# The Cost Effectiveness of Housing Support Teams: The Experiences of Persons Enrolled In the First Three Months

by

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## Executive Summary

This report is based on the experiences of individuals who enrolled in the Housing Support Team (HST) initiative in Buncombe and Guilford counties. The HST initiative was implemented as a pilot program to provide housing support coordination services to homeless individuals. This report compares the costs of services that participants received in the twelve months before enrollment to the costs of services received in the twelve months after enrollment. This report examines the experiences of the 39 individuals who enrolled before September 30, 2007.

The analysis indicates that:

- The overall costs of services declined 19%, a savings of $73,819, for the 31 individuals who remained in the program for at least twelve months
- The costs fell despite the experiences of one participant from Guilford County who was hospitalized in a state psychiatric facility several months after enrolling in HST. This one individual accounted for about one-fourth of the costs of all services received by HST participants in Guilford
- The service costs savings in Buncombe County were 32%
- In spite of the HST participant from Guilford County who was hospitalized for 53 days after enrolling, service costs fell in that county by 7.5%
- After entering the program, HST participants in both counties had lower costs for incarceration in jails and prisons, stays in homeless shelters, emergency room and inpatient hospitalizations, and substance abuse services

In the twelve months after enrolling in the program, the HST participants in both counties had higher costs for medical outpatient, mental health inpatient, and mental health outpatient services, including Assertive Community Treatment Teams (ACTT) and Community Support.

**Introduction**

This report describes the characteristics and service cost experiences of individuals who participated in the Housing Support Team (HST) pilot program in two North Carolina counties. The pilot is funded by the N.C. Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (DMH/DD/SAS). That division issued a Request for Applications (RFA) to Local Management Entities (LMEs) across the state in early 2007. That RFA invited LMEs to submit proposals to establish HSTs. The role of the HSTs is to support the coordination of services to homeless individuals and families.

Each HST was to contain two or three members. According to the RFA, one of those members was to be the team coordinator and provide a linkage between the HST and service providers such as the Assertive Community Treatment Teams (ACTT), the Community Support Teams (CST), or other community support providers. The two additional staff members could include a peer support specialist. HSTs were encouraged to hire a formerly homeless person in this role.

The HSTs were designed to provide non-clinical services. Members of the team were not intended to duplicate all types of services available through ACTTs or CSTs, although there could be some overlap. HST members were to coordinate discharge planning with hospitals, residential treatment facilities, jails, and prisons. Team members were also to perform outreach and to provide individuals eligible for services assistance with housing searches, assistance in completing applications, budget counseling, assistance in obtaining birth certificates, and other related services. HST members also could be engaged in landlord recruitment, establishing positive landlord relationships, the submission of requests for reasonable accommodations, and other related activities.

Three communities were awarded funds to establish HSTs: Durham, Guilford, and Buncombe counties. This report focuses on the experiences of individuals enrolling in HST programs in Guilford and Buncombe counties. Durham was not included in this analysis due to the inability to obtain the cost of services from a primary medical facility. Negotiations to obtain those data are ongoing. The experiences of individuals participating in the Durham HST will be included in a subsequent report.

Service costs are tracked by ten categories: incarcerations in jails and prisons; stays in emergency and long-term homeless shelters; emergency room and in-patient acute care hospitalizations; outpatient medical services; hospitalization in state psychiatric hospitals; mental health inpatient; mental health outpatient; substance abuse services; HIV services; and dental services. The costs of the HST services are not included. Also, the cost of housing is not included. Analysis of those costs will be included in a subsequent report.

**The structure of the Housing Support Teams**

In Buncombe County, HST services are provided by *Homeward Bound of Asheville* (HBofA), the main provider of housing-related services for the homeless and near-homeless in Asheville and Buncombe County. HBofA operates a day center, an emergency shelter program for women, and a long-term shelter for persons with chronic mental illness. It started a permanent housing program in 2006. HBofA also conducts street outreach and assists persons in prisons and psychiatric hospitals who face homelessness upon discharge.

The HST of Guilford County is a collaborative effort among three existing organizations: *Family Service of the Piedmont*, a nonprofit agency that provides counseling, victim services, prevention services and community education; the *Greensboro Housing Coalition*, a referral and educational organization that advocates for affordable housing for the poor and those with special needs; and *Open Door Ministries*, which provides crisis services including a community soup kitchen, a men's homeless shelter, transitional housing, emergency financial assistance and a substance abuse treatment program.

Qualification criteria for HST are the same in both locations: individuals must be homeless with no immediate viable option for housing, have a mental health diagnosis, and have a history of cycling in and out of publicly funded institutions and facilities such as jails and psychiatric hospitals. Persons living in shelters and transitional housing are eligible for services, as are those in jails, prisons, or hospitals who may be homeless upon discharge. However, the near-homeless, such as those who are doubling up or are in the process of eviction, are not eligible for HST services. Priority is given to individuals with the following mental health diagnoses: schizophrenia, schizoaffective disorder, bipolar

disorder, other psychotic disorders, organic brain syndrome, post-traumatic stress disorder (PTSD), and those who have co-occurring mental health and substance abuse disorders. Potential recipients must also be frequent and repeated users of various institutions: at least 4 stays in the past three years or a continuous one-year stay in places such as psychiatric units, emergency rooms, and jails.

**Services provided**

Similar services are provided in both programs: HST staff locate housing for recipients (which takes from 30 to 70 days), help them move in, and pay full rent and utilities costs for a contracted period—two years in Guilford; one year with a conditional one-year renewal in Buncombe. (Recipients who have a job or receive disability income or a government pension are expected to contribute 30% of their income toward rent.) HST staff provide comprehensive support services as needed while encouraging, but not requiring, recipients to seek services from an ongoing mental health provider. After a recipient finds and establishes a relationship with this provider, HST staff assume an increasingly peripheral role. Following a brief transition period, HST staff expect to provide only housing-related services and back-up crisis services, and the mental health provider becomes the first responder and primary provider. All Buncombe County recipients are placed directly in permanent housing, whereas many Guilford recipients are first placed in boarding houses or other transitional housing.

The ultimate goal of HST is to place recipients in a stable and affordable housing situation which they can maintain financially on their own—either through subsidies such as Section 8, roommates, or other appropriate options.

**HST clients included in this report**

In Buncombe County, HBofA began screening and identifying potential HST recipients in May 2007. Thirty-seven persons were approved for enrollment between May and September 2007, according to HBofA. Nineteen of these individuals were contacted by UNC-Chapel Hill researchers, and are included in this report.

In Guilford County, HST staff also began screening and identifying potential HST recipients in May 2007. According to the Guilford HST, 22 individuals were approved for enrollment between May 15 and September 30, 2007. Twenty of these individuals were interviewed for this study

**Housing in Buncombe County**

Nine of the 19 Buncombe County participants were housed in a 40-unit apartment community in Fletcher, NC, about 11 miles south of downtown Asheville. This community is a quarter-mile away from a full-service grocery store and pharmacy but more than a mile away from the closest Asheville bus stop. There are no health or mental health services within walking distance.

