The PSH-RL Tenant Selection Process</u>

The four tables in this section show results which compare those persons staying in shelters who were selected for PSH-RL and the remaining population of single adults who stayed in shelters.

The key item that is examined here is whether or not those placed in PSH-RL used shelters more heavily than the overall population.

Table 1

Table 1 – Individual Characteristics: Single adults with PSH placements and single adults who stayed in emergency shelter but not placed in PSH-RL

	PSH-RL Placements	All Single Adult Shelter Users
MALES		
Number of Persons	306	8,591
Age – average (median)	45.1 (45)	41.0 (42)
Race/Ethnicity		
Black	66.0%	56.9%
White	32.0%	38.1%
Other	2.0%	5.0%
Hispanic (not exclusive of race)	1.6%	4.7%
Reported wages at shelter exit	15.7%	17.1%
Reported benefits (SS or VA) at shelter exit	15.4%	9.8%
No income reported at shelter exit	64.7%	72.5%
FEMALES		
Number of Persons	164	2,987
Age – average (median)	41.9 (43)	38.0 (39)
Race/Ethnicity		
Black	60.4%	54.3%
White	37.8%	42.4%
Other	1.8%	3.4%
Hispanic (not exclusive of race)	1.2%	1.8%
Reported wages at shelter exit	7.3%	10.2%
Reported benefits (SS or VA) at shelter exit	22.0%	15.5%
No income reported at shelter exit	62.2%	65.6%

Note – PSH-RL placements are limited to those receiving placement from 2004 through June 2006.

Table 1 summarizes key individual characteristics. Compared to the more general population, the PSH-RL population (both male and female):

- is older;
- has a higher proportion of persons who are of Black race;
- has slightly lower proportions of persons who report earning wage income and higher proportions reporting receiving disability benefits either through Social Security or the Veterans Administration.

Altogether, the majority of persons in both groups, for both males and females, report no income at the point of their last shelter exit.

Table 2

Table 2 categorizes the two groups by shelter from which each person exited their last stay.

The distributions are considerably different. This holds true when looking at both males and females. Clearly there are some shelters from which persons are disproportionately selected for PSH-RL placements. However the reasons for this, and whether or not such a difference is desirable, cannot be ascertained solely from these data.

Table 2 – Last program before shelter exit: PSH placements compared to those served in emergency shelter but not placed in PSH-RL

	PSH Placements	Single Adult Shelter Users
MALES		
Number of Persons	306	8,591
Program Exited From		
FM – Men's Shelter	22.2%	30.2%
FOH – Men's Emergency Shelter	21.9%	17.2%
FOH – Men's Program Beds	1.3%	0.5%
FM – 8th Street	16.3%	10.6%
MH System Overflow	0.7%	2.1%
Maryhaven Engagement Center	17.3%	27.3%
VOA Men's Shelter	6.5%	7.8%
Winter Overflow Center	6.9%	2.7%
YMCA Overflow	6.9%	1.6%
FEMALES		
Number of Persons	164	2,987
Program Exited From		
Faith Mission – Nancy's Place	32.9%	46.1%
MH System Overflow	1.2%	0.4%
Maryhaven Engagement Center	17.1%	25.3%
Rebecca's Place	44.5%	26.1%
Winter Overflow Center	4.3%	2.2%

Note – PSH-RL placements are limited to those receiving placement from 2004 through June 2006.

Table 3

Table 3 looks at shelter use – the number of episodes and the number of days stayed – for both groups. For persons placed in PSH-RL, these shelter utilization measures only take into account shelter use prior to their PSH placement.

The results are quite striking. Whether looking at the number of shelter episodes, number of shelter days, or average lengths of stay, the PSH-RL group has a substantially and significantly greater degree of shelter utilization, and confirms that, in terms of targeting the heavier shelter users, PSH-RL is indeed reaching its intended population.

Table 3 – Shelter Use Dynamics: PSH placements compared to those served in emergency shelter but not placed in PSH-RL

	PSH Placements	Single Adult Shelter Users
	MALES	
Number of Persons	306	8,591
Shelter Episodes		
Average Number	1.75 stays	1.42 stays
Episode Distribution		
1 episode	50.3%	70.5%
2 episodes	31.4%	20.1%
3 episodes	12.4%	6.9%
4+ episodes	5.9%	2.5%
Days Spent in Shelter		
Average Number of Days	112.9 days	44.4 days
Days Distribution		
0-7 days	6.9%	36.8%
8-30 days	11.4%	23.9%
31-180 days	59.5%	34.5%
181-365 days	22.2%	4.8%
Average Days Per Episode	79.0 days	32.9 days
	FEMALES	
Number of Persons	164	2,987
Shelter Episodes		
Average Number	1.53 stays	1.28 stays
Episode Distribution		
1 episode	61.5%	79.4%
2 episodes	28.7%	14.9%
3 episodes	5.5%	4.2%
4+ episodes	4.3%	1.5%
Days Spent in Shelter		
Average Number of Days	85.7 days	32.1 days
Days Distribution		
0-7 days	7.3%	43.9%
8-30 days	18.3%	24.1%
31-180 days	64.6%	29.6%
181-365 days	9.8%	2.4%
Average Days Per Episode	66.9 days	26.2 days

Note – PSH-RL placements are limited to those receiving placement from 2004 through June 2006.

