Moore Place Permanent Supportive Housing Evaluation Study
Year 1 Report
February 14, 2014

Prepared by the University of North Carolina at Charlotte
Department of Social Work

UNC CHARLOTTE
College of Health and Human Services

URBAN MINISTRY CENTER

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Executive Summary

Moore Place, a HousingWorks program of the Urban Ministry Center in Charlotte, opened in January 2012 and through the summer of 2012 welcomed 85 chronically homeless adults as tenants. Moore Place is a permanent supportive housing (PSH) facility and the first PSH facility in the Charlotte area to operate as a *Housing First* model. The program provides permanent housing and comprehensive supportive services to individuals who have extensive histories of homelessness and a disabling condition (mental health and substance abuse disorders, chronic health disorders, physical disabilities, and developmental disabilities).

Individuals who experience chronic homelessness are among the community's most vulnerable and face numerous intersecting health, mental health, economic, and social challenges resulting in poor health status, poor quality of life, and premature mortality (Burt, 2003). Despite representing only a small portion of the homeless population, the chronically homeless population uses numerous community resources. Homeless adults are high users of medical care, often cycling in and out of emergency rooms and psychiatric hospitals (e.g., Kushel, Vittinghoff, & Haas, 2001; Kushel, Perry, Bangsberg, & Clark, 2002). When hospitalized, chronically homeless adults stay longer than those who are housed (Kuno, Rothbard, Avery, & Culhane, 2000; Salit et al., 1998). When their chronic homelessness is not effectively addressed, the results are far reaching for the individuals and for the broader community.

This report summarizes the activities and findings of the Moore Place Evaluation Project during the third phase of a two-year, four-phase evaluation project led by Dr. Lori Thomas in the Department of Social Work at the University of North Carolina at Charlotte (UNC Charlotte) and supported by research team members at UNC Charlotte, the University of North Carolina at Greensboro/North Carolina A&T University School of Social Work, and the University of South Carolina College of Social Work. The research team is examining the impact of Moore Place on the housing, clinical, and social stability of its tenants and on their emergency room and jail utilization. Key findings are as follows:

Moore Place tenants are more vulnerable than anticipated, particularly regarding age, disabling conditions, and the impact of traumatic stress. Moore Place was designed to address chronic homelessness among the most vulnerable in the Charlotte community, yet the profile of individuals served suggests a population with intersecting challenges

that in some cases surpass the vulnerability of those in comparable programs. The disproportionate number of aging tenants suggests one dimension of vulnerability. The youngest tenant in the study was 36, but the average age of study participants upon move-in was 52.8 and nearly 75% of participating tenants were over the age of 50. This exceeds the national average of 40% of individuals over 50 living in permanent supportive housing (US HUD, 2011). Homelessness is associated with accelerated aging (e.g., O'Connell, Roncarti, Reilly et al., 2004) and older homeless adults experience negative health and mental health outcomes at rates that exceed the younger homeless and housed populations (e.g., Brown, 2011; Cohen, 2005). In addition, the majority of study participants (72.4%) experienced two or more disabling health-related conditions including physical disability, chronic physical health conditions, mental health disorders, and substance use disorders. Finally, nearly half of tenants who participated in data collection at baseline met the clinical criteria for Post Traumatic Stress Disorder (PTSD). As with aging and disabling conditions, traumatic experiences are associated with numerous adverse mental and physical health outcomes (e.g., Felitti et al., 1998; Sachs-Ericsson et al., 2009; Springer et al., 2007).

Despite these intersecting vulnerabilities, Moore Place continues to demonstrate high housing stablity rates after Year 1 of housing. Of the 73 tenants who participated in baseline data collection, 79.5% (n=58) remained housed at Moore Place after Year 1. Of the study participants who left Moore Place, 3 tenants left for other permanent housing and remain in that housing. This suggests that the housing stability rate among those who participated in the study is 84% (n=61). Tenants were homeless an average of seven years prior to moving into Moore Place and experienced periods of homelessness ranging up to 30 years. The Moore Place housing stability rate is consistent with or higher than other housing first permanent supportive housing models across the country (e.g. Pearson, Montgomery, & Locke, 2009; Stephancic & Tsemberis, 2007).

Moore Place tenant income has increased since entering the program. Average tenant income increased from $403.22 (SD=382.1) at baseline to $502.14 (SD=393.3) at Year 1, a statistically significant difference ($p<.05$). Supplemental Security Income (SSI) and Supplemental Security Disability Income (SSDI) were the key forms of benefit income that increased between the baseline and Year 1 data collection points. In North Carolina,

SSI recipients are automatically eligible for Medicaid, providing an important health care resource for a population with numerous health vulnerabilities. At Year 1, 70.1% of participating tenants received Medicaid, an increase from 37.9% at program entry. Regular income also allows tenants to contribute to the cost of their housing and to resume or develop financial management behaviors necessary to maintain housing.

Area hospital bills, emergency room visits, and lengths of hospitalizations have significantly decreased during tenants' first year of housing at Moore Place. Despite multiple health and mental health vulnerabilites and self-perceptions of poor health and mental health, tenants use of emergency health services is decreasing. In the year after moving into Moore Place, tenants visited the emergency room 447 fewer times (78% reduction) and were hospitalized 372 fewer days (a 79% reduction) than they were the year before. Among participating tenants, the total amount billed was nearly $1.8 million less in the year after their move to Moore Place than it was the year before (a 70% reduction). On average, hospital bills per tenant were $41,542 in the year prior to Moore Place, but dropped to $12,472 the year after the tenant moved into Moore Place, a statistically significant change ($p<.001$). The average number of emergency room visits per tenant decreased from 9.3 (SD=20.3) to 2.0 (SD=4.4) visits and the average length of hospitalization decreased from 7.6 (SD=16.4) to 1.6 (SD=4.7) days, both measures statistically significant ($p<.01$). As Moore Place clinicians continue to work with tenants to address and improve their health and mental health, the program is already realizing the goal of more cost-effective health service utilization. In addition, as tenants access more regular sources of care, other health outcomes may improve (e.g., Gelberg, Anderson, & Leake, 2000).

Arrests and jail stays significantly decreased during tenant's first year at Moore Place. Reductions in service utilization extend to the criminal justice system, specifically arrests by the Charlotte-Mecklenburg Police Department and incarcerations at the Mecklenburg County jail. Most tenants were *not* involved with the criminal justice system either before or after their move to Moore Place. However, of the tenants arrested or jailed in the year preceding (n=13) or following (n=7) their move to Moore Place, there were 36 fewer arrests (78% reduction) and 418 fewer nights in jail (84% reduction). The decrease in the average number of arrests and jail stays was statistically significant ($p=<.05$).

Moore Place tenants perceive greater social support among friends than they did when they first entered the program. For the 32 tenants who completed the perceived social support measure at baseline and Year 1, the average score improved from 12.59 (SD=2.76) to 17.41 (SD=9.72), a statistically significant improvement ($p<.05$). Among homeless and formerly homeless individuals, higher rates of perceived social support are linked to a reduced likelihood of victimization (Hwang et al., 2009; Lam & Rosenheck, 1998), better quality of life (Lam & Rosenheck, 2000), and better health and mental health outcomes (Cohen, 2004; Hwang et al., 2009; Kawachi & Berkman, 2001). As the social stability of Moore Place tenants improve, improvement in their health and mental health may follow.

Moore Place tenants indicate that staff members are a key strength of the program. When asked at the end of Year 1 data collection, "What does Moore Place do well?" the majority of Moore Place tenants listed the staff. As one tenant noted, "Staff give us a lot of smiles, make us feel welcome, we are somebody, we don't have to feel afraid. There is someone there to help us in our need." Homeless persons' perceptions of the lack of staff availability, responsiveness, and respect are recognized as barriers to health and mental health services (e.g., Applewhite, 1997; Bhui, Shanahan, Harding et al., 2006).

The initial phases of this research project suggest that Moore Place has succeeded in maintaining a high housing stability rate with a clinically and socially vulnerable population while reducing inappropriate service utilization in hospitals and jails. The final phase of this research project will continue to document the housing stability of Moore Place tenants, any clinical or social changes that may be further associated with the program, and the utilization of community services in tenants second year of residency.

Moore Place Evaluation

Year 1 Report

This report summarizes the activities and findings of the Moore Place Evaluation Project during the third phase of a two-year, four-phase evaluation project led by Dr. Lori Thomas in the Department of Social Work at the University of North Carolina at Charlotte (UNC Charlotte) and supported by research team members at UNC Charlotte, the University of North Carolina at Greensboro/North Carolina A&T University School of Social Work, and the University of South Carolina College of Social Work.

