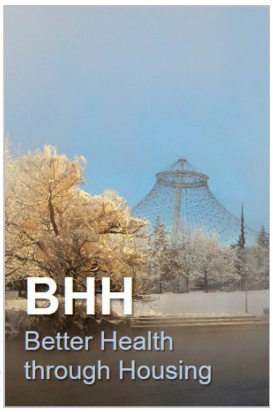

Spokane Better Health through Housing

A Pilot Program Connecting Homeless High Emergency Department Utilizers to Housing

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A SMALL PERCENTAGE of emergency department (ED) patients suffering from chronic conditions[1] account for a disproportionate share of ED-related healthcare costs (Kanzaria et al., 2019). A significant proportion of them are also unhoused and unable to access adequate primary healthcare, placing them at higher risk for poor outcomes because of persistent, unmanaged disease (Zlotnick, Zerger, & Wolfe 2013).[2] In 2019, the Washington State Legislature directed the Department of Commerce to develop a *Better Health through Housing* (BHH) pilot program in collaboration with an Accountable Community of Health (ACH). The pilot was implemented by the Better Health Together (BHT) ACH in November 2019 and is located in Spokane, Washington. Modelled after the BHH program implemented in Chicago, Illinois, the Spokane BHH program places unhoused individuals with complex health needs into housing and connects them to relevant care and support services. Program goals include placement in permanent housing, improved physical and behavioral health, increased access to primary care and support services, reduced ED utilization, and lower health care costs. This report describes baseline characteristics and outcomes of individuals referred to the program. Despite the impact of COVID-19 on program operations, program staff successfully identified and served a cohort of high-cost, unhoused individuals. Small sample sizes and limited follow-up periods prohibit an outcome evaluation with a matched comparison group; consequently, we are unable to provide conclusions about the program's effect on health or housing outcomes.

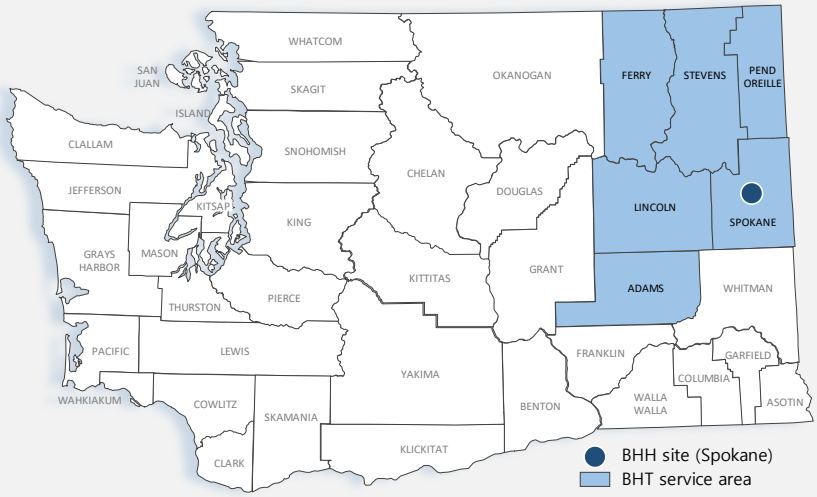
Key Findings

1. **The Spokane BHH program was successfully implemented as designed.** In total, 78 homeless, high ED-utilizers were referred to the Spokane BHH program between November 2019 and January 2021. Two-thirds (n = 54) met program eligibility criteria, and 42 were formally enrolled. As of January 2021, 13 participants were housed, on average, within 73 days of program referral despite widespread housing shortages in the Spokane area.
2. **The Spokane BHH program identified and engaged clients with highly complex health care needs.** The prevalence of chronic illness far exceeded rates observed among other BHT Medicaid recipients: BHH participants were much more likely to meet federal or state disability standards and have behavioral health problems, chronic health conditions, and/or traumatic brain injuries.
3. **Individuals referred to the Spokane BHH program were high utilizers of hospital services.** They were 22 times more likely to have visited the ED, 9 times more likely to use non-ED treatment services, and 25 times more likely to be hospitalized than other BHT Medicaid recipients.

[1] For example, diabetes, congestive heart failure, renal disease, or behavioral health disorders.
[2] *See also* Hwang et al., 2011; Hwang et al., 2013; Latimer et al., 2017; Kanzaria et al., 2019; and Salit et al., 1998.

About the Spokane Better Health through Housing Program

FIGURE 1.
BHH Program and BHT Service Area



Originally developed, initiated, and funded by local hospitals in Chicago, Illinois, the BHH program seeks to improve health-related outcomes for homeless, frequent ED utilizers. In coordination with community service organizations, the program accomplishes this goal by placing at-risk individuals in supportive housing and providing ongoing care coordination before and after housing placement.

In July 2019, the Washington State Legislature provided funding to the Department of Commerce under ESHB 1109[3] to collaborate with at least one Accountable Community of Health (ACH)[4] to implement a similar BHH pilot program in Washington. Consistent with the Chicago BHH program, the BHH pilot program focused on housing homeless individuals with complex health needs and connecting these individuals to housing and relevant services. Following a competitive bidding process, the Department of Commerce selected Better Health Together (BHT), an ACH located in northeastern Washington, to administer the program. BHT, which serves Adams, Ferry, Pend Oreille, and Spokane Counties, proposed Spokane, Washington as the pilot site.