Table 4

Table 4 summarizes findings on the length of time (i.e., "gap") between exiting shelter and moving into PSH-RL.

For the majority of persons of both sexes the gap is relatively short. However, a sizable minority – 15.4% of men and 14.2% of women – have a gap of more than 6 months between last shelter exit and PSH-RL placement. This does not include those receiving PSH-RL who had no record of shelter utilization.

Table 4 – Analysis of the "gap" between date of last shelter exit and subsequent PSH placement.

	PSH Placements – Male	PSH Placements – Female
Number of Persons	306	164
Length of "Gap" Between Shelter & PSH		
Median Length of Gap	8.5 days	3.5 days
Gap Length Distribution		
0-7 days	49.4%	54.9%
8-30 days	11.1%	11.6%
31-180 days	24.2%	21.3%
181-365 days	10.5%	5.5%
366+ days	4.9%	6.7%

Note – PSH-RL placements are limited to those receiving placement from 2004 through June 2006.

Multivariate Regression

These findings are further supported by results obtained through fitting multivariate regression models that assess the relative impacts of various factors on the likelihood of receiving a PSH-RL placement. The results, which are summarized here, are shown in full in the appendix.

In the results, for every 30 days of additional shelter days accrued, a person's likelihood of receiving a PSH-RL placement increased by 24% for both sexes. Similarly, for each additional shelter episode logged by a person, the likelihood of PSH-RL placement increased 38% for males and 45% for females.

These results took into account the potential impact of various other factors, including year of placement; age; race/ethnicity; veteran status; wages, benefits and other income received while in shelter; and the shelter program from which person last exited.

Section Summary

The results shown in the four tables of this section indicate that PSH-RL is indeed targeting the heavier shelter users and, by extension, the more difficult to serve homeless population. The evidence for this is very strong, and also signals that taking these heavy shelter users out of the homeless population stands to make a substantial impact on reducing the shelter population. This will be explored in the next section.

Impact of PSH-RL on Overall Shelter System

The focus now turns to shelter use after the PSH-RL placements were made. Table 5 and the two figures show results from comparing persons placed in PSH-RL to a group of matched controls who had shelter use records but did not receive PSH-RL placements.

The controls and the persons placed in PSH-RL had similar demographic (gender, race, and age) and shelter use (up to PSH-RL placement) characteristics. More information on how this matched control group was constructed is available in the methodology section.

Table 5

Table 5 shows pre-intervention and post-intervention (i.e., PSH-RL placement) shelter use for both those placed in PSH-RL and the control group.

Table 5 – Rates of returns to shelter for placements in PSH-RL and matched controls

	PSH-RL Placements	Controls	Test of Difference
Total N (1)	425	425	
Shelter Utilization – Pre-Intervention (2)			
Total Shelter Days Used	27,258	25,429	
Total Shelter Users	270 (63.5%)	270 (63.5%)	no significant difference
Mean Shelter Days per Person	64.1	59.8	no significant difference
Mean Gap	47.0	54.6	no significant difference
Persons with 0-day Gap	123 (28.9%)	113 (26.6%)	no significant difference
Shelter Utilization – Post-Intervention (3)			
Total Shelter Days Used	2,725	17,342	
Total Shelter Users	75 (17.7%)	202 (47.5%)	χ^2 = 1,297 (1 d.f.) ***
Mean Shelter Days per Person	6.4	40.8	t = -9.21 (523 d.f.) ***

* p < .05; ** p < .01; *** p < .001

1 - Persons represent all PSH-RL placements from January 2004 through June 2005 and matched controls

2 - Pre-intervention refers to the 1-year period prior to the intervention point (PSH-RL housing placement for cases, equivalent time point for controls. "Gap" refers to the number of days between the last shelter exit and the intervention date.

3 - Post-intervention refers to the one-year period following the intervention point.

The pre-intervention (i.e., before the PSH-RL housing placement) shelter use patterns, by design, are very similar for both groups. The controls actually have a slightly lower number of total shelter days, but this difference is statistically non-significant.

Approximately one-third of each group had no record of any shelter use in the one-year period prior to placement.

The numbers for the post-placement shelter utilization are dramatically different, however. Specifically:

- the control group used 14,617 more shelter days – an average of 34.4 more days per person – in the one-year post-placement period than the group placed in PSH-RL;

- almost half (47.5%) of the control group had a post-placement shelter stay, as compared to only 17.7% of those in the PSH-RL group.

This estimated reduction in post-placement shelter days consumed was further refined through fitting a multivariate regression model. After controlling for age, sex, race, placement date, and shelter to placement gap, the adjusted reduction in post-intervention shelter days associated with a PSH-RL placement remained virtually identical at 34.7 days. The full results of the regression model are presented in the appendix of this chapter.