Three participants were placed in Woodfin Apartments and one was placed in Griffin Apartments. Woodfin and Griffin are supportive housing complexes in downtown Asheville. Griffin has onsite case management (the HBofA offices are located in the apartment building) and Woodfin has a HBofA-affiliated building manager living onsite.

Three participants were placed in a small mill village in Swannanoa, NC, about 11 miles east of downtown Asheville. The neighborhood contains modest but well-maintained homes with neat lawns and is a close-knit community of long-time homeowners. This community is ¾ mile away from a full-service grocery store and an Asheville bus stop.

The remaining three participants were placed in scattered site rental housing—duplexes or small apartments—throughout the Asheville area. None of these units are within walking distance of downtown, but all are close to an Asheville bus stop.

**Housing in Guilford County**

Guilford County residents were housed in both Greensboro and High Point. The HST works to place recipients near bus lines and other services such as stores and coin-operated laundries. Several recipients were placed in one neighborhood due to its location near an Alcoholics Anonymous site and other supportive services. In a few instances, the Guilford HST clustered a limited number of recipients in the same apartment complex. Numbers were limited so that the HST recipients would not dominate the complex.

**METHODS**

Nineteen Buncombe County HST recipients and 20 Guilford County HST recipients who were enrolled before October 1, 2007, completed a 90-minute semi-structured interview designed to gather information on service costs before and after their entry into permanent supportive housing. Many were re-interviewed 6-12 months later. All research participants agreed to sign a Health Insurance Portability and Accountability

Act (HIPAA) compliant form authorizing providers to disclose information about services received before and after moving into supportive housing. This blanket release authorizes investigators to request information from a wide range of groups, including health and mental health service providers, health insurance providers, state psychiatric hospitals, homeless shelters, jails and prisons, county departments of social services, and the NC Division of Medical Assistance. The authorization has a specific end date (no later than December 31, 2010) and includes a right to revoke.

Jails, shelters, hospitals, health clinics, mental health providers, and other service providers were contacted and asked to provide information about services received by study participants. Information was requested regarding the date or dates that services were provided along with the type and cost of those services. Costs often differ from the amount billed for services; for example, many low-cost health clinics do not bill patients, but the care they provide is not cost-free. Providers who do not bill, including jails, law enforcement agencies, and most shelters, were asked to estimate per-diem or per-episode costs based on operating costs. State and federal prison costs were calculated using average per-diem costs reported by the NC Department of Corrections and the Federal Bureau of Justice Statistics.

For this report, service costs are reported in two lump sums: those incurred during the 12 months *before* the participant began receiving HST services and those incurred during the 12 months *after*. A subsequent report will contain data on costs incurred during the 24 months before and 24 months after enrollment in the HST program with the information broken down by month.

Not all of the participants remained enrolled in the HST program for a full year. Three of the 19 Buncombe County participants and 5 of the 20 Guilford County participants left the program within their first year of enrollment. These “dropouts” are included in the descriptive data summarized in the Results section below, but their cost data is analyzed separately.

## RESULTS and DISCUSSION

### Demographic and descriptive data

Because the participants from Buncombe County and Guilford County differed in several areas, demographic and descriptive data is reported separately for each site.

Buncombe County participants are described in Table One; Guilford County participants are described in Table Two.

Participants varied widely in age, race, and other characteristics, but the average HST participant was an unemployed male in his late 40s who had been homeless at least twice. In addition to having a diagnosed mental illness severe enough to require the use of psychotropic medication, the average HST participant had one or more disabling physical health conditions and had struggled with alcohol or drug use in the past.

The average age of the Buncombe County participants at time of enrollment was 49; participants from Guilford County had an average age of 47. The majority of participants at both sites were male (63% in Buncombe and 60% in Guilford), but participants from Guilford County were significantly more racially and ethnically diverse than those from Buncombe County —60% black and 5% Hispanic vs. 32% black and 0% Hispanic. About a third of the participants (37% in Buncombe and 25% in Guilford) had served in the military. Most participants said during interviews that they had been homeless more than once, with an average of just over two episodes for Buncombe County participants and 3.75 episodes for those from Guilford County, and had experienced their first episode of homelessness at a relatively young age, an average of 35 for participants from Buncombe County and 29 for those from Guilford County. Only two Buncombe County participants (11%) and no Guilford County participants had paid employment at the time of the research interview. Just under half the participants said they received a government cash benefit, such as Supplemental Security Income (SSI) (16% in Buncombe and 25% in Guilford), Social Security Disability (SSDI) (11% in Buncombe and 20% in Guilford), or a Veterans Administration pension (5% in Buncombe and 5% in Guilford). A majority of participants (68% in Buncombe and 50% in Guilford) had no cash income at all.

**Table One**
**Demographic and Descriptive Characteristics for Study Participants from Buncombe County**
**(N=19)**

<table>
<tr><td>Race/ethnicity<br><br>Black = 6 (32%)<br>White = 13 (68%)<br>Hispanic = 0</td><td>Gender<br><br>Male = 12 (63%)<br>Female = 7 (37%)</td><td>Age (mean)<br><br>48.8 years<br>Min: 36<br>Max: 62</td><td>Times homeless[1] (mean)<br><br>2.2<br>Min: 1<br>Max: 6</td><td>Working<br><br>Yes = 2 (11%)<br>No = 17 (89%)</td><td>Government assistance<br><br>SSI = 3 (16%)<br>SSD = 2 (11%)<br>VA = 1 (5%)<br>None = 13 (68%)</td></tr>
<tr><td>Health insurance[2]<br><br>Medicaid = 7 (37%)<br>Medicare = 1 (5%)<br>Private = 0<br>VA = 4 (21%)<br>None = 9 (47%)</td><td>Military service<br><br>Yes = 7 (37%)<br>No = 12 (63%)</td><td>Mental illness<br><br>Yes = 16 (84%)<br>No = 3 (16%)</td><td>Type of MI<br>(primary diagnosis)<br><br>Schizophrenia<br>2 (12%)<br>Bipolar<br>7 (44%)<br>Depression<br>4 (25%)<br>PTSD<br>3 (19%)</td><td>Health condition<br><br>Yes = 18 (95%)<br>No = 1 (5%)</td><td>HIV<br><br>Yes = 3 (16%)<br>No = 16 (84%)</td></tr>
<tr><td>Any lifetime substance abuse problems<br><br>Yes = 16 (84%)<br>No = 3 (16%)</td><td>Current substance abuse problems<br><br>Yes = 4 (21%)<br>No = 13 (68%)<br>Refused = 2 (11%)</td><td>Dually diagnosed<br><br>(Data not available)</td><td>Taking psychotropic medications<br><br>Yes = 12 (63%)<br>No = 7 (37%)</td><td>Age when first homeless (mean)<br><br>35 years<br>Min = 22<br>Max = 54</td><td>Foster care in childhood<br><br>Yes = 1 (5%)<br>No = 18 (95%)</td></tr>
</table>

[1] Three individuals said they had been homeless “multiple times.” If these responses are removed, the average number of episodes of homelessness is 2.07 (n=15). If “multiple times” is operationalized as three, then the average number of episodes of homelessness is 2.27 (n=18). One individual refused to answer this question.
[2] Some individuals had more than one type of insurance.