The Spokane BHH program began as a collaboration between two local hospitals (Providence Health Care and MultiCare Deaconess) and a local community service organization, Spokane Neighborhood Action Partners (SNAP). In keeping with the structure of Chicago's BHH program, hospital social workers in Spokane screen high ED-utilizers for program eligibility. Individuals are eligible for the Spokane BHH program if they meet the following criteria:

- Chronically homeless.
- High utilizer of emergency department services (e.g. four or more visits in the past year).
- Diagnosed with a substance use disorder, mental health disorder, or chronic medical condition.
- Level of Care Utilization System (LOCUS) assessment score of 14 to 19.[5]

If an individual meets these requirements, the hospital social worker notifies a community health worker (CHW) at SNAP, who performs outreach to eligible individuals, assesses their current housing and health needs, and identifies other social service needs (e.g. enrollment in Medicaid, connection to food assistance, etc.). The CHW then conducts a warm handoff to a SNAP housing specialist. The specialist then secures short-term housing, if appropriate, and collaborates with the Spokane Housing Authority and other local housing providers to secure permanent supportive housing or a suitable alternative. Throughout this process, the CHW and housing specialist provide case management and care coordination support to the BHH program participant. This support continues even after the individual has been housed.

[3] The legislative proviso is detailed in Section 129, Subsection 50 (pp. 38-39) of Engrossed Substitute House Bill 1109 passed by the 66th Washington State Legislature on April 18, 2019.
[4] ACHs are regional self-governing organizations with a multidisciplinary focus on improving health and transforming care delivery systems for individuals living within their region.
[5] The LOCUS is a standardized assessment to determine the acuity and level of an individual's care needs across multiple domains (e.g., risk of harm, function status, history of recovery and treatment, etc.). Additional information about the use of the LOCUS for the Spokane BHH program is available at http://www.betterhealthtogether.org/bhh.

Spokane BHH Program Implementation

Impact of COVID-19 on Implementation. Referrals to the program slowed dramatically as the pandemic impacted communities across Washington State. Prior to March 2020, the program was on track to refer 50 participants to the program by April 2020, but had only referred 36 participants by the end of that month. The outbreak of COVID-19 in early 2020 and subsequent state and federal responses to the pandemic affected the Spokane BHH program in several ways.

1. COVID-19-related issues prolonged the intake process and significantly hindered efforts to engage participants in a timely manner. Normally, several months of outreach and sustained contact are required to develop the trust and rapport necessary to engage eligible participants in the program. These outreach efforts became more challenging as individuals avoided emergency shelters and other usual gathering places.
2. Pandemic-related eviction moratoriums exacerbated existing housing shortages in the Spokane area, making it especially difficult to place individuals in permanent housing.

Program staff made several modifications to the program to address these issues. To counter the decline in referrals from hospitals, regional Managed Care Organizations also began making referrals as of September 2020. BHT implemented a number of interventions to improve communication with potential participants, such as providing participants with cell phones and providing nominal incentives to participants to promote continued contact with program staff.

Program Milestones. Despite significant implementation challenges due to the COVID-19 pandemic, hospital social workers referred 78 individuals (hereafter, "participants") to the Spokane BHH program between November 2019 and January 2021. Figure 2 illustrates the progression of the 78 participants[6] with a valid referral date through key program milestones. Of these 78 participants:

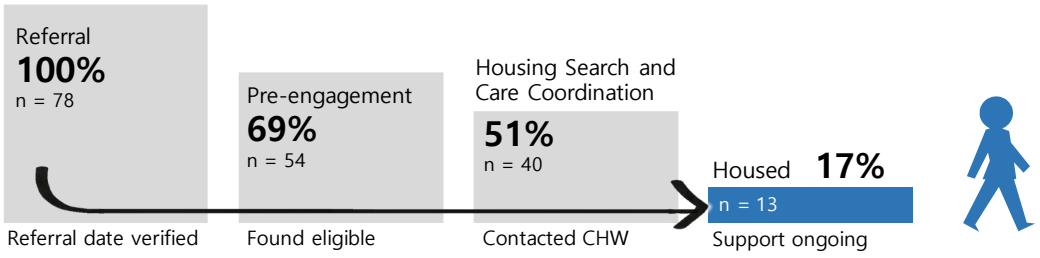
- 69 percent (n = 54) were administered a LOCUS assessment and found eligible for BHH services.
- 51 percent (n = 40) had contact with SNAP's CHW and enrolled in the program.
- 17 percent (n = 13) were placed in housing appropriate to their situation and care needs. On average, housed Spokane BHH participants were placed in a transitional[7] or permanent housing unit or long-term care facility within 73 days (about two-and-half months) after their referral.

Key Acronyms

ACH	Accountable Community of Health
BHH	Better Health Through Housing
BHT	Better Health Together
CDPS	Chronic Illness and Disability Payment System
CHW	Community Health Worker
ED	Emergency Department
LOCUS	Level of Care Utilization System
SNAP	Spokane Neighborhood Action Partners

FIGURE 2.

Spokane BHH Program Progression



[6] Three individuals who were referred to the BHH program but did not have a referral date were excluded from analysis.
[7] Some participants were placed in transitional housing units while waiting for permanent housing and/or to help build their rental history.