Figure 1

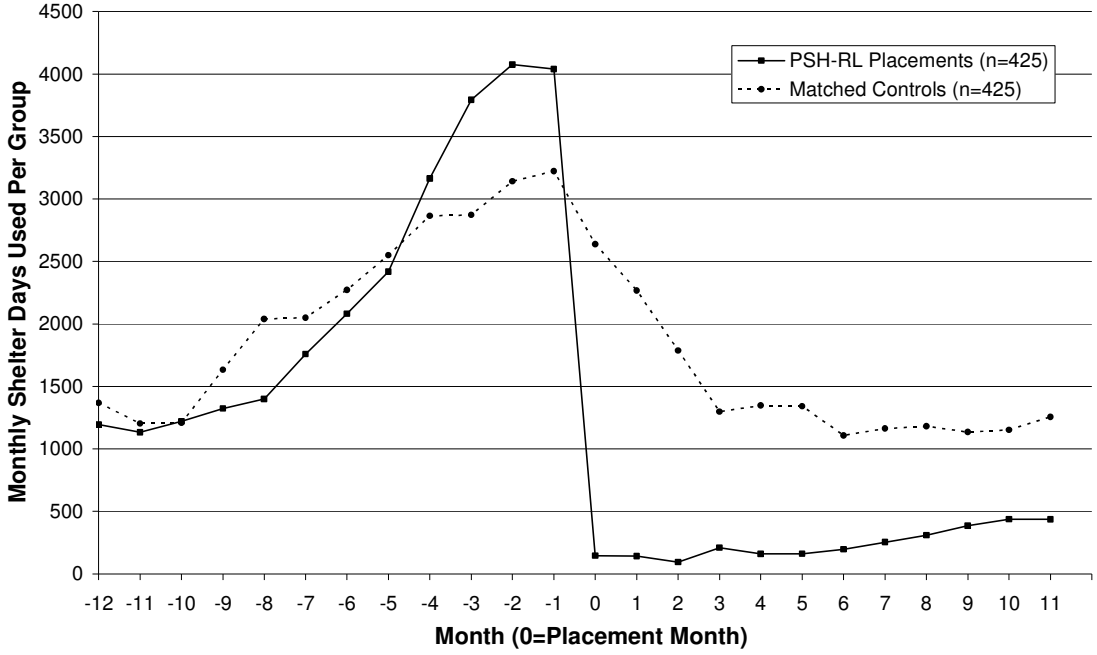
Figure 1 compares the PSH-RL group and the control group in shelter days used before and after the intervention point that signals the housing placement. It is a graphical illustration of results reported in Table 5.

In the pre-placement period, the trajectory of shelter use is again very similar for both groups, with the PSH-RL group showing slightly heavier shelter use. For the PSH-RL placements, shelter use declines dramatically after the placement point, and this reduced level is sustained through the year following placement. Interestingly, however, shelter use among the control group declines somewhat, albeit much more modestly, over time as well.

Figure 2

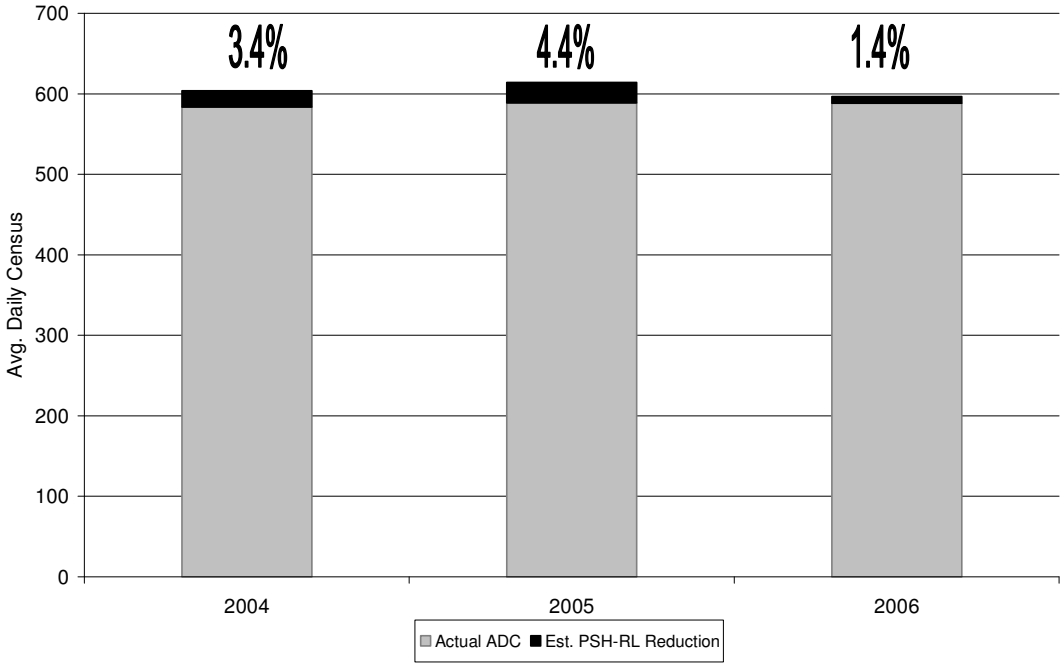
Figure 2 uses the difference in shelter use to assess the additional demand made on the shelter system, by year, if the persons with PSH-RL placements had the post-placement shelter use pattern of the control observation he or she was matched with.

