INTEGRATING HOUSING & HEALTH

A HEALTH-FOCUSED EVALUATION OF THE APARTMENTS AT BUD CLARK

PREPARED FOR *HOME FORWARD* BY:

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INTRODUCTION: NEW APPROACHES TO HEALTH

The way we think about health care is being increasingly challenged, with the old model of treating sickness rapidly giving way to an approach that emphasizes creating health. Key to these new strategies are the so-called "social determinants of health" - factors such as food, transportation, and housing that lay the essential groundwork for a population-health focused approach to health care.

Oregon's Coordinated Care transformation has created a rare opportunity to break down the artificial wall between health care and public health. By combining a global Medicaid budget, new flexibilities in how health care dollars can be spent, and strict accountability for population health, Oregon has created both an imperative and an architecture for profound change.

What it has not created is a roadmap: the *how* is still up to local communities. The state's Coordinate Care Organizations (CCOs) are actively looking for new, effective, community facing strategies that can generate positive health outcomes in the communities they serve. The time is ripe to rigorously evaluate these emerging strategies in order to systematically identify and spread the most effective approaches.

Bud Clark Commons (BCC) represents one such potential approach. A housing service that combines fully integrated services with a "harm reduction" model that prioritized housing for the most vulnerable applicants, BCC has provided stable housing to some of Portland's most vulnerable residents since 2011, with over 80% remaining in permanent housing.

BCC is one of many housing-first/harm-reduction based permanent supportive housing programs across the country. The approach is recognized by HRSA as an evidence-based practice, and supported by HUD as a best-practice for chronically homeless adults.

This reports presents results from an evaluation of the impact of BCC housing on residents' health and health care costs. BCC residents often have numerous health issues and complex psychosocial barriers that make them among the costliest patients to care for in the community. CCOs are increasingly looking for new strategies to effectively care for highly complex and costly patient populations; our intent was to determine if stable housing with integrated services had any impact on health care costs and outcomes for the residents of BCC.

KEY OBJECTIVES

We approached this evaluation with two key objectives in mind:

Aim 1: Assess the impact of stable housing on utilization and cost outcomes.

We examined longitudinal administrative data on health care utilization and costs for BCC residents, covering the years prior to and since moving into housing. We assessed change in the utilization of health care and the associated costs of that care. Our intent to was to determine if stable housing through BCC impacted the health care costs of residents.

Aim 2: Assess the impact of stable housing & services on self-reported health outcomes.

We designed a guided survey to ask residents about the ways their health status, health behaviors, health care use, and trauma experiences have changed since taking up residence at BCC. We also asked them to identify which integrated services they use and to evaluate the usefulness of those services.

ABOUT BUD CLARK COMMONS

The Apartments at Bud Clark Commons (BCC) provide 130 apartments and supportive services for some of Portland's most vulnerable homeless residents. Since opening its doors in 2011, the building has housed just over 200 residents.

BCC provides full-spectrum services to Portland's homeless community, but its primary innovations are two-fold:

1. The integration of health and wellness services within a supportive housing program.

2. The "harm reduction model," which prioritizes housing for the most vulnerable applicants and does not screen out residents who are struggling with addiction.

Applicants must have an annual income that does not exceed 35% of area median income for their family size and meet the requirements of the Public Housing program. Priority is given to applicants who score highest on a vulnerability assessment. Referrals primarily come from community health clinics.

Although there are services on site, the apartments are independent living and residents receive health care in the community. The studios have full kitchens and baths. Community space with television and free internet access, along with laundry facilities and spacious balconies, are available for residents. The controlled access building has a 24-hour desk and resident services staff on site.

METHODOLOGY

WHO WAS INCLUDED?

Working with BCC staff, we reached out to all current BCC residents (as of our fielding period, Winter 2013) as potential study participants. We provided modest compensation for residents' time in the form of gift cards. Because many residents are still active drug users, residents who were too impaired to provide coherent data were allowed to complete the interview to their best ability and were compensated, but results were excluded from the analysis. Some residents had to return to complete their interview, but ultimately 98 of the 99 surveys were included in the analysis (76% response rate among 130 residents).

Residents who completed interviews were also included in the claims data analysis; those who did not agree to complete interviews were considered non-participants and were not included in any part of the study.

