

FINAL REPORT

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Executive Summary

This report presents the findings from a longitudinal study comparing two housing approaches for persons with serious mental illness in Maricopa County, Arizona. There were three components to the site-specific study in Arizona and this report addresses each of these in a separate section.

Arizona Housing Outcomes Study. A total of 185 individuals participated in a 12-month study comparing supervised independent living (SIL) to supported housing (SH). Though originally designed as a randomized study, difficulties with randomization lead to a shift to a quasi-experimental design. Propensity scoring was used to correct for the nonequivalence of groups that resulted. Study participants completed interviews within 2 weeks of moving into their housing and at 3-, 6-, and 12-month follow-up points. Results indicate that nearly 60% of the entire sample was still in their original housing condition at the 12-month point, and those in SH stayed in their original housing 113 days (nearly 4 months) longer than those in SIL. Residents in SH also showed decreased likelihood of experiencing an episode of homelessness during the study. There were significant decreases in time spent in jail and psychiatric hospitalizations, but these effects did not differ by condition and were limited to the group with the lowest probability of being in SH (i.e., those with lowest propensity scores). The two groups did not differ in the number of days stably housed, but those in SILs at baseline did have a significantly higher number of moves during the 12-month period. There were no differences between conditions in the number of residents who used ER or crisis services, or the average number of times they used them. However, women and those who reported having used alcohol and accessed mental services for greater proportion of their lives used ER and crisis services more often. Several outcomes such as functioning, health, productivity, isolation, and empowerment showed no differences over time between the two groups. Psychiatric distress, as measured by the subscales of the BASIS-32, also did not vary by group, though some subscales showed improved functioning over time. Housing satisfaction is significantly higher for those in SH at baseline, but this difference does not appear to persist over time. The results of these intent-to-treat analyses indicate that residents in both housing conditions are faring about the same, no one condition is clearly superior to the other, although those in SH stay housed significantly longer in their original condition and are less likely to re-experience homelessness in the year following their move-in. Further analyses beyond these intent-to-treat analyses are planned.

Environmental & Contextual Factors. This site-specific research component examined the impact of contextual and environmental factors on resident outcomes by using a geographic information system (Arc Info and Arch Mapping) to first identify the geographic location in Phoenix of housing where they lived, and then to relate this location to a variety of contextual factors in the neighborhood. It was hypothesized that the different housing/neighborhood/community conditions would affect housing and other outcomes. All assisted housing in Phoenix tends to be concentrated, though not as much as conventional public housing. In contrast, however, to other types of assisted housing program using vouchers and certificates, supported housing is not as concentrated in the poorer regions of the city. While many supported housing locations are in central part of the City of Phoenix proper, a large number of SIL apartments are located in the central to northern area of the City. Neither program is concentrated in the poorest sections of the City, which are situated in the southern portion of the city. While the tracts where SH and SIL are located resemble the tracts where City-administered assisted housing

exist on variables such as unemployment rates, percentage of college educated, percentage of senior citizens and children, they are very different in that areas with higher concentrations of SH and SIL housing contain lower levels of aggregate minorities than do the tracts with concentrations of other types of assisted housing. Also, in the SH and SIL concentrated housing tracts, the median income is 78% of the City's median income, which is higher than the 70% found in tracts characterized by concentrations of Section 8 and City-administered housing. Tracts with SH and SIL housing tend to have higher vacancy rates and fewer single-family units than the average City tract, which is to be expected given that these tracts are in more marginal areas. The median rents are also lower in these tracts, and there are fewer new housing units in them than in the City as a whole. In short, the mental health consumers receiving housing through these programs tend to live in older portions of the City where rents are lower. Not surprisingly, when compared to the City as a whole, these areas tend to have somewhat higher crime rates. In another analysis, the impact of locating assisted housing (including Section 8) on surrounding neighborhood and housing quality was explored. The results indicated that the negative impacts on housing quality can be observed only within a one-half mile distance, and are most observable within a quarter-mile distance. Yet, this impact becomes positive when controlling for the gender of the household head: Assisted housing units headed by females are associated with positive housing quality effects. Hence, it appears likely that any negative impacts on housing quality may be mitigated by the gender variable. Additional analyses exploring the link between environmental and contextual factors and data collected for the housing outcome study are planned.

Qualitative Study of the Supports Aiding Housing Retention. This qualitative study examined the strategies utilized by formerly homeless persons with severe psychiatric disabilities to retain housing in Maricopa County, Arizona. Few studies of this type exist and although it has been hypothesized that the adaptive strategies used to survive while homeless are liabilities in establishing stability in housing, this is the first study to address this issue. Thirty-two men and women participated in semi-structured ethnographic interviews that covered a variety of topics including daily activities, housing, homeless experiences, social supports, income, employment history, physical health, mental health and substance abuse. A subset of these individuals participated in two additional follow-up interviews focusing on problem-solving abilities, ideas concerning housing, possessions, and homelessness. Findings indicate that the social supports developed while living on the streets have an important and positive role in the retention of housing by formerly homeless persons with psychiatric disabilities. These social supports take the form of emotional, tangible, and informational supports. Friendships that developed among homeless individuals continued to provide a variety of supports and strategies such as sharing, or trading work for goods (e.g., house cleaning for cigarettes), continued to assist in day-to-day survival.

Report Overview

This report is organized in three sections, which correspond to the three site-specific studies undertaken at the Arizona site. The first section reports on Arizona's site-specific housing outcome analyses, which are based on data from the cross-site protocol. This outcome study was under the direction of Michael Shafer, Ph.D., and was conducted by a research team based at the University of Arizona. The second section presents the results from the environmental and contextual site-specific study using geo-mapping completed under the direction of Alvin Mushkatel, Ph.D., at Arizona State University. Finally, the third section presents the results from the qualitative study of the strategies formerly homeless persons use to retain housing, which was directed by Louisa Stark, Ph.D, Arizona State University. The organization of each of the sections closely follows the assigned outline. Authorship of each section is listed at the beginning.

I. Arizona Housing Outcomes

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Context for the Site-Specific Housing Outcomes Study

This study was undertaken in Maricopa County, Arizona¹, which includes Phoenix and surrounding cities. With roughly 2.7 million residents, Maricopa County is the fifth most populous county in the nation according to the U.S. Census Bureau. Phoenix itself is the seventh largest metropolitan area in the US. In the last decade the city and surrounding areas have experienced tremendous population growth and have blended into a large megalopolis consisting primarily of urban and suburban sprawl.

Homelessness is an increasing problem in the state and mental illness has been identified by Arizona's Homeless Coordination Office as one of the factors contributing to the increase. The number of shelter beds in the entire state is estimated at approximately 2,600 emergency beds and roughly 4,500 transitional housing beds. Funding for these beds comes from all levels of government and the private sector, however, demand continues to outpace supply. Formal estimates of the number of persons who are homeless in the Phoenix metropolitan area range from the unrealistically low figure of 700 upwards to more than 10,000 (Dollin, McIntosh, & Shatter, 1998).

With the upsurge in population in recent years in Maricopa County, the pressure on the local housing market has intensified. The table below presents the median rent in Phoenix for both 1- and 2-bedroom

apartments for the years the Arizona Supported Housing Study was undertaken.

Looking at these figures, it is clear that there has

Fiscal Year	1-Bedroom	2-Bedroom
FY1999	\$496	\$623
FY2000	\$505	\$634
FY2001	\$523	\$656

Housing At What Cost?, Analysis of HUD Fair Market Rent data for Arizona, Washington DC., October, 1998.

¹ Maricopa County encompasses the Phoenix metropolitan area, which includes the City of Phoenix, Tempe, Glendale, and other surrounding communities.

been a steady increase in the fair market rent in the region. Construction of new apartment complexes has proceeded at a dizzying pace in the metropolitan region, largely to accommodate the influx of people flocking to the area to benefit from the economic boom. Yet, on a monthly SSA disability check of roughly \$550, affording one of these apartments is impossible. Overall, housing options for individuals with low incomes in Maricopa County are very limited in such a tight market.

Description of Study Housing

The two forms of housing that were evaluated are defined locally as Supported Housing (SH) and Supervised Independent Living (SIL). These two forms of housing and residential services are the primary options for persons with serious mental illness in Maricopa County². The table below describes each in more detail.