FIGURE 1 - Shelter Days Consumed Per Month:
PSH-RL Placements (1/04 to 6/05) vs. Matched Controls



-

Figure 2 - Estimated Impact of Rebuilding Lives Permanent Supportive Housing Placements on Average Daily Census in Columbus Single Adult Homeless Shelters, 1/04 to 6/06



Note: reductions noted here reflect the estimated impact of the 425 PSH-RL placements made between 1/2004 and 6/2006, reflecting 34% of the 1,259 total PSH-RL placements made between 5/2000 and 6/2006. The impact of all PSH-RL placements upon the average daily shelter census is likely to be substantial larger, but data were unavailable to assess this.

Only 425 of the total 1,259 PSH-RL shelter placements could partake in this analysis due to data requirements. This substantially reduces the impacts shown here.

Still, the impact is considerable for the number of housing units considered in the analysis – PSH-RL placements reduced demand on the shelter system by an estimated 3.4%, 4.4% and 1.4%, respectively, across 2004, 2005, and 2006 (2006 reflects a partial year).

This impact could plausibly increase between two and threefold if all of the PSH-RL placements could have been incorporated into the study, or if the time period in which data on shelter use were available was expanded.

Section Summary

Compared to a control group of similar persons who did not get placed in PSH-RL, those persons who received PSH-RL placements:

- used an estimated 34.7 fewer shelter days after their housing intervention;

- reduced the demand for shelter by an estimated 3.4% to 4.4% annually.

Data Match – HMIS and Columbus Metropolitan Housing Authority (CMHA) Shelter Plus Care (S+C) housing

The final analysis consists of a data match looking at the extent to which there is shelter use among persons placed in CMHA's Shelter Plus Care program. This program targets homeless individuals and families for housing placement. This match between S+C placements and HMIS data will therefore examine two questions:

- the degree of shelter use among persons placed in S+C housing prior to their housing placements (i.e., pre-placement analysis);

- the extent to which persons placed into S+C housing subsequently "relapse" into shelter use (i.e., post-placement analysis).

For the pre-placement analysis, all S+C housing placements between January 2004 and June 2006 are used, and shelter use in the time period one year prior to their S+C housing placement was examined. Noteworthy results include:

- Housing placements to S+C were predominantly female (71%) and one-person (72%) households;

- 155 of 380 households placed in S+C, or 41%, had a record of shelter use in the 365 days prior to their placement;

- The median "gap" between last shelter exit and S+C placement, for those with shelter records, was 72 days. Of the S+C placements with shelter records, 27.1% were placed into housing within 30 days of a shelter exit.

- The profile of those S+C placements with and without shelter records is similar except for the finding that persons with shelter history had higher proportion of females (84%) than the overall group.

- For a comparison, among the 678 PSH-RL placements between 2004 and June 2006, 436 of them, or 64%, had records of shelter use in the 365 days prior to PSH placement.

For the second analysis, looking at how many persons/families returned to shelter in the year after placement, all S+C placements between January 2003 and June 2005 were examined. This gave everyone 365 days in which to enter a shelter after their placement. Noteworthy results include:

- The overall group (S+C placements between 1/03 and 6/05) was very similar in characteristics to the overall group in the pre-placement analysis just described.

- Of the 360 persons in the overall group, 29 (8%) entered a shelter at some point in the year immediately following placement.

- The median time from S+C placement to shelter entry (among those with subsequent shelter stays) was 156 days, with 31% of these shelter entries occurring later than 180 days from placement.

- 26 of the 29 post-placement shelter entries (90%) involved single adults.

Section Summary

Forty-one percent of the S+C tenants had a history of shelter use before their housing placement, a proportion that is somewhat lower than the 64% of RL-PSH tenants who had such a shelter history. The rates of post-placement shelter use, at 8%, is relatively low, and is promising although 365 days is a shorter than optimal period for observing such returns. Families seem at a particularly low risk for entering shelter following RL-PSH placement.

Future research could further utilize the same data to examine the impact of S+C on shelter use in much of the same ways that the impact of RL-PSH was examined earlier in this chapter.

Conclusion

These analyses of shelter use patterns produce several key findings:

- PSH-RL successfully targets heavy shelter users, and thereby stands to make a disproportionate impact on reducing demand for shelter;

- when compared to a similar, matched control group, each shelter placement studied was associated with a 34.7-day reduction in shelter use. This estimated reduction serves as the basis for cost savings associated with reduced shelter use.