**Table Two**
**Demographic and Descriptive Characteristics for Study Participants from Guilford County**
**(N=20)**

| **Race/ethnicity** | **Gender** | **Age** (mean) | **Times homeless (mean)** | **Working** | **Government assistance** |
|---|---|---|---|---|---|
| Black = 12 (60%)<br>White = 7 (35%)<br>Hispanic = 1 (5%) | Male = 12 (60%)<br>Female = 8 (40%) | ***47 years***<br>Min = 20<br>Max = 62 | ***3.75***<br>Min = 1<br>Max = 10 | Yes = 0<br>No = 20 (100%) | SSI = 5 (25%)<br>SSD = 4 (20%)<br>VA = 1 (5%)<br>None = 10 (50%) |
| **Health insurance** | **Military service** | **Mental illness** | **Type of MI** (primary diagnosis) | **Health condition** | **HIV** |
| Medicaid = 10 (50%)<br>Private = 1 (5%)<br>Medicare = 6 (30%)<br>VA = 2 (10%)<br>None = 1 (5%) | Yes = 5 (25%)<br>No = 15 (75%) | Yes = 17 (85%)<br>No = 3 (15%) | **Schizophrenia**<br>4 (20%)<br>**Bipolar**<br>7 (35%)<br>**Depression**<br>5 (25%)<br>**Anxiety**<br>1 (5%) | Yes = 18 (90%)<br>No = 2 (10%) | Yes = 3 (15%)<br>No = 17 (85%) |
| **Any lifetime substance abuse problems** | **Current substance abuse problems** | **Dually diagnosed** | **Taking psychotropic medications** | **Age when first homeless** (mean) | **Foster care in childhood** |
| Yes = 12 (60%)<br>No = 8 (40%) | Yes = 4 (20%)<br>No = 16 (80%) | Yes = 11 (55%)<br>No = 9 (45%) | Yes = 15 (75%)<br>No = 5 (25%) | ***29 years***<br>Min = 12<br>Max = 51 | Yes = 2 (10%)<br>No = 18 (90%) |

As expected, based on the eligibility requirements for HST services, most participants reported having a mental illness (84% in Buncombe and 85% in Guilford). The most commonly reported mental illness was bipolar disorder, also known as manic depression (44% in Buncombe and 35% in Guilford), followed by depression (25% in Buncombe and 25% in Guilford). Schizophrenia was more common among participants from Guilford County (20% vs. 12% in Buncombe), and anxiety disorder (including PTSD) was more common among Buncombe County participants (20% vs. 5% in Guilford). Most participants used psychotropic medications to control their mental illness (63% in Buncombe and 75% in Guilford).

Substance abuse had been a problem for most participants, although most said they had been able to put those struggles behind them. Eighty-four percent of participants from Buncombe County and 60% from Guilford County said they had experienced problems with alcohol or drugs at some point during their lives, but only 21% in Buncombe County and 20% of those in Guilford County said they were still having problems at the time of the research interview. Just over half (55%) of the participants from Guilford County had a "dual diagnosis" of both mental illness and substance abuse problems. (Dual diagnosis data was not available for Buncombe County participants.)

Physical health problems plagued nearly all those interviewed, with 90% of the participants from Buncombe County and 95% from Guilford County reporting a physical health condition. A small but significant percentage of participants reported having HIV or AIDS (16% in Buncombe and 15% in Guilford).

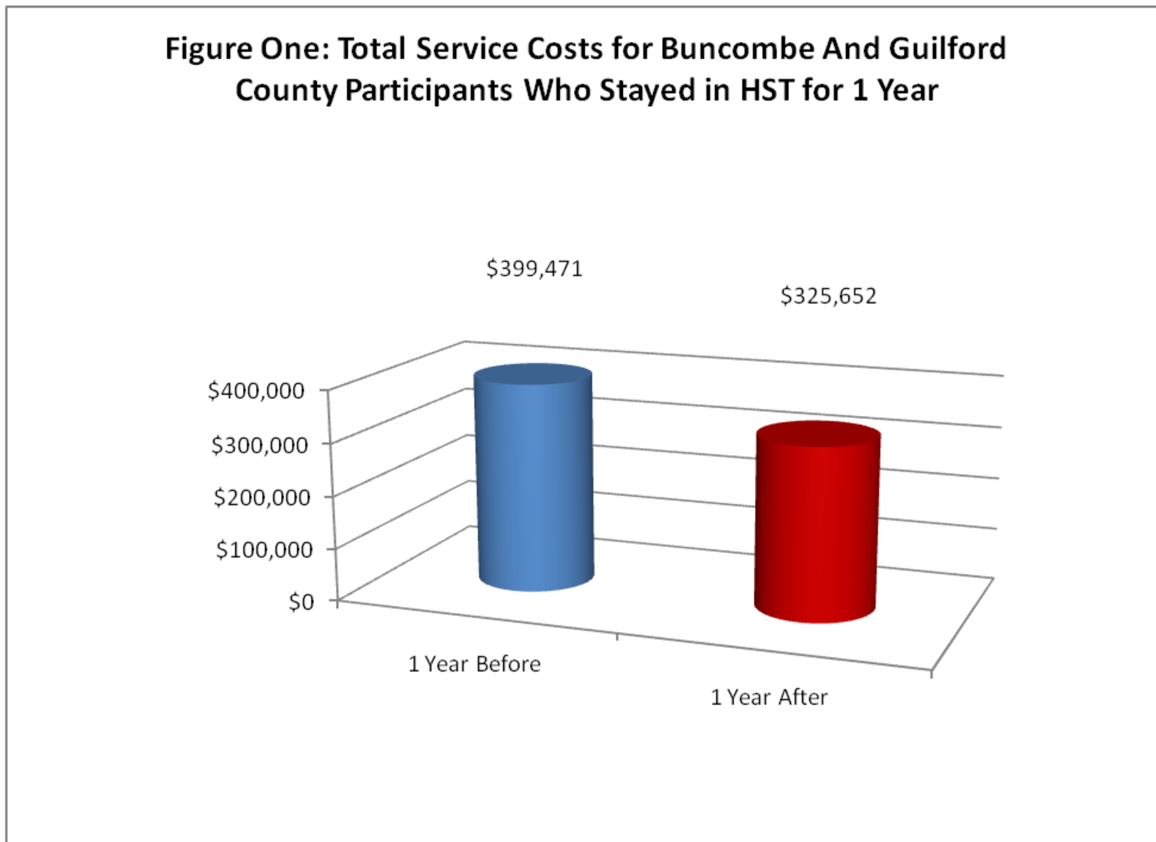
Health insurance coverage differed significantly in the two sites. In Guilford County, nearly all participants (95%) had some form of coverage, while only about half (53%) did in Buncombe County. Medicaid was the most common form of insurance, with 50% of the Guilford County participants and 37% in Buncombe County reporting they had that coverage. Medicare was common among participants from Guilford County (30%) but not in Buncombe County, where only one participant reported having that coverage. (Two of the study participants in Buncombe County said they had been deemed eligible for Medicare but had chosen not to seek coverage.) Two participants from Guilford County (10%) and four from Buncombe County (21%) received health services through a VA medical center. Private insurance coverage was rare, with only one

participant from Guilford County (5%) and none from Buncombe County reporting such coverage. The rest of the participants—47% of those in Buncombe County and 5% of those in Guilford County—had no health insurance at all.