Moore Place, a HousingWorks program of the Urban Ministry Center in Charlotte, opened in January 2012 and through the summer of 2012, welcomed 85 chronically homeless adults as tenants. Moore Place is a permanent supportive housing (PSH) facility and the first PSH facility in the Charlotte area to operate as a *Housing First* model. The program provides permanent housing and comprehensive supportive services to individuals who have extensive histories of homelessness and a disabling condition (mental health and substance abuse disorders, chronic health disorders, physical disabilities, and developmental disabilities). Following the Housing First model, eligibility criteria for the program is minimal, the housing provided is not time limited, and while tenants are proactively engaged, services are voluntary and housing is not contingent on participation in services. Tenants sign a standard lease for a one-bedroom efficiency apartment at Moore Place and are provided on-site supportive services by clinical staff. The supportive services staff includes a full-time clinical director, five full-time social workers, a full-time nurse, and a part-time psychiatrist. Tenants receive additional wrap-around support from a full-time Tenant Services Coordinator, who organizes recreational and social opportunities, as well as 24/7 on-site security staff. Additionally, tenants without a primary care physician are connected to primary health care through a partnership with Carolinas HealthCare System.

The evaluation project examines the impact of the program on the housing, clinical, and social stability of its tenants in the first month of their residence and after 6, 12, and 24 months living at Moore Place. It also examines the impact of Moore Place on tenants' emergency room and jail utilization. Overall, the project aims to:

1. Understand the impact of Moore Place on the individuals it serves and the Charlotte community;
2. Provide empirical feedback to the Urban Ministry Center on what is working and what issues may need further attention in service delivery.
3. Build capacity at the Urban Ministry Center to effectively evaluate its supportive housing programs.

Baseline data were collected from research participants within one month of moving into Moore Place. A second phase of data collection occurred approximately six months after the baseline interview. During Phase 3 of the Evaluation Project, data were collected approximately one year after moving into Moore Place. The remainder of this report briefly reviews existing empirical literature and research methodology and presents findings from the third phase of data collection.

Review of the Literature

The U.S. Department of Housing and Urban Development (HUD) defines persons as chronically homeless if they have a disabling condition and are homeless for at least one year or four or more times in a three-year period. In 2013, nearly 100,000 individuals experienced chronic homelessness in the United States, representing 15% of the overall homeless population (U.S. HUD, 2013). According to Charlotte's 2013 Point-in-Time count, individuals experiencing chronic homelessness comprise 6% (n=141) of the community's homeless population on any given night. In 2010, a week-long count identified 807 chronically homeless individuals Charlotte.

Individuals who experience chronic homelessness face numerous health, mental health, economic, and social challenges leading to poor quality of life, poor health status, and premature mortality (Burt, 2003). When their chronic homelessness is not effectively addressed, the results are far reaching for the individuals and for the broader community. Despite representing only a small portion of the homeless population, the chronically homeless population utilizes numerous community resources. Homeless adults are high users of medical care, often cycling in and out of emergency rooms and psychiatric hospitals (e.g., Kushel, Vittinghoff, & Haas, 2001; Kushel, Perry, Bangsberg, & Clark, 2002). When hospitalized, chronically homeless adults stay longer than those who are housed (Kuno, Rothbard, Avery, & Culhane, 2000; Salit et al., 1998).

The Housing First model of permanent supportive housing has demonstrated effectiveness in improving the lives of those experiencing chronic homelessness and reducing the physical and mental health costs associated with homelessness (e.g., Culhane, Metraux, & Hadley, 2002). In the last ten years, Housing First has become a frequently used term in the homeless services sector as high profile advocacy and planning efforts have focused on the key role permanent housing plays in solving homelessness. Early usage of the term referred to specific models including Beyond Shelter, a housing-focused program for homeless families in Los Angeles; Direct Access to Housing, a congregate-site program for chronically homeless individuals in San Francisco; and Pathways to Housing, a scattered-site program for chronically homeless individuals in New York City. These initial models were appreciably different but each focused on the early, if not immediate, provision of permanent housing for those experiencing homelessness. Later usage of the term Housing First has become more diffuse, as agencies, institutions, and communities around the country apply the term differently.

Housing First as a program model for chronically homeless individuals is a form of permanent supportive housing. As defined by the U.S. Department of Housing and Urban Development's (HUD), permanent supportive housing is permanent, community-based housing that provides supportive services for homeless individuals with disabling conditions and "enables special needs populations to live as independently as possible in a permanent setting" (U.S. Housing and Urban Development [US HUD], n.d.). Supportive housing models have been widely studied, particularly with individuals with psychiatric disabilities, and findings demonstrate positive outcomes in housing stability but varied clinical outcomes (e.g., Rogers, Kash-MacDonald, & Olshewski, 2009). Although eligibility criteria for permanent supportive housing programs vary, Housing First models are low-barrier programs. Low barrier programs minimize eligibility criteria and do not require service compliance or success (i.e., sobriety) in order for a tenant to qualify for or retain housing.

Research on Housing First programs for chronically homeless individuals are based largely on two programs, the Pathways to Housing Model (Pathways), a scattered site housing model in New York City that has substantial empirical support (e.g., Padgett, Gulcur, & Tsemberis, 2006; Tsemberis & Eisenberg, 2000; Tsemberis, Gulcur, & Nakae, 2005) and Downtown Emergency Service Center's 1811 Eastlake residence, a congregate housing model in Seattle, Washington.

Pathways integrates permanent, scattered site housing and Assertive Community Treatment for individuals experiencing chronic homelessness and serious mental illness. The model assumes that recovery from serious and persistent mental illness is possible. Evidence has documented the effectiveness of a Pathway's Housing First model as compared to *Treatment First* or linear housing models in which services are provided to achieve "housing readiness" prior to a permanent housing placement. Among other findings, the research suggests that the Pathway's Housing First model permanently houses chronically homeless individuals with a serious mental illness at a higher and faster rate than Treatment First models (Stefancic & Tsemberis, 2007; Tsemberis, Gulcur, & Nakae, 2005) and once in housing, the Pathway's Housing First model has higher housing retention rates than Treatment First models (Stefancic & Tsemberis, 2007; Tsembersi, Gulcur, & Nakae, 2005). In one study, Pathways demonstrated an 88% retention rate after five years compared to the 47% retention rate of those in linear housing models (Tsemberis & Eisenberg, 2000). The 1811 Eastlake residence in Seattle is a congregate-site Housing First model that focuses on chronically homeless individuals who abuse alcohol. The program reports an 84% housing stability rate (Pearson, Montgomery, & Locke, 2009)

Beyond housing successes, these Housing First models have demonstrated other positive outcomes. Tenants in the Pathways model have higher levels of perceived choice than Treatment First models (Greewood, Schaefer-McDaniel, Winkel, & Tsemberis, 2005; Tsemberis, Gulcur, & Nakae, 2005). Higher levels of perceived choice were associated with decreased psychiatric symptomology (Greenwood et al., 2005), increased social integration into the community (Gulcur et al., 2007), and increased residential stability (Tsemberis, Gulcur, & Nakae, 2005). Pathways' clients also spent less time in psychiatric hospitalization than did the Treatment First group that participated in the study (Gulcur et al., 2003).

Both Housing First models have shown seemingly counter intuitive results concerning substance use and abuse. The models do *not* requiring those who enter and remain in their programs to be clean and sober and despite this, alcohol use and abuse has *not* interfered with high housing stability rates for residents in Pathways and 1811 Eastlake (Padgett, Gulcur, & Tsemberis, 2006; Collins, Malone, Chfaselfi et al., 2012; Larimer et al., 2009). In studies of both models, residents' alcohol use either remained the same or decreased. In one study, after four years, there was no significant difference in substance use between Pathways' Housing First residents and the Treatment First (services as usual) control group suggesting the ability for

residents to remain independent and stably housed without increasing substance use (Padgett, Gulcur, & Tsemberis, 2006; Tsemberis, Gulcur, & Nakae, 2005).

The 1811 Eastlake program has also demonstrated positive outcomes for individuals involved in the criminal justice system. First, researchers have demonstrated that in a program like 1811 Eastlake, a criminal history does *not* predict a resident's ability to maintain stable housing (Pearson, Montgomery, & Locke, 2009). In fact, once 1811 Eastlake residents entered the program, their jail time decreased (Larimer et al., 2009). Research on Pathways to Housing and 1811 Eastlake suggest that Housing First models of permanent supportive housing are efficient AND effective at helping some of the hardest to serve homeless individuals secure and maintain permanent housing (e.g., Larimer et al., 2009; Tsemberis et al., 2003).