- while 47.5% of the control group experienced post-placement shelter use, only 17.7% of the PSH-RL placements experienced such shelter use.

- the estimated impact of a partial set of PSH-RL housing placements shows the annual reduction in demand for shelter associated with these limited number of placements to be as high as 4.4%.

- S+C, another housing program with support services, also draws a substantial proportion of its tenants from the shelter system and deserves further consideration as a housing resource which could reduce demand upon the shelter system.

By all these measures, PSH-RL has had a substantial impact on reducing the demand for shelter.

Appendix I – Methodology

The analyses reported here involved combining shelter and permanent supportive housing data collected through Columbus' homeless management information system (HMIS) database on shelter use and PSH placements. Because data for PSH and shelter were collected on the same identifier for each person, it was straightforward to integrate these data into a more comprehensive housing and shelter record on a person level.

Creating a matched control group for the post-placement analysis of returns to shelter was a more challenging process. What was required was a control group that is not only similar to those placed in PSH-RL in the personal characteristics that measured in HMIS (race, gender, ethnicity, etc.), but also had similar shelter use histories up to the point that the PSH-RL group is placed in housing and a hypothetical point where the control group continues without a comparable intervention.

This matching based on shelter utilization before placement, and then following the PSH-RL and control groups after placement, requires, on one hand, obtaining a shelter use history of at least a year and, on the other hand, a time period following shelter placement that also lasts at least a year. Given the available data, this restricts considerably the number of PSH-RL placements that can be used in this study. The only records used here were for persons placed into PSH-RL in or after 2004 and, when looking a relapse to shelter, those placed before July 2005. Because of this data limitation, the overall impact of all PSH-RL placements on the shelter system will be substantially underestimated.

The actual selection of control observations is done through a method known as propensity score matching. Propensity score matching selects control observations by the extent to which their matching characteristics would predict their inclusion into the control group, based on logistic regression modeling. This allows multiple matching criteria to be used to determine a single propensity score, upon which cases are then matched with controls. With such a method, although characteristics among matched pairs may differ, the matching characteristics will be similar on a group level.

For the third section, the shelter data is matched with the Shelter Plus Care housing data based on the presence of common identifiers – social security number, first and last name, date of birth, and sex. An automated probablistic matching procedure is used here which is able to identify likely matches although the identifying information may not be identical. This matching process then facilitated the integrating of information on shelter use with information on Shelter Plus Care housing placement in one integrated record for each person.

Appendix II – Complete Findings of Integrated Shelter and Supportive Housing Utilization

Individual Characteristics: PSH placements compared to those served in emergency shelter but not placed in RL-PSH - Males

	PSH Placements	Single Adult Shelter Users	Statistic
Number of Persons	306	8,591	
Age – average (median)	45.1 (45)	41.0 (42)	*** (t-test)
Race/Ethnicity			** (chi-square)
Black	66.0%	56.9%	
White	32.0%	38.1%	
Other	2.0%	5.0%	
Hispanic (not exclusive of race)	1.6%	4.7%	* (chi-square)
Veteran	21.6%	19.2%	n.s.
Disabled	40.2%	43.7%	n.s.
Reported wages at shelter exit	15.7%	17.1%	n.s.
Reported benefits (SS or VA) at shelter exit	15.4%	9.8%	** (chi-square)
No income reported at shelter exit	64.7%	72.5%	** (chi-square)
Exit Reason			*** (chi-square)
Left shelter before completing program (0)	23.9%	11.6%	
Non-compliance with program (2)	16.3%	28.6%	
Unknown/disappeared (3)	18.0%	28.0%	
Successful program completion (7)	26.8%	17.9%	
Reached maximum time allowed (8)	7.2%	3.7%	
Other reasons (1,4,5,6,9,10,999)	7.8%	10.2%	
"Successful" Housing Outcome (destination code 1,2,6,12,13,14,15,17)	44.8%	14.4%	*** (chi-square)
Program Exited From			
FM – Men's Shelter	22.2%	30.2%	*** (chi-square)
FOH – Men's Emergency Shelter	21.9%	17.2%	
FOH – Men's Program Beds	1.3%	0.5%	
FM – 8th Street	16.3%	10.6%	
MH System Overflow	0.7%	2.1%	
Maryhaven Engagement Center	17.3%	27.3%	
VOA Men's Shelter	6.5%	7.8%	
Winter Overflow Center	6.9%	2.7%	
YMCA Overflow	6.9%	1.6%	

n.s. - non-significant p-value; * - $p < .05$; ** - $p < .01$; *** - $p < .001$

Note – PSH-RL placements are limited to those receiving placement from 2003 through June 2006.

Section I – Tenant selection process: A comparison of those selected and not selected for Permanent Supportive Housing developed and operated through Rebuilding Lives (RL-PSH) among the sheltered homeless population.