Three of the 19 participants from Buncombe County and five of the 20 participants from Guilford County left the program within their first year of enrollment. Dropouts were similar to those who stayed in the program in all but one descriptive area: In Buncombe County, all three dropouts reported current substance abuse problems during the research interview, while only one of the 16 still enrolled reported the same. (Three individuals from Buncombe County, all of whom remained enrolled for the first year, refused to answer the question.)

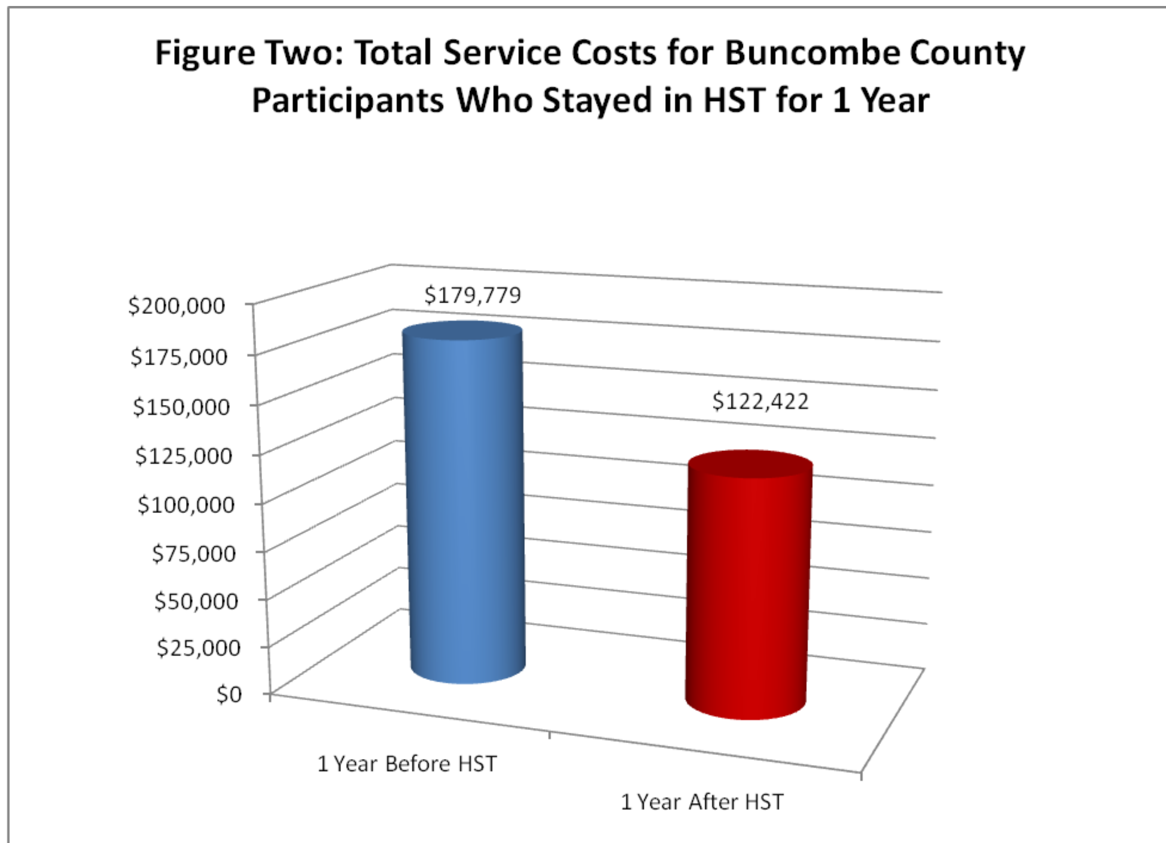
**Cost data**

When dropouts are removed, the costs for the 31 participants who remained in the HST program for at least twelve months total $399,471 pre-enrollment and $325,652 post-enrollment, a savings of $73,819, or 19%. This comparison is illustrated in Figure One.



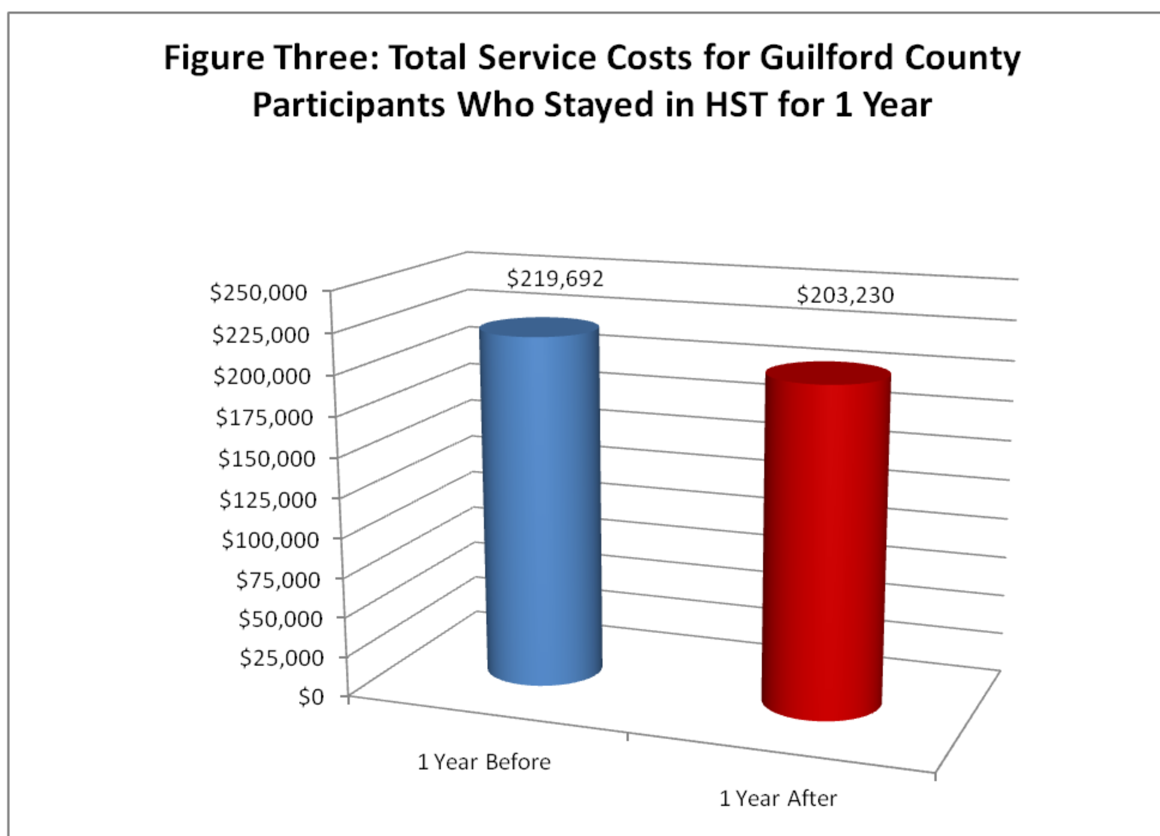
The figures include cost information for a participant from the Guilford group who was hospitalized in a state facility after receiving HST services. This individual incurred $56,086 in pre-enrollment costs, mostly in emergency and inpatient hospital care, and $47,943 in post-enrollment costs, mostly for psychiatric hospitalization in a state facility. This individual accounted for 14% of the service costs for all participants during the twelve months before entering the HST program and 15% of the service costs during the twelve months after entry.