SURVEYS

We developed a short survey instrument, administered in the form of a semi-structured in-person interview, to collect information directly from participants. The interviews included a mix of scaled survey items and more open-ended responses, and had three main data collection goals:

- *Self-reported health:* We asked participants to tell us about their subjective health before and after moving into BCC.
- *Self-reported access & utilization:* We asked participants to recall major health care needs and utilization in the year before, and in the year(s) after, moving into BCC.
- *Use of services:* We asked participants a series of questions about which onsite services they used, and asked them to rate those services.
- *Trauma experiences:* We asked participants to tell us how often various types of traumatic events had happened to them in childhood, in adulthood before moving into BCC, and since moving into BCC.

PARTICIPANT DEMOGRAPHICS

99 Of 130 Residents Participated	**56%** Female	**49** Average Age
	1.7 yrs Average Time Since Move In	**60%** % with Medicaid

CLAIMS DATA

We analyzed Medicaid claims data for 59 of the 99 individuals we interviewed (the remaining were not Medicaid members). Our data included a complete record of health care encounters and associated costs from 2010 forward; for most individuals in our study this represented several years of both pre and post-BCC data.

We used each individual's move-in date as an "index date," then split their claims data into two segments based on that index date. All health care encounters for a participant were tagged according to when they occurred in relation to the index date. Encounters were also categorized into *service domains* representing the type of care they represented (i.e, emergency department visits, primary care visits, inpatient behavioral health visits, and so on). We then summed the total number of encounters and the total costs for each person, in total and by domain of care, before and after they moved into BCC.

STATISTICAL TESTING

For outcomes of interest, we used two-tailed t-tests to assess whether the average (mean) score prior to moving into BCC was significantly different from the mean score for our study group after moving into BCC. For outcomes measured as proportions rather than mean scores, we used two-tailed chi-square tests of association. We flagged results with p-values of .05 or smaller as statistically significant.

More information about our study methods are available in the Appendix.

RESULTS:

HEALTH CARE USE & COSTS

SIGNIFICANT REDUCTIONS IN TOTAL MEDICAID COSTS

KEY FINDING: In the year before they moved into BCC, residents on Medicaid averaged total health care costs of **$2,006 per month.** In the year after moving in, average costs were **$899 per month, a 55% decline.** Total cost Medicaid cost reductions were greater than three-quarters of a million dollars in the first year following resident move-in.

We analyzed claims data for BCC residents who were Medic aid members in order to assess whether health care costs changed after they moved into BCC. We wanted to assess whether acquiring stable housing with integrated services resulted in different health care utilization patterns and lower overall costs.

Our analysis suggests a significant change in post-housing health care costs. On average, Medicaid paid $2,006 per month in total claims for BCC residents in the year before they moved in. In the year after, Medicaid paid an average of $899 per month, a statistically significant decline. This reduction was largely maintained throughout and beyond the second year of residence (Exhibits 1 & 2).

Exhibit 1. Total Costs Per Member Month (PMPM)
n=59 Residents of Bud Clark Commons with Medicaid