Research Methodology

The research questions examined in the Moore Place Evaluation Project are listed in Table 1 and are addressed using a longitudinal one group pretest-posttest research design. The project utilizes administrative and clinical data collected by the Moore Place Clinical Services staff; administrative data collected by Urban Ministry Center staff from Novant Health, Carolinas Medical Center, and the Mecklenburg County Jail; and original data collected by the research team using the instruments and open-ended questions described in Table 1 below. The sample consists of consenting participants from the initial tenants (n=85) at Moore Place. Each participating tenant provided signed consent to participate in the study. A separate consent was used to access hospital data. The study has been reviewed and approved by the UNC Charlotte Institutional Review Board. Additional information on the research methodology is discussed in more detail in the first interim report and will be reviewed in further detail in the final report.

Table 1: Research Questions and Outcome Measures

Research Questions	Data Sources & Outcome Measures
Tenant Characteristics	
What are the characteristics of the individuals being served by Moore Place?	**Demographic information -** age, race, ethnicity, veteran status, housing status, move-in date, income source, cash income, benefit source, non-cash benefits, & education level. This information is collected by the Moore Place clinical services team.
Quality of Life	
Does participation in Moore Place improve tenant quality of life?	The **Wisconsin Quality of Life Questionnaire (W-QLI)** has been extensively evaluated regarding its psychometric properties and has been found to have good reliability and construct validity. The dimensions of the instrument have been established to have predictive

	power and clinical utility (Caron et al., 2003). Test-retest reliability has been examined in the WQOL with percentages varying from 0.82 to 0.87 for each domain and total score. Convergent validity has also been assessed using Spitzer's QL-Index (r=0.91) and the Spitzer's Uniscale (r=0.68) (Becker et al., 1993).This information is collected by the UNC Charlotte/Urban Ministry Center research team.
Housing Stability	
Does participation in Moore Place improve tenant housing stability?	Housing stability will be assessed by two indicators – remaining housed at Moore Place and increase in income from benefits and/or employment. This information is collected by the Moore Place clinical services team.
Clinical Stability	
Does participation in Moore Place stabilize or improve tenant's mental health?	The **PTSD Checklist - Civilian Version (PCL-C)** has strong internal consistency and good test-retest reliability. There was also support for convergent validity (r >.75). The test-retest coefficient for the total scores in this instrument were .92 (Ruggiero et al., 2003). This instrument is administered by the clinical staff upon program entry, at 6 months of residency, and annually thereafter. This information is collected by the Moore Place clinical services team.
	The **Modified Colorado Symptom Index (MCSI)** was examined in terms of reliability and construct validity in a national sample of the homeless population. The MCSI was found to be a reliable and valid measure of psychological symptoms within this population. High internal consistency (.90) and test-retest coefficients (average .79) revealed the reliability of the instrument, while the instrument's relationship to other measures showed good construct validity and responsiveness to change (Conrad et al., 2001). This information is collected by the UNC Charlotte/Urban Ministry Center research team.
Does it improve tenant perceptions of physical and mental health?	The **SF 36** has been extensively tested for reliability and validity and has consistently achieved and exceeded high psychometric standards. Published reliability statistics for the instrument have exceeded the minimum standards of .70 (Tsai, Bayliss, & Ware, 1997) and often exceed .80. The reliability for the physical and mental summary scores exceed .90 (Ware et al., 1994). SF36 Version 2, used in this study has improvements in item wording and format with no increase in respondent burden. This information is collected by the UNC Charlotte/Urban Ministry Center research team.
How does it impact tenant substance use?	The **Addiction Severity Index** (ASI) has been tested in many different populations for reliability and validity and has far exceeded minimum standards (McLellan et al., 1985). It has also been tested in homeless individuals who are substance users and found to be acceptable in terms of reliability and validity (Zanis et al., 1994). This study used the the 30 Day and Lifetime Substance Abuse subscales at baseline and the 30 Day subscale at subsequent data collection. This information is collected by the UNC Charlotte/Urban Ministry Center research team.
Social Stability	
Does it increase perceived social support from family and friends?	The **Perceived Social Support Friends and Perceived Social Support Family (PSS Fr & PSS Fa)** instruments have been found to be reliable, valid, and generalizable methods of assessing an

	individual's perception of social support from family and friends. Reliability, construct validity, and criteron related validity have been measured. Cronbach's alpha was calculated, .91 for PSS-Fa and .92 for PSS-Fr, indicating internal consistency. The correlations between Fr and Fa were also calculated (.40 when p<.001) (Lyons, 1988). This information is collected by the UNC Charlotte/Urban Ministry Center research team.
Service Utilization	
Does Moore Place impact the hospital and jail utilization patterns and associated costs of Moore Place tenants?	**Hospital utilization and billing information** was collected by Urban Ministry Center administrative staff. Information was collected from Carolinas HealthCare Systems and Novant Health Systems. Itemized bills and dates of service were provided for each consenting tenant for the year prior their move into Moore Place and the year following their move into Moore Place.
	Arrest and jail utilization information was collected by Urban Ministry Center administrative staff from the publically accessible Mecklenburg County Sheriff's Department website.
Qualitative Interviews	
Qualitative Interviews	• Besides where you sleep, what do you think will change the most for you now that you have your own apartment? [at baseline] • Besides where you sleep, what has changed the most for you since you moved into your own apartment [subsequent interviews] • What do you think Moore Place does well? [subsequent interviews] • What improvements do you think that Moore Place could make to better serve its residents? [subsequent interviews] • Is there anything else you would like to add about your experience at Moore Place? This information is collected by the UNC Charlotte/Urban Ministry Center research team.

Study Limitations

As with any research endeavor, this project reflects several limitations. First, although the research team sought to enhance the rigor of the project by including multiple measurements over time, due to financial constraints, the project did not include a control or comparison group. The lack of such a comparison makes it impossible to more conclusively link the changes or lack of changes found in the study to the intervention. In this sense, findings remain tentative. Second, baseline data were collected on tenants within 30 days of their move-in to Moore Place. Notable changes may have occurred in tenants *before* baseline measurements were captured – i.e., tenants already felt improvements to their lives because they were no longer homeless and had access to services at Moore Place. Though not practically feasible, collecting baseline measures prior to move-in may have better captured changes, real or perceived, that had not

occurred yet. Third, the hospital billing data may or may not be an accurate reflection of the specific costs of providing care.

Finally, the study relies largely on self-report data and as such may be subject to social desirability bias. Such a bias suggests that study participants may answer questions with answers they feel are more socially acceptable to program staff or those collecting the data. Moore Place is a low barrier program and as such is substantially different than any program of its kind in the Charlotte area. Study participants, many with extensive histories of homelessness, are familiar with programs that have little to no tolerance for substance use or behavioral disturbances that result from mental health disorders. Thus to preserve their housing, they may answer questions in a way that is more acceptable to the programs with which they are familiar. Over the study period as participants may recognize that their residency is not tied to service success or sobriety, they may become more transparent during interviews. This may result in more honesty and disclosure in later phases of research resulting scores that may suggest more mental health and substance abuse issues.

Phase 3 Findings

Tenant participation in the third phase of the study remained high. Of the 85 tenants of Moore Place, 73 (86%) tenants participated in the first phase of data collection. In the second phase, the 64 tenants participated (75%), due to program attrition (9 tenants left Moore Place). In the third phase of data collection, six additional tenants who were participating in the study left Moore Place resulting in a response rate of 68% (58 tenants). Nevertheless, response rates are good and exceed or are comparable to studies with similar populations. High response rates suggest that the research findings are reflective of the population sampled, in this case the tenants of Moore Place.

Characteristics of Study Participants

Demographic information gathered at Year 1 suggests that a majority of study participants identify as male (70.7%) and most identified as African-American or Black (65.5%). One participant (1.7%) identified as Hispanic. The majority of participating tenants were between the ages of 50 and 64 (70.7%). The youngest study participant was 36 years old at intake, and the oldest was 68. The average age of study participants is 52.8, with a range of 36 to 68 (SD= 6.591). Eight tenants (13.8%) identified as veterans. Over 25% of study participants

had not earned a high school diploma or GED, but 17% had attended some college, four tenants (6.9%) had received vocational training, and four tenants (6.9%) had completed post-secondary school. Table 2 details the demographic characteristics of study participants at program intake and at Year 1.