Figure Two presents the costs for the 16 Buncombe County participants who remained in the HST program for twelve months. As the figure indicates, these individuals incurred $179,779 in costs in the year before receiving HST services. Those costs fell by $57,357—32%—to $122,422 during the year after entering the program.




The difference in costs for the 15 Guilford County participants who remained in the HST program for twelve months is shown in Figure Three. As the figure indicates, the cost of services they received in the year before joining HST was $219,692. Those costs fell by $16,462, or 7.5%, in the year after enrolling in HST. Figure Three includes information for the individual who entered a state psychiatric hospital in the year after

receiving services through HST. That one individual accounts for 26% of the total cost of services in the year before entering HST for Guilford County participants and 24% of the costs in the year after enrolling in HST.



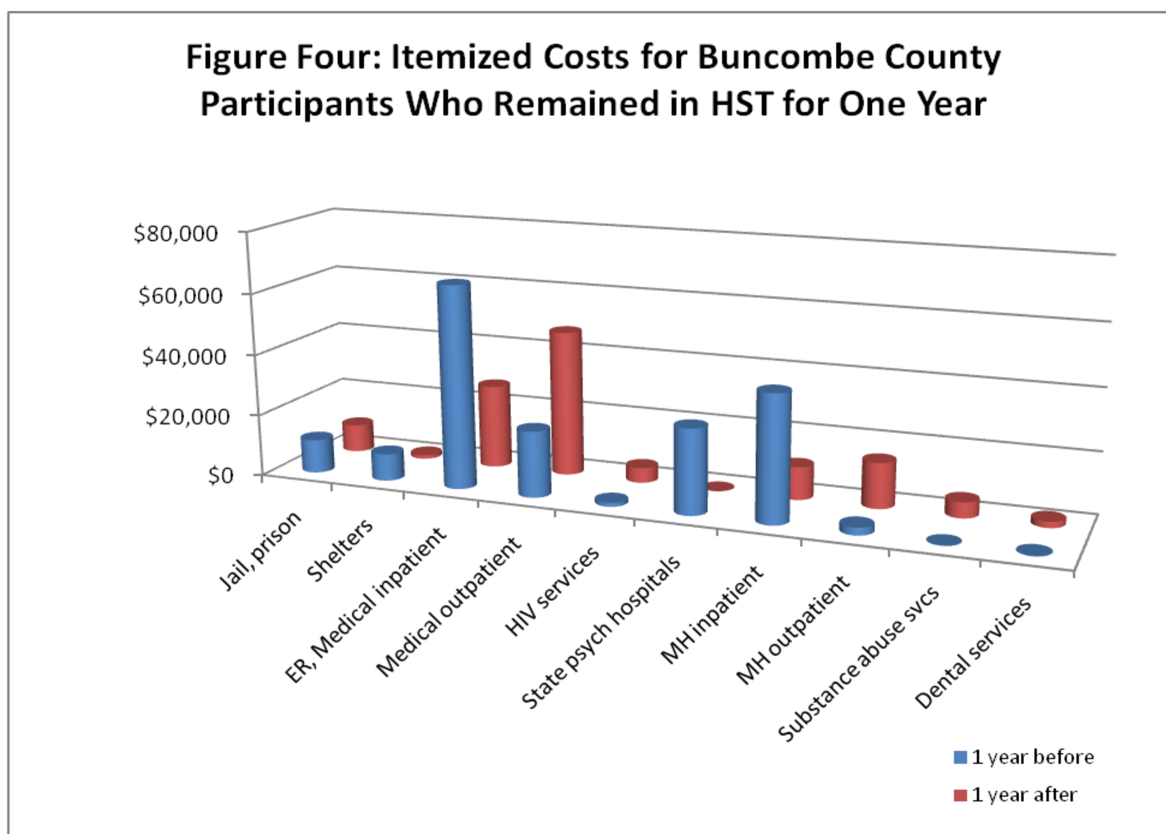

Cost data were categorized as follows:

- Arrest and incarceration, including jail and prison stays and, in Buncombe County, arrests and citations.
- Shelter in emergency and long-term homeless shelters. Transitional housing is not included in this category.
- Hospital-based emergency and urgent care and inpatient medical hospitalization. All visits to emergency rooms and hospital-based urgent care clinics are included in this category. Services received at free-standing urgent care clinics and psychiatric and substance abuse services are categorized separately, as detailed below.
- Outpatient medical services, including all services at free and low-cost medical clinics, free-standing urgent care clinics, and private medical providers.

Outpatient services provided by hospitals, such as outpatient surgery and outpatient observation, are also included in this category.

- HIV-related services (Buncombe County only). This category includes case management and counseling services, plus rent and utility assistance, prescription medication, and some medical services provided by AIDS service organizations. Most HIV-related medical services are *not* included, as the key Buncombe County provider of these services was unable to provide data in time for this report.
- State psychiatric hospitalization at Broughton, Cherry, Dix, Umstead, and Central Regional hospitals.
- Mental health inpatient. This category includes all inpatient psychiatric services *except* those provided at state psychiatric hospitals.
- Outpatient mental health services, including case management, individual counseling, and outpatient psychiatric medication checks.
- Substance abuse services, including detox, residential treatment, outpatient counseling and groups, and methadone maintenance.
- Dental services and materials, including cleanings, fillings, extractions, and dentures.