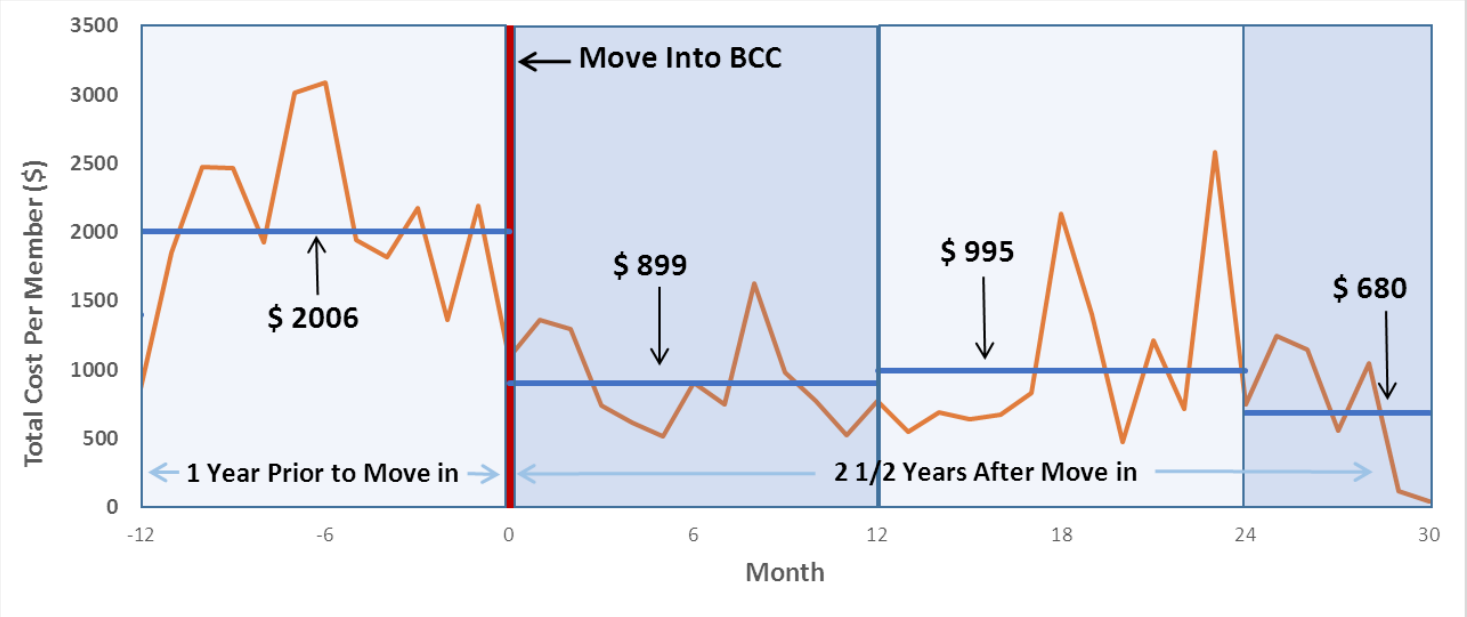
Year Before Move-In	1st Year After	2nd Year After	Beyond 2nd year	Typical Adult Medicaid Member[1]
$2,006	$899*	$995*	$680*	$454

*Indicates a statistically significant difference from baseline (the year before moving in), p<.05, two-tailed t-test.

(1) Average monthly cost for a typical adult Medicaid member in our claims database.

The magnitude of these cost reductions is considerable: an average of $13,284 per member per year. We had claims data for 59 BCC residents; thus, the data presented here represent a total reduction in Medicaid costs of over three quarters of a million dollars ($783,756) in the year after those 59 residents moved into BCC. These annual cost savings were maintained across the limit or our available study data (up to 30 months after moving in to BCC).

Exhibit 2. Total Costs Per Member Month (PMPM) Before and After Moving in to BCC



NOTES: The orange line represents actual total costs per member per month. The blue line (and associated numbers) represents the average (mean) cost for each indicated time period (one-year increments). The red line indicates the date each individual moved into BCC.

A CLOSER LOOK AT HEALTH CARE COSTS

A closer look at health care costs by *type of service* reveals that reductions in costs after Medicaid members moved into BCC were apparent across all types of health care (Exhibit 3).

Before moving in, a typical BCC resident had total health care costs **4.4 times higher** than the average adult Medicaid member's. In their first two years after moving in, average costs were just under twice as high; those gains were largely maintained into the second and third years after moving in. Costs appear to be dipping even more in year three; however, these results should be seen as preliminary since relatively few members had this much data available at the time of our analysis.

Exhibit 3. Total Costs Per Member Month (PMPM) Before & After Moving in to BCC

n=59 Residents of Bud Clark Commons with Medicaid Coverage

	Year Before Move-In	1st Year After	2nd Year After	Beyond 2nd year	Typical Adult Medicaid Member[1]
Total Cost	$ 2,006	$ 899	$ 995	$ 680	$ 454
Inpatient Behavioral Health	$ 68	$ 11	$ 17	$ 14	$ 10
Inpatient Physical Health	$ 577	$ 308	$ 498	$ 188	$ 95
Outpatient Behavioral	$ 156	$ 59	$ 66	$ 33	$ 48
Emergency Department	$ 191	$ 157	$ 164	$ 167	$ 33
Outpatient Primary Care	$ 210	$ 87	$ 58	$ 25	$ 21
Outpatient Labs & Radiology	$ 113	$ 54	$ 29	$ 32	$ 16
Outpatient Specialty	$ 69	$ 61	$ 32	$ 29	$ 24
Pharmacy	$ 115	$ 105	$ 76	$ 109	$ 75
Other[2]	$ 508	$ 57	$ 57	$ 83	$ 65
Member months of data[3]	*570*	*580*	*415*	*157*	*n/a*