Supervised Independent Living (SIL)	SIL services are offered as a “bundled service”, that is to say that provider agencies are contracted by the RBHA to provide both housing and treatment services. Typically, SIL programs are located within large apartment complexes or condominium complexes wherein a small number (4-8) of apartment/condominiums are leased by a provider agency with residents sharing an apartment with at least one other resident and one apartment designated as the staff office. In this type of service program, no overnight or weekend staff supervision is provided but staff is available either 8 or 12 hours a day, generally during normal business hours. As such, individuals being served in the SIL program need to be fairly independent and require less than 24-hour supervision. Each provider’s contract specifies whether staff supervision will be available eight or 12 hours a day at the program site. As might be expected, the 12-hour placements are reserved for those clients whose needs fall between 8-hour and 24-hour supervision. It is generally accepted that the mission of most SIL programs is to provide individuals with skills training and support to address identified behavioral deficits and barriers to more independent living. As such, SIL services are viewed as a transitional living option for individuals. SIL represents then one step in a residential continuum available that includes more restrictive residential options such as psychiatric hospitalization and 24-hour supervised residential placements along with less restrictive housing options including supported housing and independent living. Utilizing a state-mandated services matrix, individuals are provided a combination of room and board, along with a “menu” of treatment services, which may include social recreation, behavior management, psychosocial rehabilitation, individual counseling, family counseling, group counseling, and psychotropic medication injections. In this bundled contract arrangement, SIL providers agree to provide all necessary services within the bundle, at a flat negotiated rate, irrespective of the intensity of service provision.
Supported Housing (SH)	SH is viewed as a permanent housing placement for individuals with serious mental illness who require a minimal amount of staff supervision and support. These services are provided locally by three agencies. One agency provides housing assistance only, the other two supported housing programs are provided by agencies with more comprehensive behavioral health services portfolios, including SIL, day programs, and other therapeutic and rehabilitation services. Due to the limitations in data accessibility encountered by these two agencies we dropped them from consideration in this evaluation. As such, these analyses are based upon information provided by only one of the three supported housing agencies participating in the CMHS housing outcomes multi-site study. Within the Phoenix community, supported housing services are configured as tenant-based rental assistance programs, funded through HUD shelter-plus-care grants. As such, the supported housing programs provide basic tenant assistance in terms of assisting individuals in identifying rental units within the community, assistance with utility reimbursement program applications, and providing residents with a basic “move-in package”. These services are provided through staff designated as

2 A third approach, “Supportive Communities”, provides 24-hour residential care. However, based on the results of the Phase I process study (Shafer, Stewart, & Arthur, 1999), Supportive Communities were not included in the CMHS-funded cross-site outcomes study. The two housing alternatives studied in this initiative represent the primary housing options for persons with serious mental illness.

“Occupancy Specialists” who, while providing housing specific-forms of case management services, do not provide more intensive assistance, support or skill instruction. These services, when needed, are authorized by the resident’s RBHA case manager and purchased from a treatment provider agency, distinct from the housing provider.

The goal of the outcomes evaluation was to compare the outcomes for these two housing options (specific *hypotheses are presented in a later section*).

Referral Mechanisms. Referral to either SH or an SIL setting is a decision made jointly by the consumer and a clinical team led by the client’s RBHA case manager. After a client is determined to be in need of housing, a staffing is scheduled in which the clinical team, composed of the client’s case manager, other case managers on the team, the team leader, psychiatrist, and psychiatric nurse, discuss with the client what housing options are available and explore what the best “fit” would be for that individual. The client has final say in determining his or her own living condition, however, an assessment of the client’s level of functioning and court-ordered treatment may be deciding factors in referring a client to a more closely supervised housing option as opposed to more independent living. Informally, case managers and other staff involved in housing decision-making have indicated that, from their perspective, the client’s level of functioning and substance use are key factors in this process.

Systems Changes During the Study. Behavioral health services are organized in the state of Arizona through five Regional Behavioral Health Authorities (RBHAs). These RBHAs are private agencies that are contracted by the state of Arizona to organize all behavioral health services (including substance abuse and general mental health, prevention, children’s mental health, and services to persons with serious mental illness) within a defined geographic region. RBHAs are contracted by the Arizona Department of Health Services (ADHS), which manages the state’s mental health block grants in conjunction with the state-designated Medicaid agency (Arizona Health Care Cost Containment System, AHCCCS). During the course of this study, there was a change in the RBHA serving the Maricopa County area as ValueOptions, Inc., was awarded the Maricopa County contract following the departure of ComCare, Inc. ValueOptions, a nationwide managed mental health care corporation, assumed the contract in September 1998 and took over day-to-day operations in February 1999. This changeover was accompanied by a number of modifications in the system including changes in referral mechanisms and procedures, level of care criteria, and continuing stay criteria. One of the most significant changes impacting this study was that ValueOptions could no longer administer the HUD shelter-plus-care vouchers and thus a new entity known as ABC, Inc., was created to administer them. Services continued to be provided to all RBHA clients during this period, but the modifications due to a new provider had understandable impacts throughout the system.

ValueOptions provides case management, medications and medication management, and contracts with other community-based agencies for all other services including individual or group therapy, day treatment, and psychosocial rehabilitation, and other community supports. In all, over 110 agencies and clinician networks operate through contracts with ValueOptions, Inc. These community-based agencies provide a full range of mental health and community support services to both adults and children. ValueOptions serves more than 13,000 persons meeting the state’s criteria for serious mental illness (SMI) and operates five area offices and more than twenty-two service delivery sites or clinics.

Changes in Study Design

This study, as originally proposed, was a randomized study design with a total projected enrollment of 300 participants. Unfortunately, within the first 6 months, two issues became apparent: (1) the numbers from the Phase I study used to project the sample size were inflated due to systems-level changes beyond the control of the investigators, and (2) randomization, despite the high level of commitment evidenced during Phase I, was going to fail. Of these two issues, the failure of randomization was the most problematic. Concerns about the ethics of randomizing consumers to waitlists (averaging 3-4 months for placement) and the cost of providing SIL services to individuals who were capable of living in less restrictive settings quickly emerged. Research staff from the University of Arizona worked closely with ValueOptions to develop randomization procedures that would satisfy the needs of all involved parties, repeatedly revising randomization procedures to maximize the number of potential study recruits. When it became abundantly clear that randomization alone would not suffice, we shifted to a non-randomized design and began interviewing individuals who had already been placed into housing. We continued this parallel track with both randomized and non-randomized inductions until May 2000. By that time, it was clear that even extraordinary efforts at randomization were failing because once randomized, many study participants would refuse their original study condition. This was particularly the case with individuals randomized to the SIL condition; when they realized they were going to be living with a roommate in a supervised setting, many opted to forego the placement. This differential attrition guaranteed that the randomization process would not hold. All in all, less than 30 people were randomized. At that point, we moved to change the study design to a completely quasi-experimental approach and thereafter obtained consent only from people once they had moved into the housing of their choice.

All interviews were conducted following the protocol set by the Coordinating Center. Participants completed a baseline interview within 2 weeks of moving into housing and did follow-up interviews at 3-, 6-, and 12-month intervals. Interviews were usually conducted at the participant's ValueOptions clinic site or the participant's home. The next section summarizes the number of interviews completed for each wave of data collection.

Completed Surveys & Attrition

The number of interviews completed for each follow-up point are summarized in the table below. Note that the 18-month follow-up point was added after the study had begun so we were not able to complete it with all study participants. Note that some participants who did not complete a 6- or 12-month interview on time did complete the next scheduled interview.

Interview	Number SH (%)	Number SIL (%)	Total Number (%)
Baseline	139 (100%)	46 (100%)	185 (100%)
3-month	112 (81%)	32 (70%)	144 (78%)
6-month	121 (87%)	39 (85%)	160 (87%)
12-month	117 (84%)	35 (76%)	152 (82%)
18-month	97 (70%)	23 (50%)	121 (65%)

A total of 26 participants (14% of the entire sample) had left the study prior to the 12-month interview point and were lost to follow-up. More participants were lost to follow-up in the SIL condition than the SH, 21.7% compared to 11.5%, but this difference was not statistically significant ($\chi^2 = 2.994$, $df = 1$, $p = .084$). A logistic regression was conducted to see what study participant characteristics predicted study dropout and only one variable of the 13 variables tested was significant: Participants who had been in jail during the 12 months prior to the baseline interview were more likely to leave the study before the 12-month follow-up interview ($B = 1.603$, $p = .001$). Those who had been in jail had a 400% increase in their risk of dropping out.

Description of Study Sample

The following eligibility criteria were used at the Arizona site:

- Enrollment for services with the local RBHA, implying that the individual had been determined to meet the state's criteria for serious mental illness, determined by
 1. A diagnosis of schizophrenia, schizoaffective disorder, bipolar I disorder, or major depression (comorbid Axis II diagnoses of personality disorder were permitted)
 2. Level of functioning that indicated serious impairment in the ability to conduct daily life activities.
- Age 18 years or older.
- Not residing within either an SH or an SIL placement for the 3 months immediately preceding their application for housing.
- Individuals had to be determined by their clinical team as not requiring a level of service typified by 24-hour residential services. Individuals deemed to be in need of a more intensive level of support or supervision than is generally available in either of these housing programs were not eligible for this study, and typically entered a 24-hour Supportive Community program.
- Individuals had to meet the HUD definition of "homeless" as specified in CFR 24.583. The homeless definition was imposed as an inclusion criterion due to the restrictiveness of the funding base for our SH programs. Individuals who did not meet this homeless definition were still considered for residential placement, but were not considered for study participation.