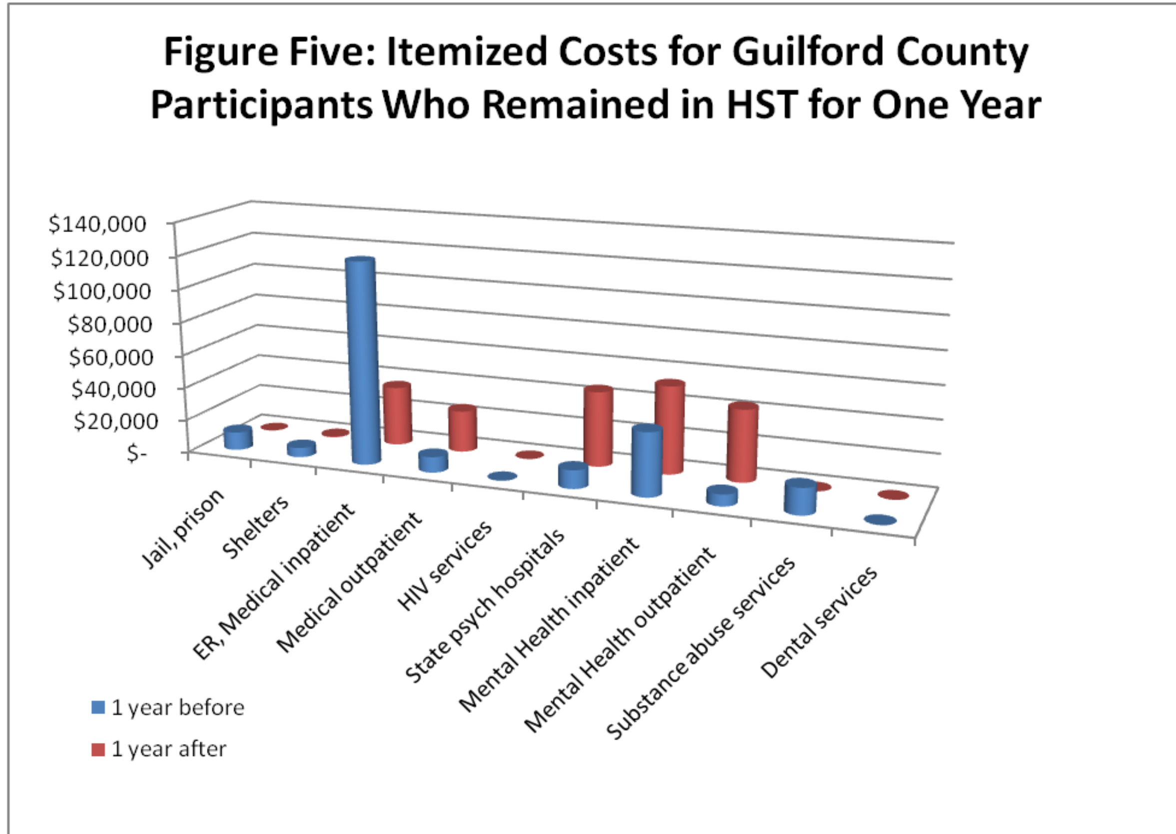
Figure Four provides a breakdown of the costs for both the year before enrolling in HST and the year after for the 16 Buncombe County participants who remained in the HST program for twelve months or longer. As the figure indicates, the costs of some service categories fell while others increased. The cost of incarceration in jail and prisons fell by $1,862, or 17%. Cost for shelters fell 86% from $8,826 to $1,236. Emergency room and inpatient costs fell by $38,810, or 59%. At the same time, medical outpatient costs increased by $25,822 or 120%. One reason for this trend is that individuals who were housed as the result of HST and were receiving case management services were able to obtain medical treatment for chronic conditions. Before HST, these individuals either did not receive treatment or were treated in the emergency room. The figure also indicates that the cost of HIV services for HST participants in Buncombe County increased by 284%—from $1,272 to $4,881.




The costs of hospitalizations at state psychiatric facilities fell from $27,648 to zero among the Buncombe County HST participants who remained in the program for at least a year. Mental health inpatient costs also fell substantially—by 74%—from $40,891 to $10,683. The drop in costs in these two categories is likely due to the fact that HST participants were housed—as opposed to being homeless—and were able to obtain mental health services on an outpatient basis. This hypothesis is supported by the increase in the amount spent for mental health outpatient services. The costs of these services increased from $2,469 in the year before enrolling in HST to $14,812 in the year after entry, a five-fold jump. Costs for substance abuse services also increased for the Buncombe County HST participants, from zero in the year before entry into HST to $5,123 in the twelve months after enrollment. The costs of dental services increased thirteen-fold, from $135 in the year before entry to $1,999 in the year after entry.

The itemized costs for the 15 HST participants in Guilford County who remained in the program for at least a year after enrollment are illustrated in Figure Five. Overall, the total service costs in Guilford County fell by $16,462. Costs for medical outpatient, mental health inpatient, mental health outpatient, and state psychiatric hospitals

increased. The increase for state psychiatric hospitals is due to one individual who was placed in a state facility while receiving HST services.




As the figure indicates, incarceration costs for the 15 HST participants in Guilford County dropped from $10,890 to zero. Costs associated with homeless shelters dropped 94% from $5,758 to $538. Emergency room and medical inpatient costs dropped by $86,054—71%—from $121,869 to $35,815. As was the case in Buncombe County, medical outpatient costs for Guilford County HST participants increased after enrolling in the program. As the figure indicates, the cost in Guilford County increased from $9,402 to $25,125, a jump of 167% ($15,724). Costs for services in state psychiatric hospitals increased by $34,292, from $11,104 to $45,396. All of the costs in the year after enrollment—$45,396—are due to the hospitalization of one individual.

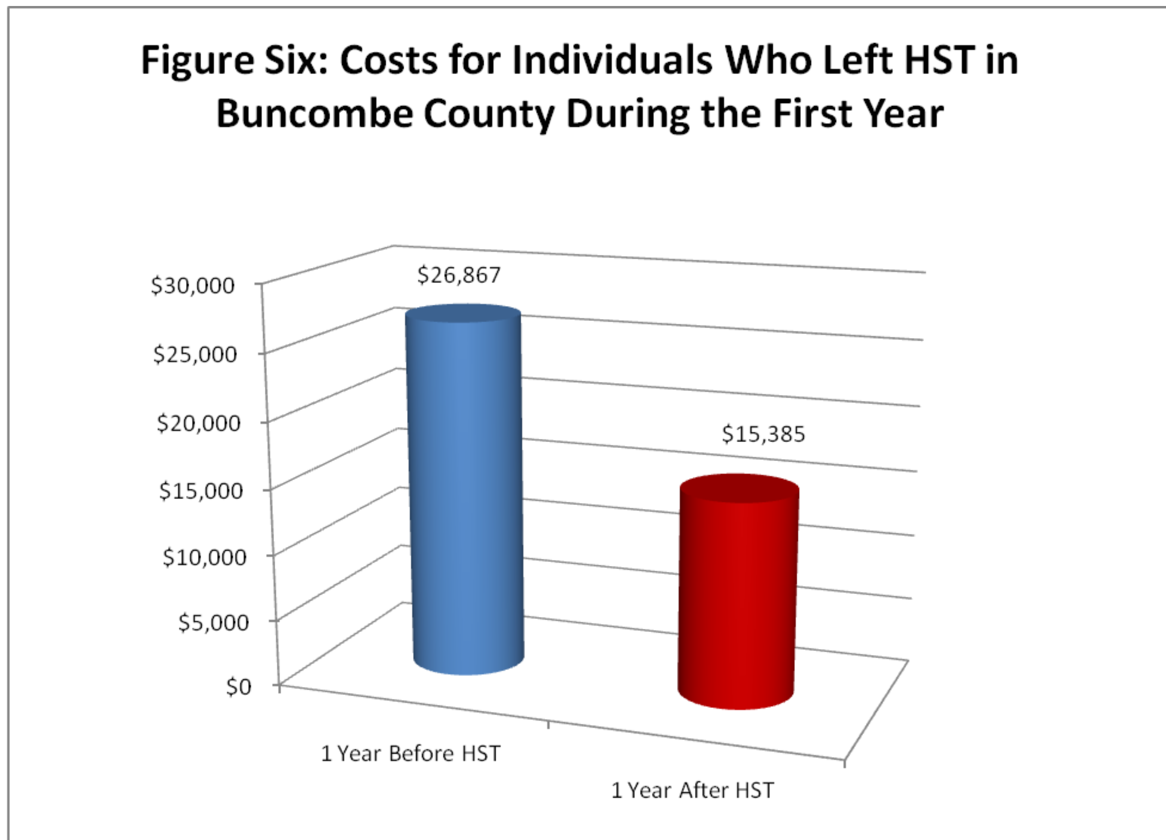
The figure also shows that costs for mental health inpatient services increased by $14,994, from $37,949 to $52,943. There is also a five-fold increase in mental health outpatient services, from $6,945 to $43,413. At the same time, the costs for substance abuse services for these HST participants fell from $15,776 in the year before enrolling in HST to zero afterward. This suggests that after enrolling in HST, participants began

receiving mental health services they were not able to access earlier. Part of this may be due to case management services.