Individual Characteristics: PSH placements compared to those served in emergency shelter but not placed in RL-PSH - Females

	PSH Placements	Single Adult Shelter Users	Statistic
Number of Persons	164	2,987	
Age – average (median)	41.9 (43)	38.0 (39)	*** (t-test)
Race/Ethnicity			n.s.
Black	60.4%	54.3%	
White	37.8%	42.4%	
Other	1.8%	3.4%	
Hispanic (not exclusive of race)	1.2%	1.8%	n.s.
Veteran	2.4%	3.2%	n.s.
Disabled	41.5%	39.4%	n.s.
Reported wages at shelter exit	7.3%	10.2%	n.s.
Reported benefits (SS or VA) at shelter exit	22.0%	15.5%	* (chi-square)
No income reported at shelter exit	62.2%	65.6%	n.s.
Exit Reason			*** (chi-square)
Left shelter before completing program (0)	7.9%	13.3%	
Non-compliance with program (2)	10.4%	12.9%	
Unknown/disappeared (3)	10.4%	28.1%	
Successful program completion (7)	61.6%	29.8%	
Reached maximum time allowed (8)	4.9%	3.4%	
Other reasons (1,4,5,6,9,10,999)	4.8%	12.5%	
"Successful" Housing Outcome (destination code 1,2,6,12,13,14,15,17)	56.7%	19.7%	*** (chi-square)
Program Exited From			
Faith Mission – Nancy's Place	32.9%	46.1%	*** (chi-square)
MH System Overflow	1.2%	0.4%	
Maryhaven Engagement Center	17.1%	25.3%	
Rebecca's Place	44.5%	26.1%	
Winter Overflow Center	4.3%	2.2%	

n.s. - non-significant p-value; * - p < .05; ** - p < .01; *** - p < .001

Note – PSH-RL placements are limited to those receiving placement from 2003 through June 2006.

Shelter Use Dynamics: PSH placements compared to those served in emergency shelter but not placed in RL-PSH - Males

	PSH Placements	Single Adult Shelter Users	
Number of Persons	306	8,591	
Shelter Episodes			
Average Number	1.75 stays	1.42 stays	*** (t-test)
Episode Distribution			*** (chi-square)
1 episode	50.3%	70.5%	
2 episodes	31.4%	20.1%	
3 episodes	12.4%	6.9%	
4+ episodes	5.9%	2.5%	
Days Spent in Shelter			
Average Number of Days	112.9 days	44.4 days	*** (t-test)
Days Distribution			
0-7 days	6.9%	36.8%	*** (chi-square)
8-30 days	11.4%	23.9%	
31-180 days	59.5%	34.5%	
181-365 days	22.2%	4.8%	
Average Days Per Episode	79.0 days	32.9 days	*** (t-test)
Year of Last Shelter Exit			*** (chi-square)
2003	7.5%	21.6%	
2004	45.1%	24.8%	
2005	33.7%	29.9%	
2006	13.7%	23.7%	
Length of "Gap" Between Shelter & PSH			
Median Length of Gap	8.5 days		
Gap Length Distribution			
0-7 days	49.4%		
8-30 days	11.1%		
31-180 days	24.2%		
181-365 days	10.5%		
366+ days	4.9%		

n.s. - non-significant p-value; * - p < .05; ** - p < .01; *** - p < .001
Episodes reflect a set of days spent in shelter preceded by 30 days spent outside of shelter.
Episodes and days stayed in shelter represent totals for the one-year period preceding the last day spent in shelter either, for those with PSH placement, prior to PSH placement, or, for those without PSH placement, before June 20, 2006 (latest PSH placement date).
PSH-RL placements are limited to those receiving placement from 2003 through June 2006.

Shelter Use Dynamics: PSH placements compared to those served in emergency shelter but not placed in RL-PSH – Females

	PSH Placements	Single Adult Shelter Users	
Number of Persons	164	2,987	
Shelter Episodes			
Average Number	1.53 stays	1.28 stays	*** (t-test)
Episode Distribution			*** (chi-square)
1 episode	61.5%	79.4%	
2 episodes	28.7%	14.9%	
3 episodes	5.5%	4.2%	
4+ episodes	4.3%	1.5%	
Days Spent in Shelter			
Average Number of Days	85.7 days	32.1 days	*** (t-test)
Days Distribution			
0-7 days	7.3%	43.9%	*** (chi-square)
8-30 days	18.3%	24.1%	
31-180 days	64.6%	29.6%	
181-365 days	9.8%	2.4%	
Average Days Per Episode	66.9 days	26.2 days	*** (t-test)
Year of Last Shelter Exit			*** (chi-square)
2003	11.6%	23.0%	
2004	45.1%	26.5%	
2005	26.2%	29.1%	
2006	17.7%	21.4%	
Length of "Gap" Between Shelter & PSH			
Median Length of Gap	3.5 days		
Gap Length Distribution			
0-7 days	54.9%		
8-30 days	11.6%		
31-180 days	21.3%		
181-365 days	5.5%		
366+ days	6.7%		

n.s. - non-significant p-value; * - $p < .05$; ** - $p < .01$; *** - $p < .001$
Episodes reflect a set of days spent in shelter preceded by 30 days spent outside of shelter.
Episodes and days stayed in shelter represent totals for the one-year period preceding the last day spent in shelter either, for those with PSH placement, prior to PSH placement, or, for those without PSH placement, before June 20, 2006 (latest PSH placement date).
PSH-RL placements are limited to those receiving placement from 2003 through June 2006.