The table on the following page presents descriptive statistics for the sample, broken down by treatment condition. Given the quasi-experimental approach we adopted, there were a few significant differences between conditions at the time of the baseline. There were also other differences that are probably due to real differences between the two conditions. For example, a higher percentage of those in residing in SILs reported having received day treatment and outpatient substance abuse treatment in the 2 weeks prior to baseline. Services such as these are part of the service package at many SILs and reflect a true difference in the housing types. Interestingly, many of the variables such as age, SSI/SSDI reciprocity status, educational levels, health, BASIS-32 scores (Eisen, Dill, & Grob, 1994), and age of first episode of homelessness, are remarkably comparable.

Baseline Characteristics of Study Sample.

Variable	Supervised Independent Living (N=46)	Supported Housing (N=139)
Demographics		
% Female	28.3%	43.9%
Age Mean (S.D.)	38.12 (9.93)	39.46 (9.03)
Race (Multiple responses permitted)		
% Hispanic	13.0%	15.8%
% Asian	0.0%	0.7%
% White	78.3%	67.6%
% Native American	0.0%	4.3%
% Black	10.9%	15.5%
% Mixed race	10.9%	12.2%
% Children Under 18	31.1%	37.1%
Education		
% < HS/GED	19.6%	26.6%
% = HS/GED	43.5%	32.4%
% > HS/GED	37.0%	41.0%
% Working for Pay	6.5%	8.6%
% Either SSI or SSDI	73.9%	71.2%
Housing (prior 12 months)		
Days Stably Housed	117.26 (118.85)	109.31 (105.51)
Days Homeless	89.21 (102.48)	130.19 (112.66)
Days in Treatment Facility ¹	39.93 (52.71)	17.33 (33.76)
Days in Jail/prison ¹	39.87 (78.03)	13.69 (38.72)
Health and Functioning		
Perceived Health Status		
% Excellent	15.2%	8.6%
% Very Good	17.4%	17.3%
% Good	41.3%	31.7%
% Fair	15.2%	24.5%
% Poor	10.9%	18.0%
Basis-32		
Overall Score	1.16 (0.74)	1.15 (0.79)
Relation to self/others	1.45 (1.01)	1.38 (1.02)

Depression/anxiety	1.48 (0.93)	1.51 (1.05)
Daily living/role functioning	1.42 (0.96)	1.36 (0.99)
Impulsive/addictive behavior	0.52 (0.60)	0.55 (0.65)
Psychosis	0.70 (0.83)	0.78 (0.87)
Disability Measures		
% Taking Rx for MH	95.7%	94.2%
% Unable to Work	63.0%	66.9%
Lifetime Hospitalizations	8.14 (8.32)	7.14 (9.79)
Age at 1 st Contact with MHS	22.58 (10.23)	21.72 (9.69)
% Day Treatment (past 2 weeks) ¹	39.1%	10.1%
% Outpatient SA (past 2 weeks) ¹	23.9%	10.8%

¹ The figures are significantly higher for persons living in SILs than in SH, $p < .05$ in all cases.

² Marginally significant difference at $p = .06$.

Propensity Scoring & Quasi-Experimental Design

The shift from a randomized to a quasi-experimental design required a shift in analytic procedures because the treatment and comparison groups cannot be assumed to be equivalent (randomization ensures that all groups are equal on both known and unknown variables). The Arizona site adopted propensity scoring to correct for the nonequivalence of groups.

Propensity scoring calculates the probability of being in one treatment versus another (in this case the probability of being in SH versus SIL) using several variables as predictors. In short, the technique works by using logistic regression to predict membership in the treatment group using a list of predictor variables. The resulting regression equation is used to calculate the probabilities, which are in turn rank ordered and divided into groups, called strata. In Rosenbaum and Rubin’s (1983, 1984; Rubin, 1996) explication of this approach, five groups, or quintiles, are typically used. However, in our study, the small sample size made the use of quintiles difficult because some cases would end up with only a handful of cases so we used three groups. Each case then receives a dummy code for strata membership that reflects their relative probability of receiving one treatment versus another. For example, the cases can be arranged so that those in stratum 1 are those who are less likely to get into SH, regardless of what treatment they actually received.

At our site, we took an empirical approach to constructing our propensity model and tested the fit of several different models. Fit was determined by examining three primary criteria: (1) the consistency among models in terms of what variables were significantly predicting group membership; (2) overlap in propensity scores between the two treatment groups (greater overlap is desirable); and (3) breakdown between the groups in the numbers of cases in each strata. The final model that emerged from these efforts is shown in the accompanying table.

Variables Included in Final Propensity Model
<ul style="list-style-type: none"> • Total amount of time homeless in past 5 years^a • Gender • Number of visits to emergency room in 6 months prior to baseline • Number of days in psychiatric unit in 12 months prior to baseline^a • Number of days in crisis unit in 12 months prior to baseline^a • Number of days in a homeless shelter in 12 months prior to baseline^a • Number of days in jail or prison in 12 months prior to baseline

^a Significantly different at baseline at $p < .05$.

This list of variables includes those that were significant predictors in the logistic regression propensity scoring models, as well as others that were known to be significantly different between the two groups at baseline and therefore important ones to include when trying to correct for differences between the two groups. This final model was used to calculate the probability of being in SH for each participant. These probabilities then were rank ordered and coded into three strata (see explanation above). The dummy coded strata were used to correct the outcome analyses for the nonequivalence of groups, typically by entering the dummy coded variable for strata into the outcome model as a predictor variable.

Preliminary Outcomes: Intent-to-Treat Analyses

In general, we had hypothesized that residents in SH would have better outcomes than those residing in the SILs. Most of the primary outcomes studied here match those from the cross-site level and are listed in the table below.

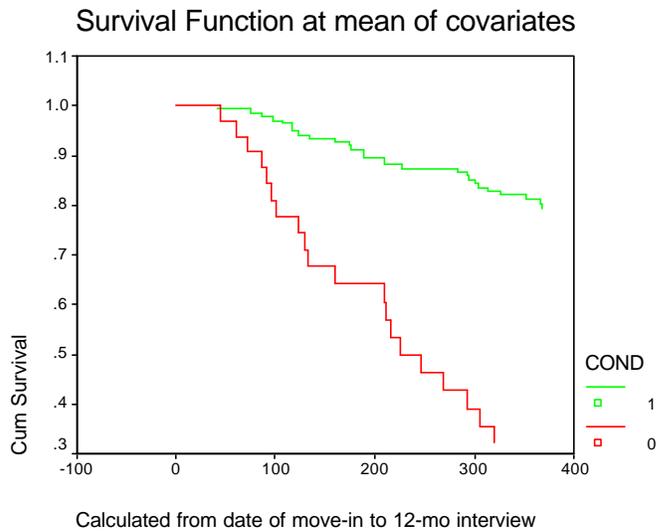
Several of our key outcome variables such as tenure in original housing condition were constructed from data in the Residential History Follow-back (New Hampshire-Dartmouth Psychiatric Research Center, 1995) completed at each follow-up interview and problems were encountered with these data (e.g., double counting days housed when interview time periods overlapped). All data were cleaned on a case-by-case basis and with the exception of 10 cases, research staff were able to resolve the problems; the most problematic 10 cases were referred to the

Primary Outcomes
<ul style="list-style-type: none"> • Tenure in original housing condition^a • Days stably housed^a • Days homeless^a • Residential stability – moves^a • Critical incidents such as hospitalization, contact with criminal justice system, and use of ER/crisis facilities • Isolation • Functioning • Quality of life • Empowerment • Housing satisfaction
^a Calculated from Residential History Follow-back Calendar

Coordinating Center staff for guidance and were resolved based on feedback from them. The analyses in this report use all the cases for Arizona, which include five cases not in the cross-site dataset. The following sections address the preliminary findings at this site, focusing on intent-to-treatment analyses due to space considerations. Additional analyses (e.g., efficacy analyses on separate subgroups) are underway and will be included in future reports to the project officer.

Days in original housing condition. Using the residential follow-back calendar data, the duration in original housing condition, that is, the housing condition in which the respondent lived at the time of the baseline, was calculated. This outcome variable is useful in examining whether how long participants stayed in their original placement varied by condition (i.e., SH versus SIL). A survival analysis (Cox proportional hazards) was conducted using condition as a predictor, along with a number of moderating variables that we have agreed to enter into all models in the

cross-site analyses: age, gender, proportion of life using alcohol, proportion of life in contact with the mental health system, physical health, whether or not had high school education (scored dichotomously), and one other variable we wanted to test at our site, the proportion of life using drugs. The variable dummy coded to represent the strata was also entered included in the model. Of these variables, only housing condition was a significant predictor of survival in original housing. This analysis revealed that the risk of moving out of the original housing increases 400% for those who resided in an SIL at the time of the baseline. The average length of stay in original housing for a resident in SH was 350.48 days ($SD = 92.41$) compared to 237.73 ($SD = 133.92$) for SIL. In short, those who were in SH stayed in their original placement 113 days longer on average, which is a difference of nearly 4 months. The figure below depicts the difference in survival for the two groups. The upper line (shown in gray tones) represents the survival function for those in SH and the lower line (in black) is the survival function for those in SIL; the shorter duration for those in SILs is indicated by the rapidly declining lower line.