Guilford County HST participants had no costs for HIV services or dental services in either the year before receiving HST services or in the year after enrollment.

**Dropouts**

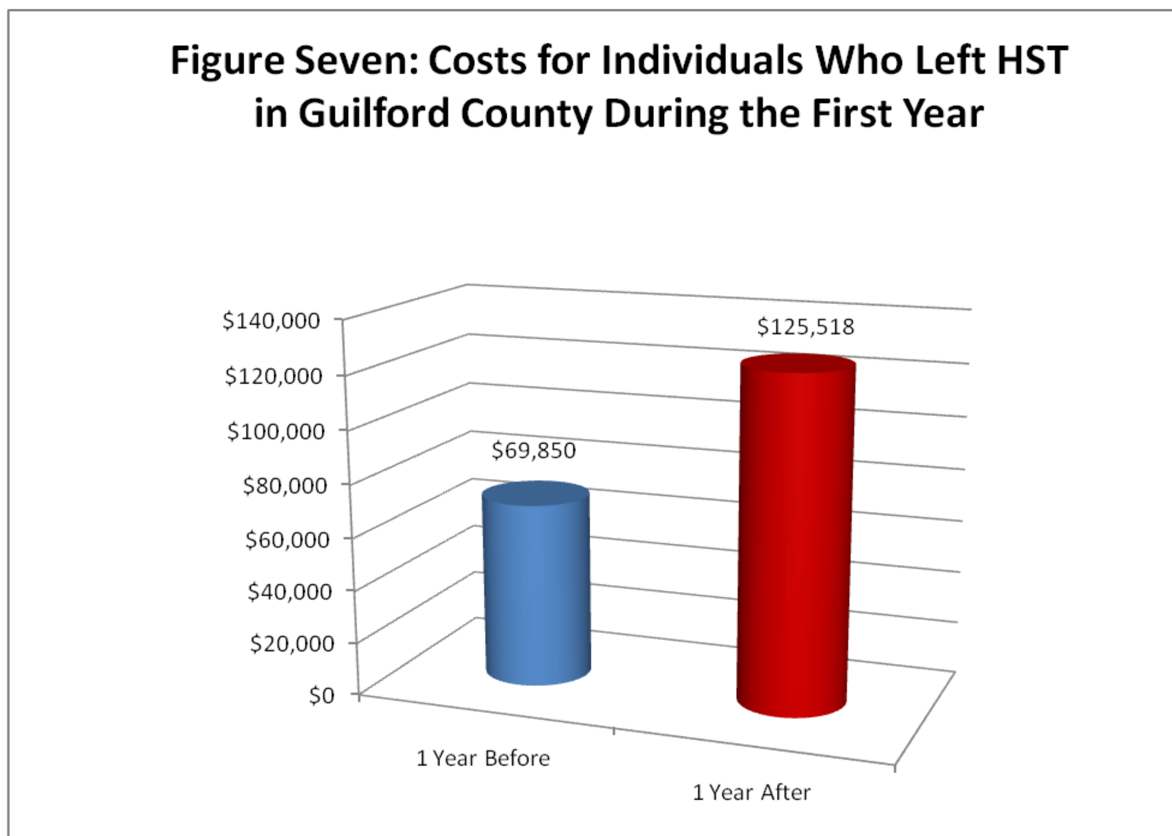
Figure Six presents the costs for the three individuals from Buncombe County who dropped out of the HST initiative before twelve months were over.




As the figure indicates, the costs for these individuals in the twelve months before enrolling in HST were higher than those in the year after entering the program. Some of the services in the year after enrollment were received while the individual was still participating in the HST initiative, while other services were received after leaving. In the year before entry to HST, the combined service costs for these individuals was $26,867. These costs fell by $11,483, or 43%, to $15,385. There are several reasons that the costs in the year after exit are lower. First, many of these individuals are mobile and may have left the area. As a result, services they received in their new locations were not being tracked. Second, a number of these individuals may have received assistance, such as

medical treatement for a chronic condition or other services that allowed them to stabilize their health, that permitted them to get by for a while without having to obtain additional services. At some point, these individuals will likely require additional services or treatment, at which point their costs will increase. Also, for those individuals who remain in Buncombe County and are not avoiding treatment, it may be the case that the services they received after enrolling in the HST program stabilized their condition and resulted in lower service costs even though they left.

The costs for the five individuals who dropped out of the HST program in Guilford County are shown in Figure Seven.




As the figure illustrates, the cost of services consumed by these individuals increased by $55,668 in the year after they entered HST. As is the case in Buncombe County, some of the services were received before the individual left HST while others were incurred after exiting the program. The cost of services in the year before enrolling in HST was $69,850. In the year after enrolling, these costs were 80% higher ($125,518). This figure suggests that, at least for the individuals from Guilford County, the HST program reduced service costs.

Cost data included in this report, while comprehensive, is not complete. Cost data for medical and other services provided by the Asheville VA Medical Center was unavailable. (The two Guilford County participants with VA medical coverage said they had not received VA services during the study period, so no information was requested.) Also, one of Buncombe County's major providers of low-cost health, mental health, and dental services was unable to supply cost data in time for the preliminary report. This information will be included in a subsequent report. Cost data for substance abuse services may also be incomplete, as North Carolina's Medicaid claim reports sent to LMEs do not include record of such services. Thus, any substance abuse services received by the 17 participants who have Medicaid may not have been captured. Requests for cost data from a small number of individual substance abuse service providers also were unsuccessful and are not included in this report. Attempts will be made to obtain these costs in the future. Also, a few of the halfway houses and treatment centers have closed and could not be contacted.

Six of the participants from Buncombe County said they had received services outside the Asheville area during the 12 months pre-enrollment, and at least one received non-local services in the 12 months post-enrollment. At least two Guilford County participants received services outside the Piedmont Triad area in the months before they enrolled in HST. Many but not all of these non-local providers were contacted. Most have not provided cost information for this report. Thus, some pre-enrollment costs are not captured in this report.

**Discussion of costs**

In reviewing the changes in costs by category, several trends are evident. Not surprisingly, shelter costs decreased after enrollment in HST. In Buncombe County, costs dropped from $8,826 before enrollment to $1,236 after; in Guilford County, costs dropped from $5,758 to $538. (The post-enrollment cost is not zero because many participants stayed in shelters while awaiting placement in housing—sometimes for a month or more.) Arrest and incarceration costs dropped dramatically in Guilford County—from $10,890 to $0—and also dropped in Buncombe County, from $10,979 to $9,118. Two Buncombe County participants stated that they were jailed following enrollment for offenses committed while homeless. This may artificially inflate post-

enrollment costs for that site. Also, one of the Buncombe County dropouts was incarcerated in a federal prison for much of the year prior to enrollment. This person's costs are not reflected in this report, because this cost analysis includes only those who remained in the HST program for a full 12 months. If his costs were added, the pre-enrollment costs for Buncombe County would nearly triple.