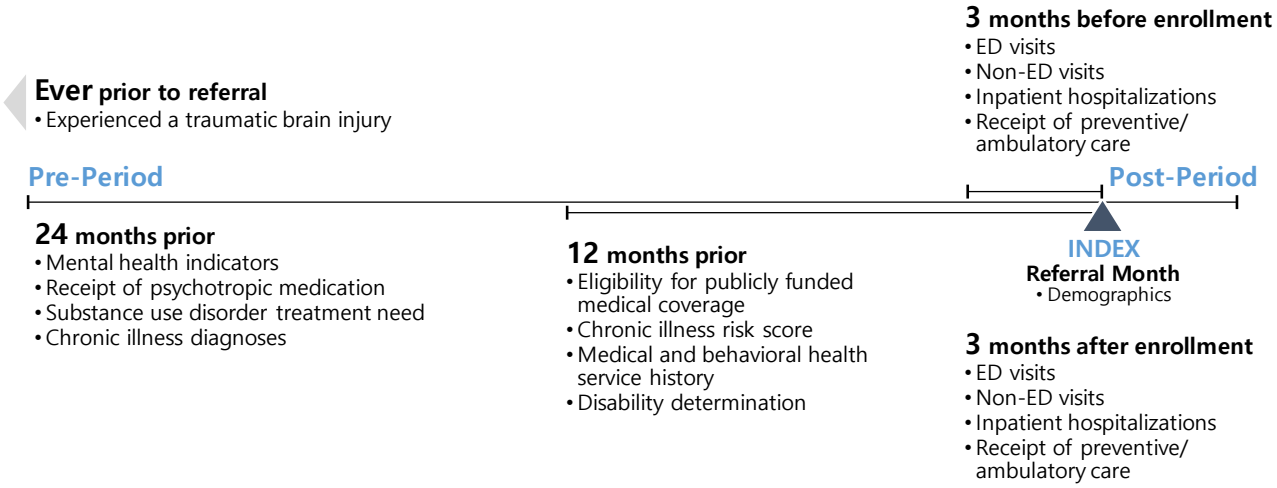
Engagement was high among participants found eligible for Spokane BHH services: 74 percent (n = 40) of the 54 participants found eligible for BHH care coordination and housing services connected with SNAP's CHW and enrolled in the program. Half of enrolled participants were screened for program eligibility, completed the LOCUS assessment, and connected with the CHW within a week of their referral date.

Roughly half (n = 38) of the 78 individuals referred to the Spokane BHH program were disenrolled as of January 2021. Thirty-six percent of disenrolled individuals participated in the program for 30 days or less. The most frequent reasons for case closure reported in a site-maintained participant log include: program staff not being able to contact the participant; participants not meeting eligibility criteria; participants already being housed; and voluntary withdrawal from the program. A key challenge of the program was maintaining contact with BHH program participants. This issue was exacerbated by the onset of the COVID-19 pandemic, as participants began to avoid emergency shelters and hospitals.

Baseline Characteristics of Spokane BHH Program Participants

Once implemented, Spokane BHH-affiliated staff were able to successfully identify unhoused individuals with considerable physical and behavioral health needs and refer them to program caseworkers. In the next section of this report we use administrative data to describe the characteristics of individuals referred to the Spokane BHH program (*see* Technical Notes). Due to a variety of factors contributing to lags in availability of administrative records, our analyses are limited to individuals who were: 1) referred to BHH no later than September 2020; 2) 18 years of age or older at referral; 3) enrolled in Medicaid in the year prior to their referral date; and 4) correctly linked to administrative records in the Integrated Client Database (Mancuso, 2020). Forty of the 78 Spokane BHH participants included in the preceding analyses met these inclusion criteria; 27 (68 percent) were found eligible for full BHH services. When relevant for comparative purposes, we also provide summary information on other full-benefit, Title XIX Medicaid beneficiaries residing in BHT's service area. Information on the measures and measurement periods employed in these analyses are provided in Figure 3.

FIGURE 3.
Study Timeline



Demographics. Spokane BHH participants were between 19 and 70 years old and were, on average, 48 years old as of their program referral date. BHH program participants were more likely to be male, relative to the average BHT Medicaid recipient (*see* Table 1). One out of four Spokane BHH participants were Black, Indigenous, or other persons of color.

TABLE 1.

Participant Characteristics at Program Referral

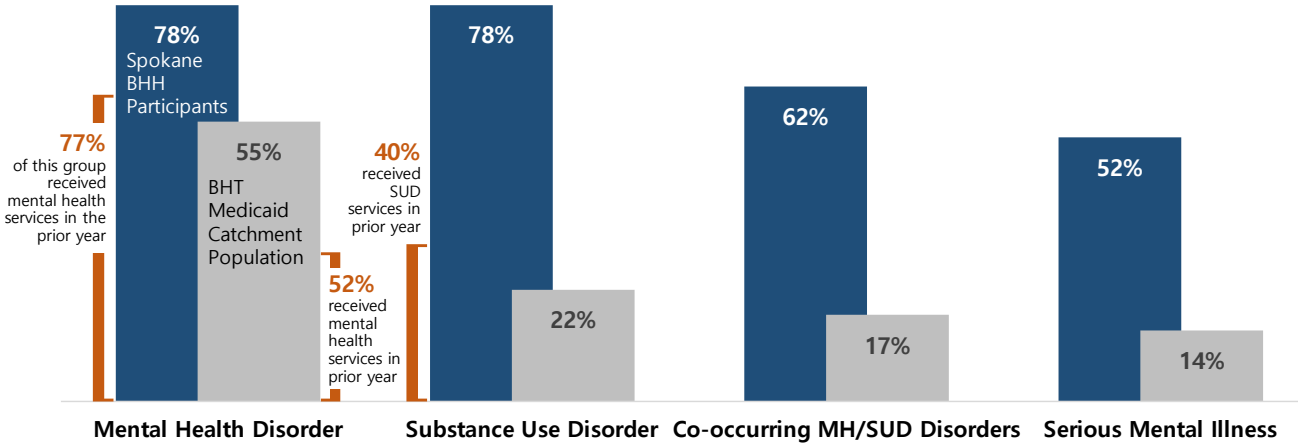
	Spokane BHH Participants *n = 40*	Other Adult BHT Medicaid Recipients Ages 18–70, *n = 98,158*
GENDER		
Male	72%	46%
Female	28%	54%
AGE		
18-44 years	36%	67%
45 years and over	64%	33%
Average	48 years	38 years
RACE/ETHNICITY		
White, Non-Hispanic	73%	73%
BIPOC[8]	27%	25%
Unknown	–	2%