Almost 60% of all study participants (58.9%) were still residing in their original housing condition at the 12-month follow-up point. The rest had moved to another type of housing (27%) or been lost to follow-up (14.1%). Of those in residing in SH at baseline, 69.1% were still there 12 months later; in contrast, only 28.3% of those in the SIL condition were still there at the 12-month follow-up. Stated another way, 50% of those in SIL at baseline had moved by the time of the 12-month interview compared to only 19% of those in SH.

Days Stably Housed. This outcome variable was created by summing across certain categories of housing types to create a “Stably Housed” outcome variable. In Arizona, the following categories were included in this variable:

- Own apartment or house with no on-site services
- Own apartment or house with on-site services
- Own room with shared bath or kitchen with no on-site services
- Other supervised living arrangement

Note that for our purposes, we chose to not count living with one’s parents as stably housed;

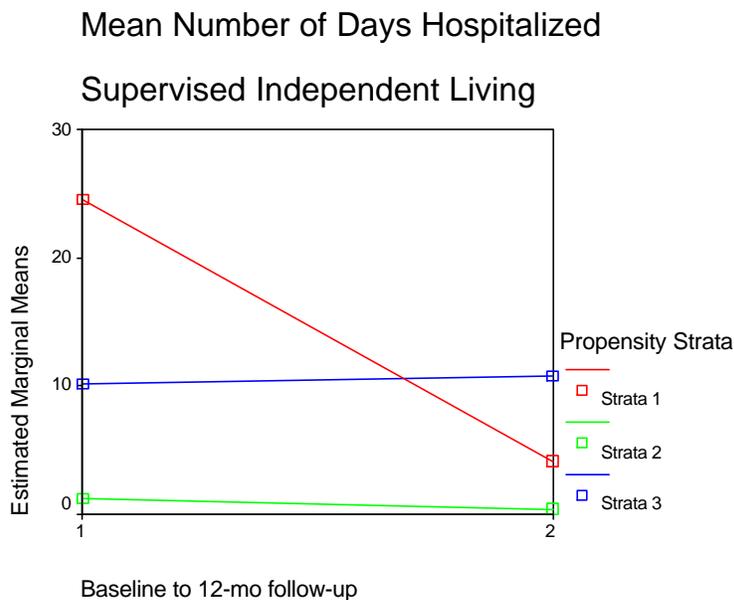
though this is in contrast to what some sites did, we felt that living with parents as an adult (likely aging parents given the mean age of our sample) did not constitute being stably housed. This analysis was complicated by the fact including those who did not move out of their original housing conditions (roughly 60% of the sample) can be considered “outliers” and attempts to use linear regression to predict the number of days stably housed were not successful due to distributional problems with the error residuals (i.e., they were not normally distributed). Various transformations of this outcome variable were tried but none adequately corrected the problem. However, dropping the group of people who did not leave their housing condition during the study from the analysis corrected this problem and allowed us to see what predicts differences in the number of days stably housed between the two groups, focusing on the subgroup that did leave their original housing condition. The same set of variables was tested as with the survival analysis summarized earlier; there were no significant predictors. Thus, condition is not a significant predictor of the number of days stably housed for those who leave their original placement: there were no significant differences in the total number of days those who moved from their original SH condition were stably housed ($M = 248.00$, $SD = 102.25$) compared to participants who left their SIL condition ($M = 268.65$, $SD = 104.63$).

Days Homeless. The total number of days homeless includes days spent on the streets or other place not meant for human habitation, and days spent in homeless shelters; it does not include days doubled-up. This variable is highly skewed because 76% of those followed for 12 months did not report any days homeless and in fact, only 13.5% (12 people in SH and 13 in SIL) showed any days of homelessness (note that the remaining 10.3% were lost to follow-up). Attempts to transform the data to handle this skewness failed and we opted to do a 2-stage analysis as suggested by Chang and Pocock (2000). In this approach, a logistic regression is first used to predict whether or not homelessness occurred at all, and then a second analysis is conducted using linear regression to look only at those cases that reported having been homeless. The logistic regression revealed that housing condition is a significant predictor of whether or not someone becomes homeless: those in SH show an 88% decrease in the risk of becoming homeless ($p = .000$). The average number of days homeless was 31.31 ($SD = 36.52$) for SIL and 24.00 ($SD = 39.84$) for SH, but this difference was not statistically significant and the linear regression predicting the number of days homeless for those with at least one day of homelessness had no significant predictors. Despite this, there was a significant difference in the number of individuals who became homeless during the 12-month follow-up period, with a smaller percentage of those in SH (9.5%) becoming homeless compared to SIL (32.5%), $\chi^2(1, N = 166) = 12.53$, $p = .000$. In the year prior to the baseline interview, 80.4% and 87.8% of those in SIL and SH, respectively, reported at least one day of homelessness (defined as above). Thus, the number of respondents who report homelessness in the 12-month follow-up period drops drastically for both groups, but the decline is even greater for those in SH. However, the average number of days spent homeless (e.g., living on the streets) does not differ between groups.

Residential Stability. The number of moves reported on the Residential Follow-back calendar was used as the primary indicator of residential stability. The average number of moves reported by those in SH was 2.51 ($SD = 3.23$), compared to 5.68 ($SD = 5.68$) for SIL participants. Housing condition was a significant predictor of the number of moves in the 12-month follow-up period, $F(1, 110) = 19.14$, $p = .000$, but there were no differences by age, gender, health status, education level, proportion of life using drugs/alcohol, or proportion of life in contact with mental health system.

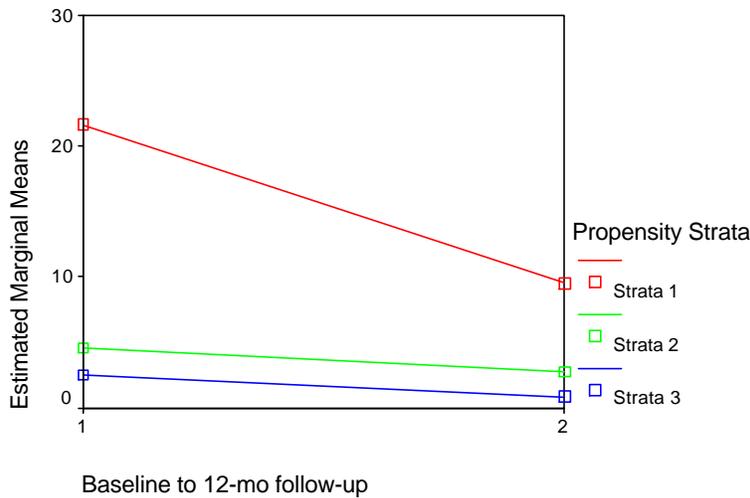
Hospitalizations. This variable, like days homeless, is highly skewed; 65.4% of the sample had no hospitalizations during the 12-month follow-up so the 2-stage analysis that was used with days homeless was applied here as well. There was a significant difference in the number of people hospitalized between the two conditions: 37.5% of those residing in an SIL at baseline had been hospitalized at least once prior to the 12-month interview compared to 19.8% of those in SH, $\chi^2(1, N = 166) = 5.176, df = 1, p = .023$. Yet, the logistic regression including the same moderators used previously (age, gender, proportion of life using drugs, proportion of life using alcohol, education level, overall health rating, and proportion of life in contact with mental health system and the propensity scoring correction) revealed that condition is not a significant predictor of whether someone was hospitalized during the 12-month follow-up period of the study. That is, after correcting for baseline differences that existed between the groups (using propensity score strata) and for other moderators, the effects of housing condition are not significant. In fact, there were no significant predictors in that model.

To examine change over time in the number of days hospitalized, a GLM with repeated measures analysis was conducted. This analysis revealed that there was a significant decline in the mean number of days hospitalized from baseline to 12-month follow-up, $F(1, 155) = 9.47, p = .003$, but this did not differ by condition. The propensity score strata were included in the model and there was a significant strata by time interaction, indicating that the decline in hospitalizations over time differed by strata, $F(2, 155) = 5.24, p = .006$. Post hoc tests showed that the decline is limited to Stratum 1, those least likely to reside in SH; those in Stratum 2 and 3 show no significant decrease. The figures below illustrate this (note that the marginal means, i.e., means corrected for other covariates in the model, are shown in the figure). The left-hand portion of the graph indicates the mean of the number of days hospitalized in the previous 12 months and the right-hand side shows the mean for the 12-month follow-up period. In both groups, the line for Strata 1 (those with the lowest likelihood of residing in SH) shows a marked decline whereas the other two groups show little change.



Mean Number of Days Hospitalized

Supported Housing



Thus, it appears that over time, regardless of housing type, the average number of days hospitalized is reduced, but only for those in Stratum 1 who were least likely to have resided in SH. It is important to note that this group was characterized by a higher mean number of hospitalizations at baseline. The table below presents the marginal means for each group, broken out by strata.

Means of days hospitalized.