Costs for hospital-based emergency and urgent care and inpatient hospitalization dropped substantially. In Buncombe County, costs dropped from $66,028 to $27,218. In Guilford County, these costs dropped even more dramatically, from $121,869 to $35,815. These results are similar to those found in other research. Outpatient healthcare costs increased post-enrollment, from $21,530 to $47,352 in Buncombe County and $9,402 to $25,125 in Guilford County. This increase—which is more than compensated for by the drop in more expensive emergency care and inpatient hospitalization—is to be expected, as having housing permits the stability necessary to seek care for chronic conditions that may have been ignored during homelessness. This data is incomplete, as VA information was not available for participants from Buncombe County. (VA information was not sought for Guilford County participants, because neither of the two individuals who were eligible for VA benefits reported receiving services during the study period.)

Six participants (three each in Buncombe and Guilford) have HIV or AIDS. In Buncombe County, the costs of most *non-medical* services provided by the AIDS services organizations in that area, including counseling and case management, were tracked. Rent and utility assistance, prescription medication, and some medical services were also tracked. Most HIV-related *medical* services received by Buncombe County participants are *not* included in this report because data were not available from the area's main provider of medical services for persons with HIV/AIDS. These HIV-related costs increased post-enrollment, from $1,272 to $4,881. It should be noted that one of the three HIV-positive Buncombe County participants lived outside of the area for part of the pre-enrollment period and thus did not incur costs in Buncombe County during that time.

Dental care is often neglected by the homeless and poor, as services are not covered by most health insurance plans and many dentists refuse Medicaid patients. Less than half of the participants from Buncombe County (47%) and only one from Guilford County (5%) reported receiving dental services during the two years prior to the research

interview. Full dental costs for Buncombe County were not captured because one major low-cost dental provider did not provide data and VA data were unavailable. In Buncombe County, dental costs were insignificant but did increase post-enrollment, from $135 to $1,999. All pre-enrollment costs and $1,616 of the post-enrollment costs were incurred by one individual. No dental costs were found for participants from Guilford County.

Psychiatric hospitalization is one of the most cost-intensive services for persons with mental illness. The state of North Carolina operates four psychiatric hospitals: Broughton, Cherry, Central Regional (the Butner hospital that replaced Umstead and will replace Dix), and Central Regional-Wake Campus (formerly Dix). A total of 18,498 adults were admitted during the state fiscal year 2006-07. Also, the state budgeted more than $277 million to operate these facilities in that year. Reducing clients' utilization of state psychiatric hospitals was a key goal of the HST initiative.

These costs were eliminated entirely in Buncombe County, from $27,648 to zero. They increased in Guilford County by $34,292, from $11,104 to $45,396. This increase in Guilford County is due to the cost for one individual who was hospitalized during the first year after enrolling in the HST program. The number of bed days decreased from 56 to 1 in Buncombe County but increased from 19 to 53 in Guilford County. (One individual from Buncombe County checked into a state hospital after HST enrollment while she was waiting to be housed but checked out the same day; costs were not reported.)

Inpatient psychiatric care at other hospitals also showed an overall decrease post-enrollment, although costs actually increased in Guilford County, from $37,949 to $52,943. In Buncombe County, costs decreased from $40,891 to $10,683. All pre-enrollment costs in Buncombe were incurred by a single individual, and all post-enrollment costs were incurred by a different single individual. One goal of the HST program is to help mentally ill homeless individuals find stability and gain financial independence by providing housing and ongoing mental health case management. While such services can be expensive, they are more cost-efficient than inpatient hospitalization, and the stability they provide can forestall or prevent crises that could otherwise lead to a trip to the emergency room or the local jail. In Buncombe County,

outpatient mental healthcare costs increased post-enrollment, from $2,469 to $14,812. In Guilford County, these costs increased from $6,945 to $43,413. These amounts do not include counseling and case management services provided by the VA. Three of the four individuals from Buncombe County (including two dropouts) who receive VA-covered care said they received such outpatient care. (Information from the VA was not sought for Guilford County participants, because neither of the two individuals who were eligible for VA benefits reported receiving services from them during the study period.)

Substance abuse treatment costs decreased overall, but trends differed by site. In Guilford County, costs decreased from $15,776 to zero, while in Buncombe County, costs actually increased from zero to $5,123. All Buncombe County costs were incurred by a single individual who started receiving outpatient substance abuse services shortly after HST enrollment. These costs are incomplete, since two Buncombe County participants (including one dropout) reported receiving numerous substance abuse services at the VA Medical Center, and VA costs for Buncombe County could not be obtained for this report.

**Summary**

This report provides information on the costs of services received by homeless individuals participating in a pilot program in North Carolina. As part of the pilot program, funds were made available to Local Management Entities (LMEs) in three counties to fund Housing Support Teams (HSTs). The purpose of the HSTs is to coordinate services to homeless individuals and families. The pilot is sponsored by the N.C. Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS). Three counties were selected to participate: Buncombe, Guilford, and Durham. This report explores changes in service utilization—as measured by the changes in the costs of services—by individuals who enrolled in the program during the first three months of operation in two counties, Buncombe and Guilford. Durham County was not included in this report because information on the costs of medical services is not currently available.

There were 19 individuals from Buncombe County and 20 from Guilford County who enrolled in the HST initiative by September 30, 2007. The end of September 2007 was used as a cutoff date for this report in order to allow the follow-up of the costs of

services for a twelve-month period after enrollment. Eight of these 39 HST participants dropped out of the program before twelve months. Their costs, as identified through local service providers, were followed separately. Close to two-thirds of the HST participants were male. The program participants in both counties had an average age of 47 to 48.8.Only two were working at the time they were interviewed by UNC-CH researchers. Between two-thirds and three-fourths of the participants were taking psychotropic medications. Most acknowledged having a substance abuse problem.

Overall, the costs of services for the 39 participants who remained in the program declined by 19% between the twelve months before enrolling and the twelve months after. This represented a savings of $73,819. The difference in costs savings varied between the two counties. The service costs savings in Buncombe County were 32%, while the savings in Guilford County were 7.5%. About one-fourth of the service costs in Guilford County were incurred by one person. That individual was the only one of the 39 individuals who remained in the program for a year who re-entered a state psychiatric hospital after enrolling in HST. That one hospitalization cost $45,396.

Except for that psychiatric hospitalization, both counties had a similar change in the pattern of itemized costs. Costs for incarceration in jails and prisons, stays in homeless shelters, emergency room and inpatient hospitalizations, and costs for substance abuse services declined in the year after enrolling in HST. Costs for medical outpatient, mental health inpatient, and mental health outpatient services increased. There was an increase in costs for HIV and dental services in Buncombe County. No costs for these services were identified in Guilford County.

The costs for these individuals, as well as others who enrolled in HST, will be tracked for a two-year period. The analysis of those costs will be covered in a subsequent report.

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