Table 2. Demographic Characteristics of Study Participants at Intake and Year 1

Variable	Baseline (n=73)		Year 1 (n=58)	
	n	**%**	**N**	**%**
Gender				
Female	19	26	17	29.3
Male	54	74	41	70.7
Race				
American-Indian	1	1.4	0	0
Black or African-American	49	67.1	38	65.5
White	23	31.5	20	34.5
Ethnicity				
Non-Hispanic/Non-Latino	72	98.6	57	98.3
Hispanic/Latino	1	1.4	1	1.7
Age				
19-39	3	4.1	2	3.4
40-49	16	21.9	13	22.5
50-64	51	69.9	41	70.7
65+	2	2.7	2	3.4
Veteran	9	12.3	8	13.8
Level of Education				
Through 4th grade	1	1.4	1	1.7
5th - 11th grade	21	28.8	14	24.2
High school diploma	22	30.1	20	34.4
GED	8	11.0	5	8.7
Some college	13	17.8	10	17.2
Post-secondary school	4	5.5	4	6.9
Vocational/Technical Program	4	5.5	4	6.9

At Year 1, just over one-third of the remaining study participants (34.5%) had no income from employment or benefits. Supplemental Security Income (SSI) remained the most frequent source of income for study participants (50%), while nine tenants (15.5%) received Social Security Disability Income (SSDI) and three (5.2%) received Social Security Retirement (SS).

No study participants were employed or receiving unemployment benefits at the Year 1 data collection point. The average monthly income for study participants at intake was $502.14 (SD=382.09), an increase from the Baseline average of $403.22 (SD=393.33; discussed further in section on Housing Stability). Table 3 lists the sources of monthly income at Year 1.

Table 3: Sources of Participant Monthly Income at Year 1

Source	Year 1 (n=58)	
	N	**%**
No Income	20	34.5%
Social Security	3	5.2%
Supplemental Security Income (SSI)	29	50.0%
Social Security Disability Income (SSDI)	9	15.5%
Military Retirement	1	1.7%
Unemployment	0	0%
Employment	0	0%

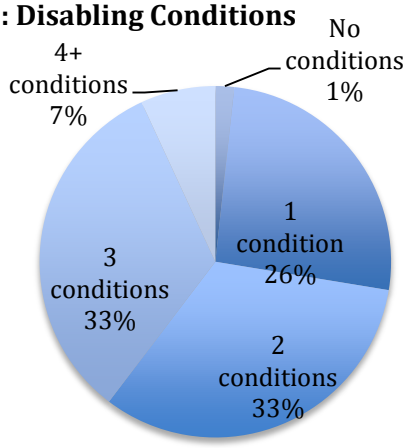
Other resources tenants receive were also assessed at Year 1. Most (81%) of study participants received a monthly allotment from the Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps. Forty-one participants (70.7%) receive Medicaid and eight (13.8%) receive Medicare. At Year 1, one tenant was receiving Veterans Administration Health Care. These resources are detailed in Table 4.

Table 4: SNAP and Health Resources at Year 1

Resource	Year 1(n=58)	
	n	**%**
SNAP	47	81.0
Medicaid	41	70.7
Medicare	8	13.8
VA Health	1	1.7
Ryan White HIV/AIDS	2	3.4

Study participants entered Moore Place with a variety of special needs, including health conditions (physical and mental health) and other special needs (developmental disabilities, experience of domestic violence). These conditions were indicated by the referring clinician or case manager and updated on a quarterly basis by Moore Place clinical staff. Mental and physical health conditions affect a majority of study participants. Over half of participating tenants had a mental health, substance abuse, or chronic health condition. Nearly a quarter of participants had a physical disability. The majority of study participants (72.4%) at Year 1 experience two or

Figure 1: Disabling Conditions



more of the disabling health conditions (physical disability, HIV/AIDS, other chronic health conditions, mental health problem, or substance abuse problem). Only one study participant had no disabling health condition at Year 1, although the tenant did have a developmental disability. The health and other needs of study participants are summarized in Table 5 below.

Table 5: Study Participant Special Needs at Baseline and Year 1

Condition/Need	Year 1 (n=58)	
	n	%
Disabling Health Conditions		
Physical Disability	14	24.1
HIV/AIDS	7	12.1
Other Chronic Health Conditions	38	65.5
Mental Health	37	63.8
Substance Abuse	31	53.4
Number of Disabling Health Conditions		
No Disabling Health Conditions	1	1.7
1 Disabling Health Condition	15	25.9
2 Disabling Health Conditions	19	32.8
3 Disabling Health Conditions	19	32.8
4 or more Disabling Health Conditions	4	6.9
Other Special Needs		
Developmental Disability	2	3.4
Domestic Violence	6	10.3

Housing Stability

Prior to moving into Moore Place, tenants were homeless between 1 and 30 years and the average length of homelessness for tenants was 7.14 years (SD=5.628). The median length of homelessness was 5 years. Over a quarter of study participants (26%) had been homeless 10 or

more years prior to moving into Moore Place. Table 6 summarizes the length of time homeless for Moore Place tenants.

Table 6: Study Participant Length of Time Homeless at Baseline (n=73)

	N	%
Number of Years Homeless		
1-2 years	9	12.3%
3-5 years	32	43.8%
6-10 years	19	26.0%
11-15 years	6	8.2%
16-30 years	7	9.6%

Of the 73 tenants who participated in baseline data collection, 87.6% (n=64) remained at Moore Place after 6 months and 79.5% (n=58) remained housed at Moore Place after Year 1. Of the study participants that left Moore Place, three tenants left for other permanent housing and remain in that housing. This suggests that the housing stability rate among those who participated in the study is 84% (n=61). Of those that exited the program for other reasons, two tenants died and ten were asked to leave or evicted. Tenants are asked to leave if they are unable or unwilling to follow the guidelines of their lease, even with staff support and intervention. Table 7 summarizes study participant housing stability through Year 1.

Table 7: Study Participant Housing Stability through Year 1 (n=73)

	N	%
Housed at Moore Place through Year 1	58	79.5%
Housed in Permanent Housing at Year 1	61	83.6%
Left Moore Place	15	20.5%
Reason for Leaving:		
Death	2	13.3%
Exited to Other Housing	3	20.0%
Evicted/Asked to Leave	10	66.7%

Participant income through employment or benefits and entitlements is another indicator of housing stability, providing clients necessary resources to establish a home and contribute to rent. As noted above, for those who participate in the study at both baseline and at Year 1 (n=58) the average income was $403.22 (SD=393.31) at baseline and $502.14 (SD=382.09) at Year 1.

This change was statistically significant ($p<.01$). Table 8 summarizes the changes in average tenant income between baseline and Year 1.

Table 8: Average Income through Year 1 (n=58)

	Baseline	Year 1	T	*df*	*p*
Average Monthly Income	**M=$403.22 SD=393.31**	**M=$503.14 SD=382.09**	**-2.890**	**57**	**.005***

Note. M = mean; SD = standard deviation
*$p<.01$

Supplemental Security Income (SSI) and Supplemental Security Disability Income (SSDI) were the key forms of benefit income that increased between the baseline and Year 1 data collection points. In addition, study participants enrolled in Medicaid also increased between baseline and Year 1. Table 9 summarizes the increase in these study participant resources.

Table 9: Increase in Study Participant Resources through Year 1 (n=58)

	Baseline		Year 1	
	n	%	n	%
SSI	**21**	**36.5%**	**29**	**50.0%**
SSDI	**6**	**10.3%**	**9**	**15.5%**
Medicaid	**22**	**37.9%**	**41**	**70.1%**

Quality of Life

At baseline, study participants (n=58) averaged a general satisfaction score of 1.69 (SD=.878) on the Wisconsin Quality of Life Index (W-QLI). Scores for the W-QLI range from -3 (the worst things could be) to +3 (the best things could be). For the 58 tenants who participated in the study at baseline and at Year 1, their average general satisfaction score rose slightly to 1.81 (SD=.906) at 6 months, but the change between baseline and Year 1 was not statistically significant. Table 10 summarizes the change in W-QLI General Satisfaction Scores between baseline and Year 1.

Table 10: W-QLI General Satisfaction Scores through Year 1 (n=58)

Scale/Subscale	Baseline	Year 1	t	*df*	*p*
General Satisfaction	**M=1.69 SD=.878**	**M=1.81 SD=.906**	**-1.168**	**57**	**.248**

Note. M = mean; SD = standard deviation

Clinical Stability

The clinical stability of study participant is assessed using a number of standardized instruments. The Modified Colorado Symptom Index (MCSI) and the PTSD Checklist - Civilian Version (PCL-C) were used to assess mental health. Scores for the MCSI range from 0 to 56, with higher scores indicating greater psychiatric symptomology and a clinical cut-off score of 30 and above suggesting the presence of a mental health disorder. For the 55 tenants who completed this instrument at baseline and at Year 1, the average baseline score was 17.7 (SD=13.6), with scores ranging from 0 to 57 and 23.6% scoring 30 or above. At Year 1, their average MCSI score fell to 15.4 (SD=11.4). The change between baseline and Year 1 was not statistically significant, but it was approaching significance, suggesting a positive trend. This trend is also notable considering that average scores rose slightly between baseline and 6 months. The scores at Year 1 ranged from 0 to 42 and 16.4% of participating tenants scored 30 and above. Table 11 summarizes the change in MCSI Scores between baseline and Year 1.