		Baseline	12-mo point
SIL	Stratum 1	24.54	4.08
	Stratum 2	1.17	.33
	Stratum 3	10.17	10.83
SH	Stratum 1	21.63	9.47
	Stratum 2	4.64	2.80
	Stratum 3	2.62	.86

Involvement with the Criminal Justice System. At the time of the baseline interview, 28.1% of the entire sample reported having spent at least one day in jail in the preceding 12 months. During the 12-month follow-up period, the figure dropped to 14.1% of those still being followed (bear in mind, however, that 10.3% have missing data at the 12-month follow-up point). The average length of stay in jail for those incarcerated also decreased from 71.87 ($SD = 78.16$) to 56.31 ($SD = 63.69$) days. However, there was no significant difference between the two housing conditions in the number of respondents who reported having been in jail during the 12-month follow-up period. A GLM with repeated measures revealed that there was a significant decrease over time in the average number of days spent in jail, $F(1, 155) = 5.69, p = .018$, but no effect for

housing condition. There was a significant interaction between time and strata, $F(2, 155) = 3.45, p = .034$. Once again, only those in Stratum 1 showed a significant decline in the number of days spent in jail from 46.85 ($SD = 76.29$) to 20.87 ($SD = 50.45$) days.

Use of Emergency Room (ER) and Crisis Services. Both of these variables are a self-reported count of the number of times the participant used the service. Due to the low frequencies on these two variables, they were combined (summed) to create a new composite variable. Most values still cluster at zero at all time points making this variable also highly skewed, but by computing a log transformation of this variable and dropping one outlier case (a case with 78 ER and crisis visits total), it was possible to conduct a linear regression to predict the number of ER and crisis visits during the 12-month follow-up period. The same predictors as in the previous analyses were used and although condition was not a significant predictor, gender, proportion of life using alcohol, and proportion of life in contact with the mental health system were significant. Being female and having spent a greater proportion of their lives using alcohol and accessing mental health services were associated with using ER and crisis services more often. There were no significant differences between the SH and SIL conditions in the number of people who used these services during the 12-month follow-up period, $\chi^2(1, N = 143) = .71, p = .399$.

Isolation. Isolation was examined by looking at two self-report variables: the 4-item UCLA loneliness scale (Russell, Peplau, & Cutrona, 1980) and number of hours spent in the apartment every day. A GLM repeated measures analysis of the UCLA loneliness scale did not detect any change across time or by condition, $F(2, 274) = .785, p = .457$, after correcting for propensity scores. There were also no differences between the two conditions over time in the number of hours respondents reported spending in their apartments per day, $F(2, 270) = .750, p = .473$. Across both groups, residents reported spending roughly 5 hours a day in their apartment between 9:00 a.m. and 5:00 p.m.

Health & Functioning. Three indicators of health and functioning were measured in this study. The first indicator was productivity, defined as engaged in working for pay, volunteering, or attending school. Each of these productive activities was examined separately. Fewer than 10% of the sample reported working for pay at any of the time points. There were no significant differences between the two groups in the number of people working for pay, though SH generally averaged 1-2% higher rates of employment at all time points. Across the sample, nearly all of these jobs were part-time or occasional labor; less than 5% of the sample held full-time jobs at baseline and by the 12-month interview this number had dropped to 1.6%. On average, those residing in SH who were working made more money than those in SILs who worked, but this difference was not statistically different, due largely to the great variability in the amounts earned. Nearly twice as many people were volunteering as working. At baseline about 13% of those interviewed reported they were engaged in some sort of volunteer activity and this dropped to 9% by the time of the 12-month. At all time points, more of those in SH were volunteering, but these differences were not statistically significant. At baseline, 5.4% of those interviewed said they were attending school or receiving vocational training. This rose to 10.6% by the 6-month point and 11.8% at the 12-month interview, but there were no significant differences by group.

The second indicator, physical health, was measured with one general health item from the SF-12 (Short Form Health Survey; Ware, Kosinski, & Keller, 1996). There were no differences between conditions over time on this outcome, $F(2, 274) = .085, p = .918$ (note that these analyses did not include the age, education, drug, alcohol, and mental health variables as covariates as the

ones reported earlier in this report did).

Finally, the third indicator of health and functioning was calculated using the BASIS-32 (Eisen et al., 1994), both the overall score and subscales. There was a marginally significant effect for time on the overall BASIS-32 score, $F(2, 276) = 3.052, p = .049$, but no difference between groups over time, $F(2, 276) = 1.082, p = .340$. Thus, there appears to be a decrease over time in the average overall score (lower scores indicate improved functioning on this scale), but this does not differ by condition. It should be noted that the decrease is marginally significant, and not likely of clinical significance because it represents a decrease in the marginal mean from 1.18 at baseline to 1.10 at the time of the 12-month follow-up.

This same pattern of general decrease over time, but no difference by condition was also found for the Relationships and Depression subscales of the BASIS-32. No change was found on the Life Skills, Impulsivity, and Psychoticism subscales.

Quality of Life. Changes in the self-reported quality of life were measured with only one item, the general quality of life item from the Lehman Quality of Life Interview (Lehman, 1988). A GLM for repeated measures revealed no significant differences between groups over time.

Empowerment. Twenty-eight items comprise the Empowerment Scale (Rogers, Chamberlin, Ellison, & Crean, 1997). A GLM for repeated measures detected no change over time in the means of this scale, $F(2, 274) = .429, p = .651$, or differences between conditions over time, $F(2, 274) = .090, p = .914$.

Housing Satisfaction. Housing satisfaction was measured with a 19-item scale specially developed for the Housing Initiative (overall housing satisfaction is calculated by taking a mean of the 19 items). At the time of the baseline interview, there was a significant difference between the two housing conditions. Those in SH ($M = 3.99, SD = .55$) reported a higher level of satisfaction with their housing than those in SIL ($M = 3.75, SD = .61$), $t(183) = 2.538, p = .012$ (two-tailed). However, there were no significant differences in housing satisfaction between the two conditions over the time period between the 6- and 12-month interviews once the baseline differences were controlled (i.e., with the baseline score covaried out), $F(1, 121) = .173, p = .678$.

Discussion of Preliminary Findings

These preliminary findings found that those residing in SH stayed longer in their original placement; in fact, fully 69% were still in that housing type at the time of the 12-month interview (though some did move from one apartment to another) and on average stayed nearly 4 months longer than those in SILs. Partly due to the longevity in their original housing condition, residents in SH were less likely to experience an episode of homelessness in the 12-month follow-up period. There were no differences in the total amount of time stably housed between the two conditions, but those in SILs did move at a significantly higher rate. Psychiatric hospitalizations did decline significantly over time for those in Stratum 1 (least likely to be in SH), but this decline was equal across both conditions. It may be that placing these individuals in housing of any type reduces hospitalizations equally. There was no decline for those in Strata 2 or Strata 3, which again, may indicate that housing has its greatest effect for those who had frequent hospitalizations, or it may be that we are seeing a regression to the mean given that these individuals also had a higher average number of hospitalizations at baseline. There was a similar pattern for serving time in jail: only residents in Stratum 1 showed a significant decline from baseline to follow-up. There were no differences between conditions in the number of residents who used ER or crisis services,

or the average number of times they used them. However, women and those with greater proportion of their lives using alcohol and accessing mental health services used ER and crisis services more often. Several outcomes such as isolation, productivity, health, and functioning showed no differences over time between the two groups. Psychiatric distress, as measured by the subscales of the BASIS-32, also did not vary by housing condition, though some subscales showed a tendency to decrease over time, indicating improved functioning. Housing satisfaction is significantly higher for those in SH at baseline, but this difference does not appear to persist over time; this difference may represent the initial “bump” in housing satisfaction due to differences in the way the two groups perceive their housing choice, which dissipates over time. The results of these intent-to-treat analyses indicate that residents in both housing conditions are faring about the same, no one condition is clearly superior to the other, although those in SH stay housed significantly longer in their original condition and are less likely to re-experience homelessness in the year following their move-in.

In the next phase of analysis, we will conduct subgroup analyses to determine if there are groups of participants for whom housing worked particularly well, or for whom one housing type was clearly superior. These results will be forwarded to the project officer as they become available.

II. Environmental & Contextual Factors – Geographic Information System

*Section Prepared by Alvin Mushkatel, Ph.D.
Arizona State University*

Overview

This site-specific research component examined the impact of contextual and environmental factors on resident outcomes by using a geographic information system (Arc Info and Arch Mapping) to first identify the geographic location in Phoenix of housing where they lived, and then to relate this location to a variety of contextual factors in the neighborhood. This analysis was limited to the City of Phoenix proper, not the larger metropolitan area that encompasses surrounding cities (to make this distinction clear, City is capitalized). It was hypothesized that the different housing/neighborhood/community conditions would affect housing and other outcomes. That is, consumers placed in a variety of residential settings encounter different environments (housing condition of neighboring units, crime rates in their area, variability in access to transportation, gang activity, etc) that affect an individual's ability to achieve desired outcomes regardless of which housing program in which they are placed. For example, housing, regardless of whether it is supported housing (SH) or supervised independent living (SIL), may vary systematically in terms of its location and the conditions of the neighborhood and surrounding environment. To the extent such variation exists, or that environmental conditions of surrounding areas are poor for both types of housing, these factors may impact the outcomes of consumers, independent of individual demographic characteristics, psychiatric status, diagnostic indicators, case worker support or other factors. Simply stated, what was hypothesized in this research was an interaction between housing, neighborhood/environmental conditions and outcome. The next section reports on the construction of the database that has several different elements and the remainder of this report reviews the activities implemented to collect and analyze the data necessary to evaluate the impact of environmental/contextual variables on resident outcomes, as well as the initial findings from the study.