REDUCTIONS IN UTILIZATION DRIVE THE COST SAVINGS

Data on utilization counts by type of service show a clear pattern: the first post-move in year sees a clear reduction in the number of inpatient and ED events, accompanied by continued connectivity to outpatient behavioral health, primary care, and pharmacy services (Exhibit 4). Use of many outpatient services begins to decline some as residents move into their second year. Overall, the pattern of care is consistent with a story of a population whose health is being more efficiently managed in appropriate care settings, helping to avoid acute health crises.

Exhibit 4. Total Visits Per Member Year (PMPY) Before & After Moving in to BCC

n=59 Residents of Bud Clark Commons with Medicaid Coverage

	Year Before Move-In	1st Year After	2nd Year After	Beyond 2nd year	Typical Adult Medicaid Member[1]
Inpatient Behavioral Health	0.2	0.0	0.1	1.5	<.01
Inpatient Physical Health	4.8	3.7	8.9	1.9	0.1
Outpatient Behavioral Health	25.8	27.8	46.2	37.3	6
Emergency Department	2.7	1.6	1.3	0.6	1.5
Outpatient Primary Care	4.4	4.8	2.2	1.5	3.1
Outpatient Labs & Radiology	2.2	2.4	1.3	1.5	1.8
Outpatient Specialty	2.2	1.7	0.7	1.0	3.4
Pharmacy (# of claims)	11.4	11.5	7.4	8.3	11
Other (# of claims)[2]	6.7	3.6	2.4	1.9	1.4
Member months of data	*570*	*580*	*415*	*157*	*n/a*

NOTES

Average for a typical adult Medicaid member in our claims database.

"Other" includes claims for durable medical equipment, vision, medical transportation, long term care, and other miscellaneous costs. This category also includes inpatient maternity costs, which are excluded from the inpatient physical health categories.

For each indicated time period, cost & utilization estimates are computed as follows: (total costs/visits) / (total number of member months of Medicaid coverage). Normalizing by member months allows comparability even if some members were only covered for part of a given time period.

SELF-REPORT DATA TELL THE SAME STORY

We also asked survey participants to self-report utilization of care before and after moving into BCC. This data is important because it includes information from the 40% of our participants who were *not* enrolled in Medicaid (primarily uninsured).

We found significant reductions in hospitalizations and ED visits in the years after moving into BCC (Exhibit 5). We also found significant improvements in the percent of residents reporting they had a designated personal doctor or primary care provider, an important outcome for establishing continuity of care in complex patient populations. Overall, these findings are consistent with (and help confirm) the claims-based analysis, suggesting that BCC residents maintained or improved outpatient care connections after moving in, while reducing the use of acute care settings such as hospitals and EDs.

Exhibit 5. Self-Reported HealthCare Utilization
n=98 Residents of BCC Who Completed an Interview

	Year Before Move-In	1st Year After	2nd Year After
Had at least 1 hospitalization	65%	26%*	42%*
Average # of hospitalizations	2.5	0.63*	0.75
Had at least 1 ED Visit	62%	48%*	46%*
Average # of ED Visits	2.8	1.9	1.3*
Had at least 1 Outpatient Visit	46%	41%	53%
Average # of Outpatient Visits	6.9	5.0	5.8
Had a designated PCP	73%	89%*	89%*