Table 11: MCSI Scores through Year 1 (n=55)

Scale/Subscale	n	Baseline	Year 1	t	*df*	*p*
Modified Colorado Symptom Index	**55**	**M=17.7 SD=13.6**	**M=15.4 SD=11.4**	**-1.374**	**54**	**.175**

Note. M = mean; SD = standard deviation

The PTSD Checklist - Civilian Version (PCL-C) was administered to tenants by the Moore Place clinical staff and the scores were provided to the research team for analysis. The PCL-C examines trauma-related symptomology. Scores for the PCL-C ranged from 17 to 85, with higher scores suggesting greater symptom severity. Fifty-one tenants completed this instrument at baseline and at Year 1. For those 51 tenants, the average baseline score was 38.63 (SD=17.72). This average score exceeds suggested PCL cut-point scores for settings frequented by the general population (e.g., civilian primary care; suggested cut-point 30-35) and exceeds or approaches the cut-off scores for a setting like VA primary care (suggested cut-point score 36-44) (U.S. Department of Veteran Affairs [USVA], 2012). The cut-off scores inform clinicians that individuals should be more thoroughly assessed for PTSD. At Year 1, their average PCL-C score fell to 37.53 (SD=17.52), but the change between baseline and Year 1 was not statistically significant. Table 12 summarizes the change in PCL-C scores between baseline and Year 1. The PCL-C also allows clinicians to determine if an individual meets DSM-IV criteria for post-

traumatic stress disorder. The Moore Place clinical services staff calculated that 35% (18) of tenants who participated in data collection met clinical criteria for PTSD at the Year 1 data collection.

Table 12: PCL-C Scores through Year 1

Scale/Subscale	n	Baseline	Year 1	t	*df*	*p*
PTSD Checklist – Civilian Version	**51**	**M=38.63 SD=17.7**	**M=37.53 SD=17.5**	**.604**	**50**	**.549**

Note. M = mean; SD = standard deviation

As an additional indicator of clinical stability, the SF36v2 was administered to study participants to assess perceptions of their own physical and mental health. The SF36v2 produces two summary scores, the Physical Component Summary (PCS) and Mental Component Summary (MCS). Both scores provide a broad perspective on the study participant's perceived health. A score of 50 on the PCS or MCS indicates the norm of the general population. Both component summary scores suggest that Moore Place tenants have worse perceptions of their mental and physical health than do those in the general population. At Year 1, 64% of participating tenants scored below and 20% scored at the general population norm on the PCS and 43% of participating tenants scored below and 30% at the general population norm on the MCS. For the 50 tenants that participated at baseline and at Year 1, the average score of the PCS at baseline was 42.73 (SD=10.39) and 41.71 (SD=10.24) at Year 1. The decrease was not statistically significant. The average score for the MCS at baseline was 46.56 (SD=11.56) and 47.50 (SD=10.09) at Year 1. The increase was not statistically significant. Table 13 summarizes the scores on the SF36v2 through Year 1.

Table 13: Perceived Health through Year 1

Scale/Subscale	n	Baseline	Year 1	t	*df*	*p*
SF36v2 – Physical Component Summary	**50**	**M=42.73 SD=10.39**	**M=41.72 SD=10.24**	**.824**	**49**	**.414**
SF36v2 – Mental Component Summary	**50**	**M=46.56 SD=11.56**	**M=47.50 SD=10.09**	**-.517**	**49**	**.607**

Note. M = mean; SD = standard deviation

To examine how Moore Place impacted study participant substance use, portions of the Addiction Severity Index (ASI) were administered. The ASI provides a count of the number of days a person has used a substance over the past 30 days and the number of years a person has

used a substance over his or her lifetime. The lifetime use measure was only collected at baseline and reported in the first interim report.

At Year 1, for those who reported using substances, more study participants reported alcohol use than any other substance over the last 30 days (n=35). Among drug use, cannabis and cocaine were the drugs most frequently reported. The number of tenants who reported using alcohol, drinking until intoxication, and using drugs decreased from baseline to Year 1. The number of tenants who used multiple substances rose from baseline to Year 1. Table 13 summarizes the number of tenants through Year 1 who reported using substances 30 days prior to data collection.

Table 14: Number of Tenants Reporting Substance Use in Last 30 Days

Scale/Subscale	Baseline		Year 1	
	n	%	n	%
Tenants Reporting Use in Last 30 Days				
Alcohol (n=56)	**35**	**62.5**	**30**	**53.6**
Alcohol until intoxication (n=56)	**25**	**44.6**	**23**	**41.1**
Drugs (n=58)	**16**	**27.6**	**9**	**15.5**
More than one substance a day (n=56)	**6**	**10.7**	**9**	**16.0**

The average number of total days participating tenants used alcohol and/or drugs fell from 10.4 days (SD=14.28) to 7.6 days (SD=12.22) during the 30 days prior to baseline and Year 1 data collection, respectively. The change between baseline and Year 1 was not statistically significant, but it was approaching significance, suggesting a positive trend. Table 15 summarizes the change in the average use of substances in the past 30 days.

Table 15: Average Use of Alcohol and Drugs in Past 30 Days

Scale/Subscale	n	Baseline	Year 1	t	*df*	*p*
Addiction Severity Index	**58**	**M=10.4 SD=14.28**	**M=7.6 SD=12.22**	**1.526**	**57**	**.133**

Note. M = mean; SD = standard deviation

Social Stability

Two scales measured the amount of perceived social support that tenants reported from family and friends. The PSS Friends and PSS Family are each 20 item scales and the scale scores range from 0 to 20, with higher scores reflecting more perceived social support. The study

participants' average baseline scores were lower than other samples reported on using this instrument. Of note, several participating tenants refused to complete this instrument at baseline stating that they did not have any friends. For the 32 tenants who completed the PSS Friends measure at baseline and Year 1, the average baseline score was 12.59 (SD=2.76) and the average score at Year 1 was 17.41 (SD=9.72), a statistically significant improvement. There was little change between the scores for PSS Family between baseline and Year 1 data collection. For the 34 tenants who completed the PSS Family measure, the average baseline score was 12 (SD=4.47) and the average score at Year 1 was 12.56 (SD=5.87) The slight change in PSS Family scores was not statistically significant. It is important to note that fewer study participants completed the PSS instruments at both the baseline and Year 1 data collection points and results should be reported tentatively. Table 16 summarizes the scores of the PSS Friends and Family through Year 1.

Table 16: PSS Friends and Family Scores through Year 1

Scale/Subscale	n	Baseline	Year 1	t	*df*	*p*
Perceived Social Support Friends	**32**	**M=12.59 SD=2.76**	**M=17.41 SD=9.72**	**-2.403**	**31**	**.022****
Perceived Social Support Family	**34**	**M=12.00 SD=4.47**	**M=12.56 SD=5.87**	**-.627**	**33**	**.535**

Note. M = mean; SD = standard deviation
***p*<.05

Service Utilization

Tenant utilization of area hospitals and the Mecklenburg County Jail was analyzed one year prior and one year after moving into Moore Place[1]. Utilization of both service sectors decreased among the participating tenants in the year following their move to Moore Place. To examine emergency room utilization and resulting hospitalizations, itemized bills and service use dates were collected from Carolinas HealthCare System and Novant Health for participating tenants. Among the tenants that approved the release of information the year prior to and the year following their move into Moore Place, the total hospital bill was $1.8 million less in the year after their move than it was the year before, a 70% reduction. Further, tenants visited the emergency room 447 fewer times in the year after they moved into Moore Place, a 78% reduction. In addition, tenants were hospitalized 372 fewer days in the year following their move to Moore Place, a 79% reduction.