Behavioral Health Conditions and Recent Treatment History. Rates of behavioral health disorders were substantially higher among BHH participants relative to BHT's Medicaid population. Ninety-two percent (n = 37; not shown here) of Spokane BHH participants had some indication of a behavioral health problem: 78 percent (n = 31) of Spokane BHH participants had a mental health disorder; 78% had a substance use disorder (n=31); 62 percent (n = 25) had co-occurring mental health and substance use disorders; and 52 percent (n = 21) had a serious mental illness (*see* Figure 4). The most commonly occurring mental health diagnoses (not shown) include depressive disorders (n = 26), anxiety disorders (n = 24), schizophrenia and related disorders (n = 15), and bipolar and mania disorders (n = 11).

As shown in Figure 4 (orange bars), the majority of program participants with behavioral health treatment needs received mental health treatment services in the prior year: 77 percent of Spokane BHH participants with a mental health disorder received mental health services in the year prior to enrollment, compared to 52 percent of Medicaid recipients in BHT's service area. Similar percentages of Spokane BHH program participants and BHT Medicaid recipients with a SUD received SUD treatment services in the prior year (about 40 percent for both).

FIGURE 4.

Rates of Behavioral Health Treatment Needs among BHH Participants are Higher than those of other BHT Medicaid Recipients



[8] Black, Indigenous or other Person of Color. Other racial categories are suppressed to protect privacy.

Physical Health Conditions. Spokane BHH program participants experienced significantly higher rates of chronic health conditions (*see* Table 2). More than half of Spokane BHH program participants were diagnosed with a cardiovascular, gastrointestinal, or pulmonary disorder, infectious disease, or skin disease in the 24 months prior to referral (*see* Example Diagnoses insert below for information on specific risk categories and associated diagnoses). BHH program participants were diagnosed with a chronic health condition at rates anywhere from 2.4 (e.g., gastrointestinal disorders) to 7.6 times higher (e.g., infectious diseases) relative to those observed among other adult BHT Medicaid recipients.

TABLE 2.

Chronic Illness Diagnoses, 24 Months Prior to Referral

Based on Medical Diagnoses Aggregated Using Chronic Illness and Disability Payment System Categories

	Spokane BHH Participants *n = 40*		**Other Adult BHT Medicaid Recipients** Ages 18–70, *n = 98,158*	
	NUMBER	PERCENT	NUMBER	PERCENT
Cardiovascular Disease, Any	26	65%	13,247	13%
Diabetes, Any	13	33%	8,684	9%
Gastrointestinal Disease, Any	22	55%	22,463	23%
Infectious Disease, Any	21	52%	6,996	7%
Metabolic Disease, Any	25	62%	9,982	10%
Pulmonary Disease, Any	28	70%	20,891	21%
Skin Disease, Any	25	62%	13,497	14%

NOTE: Chronic Illness and Disability Payment System (CDPS) risk categories (detailed in Kronick et al., 2000) were aggregated across levels of severity. Individuals may have multiple diseases that affect the same organ system. We suppressed categories with counts <11 to protect participant's identities.

10 Most Commonly Occurring Risk Categories and Example Diagnoses

24 months prior to referral month

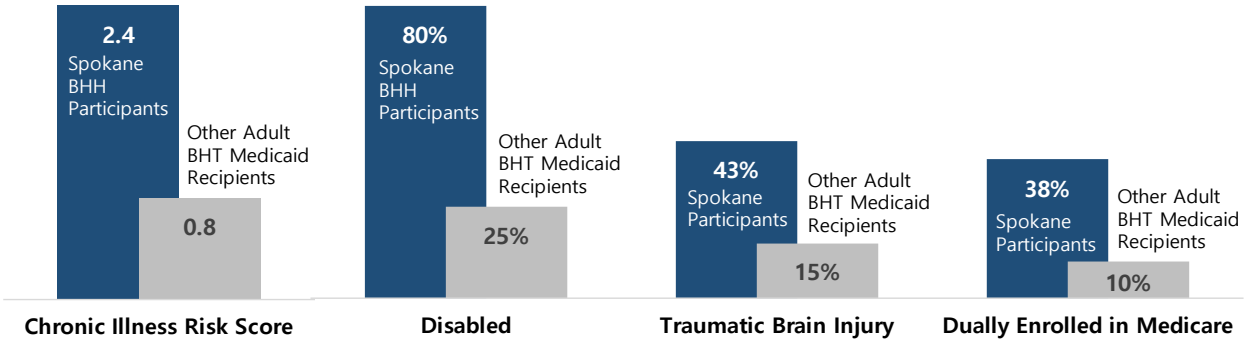
CDPS risk categories are grouped based on the affected organ system and relative severity of the diagnosis and range from range from "very low" to "very high." Even the "low" risk categories include potentially serious chronic illnesses that require ongoing management and care. The example diagnoses below provide a sense of the severity of the diagnoses associated with a given risk category, but may not reflect the specific conditions observed among BHH participants.