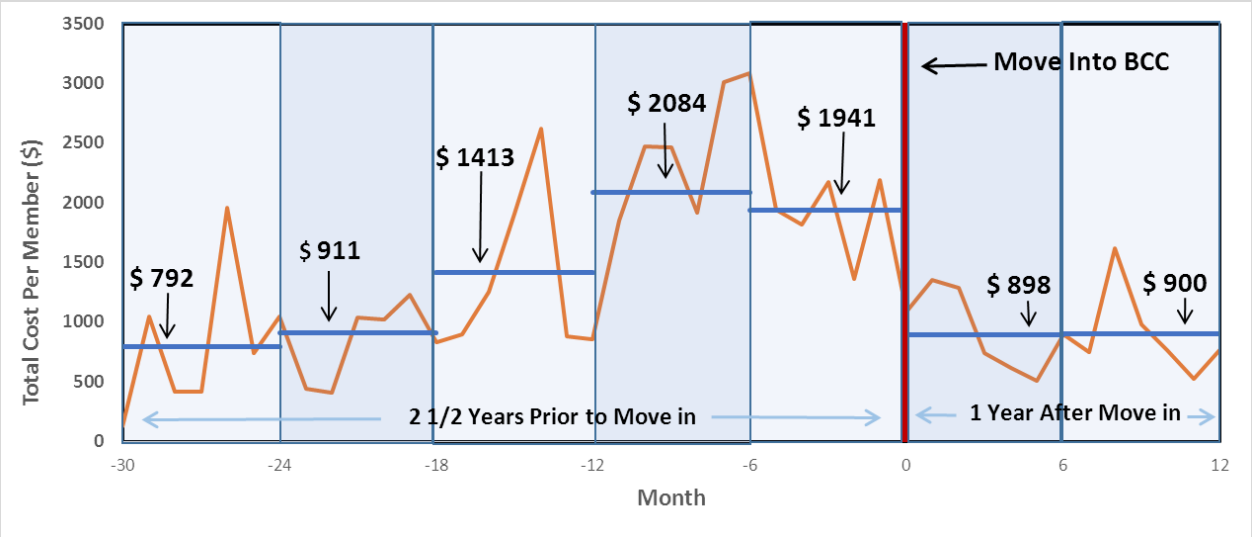
*Indicates a statistically significant difference from baseline (the year before moving in), p<.05, two-tailed t-test or two-tailed chi-square test.

COST REDUCTIONS WERE NOT HAPPENING NATURALLY BEFORE BCC

High cost populations often see costs naturally regress toward the mean: specific health crises eventually resolve, leading to more typical levels of utilization. However, BCC residents have prolonged histories of struggle with psychosocial barriers, such as addiction and housing insecurity.There may be little reason to expect a population under such strain to see any natural decline in costs. To help determine whether the declining costs we observed in BCC residents might have happened naturally anyway, we used *historical claims data* for our study participants to examine the natural arc of health care costs in the 2.5 years prior to moving into BCC.

We found little evidence of a natural propensity for costs to regress toward the mean among BCC residents (Exhibit 6). Indeed, over the 2.5 years prior to moving in, average costs steadily rose, from $784 PMPM to a high of around $2000 PMPM just before moving into BCC. After this long period of steady rising, costs immediately fell by over half in the six months after moving into BCC, and remained low for the duration of our study period. In the absence of a formal comparison or "control" group, this represents the best available evidence that the declining costs observed in this study may be attributable to the housing and services provided by BCC.

Exhibit 6. Total Costs Per Member Month (PMPM) Before and After Moving in to BCC, Expanded Historical View
n=59 Residents of Bud Clark Commons with Medicaid



NOTES: The orange line represents actual total Medicaid costs per member per month. The blue line (and associated numbers) represents the average cost for each indicated time period (in this case, six-month increments). The red line indicates the date each individual moved into BCC.

RESULTS:

ACCESS, HEALTH, & TRAUMA

SIGNIFICANT IMPROVEMENTS IN ACCESS TO CARE & HEALTH OUTCOMES

We asked participants to answer a series of general questions about getting the care they needed, their physical and mental health outcomes, and their overall happiness in life before and after moving into BCC (Exhibit 7). Residents reported significant reductions in "unmet need" for physical and mental health care, and better overall subjective health. When we asked people to tell us whether they were generally "very happy, pretty happy, or not too happy" during different times in their life, we saw significant improvements in general happiness after moving into BCC.

Exhibit 7. Self-Reported Access & Health Outcomes
n=98 Residents of BCC Who Completed an Interview

	Year Before Move-In	1st Year After	2nd Year After
Had Unmet Physical Health Needs	79%	48%*	56%*
Had Unmet Mental Health Needs	45%	17%*	20%*
Physical Health Was "Fair" or "Poor"	80%	54%*	52%*
Mental Health Was "Fair" or "Poor"	80%	63%*	57%*
Reported Being "Not Too Happy" in Life	59%	14%*	

*Indicates a statistically significant difference from baseline (the year before moving in), p<.05, two-tailed t-test or two-tailed chi-square test.