Figure 2: Hospital Bills

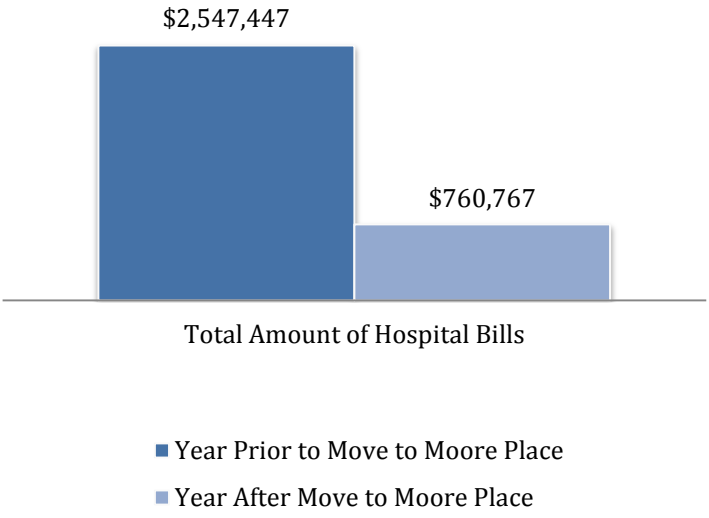
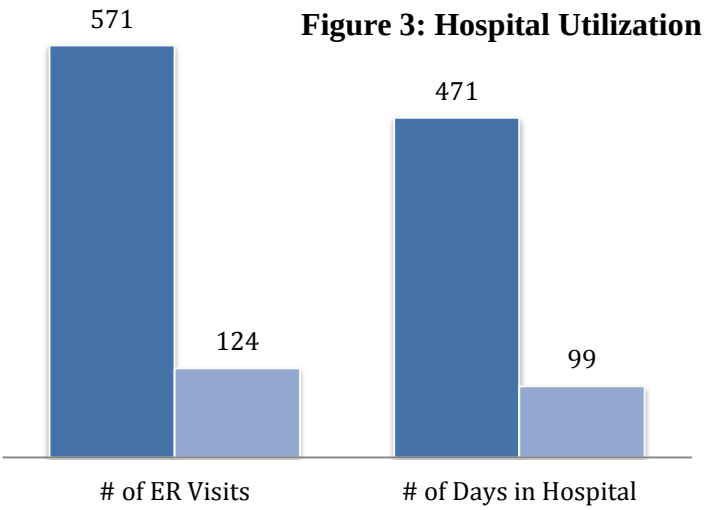


Figure 3: Hospital Utilization



In the year prior to their move to Moore Place, the amount billed tenants ranged from $0 up to $268,404, the number of emergency room visits ranged from 0 up to 125 visits, and the number of days hospitalized ranged from 0 up to 93 days. In the year following their move to Moore Place, the amount billed tenants ranged from $0 to $100,131, the number of emergency

[1] Note that the sample size used to examine utilization patterns varies because the informed consent process for hospital data was separate from that of the survey data and jail utilization data relied on public information.

room visits ranged from 0 up to 27 visits, and the number of days hospitalized ranged from 0 to 28 days. On average, hospital bills per tenant were $41,542 in the year prior to Moore Place, but dropped to $12,472 the year after the tenant moved into Moore Place, a statistically significant change ($p<.001$). In addition, the average number of emergency room visits and the average length of hospitalization decreased as well, both measures statistically significant. Table 17 describes these reductions.

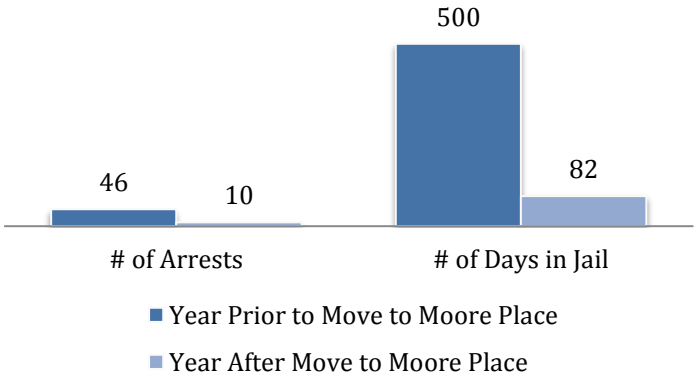
Table 17: Tenant Hospital Utilization & Billing (n=61)

	Year Prior	Year After	t	*df*	*p*
Average Total Billed Amount					
Carolinas Medical Center	M= $34,359 SD=57603	M=$11,317 SD=21735	3.497	60	**.001***
Novant Health	M=$7,183 SD=18708	M=$1,155 SD=3888	2.610	60	**.011****
Combined Health Centers	M=$41,542 SD=68421	M=$12,472 SD=23136	3.754	60	**.000*****
Average Number of ER Visits					
Carolinas Medical Center	M=7.1 SD=14.4	M=1.6 SD=3.9	3.852	60	**.000*****
Novant Health	M=2.2 SD=6.3	M=0.4 SD=1.2	2.299	60	**.025****
Combined Health Centers	M=9.3 SD20.3	M=2.0 SD=4.4	3.435	60	**.001*****
Average Length of Hospitalization					
Carolinas Medical Center	M=6.4 SD=14.7	M=1.6 SD=4.6	2.562	60	**.013****
Novant Health	M=1.2 SD=3.4	M=0.07 SD=0.4	2.704	60	**.009***
Combined Health Centers	M=7.6 SD=16.4	M=1.6 SD=4.7	2.850	60	**.006***

Note. M = mean; SD = standard deviation
*$p<.01$. **$p<.05$. ***$p\leq.001$

In addition to reductions in hospital utilization, tenant arrests and jail stays also decreased. The majority of Moore Place tenants were not arrested or jailed in the year preceding (80%) or following their move to Moore Place (89%). In the year prior to their move to Moore Place, 13 tenants were arrested 46 times. In the year following their move, 7 tenants were arrested 10 times, a 78% reduction. Prior to their move, tenants spent a total of 500 days in jail.

Figure 4: Jail Utilization



After their move, tenants spent 82 days in jail, an 84% reduction. Changes are depicted in Figure 4.

In their last year of homelessness, tenants were arrested an average of .72 times (SD=2.07) and .16 times (SD=0.48) in the year following their move, a statistically significant difference ($p<.05$). In addition, in the year prior to their move, participating tenants spent an average of 7.8 days (SD=23.53) in jail. Following their move, they spent an average of 1 (SD=3.40) day in jail, also a statistically significant difference ($p<.05$). Table 18 describes these reductions.

Table 18: Tenant Jail Utilization (n=64)

	Baseline	Year 1	t	*df*	*p*
Average Number of Arrests	**M=.72 SD=2.07**	**M=.16 SD=0.48**	**2.316**	**63**	**.024****
Average Length of Incarceration	**M=7.8 SD=23.53**	**M=1.0 SD=3.40**	**2.473**	**63**	**.016****

Note. M = mean; SD = standard deviation
***p*<.05

Qualitative Analyses

During Year 1 interviews, study participants were asked the following open-ended question: "Besides where you sleep, what do you think has changed the most for you now that you have your own apartment?" Responses were analyzed thematically and fell under eight categories detailed below. Tenants who participated in the study expressed that their ability to

accomplish tasks or goals, their health, their housing, their mental health, their relationships, their safety, and their way of living changed for the better because of moving into Moore Place. Six study participants indicated that nothing had changed for them. Table 19 summarizes the major categories and subcategories from the analysis along with exemplar quotations from the tenant responses.

Table 19: Qualitative Analysis – What has changed the most?

Category	Subcategories & Examples of Tenant Responses
Accomplishment	**General Accomplishment** "Coming back from nothing to something." "Accomplishing goals – GED, cleaning house, doing crafts, exercise."
	Giving Back "Volunteer work is a part of my life now."
	Financial Improvement **"**Financial stability"
Health	**Personal Care** "Taking care of myself. I have changed the way I think about myself and health." "Regaining better health."
	Health Behaviors "I had another stroke and I stopped smoking." "I've gained weight and have better hygiene." "I can stay inside or walk early in the morning to avoid heat and pollen (COPD)."
	Health Resources "I filed for disability and I was approved for Medicaid."
Housing	"I appreciate a stable place to sleep." "I have my own place and I don't have to worry about being put out or having to sleep under a bridge." "I'm so grateful to have my own 'penthouse' and to have friends and family come over – it is home!" "Having a place to live - putting the key in the door. EVERYTHING!"
Mental Health	**Attitude & Outlook** "My appearance, my attitude, my outlook on life – all much better." "My attitude. Things have started looking up again." "My outlook on the future. It is better." "I have hope – I'm moving in the right direction and I'm inspired to do better."
	View of Self "I feel happy with myself." "People's attitudes toward me."
	Peace of Mind

	"I feel much more calm." "Security and peace of mind." "I have peace. No stress."
Relationships	**Family** "Being forgiven. Being a part of my family."
	Friends "New, good friends." "Getting to know my neighbors and environment instead just self-preservation on the street. We help each other out now."
Safety	"I'm not as frightened, nervous, and scared." "I have my own space and I feel safe and secure about that." "I feel safe." "I have a secure place to sleep."
Way of Life	**General Quality of Life** "My life." "Having a normal life." "Lifestyle better than living in the woods." "I have time and place to do things – watch tv, read. Those were snippets of time that you grabbed when you could before." "I can stick my key in my door, lay in my apartment, look at tv, eat, take a good hot shower."
	Independence & Privacy "Freedom." "Being happy to have my own privacy. I can cook my own food. I can take showers on a regular basis in privacy."
Nothing	"Nothing. I don't like to go out too much." "Nothing. Only my housing."