1. **Cardiovascular, low (n = 26; 65 percent).**
   Examples: Endocardial disease, myocardial infarction, angina.
2. **Cardiovascular, extremely low (n = 26; 65 percent).**
   Examples: Hypertension.
3. **Skin, very low (n = 25; 63 percent).**
   Examples: Cellulitis, burns, lupus erythematosus.
4. **Pulmonary, low (n =25; 63 percent).**
   Examples: Viral pneumonias, chronic bronchitis, asthma, chronic obstructive pulmonary disease.
5. **Metabolic, very low (n = 23; 58 percent).**
   Examples: Gout, other pituitary disorders.
6. **Central nervous system, low (n = 20; 50 percent).**
   Examples: Epilepsy, Parkinson's disease, cerebral palsy, migraines.
7. **Gastrointestinal, low (n = 19; 48 percent).**
   Examples: Ulcer, hernia, intestinal infectious disease.
8. **Skeletal, very low (n = 17; 43 percent).**
   Examples: Osteoporosis, musculoskeletal anomalies.
9. **Pulmonary, medium (n = 16; 40 percent).**
   Examples: Other bacterial pneumonias, chronic obstructive asthma.
10. **Infectious disease, medium (n = 16; 40 percent).**
    Examples: Septicemia (excluding staphylococcal or pseudomonas septicemia), pulmonary or disseminated candida.

Three out of four Spokane BHH program participants were diagnosed with two or more chronic physical health conditions.[9] Chronic illness risk scores calculated using Medicaid claims data[10] indicate that Spokane BHH program participants' mean anticipated medical costs were almost two-and-a-half times that of the average disabled Medicaid beneficiary in Washington State. Spokane BHH participants were also more likely to meet state or federal disability standards, to have experienced a traumatic brain injury, and to be dually enrolled in Medicaid and Medicare (*see* Figure 5).

FIGURE 5.

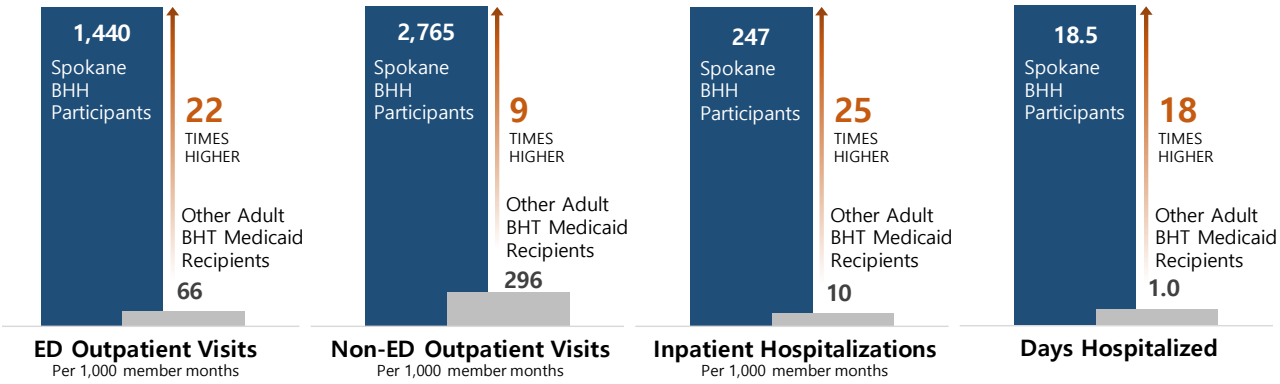
Chronic Illness and Disability among BHH Participants



Medical Utilization Patterns. Spokane BHH program participants averaged 14.7 outpatient hospital ED visits, 28.3 outpatient hospital non-ED visits, and 2.5 hospitalizations in the year prior to program referral. As shown in Figure 6, they accessed hospital services at extremely high rates relative to other BHT Medicaid recipients. Expressed in events per 1,000 Medicaid member months (/1,000mm), Spokane BHH program participants visited the ED approximately 1,440/1,000mm; accessed non-ED outpatient services 2,765/1,000mm; and were hospitalized in a psychiatric or general medical setting 247/1,000mm (respectively, the rates per 1,000mm for other Medicaid clients were 66, 297, and 10). Spokane BHH participants were also hospitalized for longer periods: 18.5 days on average in the prior year compared to 1.0 days for other Medicaid recipients in BHT's service area. Use of non-hospital preventative and ambulatory care services were largely comparable across the two groups: 85 percent (n = 34) of BHH program participants had at least one preventative care visit in the year prior to referral relative to 79 percent (n = 77,565) of BHT's adult Medicaid population.

FIGURE 6

Individuals Referred to the BHH Program were High Utilizers of Hospital Services



[9] Mental health and substance use disorders are excluded from the list of chronic conditions.

[10] A score of "1" indicates that a population's anticipated medical costs equal that of the average Medicaid disabled beneficiary. Note that these scores likely underestimate the anticipated medical costs associated with Spokane BHH participants because they do not include Medicare claims data, resulting in incomplete risk data for the 15 participants dually enrolled in Medicaid and Medicare.

Prior research suggests that high rates of healthcare service utilization among homeless individuals may be driven by a subset of individuals with extremely high-intensity usage of hospital services (Hwang et al., 2013). This is the case with the individuals referred to the Spokane BHH program, where only three individuals accounted for about 40 percent of all ED outpatient and non-ED visits in the prior year. However, even after removing these three individuals from the analysis, hospital service utilization rates for Spokane BHH participants remained significantly higher than other Medicaid recipients in the service area (947/1,000mm ED outpatient visits, 1,760/1,000mm non-ED Outpatient visits, 245/100mm hospitalizations, and 18.1 days hospitalized on average).