MEASURING TRAUMA EVENTS

We asked respondents to tell us how often they had experienced different types of traumatic events in childhood, in adulthood before moving into BCC, and since they had moved in to BCC. Our intent was to understand the prevalence of such events among BCC residents, and to determine how often these events were still happening since residents had attained housing & services through BCC.

We adapted a trauma experience checklist, derived from multiple tools used in other peer-reviewed studies, for the purpose of a preliminary assessment of the type and prevalence of trauma in the BCC community. We asked participants to reflect on three distinct time periods:

- Childhood and teenage years;
- Adult life before moving into BCC; and
- Adult life since moving into BCC.

For each event, participants were asked to indicate whether they had experienced it at all; those who had experienced it were further asked to indicate if it had happened once, a few times, or many times during the indicated time window.

Measures included in the checklist were as follows:

For each of the following, tell us whether it happened to you zero times, once, a few times, or many times.
A really bad illness, accident, or injury
Someone you cared for dying
A difficult breakup, divorce, or falling out
Addiction to alcohol or other substances
Being physically assaulted or attacked
Being sexually assaulted or attacked
Spending time in jail or prison
Any other very frightening or traumatic events

TRAUMA WAS WIDELY PREVALENT; LESS SO AFTER HOUSING

We found very high prevalence of trauma across all measures—even the rarest event we asked about (sexual assault) had been experienced during childhood by 29% of residents. Almost no one living in BCC was completely untouched by trauma.

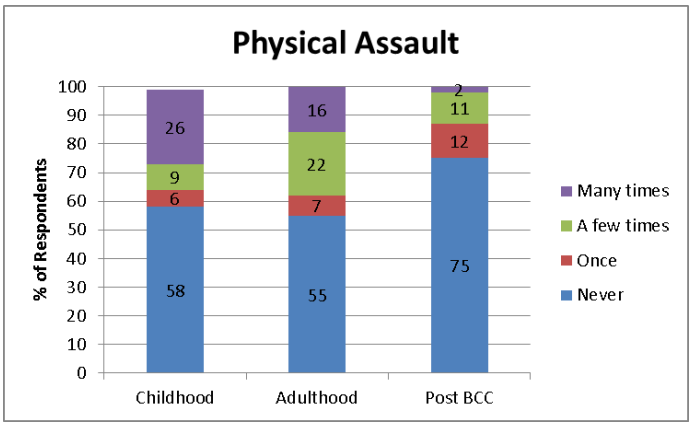
Exhibit 8. Percent Experiencing Trauma Events One Or More Times
n=98 Residents of BCC Who Completed an Interview

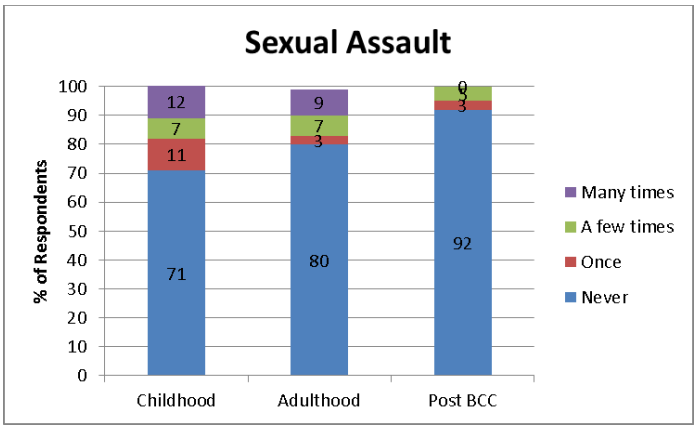
	Childhood	Adulthood Before BCC	Adulthood After BCC
A bad illness, injury, or accident	40%	55%	51%
Someone you cared for dying	48%	54%	56%
A difficult breakup, divorce, falling out	42%	44%	30%
Addiction to alcohol or other substances	38%	51%	55%
Being physical assaulted or attacked	42%	45%	25%
Being sexually assaulted or attacked	29%	20%	8%
Spending time in jail or prison	33%	41%	19%
Other traumatic events	33%	47%	26%