Data Base Construction

The database required to permit testing of the major hypothesis has several different components. The strategy utilized was for each component of the database to support an independent piece of analysis, as well as being one of the supporting components in the site-specific research. For example, the collection of information on all other City of Phoenix assisted housing units, including its geographic location, the racial mixture of occupants, education, and gender of the head of household was necessary for two different reasons. First, the data permitted an independent or stand-alone investigation concerning the concentration of assisted housing in the City, that included SMI assisted housing, and the impact of voucher and certificate assisted housing programs that were designed to disperse the poor throughout the City. This analysis was completed and published in the *Urban Affairs Review* (please see attached copy). Second, these data also were essential to supporting the overall site-specific investigation into the impact of environmental conditions impact on consumer success in that they would be used as one of the factors to characterize the housing in consumers' neighborhoods (environmental/contextual variable).

Several other data sets needed to be collected or obtained and manipulated to be compatible with the GIS approach that was utilized. First, crime data were provided by the Phoenix Police Department that was then geographically recoded to be compatible with some of the demographic information from the census, as well as with the actual addresses that were used for the assisted and SMI housing components of the study. The crime data from 1997-1998 have been coded and supported an investigation into the relationship between consumers' perception of the safety of the area and safety as measured through actual reported crime reports. Second, a transportation data set was constructed consisting of both actual distance measures from bus routes (public transportation) as well as distance from freeways. Access to public transportation was thought to be particularly important for efforts at vocational rehabilitation and employment outcomes. It was hoped that this database would support an independent investigation of the relationship between access to public transportation and the intensity of use of voc rehab programs and their success. However, so few consumers were utilizing this service that this prong of the analysis was dropped.

The specific data sets underlying this site-specific research project consisted of the following:

- Data on all assisted housing programs in the City of Phoenix (geographic location and other data for each unit);
- Crime report data that had been reconfigured and geo coded to match census tracts and GIS (arc info and map) configurations that permitted a safety characterization of the location of SMI housing;
- Census data that is still being updated in the hope of utilizing 2000 tract data;
- Individual consumer baseline interview data from the cross-site interviews, and in some cases follow-up interviews from the three and six month interviews.

The integration of the environmental and contextual data sets with the individual interview data has been most difficult and is reported on below. The next section reviews the major findings from the study prior to the analysis using individual interviews.

Environmental/Contextual Analysis

All assisted housing in Phoenix tends to be concentrated (Mushkatel, 2000). While not as concentrated as traditional or conventional public housing, voucher and certificate housing programs are also concentrated in certain areas of the City. In addition, these areas of concentration tend to be among the poorest areas of the City with high crime rates and where minority population tends to be overly represented. Interestingly, the shelter plus care supported housing is not as concentrated in these types of areas as the other assisted housing programs using vouchers and certificates. While the analysis did not contain data for SH and SIL housing for the suburban cities of Mesa, Tempe, and Glendale, when just the City of Phoenix is examined, several facts emerge. First, while much of the SH is located in central part of the City, a large number of SIL apartments are located in the central to northern area of the City. Neither program is concentrated in the poorest and highest minority sections of the City, which are situated in the southern portion of the city; in fact, there is one census tract area with a concentration of SH in south Phoenix, but none of the SIL units are in this portion of the City. Of the 10 tracts with SH concentrations in the City, 6 are in the central area in close proximity to each other.

Notably, the tracts where both SIL and SH housing units differ in important ways from the tracts where section 8 and other city-administered programs are concentrated. While such tracts are very much like the tracts where city-administered assisted housing exist on variables such as unemployment rates, percentage of college educated, percentage of senior citizens and children, they are very different in two important ways. First, areas with higher concentrations of SH and SIL housing contain lower levels of aggregate minorities than do the tracts with concentrations of assisted housing. Second, in the SH and

SIL concentrated housing tracts, the median income is 78% of the City's median income, which is higher than the 70% found in tracts characterized by concentrations of Section 8 and City-administered housing. Hence, tracts with concentrations of housing serving the SMI population have fewer minorities in them than either the City as a whole or other assisted housing concentration tracts, but have lower median incomes than the City as a whole with only 78% of the median income.

The tracts where SH and SIL housing are located tend to have higher vacancy rates and fewer single-family units than the average City tract, which is to be expected given that these tracts are in more marginal areas. The median rents are also lower in these tracts, and there are fewer new housing units in them than in the City as a whole. In short, the mental health consumers receiving housing through these programs tend to live in older portions of the City where rents are lower. Not surprisingly, when compared to the City as a whole these areas tend to have higher crime rates. Perhaps most important for the analysis of the housing location of SH and SIL housing is the finding that different providers of assisted/subsidized housing in Phoenix are locating their consumers in areas already compromised by high concentrations of the urban poor. Thus, while these programs operate independently, the collective outcome is to concentrate the urban poor.

In another forthcoming article (due to be published in the *Urban Affairs Review* in March of 2002; preprint attached), the impact of the presence of assisted housing units on housing quality was investigated. This research combined those programs using vouchers and/certificates and included the SH, SIL and section 8 housing data sets to attain a larger number of units to aid in the analysis. Using data available on housing condition at two points in time, an area's housing quality was characterized to estimate the impact of assisted housing units on overall neighborhood housing quality. Importantly, this research did not use housing prices as a surrogate measure for quality as much research does. A considerable amount of literature suggests that the presence of assisted and subsidized housing in an area results in neighborhood decline. Hence, in arguing against the housing of homeless SMIs and section 8 recipients it is often asserted that the presence of these will result in both a lowering of value and a decline of the area's housing.

While the focus of the study is mostly on the impact of section 8 housing (the number alone tends to overwhelm the number of SH units), given the similarities described above there is little reason to think the effects will differ for this subgroup. Using the same housing units surveyed in both 1980 and 1994, negative impacts on housing quality can be observed only within a one-half mile distance, and are most observable within a .25-mile distance. Yet, this impact becomes positive when controlling for the gender of the household head: Assisted housing units headed by females are associated with positive housing quality effects. Hence, it appears likely that any negative impacts on housing quality may be mitigated by the gender variable.

Impact of Environmental Factors Effects on Resident Outcomes

Several factors have complicated this portion of the analysis. First, change in the research design resulting in the abandonment of the experimental design and random assignment has resulted in the originally designed contextual analysis being inappropriate. Second, this portion of the site-specific research was not represented in the cross-site interview design decisions, and some potentially rich areas of crosswalks and analysis are not represented in the final baseline instrument. Third, the number of consumers taking part in the study is far below the number originally projected in the design stage of the study, and the number of moves has caused some major difficulties. As a result, the use of the contextual data could not go forward as planned on the smaller number of consumers participating in the study and still achieve a reasonable statistically valid result.

Despite all of these changes some analyses are still in progress to examine such factors as housing satisfaction (perceived quality) with housing quality in the area, perceived safety of the housing and neighborhood with actual crime rates in the area, use of public transportation and getting out and distance from a bus line, as well as the more complicated issues of health and functioning. Future results from these analyses will be shared with the Coordinating Center and federal project officers.

III. Support in the Retention of Housing – A Qualitative Study

*Section Prepared by Louisa Stark, Ph.D.
Arizona State University & Community Housing Partnership*

Overview

The following study was based on an examination of strategies utilized by formerly homeless persons with severe psychiatric disabilities to retain housing in Maricopa County, Arizona. Few studies have examined the transition from homelessness to housing (Elias 1990; Susser et al., 1997), and none have examined the adaptive strategies developed by mental health consumers to successfully retain housing. Ridgeway (1998) has proposed that the experience of homelessness itself, together with the adaptive strategies used to survive life on the streets, may be liabilities when attempting to establish stability in housing. However, in sharp contrast, our findings indicate that the social supports developed while living on the streets have an important and positive role in the retention of housing by formerly homeless persons with psychiatric disabilities. This report provides a description and analysis of these social supports and the role that they play in the retention of housing.

Study Procedure

Interviewing for this study began in May 1999 with new participants added through June 2000. A list of potential participants residing in SH was selected from lists provided by the ComCare housing office. Additional participants were recruited from an ad placed in the newsletter of HOM, Inc., an agency that manages SH housing. Finally, we contacted individuals from a list of participants who had been interviewed as part of the cross-site outcome study. All participants who participated in this qualitative study resided in SH.