Hospital Service Utilization Patterns and Short-Term Outcomes

We describe monthly hospital service utilization trends—emergency department (ED) outpatient visits, non-ED outpatient services, and hospital admissions—for the 12 months prior to, the month of, and three months following the first referral to the BHH program (Figure 7). Note that there were only 33 individuals referred to the program for whom there was sufficient pre- and post-referral data[11] to perform this analysis, of whom 21 were eligible for BHH services, 17 came into contact with the CHW and enrolled in the program, and eight were housed.[12]

Due to the small sample size, these findings should be interpreted with caution and should not be used to draw inferences about program effectiveness. In general, we find increasing patterns of utilization in the year preceding referral, pronounced increases near the month of referral, then an apparent return to the previous year's pattern of utilization, or lower, in the three months following referral. Absent a matched comparison group, it is unclear whether these post-period declines are due to BHH program participation or are reflective of a return to average utilization patterns following unusually high usage of hospital services in the referral month (i.e., regression to the mean).

ED Outpatient Visits. ED utilization rates for individuals enrolled in the BHH program increased from about 850 to 2,300 visits/1,000mm over the year preceding referral and spiked sharply to 3,152 visits/1,000mm in the referral month. In the three months following referral, ED visits averaged 1,931/1,000mm.

Non-ED Outpatient Visits. The rate of non-ED outpatient hospital visits also increased over the year preceding referral, averaging 2,959 visits/1,000mm. The rate then spiked dramatically to over 7,515/1,000mm in the referral month, more than doubling the rate observed for the preceding month. Non-ED outpatient hospital visits averaged 4,642/1,000mm over the three-month follow-up period.

Inpatient Hospitalizations. As was the case with receipt of ED and non-ED outpatient services, inpatient admissions to general medical or psychiatric settings increased steadily in the 12 months prior to referral, increased by 1.5 times between the referral month and the preceding month, and then declined in the post-period. Changes in utilizations rates over the three months before and after referral capture this decline: inpatient admissions decreased from 402 admissions/1,000mm in the three-months prior to referral to 227 admissions/1,000mm in the follow-up period. The average number of days hospitalized in a mental or general health setting decreased from 7.9 to 6.6 days between the three months prior to and following referral.

Preventative Care. The percentage of Spokane BHH participants accessing preventative care remained largely unchanged between the baseline and follow-up periods and ranged between 35 and 47 percent. As was the case with the other health care measures, the percentage of BHH participants accessing preventative/ambulatory care peaked during participants' referral month.

[11] Individuals had sufficient follow-up periods if they enrolled in the program as of, or prior to, June 30, 2020.
[12] Including the three outlier cases with extreme utilization patterns.

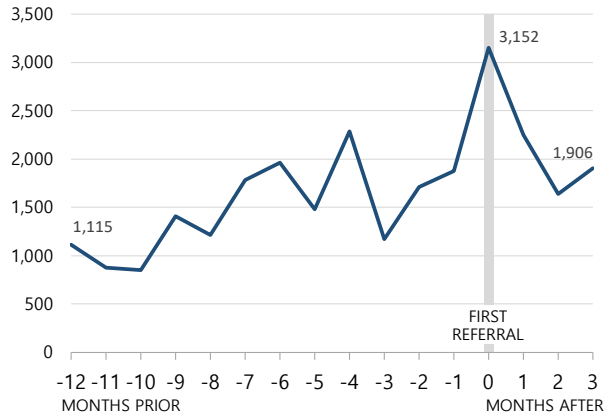
FIGURE 7

Monthly Service Trends

Before and after referral to BHH

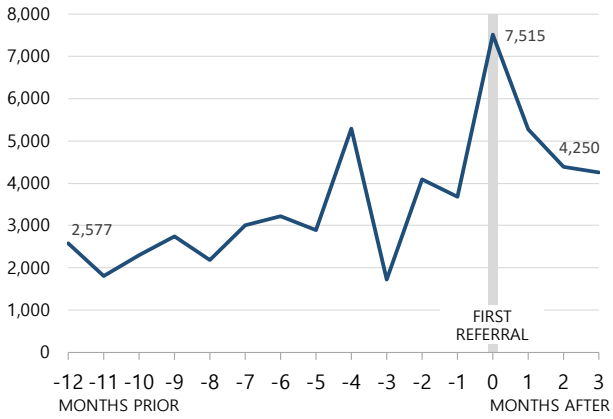
ED Outpatient Visits

Average per 1,000 member months



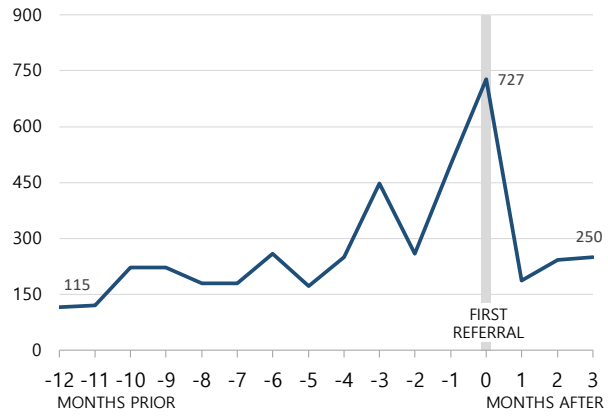
Non-ED Outpatient Visits

Average per 1,000 member months



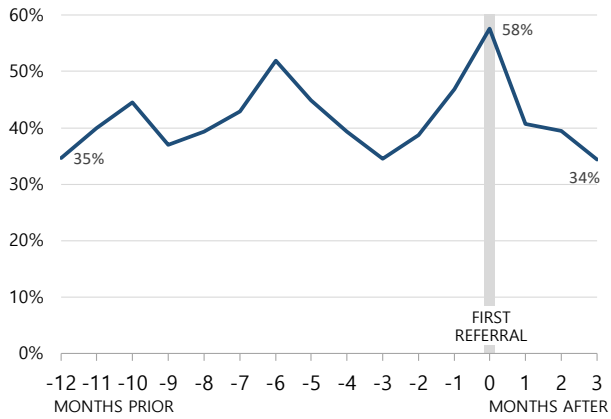
Inpatient Hospitalizations

Average per 1,000 member months



Preventive Care

Percentage of Medicaid Clients with 1 or More Visits in the Month



Discussion

Funded through Engrossed Substitute House Bill 1109, the Spokane Better Health through Housing (BHH) pilot program is a collaborative effort between the Department of Commerce and Better Health Together (BHT), an Accountable Community of Health (ACH) located in the Spokane region. The Spokane BHH is based on a Chicago program with the same name, which has successfully reduced hospital costs by addressing the housing needs and care management of chronically homeless individuals with complex physical and behavioral health care needs.