Event History Model – determinants of RL-PSH placement from measures of shelter use (key variables) and household characteristics (control variables)

	Males (n=8,893)	Females (n=3,143)
Variable	Hazard Ratio	Hazard Ratio
Length of Shelter Episode	1.008***	1.008***
Number of Shelter Episodes	1.38***	1.45***
Year Shelter Episode Ends		
2003	ref. cat.	ref. cat.
2004	4.72***	2.94***
2005	2.87***	1.69
2006	1.73*	2.17*
Age	1.023***	1.017*
Race/Ethnicity		
Black	1.08	0.98
Other	0.64	0.63
White	ref. cat.	ref. cat.
Hispanic (not exclusive of race)	0.67	1.12
Veteran	0.89	0.79
Disabled	1.11	1.36
Reported wages at shelter exit	0.61*	0.90
Reported benefits at shelter exit	0.95	1.48
Reported receiving income (yes/no) at shelter exit	1.43	0.74
Last shelter facility before exit		
FM – Men's Shelter	0.63**	
FOH – Men's Emergency Shelter	0.63**	
FM – 8th Street	0.72	
Maryhaven Engagement Center	0.51***	0.30**
Faith Mission – Nancy's Place		0.43*
Rebecca's Place		0.68
All other shelters	ref. cat.	ref. cat.

* - p < .05; ** - p < .01; *** - p < .001

Note – PSH-RL placements are limited to those receiving placement from 2003 through June 2006.

Ordinary Least Squares Regression Model – determinants of days in shelter from measures of RL-PSH placement (key variable) and household characteristics (control variables)

	Males	Females
Propensity Score Matching		
Number of PSH Placements	306	164
Number of "eligible" non-PSH placements	874	656
Percent of total non-PSH placements	10.2%	9.4%
Adjusted number of shelter days associated with PSH placement	+59.5***	+46***
Immediate vs. Other PSH Placements		
Number of persons placed in PSH		
Within 1 week of shelter exit (immediate)	151	90
after exiting shelter longer than 1 week	155	74
Adjusted number of shelter days associated with immediate PSH placement	50.1***	68.6***

* - p < .05; ** - p < .01; *** - p < .001

results were obtained through the use of ordinary least squares regression models

"adjusted" means the number of shelter days associated with this factor after taking into account (i.e., controlling) for variations in year of placement; age; race/ethnicity; veteran status; self-reported disability; wages, benefits and other income received while in shelter; and the shelter program from which person last exited. The coefficients associated with these control variables are not reported.

Note – PSH-RL placements are limited to those receiving placement from 2003 through June 2006.

Rates of returns to shelter for placements in RL-PSH and matched controls

	RL-PSH Placements	Controls	Test of Difference	
Total N (1)	425	425		
Demographics & Personal Characteristics				
Male	60.7%	60.7%	$\chi^2 = 0$ (1 d.f.)	
Black	69.2%	73.7%	$\chi^2 = 2.08$ (1 d.f.)	
White	28.9%	23.5%	$\chi^2 = 3.22$ (1 d.f.)	
Other Race	1.9%	2.8%	$\chi^2 = 0.82$ (1 d.f.)	
Age (mean years)	39.4	41.6	t = -0.53 (767 d.f.)	
Disabled (self-assessed)	55.5%	46.8%	$\chi^2 = 6.45$ (1 d.f.)	*
Shelter Utilization (1)				
Total Pre-Intervention Shelter Days Used	27,258	25,429		
Number of Pre-Intervention Shelter Users	270 (63.5%)	270 (63.5%)	$\chi^2 = 0.00$ (1 d.f.)	
Mean Pre-Intervention Shelter Days per Person	64.1	59.8	t = 0.78 (848 d.f.)	
Mean Gap	47.0	54.6	t = 1.14 (538 d.f.)	
Persons with 0-day Gap	123 (28.9%)	113 (26.6%)	$\chi^2 = 8.91$ (1 d.f.)	
Total Post-Intervention Shelter Days Used	2,725	17,342		
Number of Post-Intervention Shelter Users	75 (17.7%)	202 (47.5%)	$\chi^2 = 1,297$ (1 d.f.)	***
Mean Post-Intervention Shelter Days -- Person	6.4	40.8	t = -9.21 (523 d.f.)	***

* p < .05; ** p < .01; *** p < .001

1 Persons represent all RL-PSH placements from January 2004 through June 2005 and matched controls

1 Pre-intervention refers to the 1-year period prior to the intervention point (RL-PSH housing placement for cases, equivalent time point for controls. "Gap" refers to the number of days between the last shelter exit and the intervention date. Post-intervention refers to the one-year period following the intervention point.