Tenants were also asked to respond to two questions regarding Moore Place at Year 1. First, tenants were asked, "What do you think Moore Place does well?" Initial thematic analysis suggested six response categories. Notably, 29 study participants responded that Moore Place staff are a key strength of the program. Table 20 summarizes the major categories from the analysis of responses at Year 1 along with exemplar quotations from the tenant responses.

Table 20: Qualitative Analysis – What does Moore Place do well?

Category	Examples of Tenant Responses
Overall	"They do everything well."
	"So many things, it's hard to choose one."
	"I appreciate it and I like it."
	"Everything! In addition to shelter, it returns you to the life you were raised in – peace and quiet."
	"Moore Place provides you with everything you need."

Activities	"Good at everything – computer, transportation, classes."
	"There is always something to do."
	"I enjoy ping pong, cookouts, bingo."
Assistance	"Provides assistance for all of the tenants to meet their needs."
	"Help you get on your feet with services."
	"Hook you up with the right resources you need to get you back on track."
	"They provide consistent support for medical needs."
	"Helping the homeless get adjusted to a home."
Housing & Facility	"Facility is great."
	"Roof over your head." "Your own place – it's yours – you don't have to be out in the cold."
Safety	"Provides safe and secure housing"
	"Keeping people safe."
	"Security."
Staff	"Staff does a good job helping with any problems – mental health, seeing a psychiatrist, getting to your doctor's appointment."
	"Staff give us a lot of smiles, make us feel welcome, we are somebody, don't have to feel afraid. There is someone always there to help us in our need."
	"Love my counselors and staff teamwork is excellent"
	"Everything. Especially listening."
	"They treat you like a human being. No one makes you do something that you don't want to do, but they are always there to help."
	"Staff is approachable and helpful."

Second, tenants were asked, "What improvements do you think that Moore Place needs to make to better serve its residents?" Initial thematic analysis suggested six response categories. Notably, 22 study participants stated that there was nothing to improve. Table 21 summarizes the major categories from the analysis of responses at Year 1 along with exemplar quotations from the tenant responses.

Table 21: Qualitative Analysis – What can Moore Place improve?

Category	Examples of Tenant Responses
Activities	"Exercise room and school program."
	"Group dinners – potlucks. BBQ outdoors. More variety with craft offerings – oil painting. Contests – talent show."
	"Horseshoe ring with steel horseshoes."
	"Field trip to hike and get fresh air – hiking trails."
	"Would be nice to have a little exercise equipment – treadmill, weights, etc."

Apartment	"Computers and wifi connections in the apartments."
	"I need a stove [*sic*.]. I like to cook." Note: Stoves are provided in each apartment, but ovens are not.
Building	"Community room to stay open 24 hours."
	"Keep computer lab open longer on weekends and holidays."
	"Offer the community room 24/7 to play cards, interact, watch TV, etc."
	"Clean elevators more regularly."
	"Improve on insect extermination."
	"Build a tub – hot tub or swimming pool."
Assistance	"Coordinating with community – human resources for employment purposes"
	"Local employment training program to make additional income."
	"Help out with transportation more often."
	"Stay out of people's business."
Neighbors	"When tenants drink it can be aggravating, but I stay away and don't pay them attention."
	"More strict rules for rule breakers."
	"Too lenient on alcohol – drinking is a problem – especially smoking patio – a lot of begging going on."
Nothing	"4 stars!"
	"None – if it ain't broke, don't fix it."
	"Can't think of any."

Discussion

Research conducted at Year 1 continues to suggest a population with extensive special needs, but also begins to document notable improvements including a high housing stability rate and reduced utilization of hospitals and jail. In addition, slight positive changes in mental health symptomology and substance use suggest trends toward improvement.

Tenant Characteristics

Findings regarding tenant characteristics suggest Moore Place tenants who participated in the study are both comparable to that of similar programs and in some cases, more vulnerable than those in comparable programs. Moore Place tenants that participated in the study after one year of housing at Moore Place are predominantly male (70.7%) and the majority of them identify as either African-American or Black (65.5%). These characteristics reflect national trends in homelessness – men are overrepresented in single adult and chronic homelessness and African-Americans are overrepresented in every category of homelessness (Burt, 2001; U.S. HUD, 2011). Most (74.1%) of the tenants who participated in the study had earned a high school diploma or a GED and 31% of tenants had pursued either college or vocational training.

The youngest tenant in the study at Year 1 was 36, but the average age of study participants was 52.8 and nearly 75% of participating tenants were ages 50 – 64. This exceeds the national estimation of 40% of individuals over 50 living in permanent supportive housing (US HUD, 2011). Studies have noted the overall aging of the homeless population (Culhane, Metraux, Bainbridge, & Bryan, 2012; Hahn et al., 2006) and the disproportionate number of single homeless adults born between 1946 and 1964 in the latter half of the Baby Boom (Culhane, Metraux, Byrne, Stino, & Bainbridge, 2013). In one study, when compared to the housed individuals their same age, homeless adults age 50 and over had higher rates of geriatric syndromes including depression, cognitive impairment, mobility limitations, and difficulty performing Activities of Daily Living (Brown, Kiely, Bharel, & Mitchell, 2012). Research suggests that homeless adults age from 15 to 20 years faster than the general population (e.g., Cohen, 1999; O'Connell, Roncarti, Reilly et al., 2004). These patterns for aging homeless adults have important implications for Moore Place and for the community. Moore Place is serving a number of individuals who will likely age in place. With on-site clinical support and regular access to primary care, tenants can manage chronic diseases improving their quality of life and delaying costly long-term care. The average annual cost of nursing home care (semi-private

room) is $75,555 in Charlotte (U.S. Department of Health and Human Services [HHS], 2010). In addition, as in the general population, health care costs for tenants will rise in older adulthood. However, compared to the emergency room care they would have more likely sought living on the streets or in shelter, the costs for services accessed through primary care may be more congruent with those of the general aging population.

Data gathered at Year 1 continue to suggest a population with extensive special needs. Special health needs were documented by referring case workers, corroborated by Moore Place licensed clinicians prior to entry and updated on a quarterly basis by clinicians. While eligibility criteria for the program requires a disabling condition, the majority of tenants who participated in the study at Year 1 (72.5%) have two or more health conditions (including mental health and substance abuse disorders). Nearly 40% of study participants have three or more health conditions.

Housing Stability

Over 80% of Moore Place tenants participating in the study remained stably housed after Year 1 of residency, despite extensive histories of homelessness. This housing stability rate is consistent with or higher than other housing first permanent supportive housing models across the country (e.g. Pearson, Montgomery, & Locke, 2009; Stephancic & Tsemberis, 2007). As studies with comparison groups have demonstrated, people in more typical Treatment First housing have lower housing retention rates (e.g., Tsemberis & Eisenberg, 2000). I

In addition to the housing stability rate, the overall income of participating tenants increased since program entry. This increase was statistically significant. At intake, 55% of tenants participating in the study had earned or benefit income. At Year 1, 65.5% of tenants had earned or benefit income. Only two tenants were employed. A low employment rate is expected since tenants of Moore Place are required to have a disabling condition to live at Moore Place. Of those with income, 38% received SSI. Despite high disability rates among the homeless, only 10-15% of homeless people nationally receive SSI or SSDI (US HUD, 2011). The comparably higher percentage of individuals that had SSI income at the time of move-in to Moore Place may speak to the success of the SSI/SSDI Outreach, Access, and Recovery program for the homeless (SOAR). Urban Ministry recently hired dedicated SOAR specialists and two members of the Moore Place clinical staff utilize the SOAR process to assist tenants in receiving disability

income. Tenants of Moore Place are expected to pay 30% of their income for rent and while 30% of SSI payments (approximately $209) does not cover Moore Place's housing costs, it is a source of revenue for the program and enables tenants to meaningfully participate in paying for their housing. Regular income allows tenants to contribute to the cost of their housing and to resume or develop financial management behaviors necessary to maintain housing.

In addition to income, tenants who participated in the study also reported food and health resources at program intake. At intake, over 70% of tenants received SNAP benefits (formerly known as food stamps) and 48% of tenants had some form of health insurance. At Year 1, 81% of tenants received SNAP benefits and over 70% had some form of health insurance .Both resources serve to further stabilize individuals as they transition into permanent housing. SNAP benefits enable tenants to purchase food to prepare in their own apartments. Health insurance facilitates access to additional health and mental health services to stabilize and manage mental health disorders, HIV/AIDS, and other chronic health conditions.

Research to date suggests that Moore Place effectively ends long-term homelessness among its tenants and as discussed below, serves as a foundation from which to address individual health, mental health, and social concerns. In addition, stable housing has also been linked to changes in health utilization patterns and help-seeking behaviors, both of which have cost implications for the community.