Data Sources. Thirty-two men and women participated in the first phase of our data collection. This consisted of a semi-structured ethnographic interview that covered a variety of topics including daily activities, housing, homeless experiences, social supports, income, employment history, physical health, mental health and substance abuse. Eighteen individuals participated in a second semi-structured interview that took place 6 months after the first one, and was generally conducted in their home. The interviews focused on the respondents' problem-solving abilities. A third interview took place between 1-5 months after the second meeting. Carried out in the participants' homes, this third interview focused on their ideas concerning housing, home, possessions and homelessness.

In addition to the scheduled interviews, researchers engaged in participant-observation whenever invited to do so. This included home visits and phone conversations, participation in daily activities (including help with chores, transportation, moving etc. as well as meeting friends and family members), observing and interacting with mental health care managers, housing

providers, court hearings, landlords and neighbors, and helping to access emergency assistance such as food boxes and crisis care. We complemented our interviews and participation observation by preparing a detailed literature review and examining other materials ranging from newspaper articles to consumer literature, along with the personal documents that program participants shared with us.

Research Participants. Research participants consisted of 15 women and 17 men who ranged in age from 26 – 61 years, with an average age of 24. Twenty-one identified themselves as Caucasian, four as African American, two as Hispanic and four as Native American. Two of our participants had long-term partners; one was married to someone outside of the study. The other 29 participants were single (n = 16), divorced (n = 10), or separated (n = 3). Fifteen had children. Educationally, 12 participants were high school graduates or had earned a GED, 8 had attended some college, 6 were college graduates, and 2 had earned Master's Degrees. Only four had not finished high-school or its equivalent.

All participants were classified as seriously mentally ill by the Arizona Department of Health Services, Division of Behavioral Health and were receiving mental health services through the regional behavioral health authority, Value Options. Primary psychiatric diagnoses included bipolar disorder (n = 14), major depressive disorder (n = 9), and schizophrenia (n = 7). We were unsure of the diagnosis for the other two participants. Besides the three major diagnostic categories, in many cases there were co-occurring psychiatric diagnoses including obsessive-compulsive disorder, panic-anxiety disorder, borderline personality disorder, post-traumatic stress disorder, depression, homicidal tendencies, and Schizoaffective disorder. In addition, among the 20 participants that we knew best, nine used drugs and/or excessive alcohol during the course of the study. Five others had used drugs heavily in the past, but had been clean for 1-2 years.

All of the study participants had experienced homelessness. Eight reported having been homeless between 1-7 years, fourteen estimated that they had been homeless for between 6 months and 1 year, while eight had been homeless for less than 6 months. Most had stayed in shelters, in their car or on the streets, with brief respites at someone's house or a cheap hotel.

At the time of the study, our respondents lived in independent apartments that were located in complexes ranging from ten units to properties containing hundreds of units. Study participants paid rent on a sliding scale depending upon their income. This ranged anywhere from \$50.00 to \$230.00 a month. Although all apartments were located in low-income neighborhoods, they were quite variable as to amenities and maintenance. Many had swimming pools, laundry facilities, and game rooms. A few were dirty and in poor repair. At the time of the study, participants had been in the supported housing program for between 6 months and 6 ½ years. Living arrangements varied. Two participants lived together with the woman's 15-year-old daughter; another lived with her 20-year-old daughter. In each case they were housed in a two-bedroom apartment. The other 29 respondents lived alone. With the exception of one man who had a one-room studio type apartment, all were placed in a standard one-bedroom unit.

Data Analysis. Our analysis of the data took two different forms. The first began with the first interview and proceeded throughout the course of the research as we worked with our interview materials in order to develop a basic understanding of the participants' lives as lived. This analysis moved continuously back and forth between fieldwork, literature review, and examination of collected data. While there was no clear end point to this portion of the analysis, we judged that it had reached a conclusion when fewer and fewer changes were made to the research notes and our thinking had coalesced around particular patterns and interpretations.

After completing our transcription of the interviews, we reviewed them several times to develop an overall understanding of our participants’ experiences with supported housing, as well as to look for similar strategies within the group. We then developed a coding system of strategies used to maintain housing which was later compared with the literature on strategies used to cope with homelessness in order to look for similarities and differences.

Presentation. Our data are presented in two distinct and somewhat contrasting ways. On the one hand we present some materials in a traditional quantitative manner; in the other we focus on a “narrative ethnographic approach (Rose, 1996) in which our research participants speak directly to the reader of their experience, in contrast to a reliance on generalized interpretations by the authors. We believe that these two methods complement one another, thereby offering the reader a better understanding of the subject under discussion.

Findings on the Retention of Housing

Our research leads us to posit that social supports that are developed while homeless play a positive role in the retention of housing by formerly homeless individuals who suffer from a major mental disability. Our interpretation of social support is based on the definition by Shaefer, Coyle and Lazarus (1981) who delineate three distinct categories (refer to table below).

Emotional Support	Includes intimacy and attachment, reassurance and being able to confide and rely on another.
Tangible Support	Involves direct aid or services.
Informational Support	Includes giving information and support that can help a person solve a problem.

It is our belief that homeless people who are severely mentally ill develop a system of emotional, tangible and informational supports while homeless, which they later utilize to retain housing. Not all our respondents had learned to create all of the above support systems. However, they had each developed enough to be able to retain housing. Each of these is addressed in a separate section below.

Emotional Support. For homeless individuals, social resources may include friends, acquaintances and family members. The literature on homelessness is divided into two categories when it comes to analyzing the social connections maintained by homeless people. Quantitative studies frequently conclude that homeless people have a very limited number of social resources, whereas qualitative studies generally maintain that homeless people have substantial social networks which are often supportive in nature.

Forty-seven percent of our respondents reported having become homeless because of problems associated with family members or friends; an additional 18% abandoned their housing because of a domestic violence situation. Researchers report that the kinship bond often frays more readily in the case of individuals with mental disabilities “especially if the disabilities lead to disruption in the household or the community” (Tessler et al. 1992). Once homeless, few receive any kind of material support from their families. What little support generally comes in the form of non-monetary resources provided, usually sporadically, by friends. For example, 38% of our respondents reported some sort of assistance from a friend, which could entail a short stay, sleeping on a back porch, or setting up residence in a friend’s car. One respondent reported visiting friends daily to retrieve the insulin he kept in their refrigerator. Another participant, Joan,

described the support of a friend while she was homeless as follows:

“I had a friend named Sarah. She’s since moved. She was one of my friends over in Longmore. She let me come over and shower to go look for a job. At least I lucked out and had a place to shower. Most people don’t have a place to shower or a place to sleep. They have to sleep on the street. So at least I wasn’t totally homeless. I had the comfort of a car seat to sit on [in her own car] compared to the ground. And I could go over to Sarah’s and shower and eat and visit.”

Only one respondent reported a similar kind of assistance from a family member; his brother allowed him sleep in a closet in the back of his store. However, in spite of having little material support from their relatives, many remained in contact with their families. Even if these contacts were only sporadic, the importance related to even a small amount of social support provided some of the reassurance needed for survival while homeless.

Wolch and Dear (1993) point out that although homeless individuals may have networks that are “small, unstable and resource deficient, homeless people are rarely without any supportive relationships.” Koegel (1987) writes that among homeless people who are seriously mentally ill, relationships without any apparent direct contact have a strong supportive effect. A realization that social supports, whether real or fictive, are important in resolving life’s problems, whether on the streets or in an apartment, can play an important role in the retention of housing. It makes it easier to resume family relationships once one has housing. In turn, family members may provide emotional support that can help surmount those hurdles that may jeopardize the retention of housing. For example, after moving into housing, 85% of study participants reported being in touch with family members, with 75% stating that they had more contact after moving into housing than they had had while on the streets. However, just as with their relationships while on the streets, family members were more apt to provide emotional support (76%) than any kind of material assistance (financial, food, household, etc.). Friends, who were most apt to provide support while on the streets, remained an important part of our respondents’ emotional sustenance.

“The thing that’s really kept me going these last few years, that’s kept me in the programs, has been the support of my friends. That’s kept me in housing. ... And everyone’s so proud of me, my friends and everything. I don’t want to let them down. And if I need help I know where to go. And I’m afraid if I let all this go that I would be letting all these people down.”

“I talk to all my friends about my problems. I have a good support system.”

Our respondents also reported that, once in housing, they were able to provide social support, both emotional and tangible, to their friends. When asked who they were currently helping, 86% responded that they offered assistance to their friends, 14% to neighbors, and 0% to family members.

We may conclude that individuals build and maintain support systems, real or fictive, while homeless and that these constructs later assist them in the retention of housing. The ties that

they have maintained with their families provide much of the emotional stability needed to remain in housing. Support provided by friends, whether fictive or real, provides the often specialized support that can come from a peer who has undergone similar experiences. Finally, when housed, our respondents were able to offer social support to their friends, a role that was made possible by having residential stability which, in turn, made it possible to focus on the needs of others.