Results from a Regression Model Using Generalized Estimating Equations Methodology to Estimate Effects Associated with Shelter Days Used in 1-Year Post Intervention Period for Persons Receiving RL-PSH Housing Placements and Matched Control observations.

Covariate	Days Saved	Odds Ratio for Returning to Shelter
Received RL-PSH Placement	34.7 ***	0.25 ***
Days Sheltered in 1-Year Pre-Intervention Period	0.85 ***	1.00
Gap from Last Shelter Exit to Intervention Date	0.01	0.995 ***
No Gap from Shelter Exit to Intervention Date	-29.0 ***	1.15
Date of RL-PSH Placement (or est. date for controls)	-0.001	1.00
Age at Intervention Date	-0.003	1.00
Male	-14.3	2.81 ***
Black Race	-3.1	1.42
Other Race	-15.5	1.46
White Race	(reference cat.)	
Disabled	4.8	1.21
Intercept	-2.8	n/a

* p < .05; ** p < .01; *** p < .001

"Days Saved" estimates derived from a multivariate least squares regression model using generalized estimating equations (GEE) methodology; "Odds of Returning to Shelter" estimates derived from a logistic regression model.

Persons represent all RL-PSH placements from January 2004 through June 2005 and matched controls

Cost estimates for any reduced number of shelter days subsequent to PSH placement that are associated with RL-PSH placements would be based on a **34.7 day savings per average placement** estimated by this regression.

Pre-Placement Shelter Use by Persons with CMHA S+C Placements between 1/2004 and 6/2006

	Total	Shelter Before CMHA
Number of Households	380	155
Age of Household Head (at CMHA placement)		
18-29	17.6%	21.3%
30-39	30.3%	29.0%
40-49	37.6%	40.0%
50+	14.5%	9.7%
Race/Ethnicity of Household Head		
Black	56.1%	54.2%
White	42.9%	43.9%
Other/Unknown	1.0%	1.9%
Sex of Household Head		
Female	71.3%	83.9%
Children in Household		
0	71.6%	72.3%
1	14.0%	14.2%
2	6.8%	5.8%
3+	7.6%	7.7%
Adults In Household		
1	92.9%	95.5%
2+	7.1%	4.5%
Year of Placement		
2004	30.8%	33.6%
2005	45.3%	45.8%
2006	23.9%	20.7%
Placement Location		
Amethyst	0.3%	0.0%
Community Housing Network	23.4%	9.0%
Faith Mission	2.6%	6.5%
Columbus AIDS Task Force	10.8%	3.9%
Missing Data	62.9%	80.7%
Shelter Stay before S+C (within one year)	40.8%	100.0%
Timing		
Median between shelter & CMHA		72 days
1 to 30 days between shelter & CMHA		27.1%
31 to 90 days between shelter & CMHA		32.9%
91 to 180 days between shelter & CMHA		20.0%
180 to 365 days between shelter & CMHA		20.0%

note: all CMHA S+C placements from 1/1/2004 to 6/30/2006 are included in the study group so as to give everyone 1 year of "opportunity" to be in HMIS database prior to S+C placement.

Pre-Placement Shelter Use by Persons with CMHA S+C Placements between 1/2004 and 6/2006

	Total	Shelter After CMHA
Number of Households	360	29
Age of Household Head (at CMHA placement)		
18-29	15.3%	6.9%
30-39	30.3%	34.5%
40-49	36.7%	51.7%
50+	17.8%	6.9%
Race/Ethnicity of Household Head		
Black	58.9%	51.7%
White	40.0%	44.8%
Other/Unknown	1.1%	3.5%
Sex of Household Head		
Female	67.5%	58.6%
Children in Household		
0	73.6%	89.7%
1	14.4%	3.5%
2	6.7%	3.5%
3+	5.3%	3.5%
Adults In Household		
1	91.7%	100.0%
2+	8.3%	0.0%
Year of Placement		
2003	45.0%	37.9%
2004	32.5%	37.9%
2005	22.5%	24.1%
Placement Location		
Amethyst	1.1%	0.0%
Community Housing Network	22.5%	10.3%
Faith Mission	1.7%	3.5%
Columbus AIDS Task Force	8.1%	0.0%
Missing Data	66.7%	86.2%
Shelter Stay before S+C (within one year)	8.1%	100.0%
Timing		
Median between shelter & CMHA		156 days
1 to 30 days between shelter & CMHA		17.2%
31 to 90 days between shelter & CMHA		13.8%
91 to 180 days between shelter & CMHA		29.6%
180 to 365 days between shelter & CMHA		31.4%

note: all CMHA S+C placements from 1/1/2003 to 6/30/2005 are included in the study group so as to give everyone 1 year of "opportunity" to be in HMIS database after S+C placement