Clinical Stability

After one year of housing at Moore Place, study participants remain clinically vulnerable as documented in all of the clinical scores reported above. Given the extent of comorbid health disorders and the added risk of extensive histories of homelessness, this vulnerability is not surprising. The high disease and mortality rates of homeless individuals are well-documented (e.g., Baggett, O'Connell, Singer, & Rigotti, 2010). Tenants' perceptions of their own health appear congruent with presence of multiple health disorders. Perceived health and mental health summary scores on the SF36v2 suggest that Moore Place residents have worse perceptions about their health than do those in the general population. Despite numerous health conditions and poorly perceived health, all average clinical scores stayed the same or improved since the baseline data collection phase, although none of the changes were statistically significant. The change in the measure of mental health symptomology from baseline to Year 1 approached

significance, however, suggesting a positive trend in the mental health of tenants.

The impact of trauma continues to be relevant. The average score of the Post Traumatic Stress Disorder (PTSD) screening measure, the PCL-C at Year 1 (M=37.53; SD=17.5) suggests the relevance of post-traumatic stress for the Moore Place tenants in general. The average score exceeds the cut-off score of 30 for the general population and 36 for the Veteran Administration Health primary care population. Cut-off scores tell clinicians that a patient should be further examined for PTSD. In addition, at one year, 35% (n=18) of study participants met clinical criteria for PTSD. These scores and the histories of domestic violence noted at intake suggest a substantial portion of Moore Place tenants are exposed to and experiencing the effects of trauma.

Trauma is defined as events that cause intense feelings of fear, anxiety, helplessness, or horror—such as combat, adult or childhood physical abuse, sexual abuse or assault, or domestic violence (e.g., Finkelhor, Ormrod, & Turner, 2007) – and is recognized as a common experience among those experiencing homelessness both prior to and during homelessness. Once homeless, rates of violent and nonviolent victimization are higher for homeless adults than for the general population (e.g., Burt, 2001; Fitzpatrick, La Gory, & Richey, 1993: Kushel, Evans, Perry, Robertson, & Moss, 2003). Nationally representative data suggest that 54% of homeless adults have been victimized while homeless (Lee & Schreck, 2005). Homelessness itself has been recognized as a "psychological trauma" that predicts poor health and mental health outcomes (Goodman, Saxe, & Harvey, 1991). The negative mental health effects of trauma are well documented and include increased risk of depression, suicide, PTSD, and substance abuse (e.g., Afifi, Boman, Fleisher, & Sareen, 2009; Chapman et al., 2004; Kubiak, 2005; Kubiak & Cortina, 2003). In addition, when compared to the general population, survivors of trauma are more likely to engage in risky health behaviors such as substance abuse and risky sexual behavior and they are more likely to experience chronic health conditions including diabetes, heart disease, stroke, and chronic pain (e.g., Davis, Luecken, & Zautra; Felitti et al., 1998; Hillis, Anda, Felitti, Nordenberg, & Marchbanks, 2000; Sachs-Ericsson et al., 2009; Simpson & Miller, 2002; Springer et al., 2007). Despite the prevalence of trauma in the homeless population and its numerous negative outcomes that are costly on individual and community levels, trauma is rarely explicitly addressed in homeless service models (Hopper, Bassuk, & Olivet, 2010). Moore Place clinical staff offer services that are sensitive to tenants who may have experienced trauma by providing a safe environment and addressing disturbances as they occur, interacting with tenants

in a calm and respectful person-centered manner, assessing for a history of trauma at program entry, offering psychiatric and counseling services, and offering choices rather than issuing directives.

Reports of substance use in the 30 days prior to the third phase of data collection suggest that a portion of tenants continue to utilize alcohol and/or illegal substances although the number of tenants using alcohol and drugs decreased from baseline to Year 1, 46% of participating tenants reported no alcohol use, and 85% reported no drug use. The average number of days tenants used drugs or alcohol in the 30 day period also decreased, and the change was approaching statistical significance, suggesting a trend toward reduction. While the measures used in this study do not assess addiction and abuse and are limited as self-report measures, Moore Place clinicians have noted substance abuse as a special need experienced by 53% of the tenants participating in the study at Year 1.

Substance abuse is associated with numerous negative outcomes that impact individuals and their communities including physical and mental health, employment, social networks and involvement with the health and criminal justice systems. These outcomes may be exacerbated when individuals are not housed (e.g., McNeil, Binder, & Robinson, 2005). Substance use and abuse behaviors will vary for tenants in Housing First permanent supportive housing programs. Supports are continually provided for tenants to reduce and abstain from substance use, however, tenants will choose to maintain, moderate, or abstain from substance use. The key role of client choice in creating change is recognized by Moore Place staff and is well documented in the success of Housing First permanent supportive housing programs (e.g., Padget et al., 2006; Larimer et al., 2009).

Prior to the Housing First model, strict eligibility criteria on sobriety (or a commitment to sobriety) in most transitional and permanent housing programs prevented housing many individuals and families experiencing chronic homelessness. If those experiencing chronic homelessness managed sobriety long enough to enter a transitional or permanent housing program, relapses – a typical part of the recovery process – would often result in removal from the program sending vulnerable individuals back to the streets and emergency shelter where resources to address their addiction were limited, their health further deteriorated, and the community costs to serve them in hospitals and jails increased. Despite the choice of some

Moore Place tenants to continue to use substances, a majority of study participants remain stably housed and typical impacts on the community have been meaningfully addressed in the first year of the program – emergency room visits and arrests have decreased. Studies of other permanent supportive housing programs suggest that the majority of tenants will moderate or reduce utilization as they remain housed (Padgett, Gulcur, & Tsemberis, 2006; Tsemberis, Gulcur, & Nakae, 2005).

Social Stability

The social stability of Moore Place tenants is improving. As noted in the first interim report, the social networks of chronically homeless individuals are often severely weakened or destroyed before and during homelessness. Those who are chronically homeless, and particularly those with mental illnesses, perceive less social support than the housed and more recently homeless (e.g., Lam & Rosenheck, 1999). The standardized measures used to gauge the social support Moore Place tenants perceive from their friends and family suggest that tenants continue to perceive little support from family networks but perceive increased support from friend networks since the baseline data collection period, a statistically significant change since the baseline measurement. Among homeless and formerly homeless individuals, higher rates of perceived social support are linked to a reduced likelihood of victimization (Hwang et al., 2009; Lam & Rosenheck, 1998), better quality of life (Lam & Rosenheck, 2000), and better health and mental health outcomes (Cohen, 2004; Hwang et al., 2009; Kawachi & Berkman, 2001). As the social stability of Moore Place tenants improve, improvement in their health and mental health may follow.

Service Utilization

Moore Place has resulted in the reduced utilization of area hospital and criminal justice systems. In the year prior to housing at Moore Place, participating tenants amassed bills at Carolinas HealthCare System and Novant Health totaling over $2.5 million, visited the emergency room 571 times, and were hospitalized 471 days. When comparing the year prior to the move to Moore Place to the year following the move, the total amount billed participating tenants was reduced by 70%, the total number of visits to the emergency room was reduced by 78%, and the total number of days hospitalized was reduced by 79%. The average annual bill per tenant fell from $41,542 to $12,472 ($p<.001$); the average number of emergency room visits fell

from 9.3 to 2.0 visits ($p \leq .001$); and the average length of hospitalization fell from 7.6 days to 1.6 days ($p < .01$). Arrests and jail time also decreased in the year following the tenants' move to Moore Place. The frequent use of these community resources prior to moving into Moore Place underscores the inefficiency of relying on crisis services alone to address chronic homelessness. Chronically homeless adults, and particularly those who participated in the study at Moore Place, experience numerous health and mental health disorders that are exacerbated on the street and lead to inappropriate utilization of community institutions in order to address multifaceted housing and health needs. These reductions confirm the findings of earlier research documenting the positive impact Housing First permanent supportive housing programs have on the inappropriate utilization of expensive service systems (Culhane et al., 2008; Rosenheck et al., 2003).

As Moore Place clinicians continue to work with tenants to address and improve their health and mental health, the program is already realizing the goal of more cost effective health service utilization. Through a partnership with Carolinas HealthCare System, tenants who are not already connected to a primary care physician are assisted to establish a patient-centered medical home. Establishing access to more regular sources of care has been linked to improved health outcomes in older homeless adults (Gelberg, Anderson, & Leake, 2000).

Conclusion

The third phase of this research project suggests that Moore Place has succeeded in maintaining a high housing stability rate with a clinically and socially vulnerable population, while increasing tenants perceived social support from friends and moving toward improvements in tenant mental health. Further, the study suggests that Moore Place has successfully reduced the use of area hospital and jail services. The final phase of this research project will continue to document the housing stability of Moore Place tenants and any clinical or social changes that may be associated with the program.

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