From November 2019 through January 2021, two hospitals located in Spokane, WA referred 78 homeless individuals who were frequent utilizers of emergency department services to a partnering community service provider. A community health worker (CHW) then screened these individuals for program eligibility and connected them to needed medical services, while a housing specialist located and placed participants in housing matched to their level of independence and care needs. Forty of the 78 individuals referred to the Spokane BHH met program eligibility criteria and were fully engaged in services. Thirteen of these individuals were eventually housed.

Though limited, data were available to conduct a descriptive analysis of 40 individuals referred to the Spokane BHH program between November 2019 and September 2020. That analysis reveals stark differences in the behavioral and physical health care needs of BHH program participants relative to BHT's broader Title XIX Medicaid population. Individuals referred to the Spokane BHH program were much more likely to have a behavioral health need, be diagnosed with a range of chronic illnesses such as cardiovascular disease or diabetes, and suffer from chronic conditions affecting multiple organ systems in the 24 months prior to referral. They also accessed hospital services at substantially higher rates relative to the broader BHT Medicaid population. Spokane BHH participants visited the ED approximately 22 times more often, accessed non-ED outpatient services nine times more often, and were hospitalized in a psychiatric or general medical setting 25 times more often than other adult Medicaid recipients in BHT's service area.

Additional analyses of 33 clients referred to the program as of June 30, 2020 reveal that participants' usage of hospital-related services and preventative care increased over the year prior to their referral, peaked during the referral month, and tended toward the previous year's trajectory in the three months after referral. These patterns and other factors suggest that these individuals may have experienced a significant health event in the months prior to referral. Further analysis is required to determine if and how homelessness and these significant health events are related.

As directed by the Washington State Legislature, we were able to describe the baseline demographics and physical and behavioral health characteristics of clients served by the Spokane BHH. We were not able to conduct a quasi-experimental evaluation of program outcomes as requested in the same budget proviso for the following reasons:

1. The onset of the COVID-19 pandemic four months into program implementation significantly reduced the number of referrals to the program.
2. Spokane's tight housing market, coupled with the enactment of statewide eviction moratoriums related to the pandemic reduced the total number of available housing units available for placement. This is problematic because permanent housing is the most critical component of the intervention, and only 13 individuals were housed by January 2021.
3. Administrative data necessary for an evaluation of physical and behavioral health outcomes require time to mature; the timeframe permitted for program implementation and the evaluation deadline limited the number individuals for whom evaluation data are available.

Due to these challenges and the considerable variation in physical and behavioral health outcomes in the target population, the sample size necessary for a rigorous matched comparison group outcome evaluation was not attained. Consequently, it is unclear if observed declines in participants' usage of hospital services are attributable to program participation or regression to the mean. Even if sufficient evaluation data were available for these 33 individuals, only 17 of them came into contact with SNAP's CHW and eight were housed. As a result, no causal inferences regarding program effectiveness can be made from the available data or the descriptive analysis presented in this report. A longer follow-up period will not remedy the analytic limitations associated with the small number of clients eligible for, and served by, the Spokane BHH pilot. A larger scale implementation of a BHH program is necessary if we are to confidently assess the influence of housing on health.

OVERVIEW AND STUDY POPULATION

A total of 78 participants with a valid referral date were referred to the Spokane Better Health through Housing (BHH) pilot program from November 1, 2019 through January 31, 2021. Program participants were identified using monthly participant log data submitted by Spokane Neighborhood Action Partners' (SNAP) community health worker to the Department of Social and Health Services' Research and Data Analysis Division (DSHS-RDA). Program summary information is provided for all individuals referred to the Spokane BHH program through January 2021. Demographic information, medical utilization patterns, and health histories are restricted to the 40 participants who: 1) were referred to the program through September 30, 2020; 2) were 18 years of age or older as of their referral date; and 3) received at least one month of medical assistance in the 12 months prior to their referral date. For the purposes of our pre-post descriptive analyses, we further restrict our analyses to the 33 participants who met the above criteria, were referred to the program as of June 30, 2020, and had sufficient data for a 12-month baseline and 3-month follow-up period to allow for comparisons in hospital service usage patterns over time.

BETTER HEALTH TOGETHER'S TITLE XIX FULL BENEFICIARY POPULATION

We selected a subset of Title XIX Medicaid beneficiaries from the broader calendar year (SFY) 2020 Medicaid population and attributed these individuals to Better Health Together (BHT) if, in SFY 2020, they: 1) were eligible for Title XIX Medicaid full-benefit medical coverage for seven or more months; and 2) resided in any of the six counties (Adams, Ferry, Lincoln, Pend Oreille, Spokane, and Stevens) included in BHT's service area for seven or more months in the year. We then restricted this population to individuals whose age as of June 30, 2020 was within the observed age range for BHH participants (i.e., 18 to 70 years of age).