Tangible Support. Financially, the majority of our respondents supported themselves on SSI payments which amounted to \$525.00 per month. They paid 30% of this (roughly \$160.00) for rent which left them \$365.00 to cover all other expenses, including utilities, food, clothing, household furnishings, transportation and maybe, only occasionally, a meal in a restaurant or an evening at the movies. Many reported having to supplement their monthly check in order to maintain the most basic of lifestyles. Utilizing economic strategies that are often associated with a homeless lifestyle, they were able to augment their financial resources through the development of reciprocal relationships.

Reciprocity is most often described as patterns of exchange, generally defined as the trade of resources, including goods and services. These patterns of exchange are most closely associated with members of a subculture who participate only peripherally in a market economy, i.e. the buying and selling of goods. In the case of homeless individuals, who are generally unemployed, reciprocity is associated with the exchange of goods and services, all of which are essential for survival on the streets or in shelters.

Generalized reciprocity is associated with the act of giving a gift without any expectation of immediate return. However, sanctions may be brought against the recipient who fails to live up to at least minimum expectations of return. Generalized reciprocity is the form of exchange most commonly practiced by homeless people. Rather than hoarding and keeping personal possessions to themselves, many individuals, once homeless, stretch their resources by sharing what limited assets they may have. More often than not this is associated with the sharing of resources (food, clothing, safety, transportation, work, alcohol, drugs, money) deemed necessary for survival on the streets. Tangible goods, such as food, alcohol, drugs and money, are often shared because it is difficult to maintain such items while on the streets. Food goes bad without refrigeration; alcohol, drugs and money are apt to be stolen. Thus it is better to share than to risk letting resources go to waste through loss or theft. There is an additional benefit to the sharing of resources. Without a demand for an immediate return, resource sharing often allows a homeless person to express “kindness and generosity, which bolsters self-esteem” (Wolch and Dear 1993), qualities which are often in short supply in the dark world of homelessness.

Once housed, the possible loss of material goods such as food, alcohol and money may no longer be of concern. With a safe place to live, and a refrigerator, items that must be shared on the streets can be stored for future use. Yet the sharing of resources was still practiced by many of our respondents who needed those “cushions against setbacks” which were so important to their survival while homeless. Often our research participants found their SSI checks simply did not stretch far enough to cover all monthly expenses. Some would share items that they had purchased with their checks at the beginning of the month expecting that when they ran out they would receive assistance from the person they had aided. Others would help a neighbor or friend in a non-material way -- running errands, cooking, etc. -- in return for food or other such items. One of our respondents speaks of reciprocity as a balance sheet:

“I keep a mental balance sheet in my head of how many favors I owe out and how many favors I have owed in. And as long as I

have more favors owed in than out, I'm comfortable. 'Cause I don't want to owe money and I don't want to be beholden favors. But Bill's a good friend. I do good things for him and he does good things for me and it's out of because we like each other."

Other respondents were somewhat less analytical:

"There's this other household at the end. ... We sit outside and have a cup of coffee. They have a car. I'm sure I could give them a couple of dollars and they would take me somewhere if I needed. We keep to ourselves, but it's no problem to knock on somebody's door if we needed something. 'Do you have a couple eggs?' and 'I'm going to the store tomorrow,' or 'Can I borrow a couple of dollars. My check didn't come in the mail.'"

"I got a box from ABS [supported housing provider] and they came with some homemade burritos. I gave 'em to Scott. And he gave me some brand new pictures. And that fern there."

Speaking of a disabled neighbor: "I mopped and swept her floors yesterday. And she gave me cigarettes. Not one pack. She gave me four packs. That'll last four days. I'll make it."

Without the mechanism of reciprocity, some of our respondents may not have been able to retain their housing. Their resources were so limited that the goods and benefits that came from their reciprocal activities were an important contribution to their household incomes and therefore their housing stability.

To conclude, many of our respondents were engaged in a reciprocal relationship with a friend or neighbor. These relationships were sometimes crucial in helping them survive economically. As far as we can ascertain, they had not learned about reciprocity and its benefits before becoming homeless.. Rather they were a mechanism important to survival while homeless which, when transferred to a housing situation, played a role in enabling our respondents to retain housing. Beyond this, generalized reciprocity has an added benefit; it requires that an individual interact with others. One of the negative aspects associated with moving from the public sphere of homelessness into housing is the propensity to isolate, to stay sequestered indoors day-in and out. Several respondents reported they believed such inactivity could lead to deterioration in their mental health, which potentially could result in loss of housing. Conversely, reciprocal relationships entail communication, the antithesis of isolation. When asked if he had any secrets to share about having been able to retain his housing, one respondent replied:

"Try to find someone in your complex that you can have contact with daily. Someone who's home during the day. Perhaps somebody who's elderly or disabled. Besides, you can help them, and they can help you. and you won't get isolated. When you are going into a depression it's best to get out. Pat [friend] isolates. She hasn't been out of the apartment in a week."

Informational Support. Informational support among homeless people often takes the

form of either sharing or exchanging information that can be used in resolving a problem. Among homeless people the most important source of information derives from the sharing of personal knowledge or experiences. Homeless people generally pass substantial amounts of time waiting for a meal to be served, a shelter to open, or an appointment to be kept. While waiting, a good deal of time is spent communicating with one another. Homeless people also visit with one another away from service sites. In fact, 20% of our respondents reported that while homeless they spent a substantial part of their days socializing.

Information provided by personal experience or knowledge generally takes two forms. The first concerns events that may affect the lifestyle of a homeless person. Since homeless people in Phoenix spend a great deal of time in the downtown area where a number of public venues are located (Seats of City and County Government, Courts, the jail and the central police station), they are privy to a certain amount of information just by being in close proximity to public sources. Just a year ago George, a homeless man with a mental health illness, told one of the researchers that he had overheard two police officers talking casually to one another about the “sweep” that was going to be carried out in the shelter area that weekend. Later, police officers were chagrined to learn that a large number of homeless people knew about what was supposed to have been a secretly planned activity.

Other information, coming from the personal experience of a friend or acquaintance, may be more closely related to the personal needs of the recipient. This may take the form of information about where to sleep and eat, where one can locate employment, the location of medical assistance, how to get from one place to another, good places to panhandle, etc. Equally important is the sharing of knowledge about how to negotiate public and private service systems. This may include everything from filling out an application to how to use the assistance once accessed. One such area is housing. Several of our recipients relied on information from friends and acquaintances who understood the process to assist them in their quest for a place to live. For example, when asked what people were instrumental in helping them get off the streets, respondents replied:

“Friends helped me out when I was homeless. People on the streets shared with me where to go and what to do.”

“I was helped by my case manager, my mother, and other people [consumers] who were already in the system.”

Once housed, information is still shared. However, topics tend to differ. Rather than an exchange of information related to where to get a meal or shelter bed, information is shared about how to locate a food box, or rental or utility assistance. Sharing information is often done through networking. One of our respondents advises:

“Use the resources that are out there. For every one person you talk to, they know of ten others you can talk to. If you don’t let people know what your needs are, they won’t get met.”

The importance of support through the sharing of information, and its role in the retention of housing, should not be underestimated. Ellen had a \$300.00 summer electric bill to pay out of her monthly SSI check of \$540.00. She paid for it with a check that bounced. Concerned that she would lose her housing, she contacted her friends.

“First I called my friend Alice ‘cause she’s had a bank account for quite a while, and she always helps me figure out who to talk to and what to say ‘cause I don’t have a clue half the time. ... She tells me to stay calm and not go running off at the mouth. I also call my other friends, Don and Cindy, to get their advice. ... I called my case manager. She said she had no clue what to do. ... My friends knew more than her, because they’ve all dealt with it before. We’re all on SSI and we’ve all been through hard times. I don’t think my case manager has ever been.”

An indirect benefit associated with the sharing of information is associated with the sense of empowerment that it instills in the person who is sharing his or her knowledge with another. If knowledge is power, then the individual who can provide information about sources for utility assistance, for example, attains a bit of stature and empowerment when he or she shares what they have learned with another.

Conclusion

Our research indicates that the social supports developed through friendships made while homeless play an important role in the retention of housing by individuals who are mentally ill. Support strategies that are used to navigate homelessness continue to be utilized positively to support housing. This is not to say that all social relationships formed on the streets are positive. In fact, 43% of our research participants indicated that one of the major causes of eviction among their peers was the influence and/or presence of people who they had known while homeless. Such individuals could cause eviction by taking up residency in tenants’ apartments, influencing them to use drugs, or simply hanging around the complex. Yet our research participants had been able successfully to make a distinction between those who contributed to a positive support system, and those who could cause them to lose their housing. The ability to make such distinctions proved a valuable asset to our respondents in their struggle to retain housing with very limited resources and little support from the service community. If service providers can work with consumers to expand their existing social support systems, while at the same time educating them about problems that may lead to housing loss, the rate of eviction could be lowered.

Finally, we need to remember that housing for homeless people with mental illness goes far beyond simply a roof and four walls. As one of our respondents concluded:

“I’ve been able to be successful in this housing program even though I had it drummed into me that I was no good, would never amount to anything and had no values. I look back on my life and think I must have accomplished something. I have a place to live, so I must have some sort of value. And with that recognition, I give value back to other people because they see that I have potential.”

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