DATA SOURCES

Integrated Client Database. Data used in this report came from the administrative data maintained in the Department of Social and Health Services' Integrated Client Databases (ICDB; Mancuso 2020). The ICDB contains data from several state administrative data systems, including the state's ProviderOne MMIS data system that contains Medicaid claims and encounter data, and Medicare claims for Medicaid beneficiaries who are dually enrolled in Medicare. The ICDB was explicitly designed to support evaluation of health and social service interventions in Washington State, and has been widely used in evaluation studies published in peer-reviewed journals (e.g., Xing et al., 2015) and for the production of performance and monitoring measures.

Participant Log. Program staff documented information on entry and engagement in the BHH program, including demographic information, program eligibility criteria, and housing status at the time of referral. The participant log was updated monthly, tracking participation through the program and changes in housing placement over time.

MEASURES

Demographics. Demographics such as age, self-reported race/ethnicity, and self-reported gender were drawn from the ICDB. Due to the small number of participants, self-reported race/ethnicity was divided into two categories: Black, Indigenous, and other persons of color and white, non-Hispanic.

Medical Coverage. Medicaid and other medical coverage information was obtained from eligibility codes recorded in ProviderOne. Medical coverage information included two different categories of Medicaid coverage: enrollment in Medicaid only and enrollment in both Medicaid and Medicare ("duals").

Behavioral Health Indicators. Data from two information systems—ProviderOne (medical) and the Behavioral Health Data System (mental health and substance use disorders)— were combined with Medicare claims data for dually enrolled Medicare and Medicaid clients to identify the presence of substance use disorders and/or mental illness based on diagnoses, prescriptions, and treatment records. In addition, drug- and alcohol-related arrest data maintained by the Washington State Patrol were also used to identify probable substance use issues and were included in the definition of treatment need for substance use disorders.

- **Mental Illness.** Mental illness is indicated for any individual who: 1) was diagnosed with a psychotic, mania/bipolar, depressive, anxiety, attention deficit and/or hyperactive, disruptive/impulse control/conduct, or adjustment disorder; 2) had an antipsychotic, antimania, antidepressant, antianxiety, or ADHD prescription filled; 3) received mental health services; or 4) received behavioral rehabilitation services from the Children's Administration.
- **Serious Mental Illness.** Serious mental illness is indicated if an individual was either: 1) assigned to the Psychiatric High, Medium, or Medium Low Chronic Illness and Disability Payment System (CDPS) categories (Kronick et al. 2000) or 2) received an antipsychotic medication in the 24 months prior to the month of entry into the BHH program.

Individuals were assigned to CDPS categories based on diagnosis data available in ProviderOne, the Behavioral Health Data System, Medicare claims data, and the DSHS Aging and Long-Term Services Administration's CARE database. Example diagnoses include: schizophrenia, bipolar affective disorder, and major depressive disorder.

- **Substance Use Disorder.** A substance use disorder is indicated for any individual who: 1) was diagnosed with a substance use disorder; 2) had a prescription filled for medication for opioid or alcohol use disorder treatment; 3) received outpatient or inpatient substance use disorder treatment services; or 4) was arrested for an SUD-related charge.
- **Co-Occurring Disorders.** A co-occurring mental illness and substance use disorder is indicated for any individual who, 24 months prior to the month of entry into the BHH program, had both an indicator of mental illness and an indicator of substance use disorder (as defined above).

Chronic Illness Indicators. Two indicators of chronic illness were used to identify the presence of chronic illness (e.g. diabetes, hypertension, etc.) among BHH program participants and Medicaid beneficiaries living in BHT's service area.

- **Chronic Illness Risk Score.** An indicator of chronic illness was developed to identify individuals with significant health problems. A risk score equal to one is the score for the average Medicaid participant in Washington State meeting Supplemental Security Income disability criteria. Chronic illness risk scores were calculated from health service diagnoses and pharmacy claim information, with scoring weights based on a predictive model associating health conditions with future medical costs (*see* Gilmer et al., 2001; Kronick et al., 2000 for more information). Individuals were identified as having chronic illness if their risk score was greater than or equal to one.
- **Chronic Disease Risk Categories.** A measure of chronic disease burden derived from a risk model leveraging CDPS and Medicaid-Rx risk groups and calibrated to the Washington State Medicaid population. Additional information about CDPS and Medicaid-Rx risk groups can be found at http://cdps.ucsd.edu.

Emergency Department Use and Hospitalizations in General Medical Settings. Emergency department and hospitalizations in general medical settings were identified from Medicaid claims and encounters in ProviderOne and Medicare claims data for individuals dually enrolled in Medicaid and Medicare. The data do not include claims information for individuals with third-party liability coverage.

Outpatient Behavioral Health Service Encounters. Service encounter records in ProviderOne and the Behavioral Health Data System were used to track outpatient mental health services. Specific service modalities were identified using the Division of Behavioral Health and Recovery's (DBHR) Service Encounter Reporting Instruction (SERI) categories and Healthcare Common Procedure Coding Systems (HCPCS) codes and/or Current Procedure Terminology (CPT) codes. Service encounter records in ProviderOne and the Behavioral Health Data System were used to track outpatient substance use disorder services.

Access to Preventative/Ambulatory Health Services. Preventative and/or ambulatory heath service visits were identified using Medicaid claims data from ProviderOne and Medicare claims data for individuals dually enrolled in Medicaid and Medicare. A claim was categorized as a preventative/ambulatory visit if its procedure code appeared in the "Ambulatory Visit" or "Other Ambulatory" Healthcare Effectiveness Data and Information Set (HEDIS) value sets. These data do not include claims information for individuals with third-party liability coverage.

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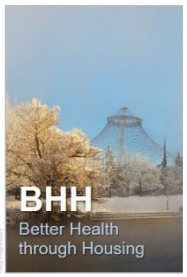

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