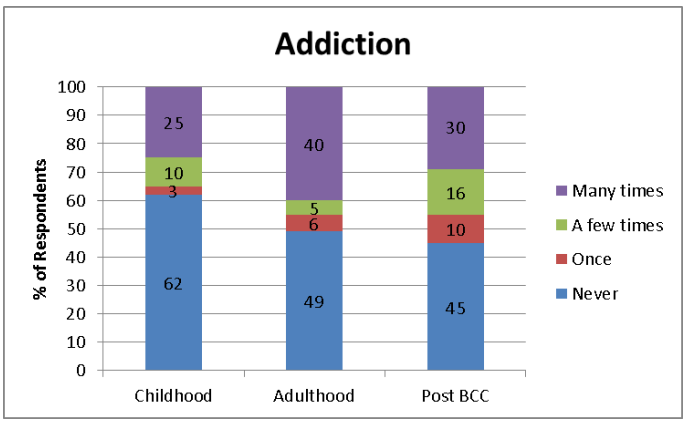
Trauma prevalence was high across the life course among our participants. However, we did find substantial reductions in some key types of trauma —most notably physical assault, sexual assault and jail time — after moving into BCC. This should be interpreted with some caution since our pre and post periods are not directly comparable time windows, and therefore statistical interpretations are not reported here. However, stable housing may also help provide a safer environment where these specific types of traumatic events are less likely to occur.

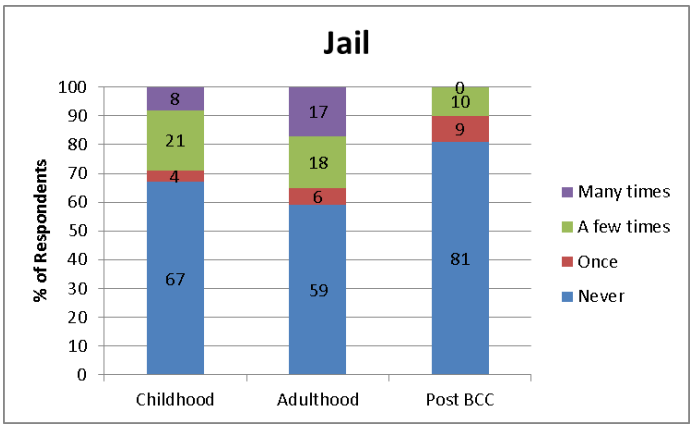
Perhaps the most important takeaway from these findings is a reminder that BCC residents, and those with similar life histories, are not simply "high utilizers" or "frequent fliers" in the health care system. They are also *trauma survivors,* and any attempt to improve their outcomes would be well served by integrating the principles of trauma-informed care.

Exhibit 9. Detailed Results for Four Key Types of Trauma Events









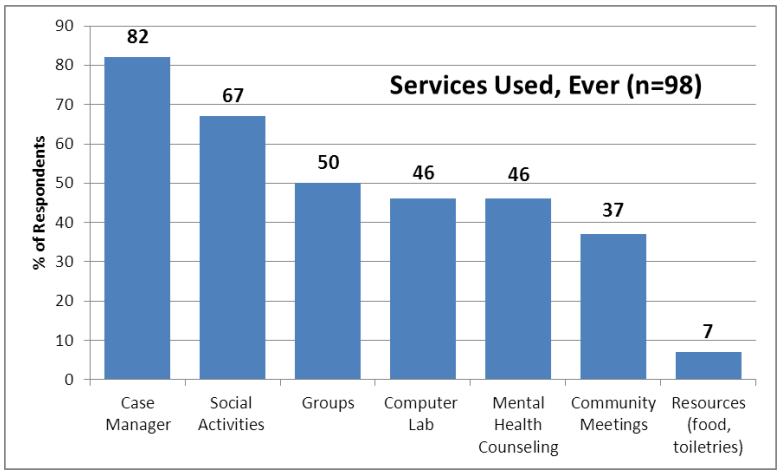
RESULTS:

SERVICES & SATISFACTION

SERVICE USE & SATISFACTION

We asked respondents what services they used at all, which ones they used the *most,* and how satisfied they were overall with services. On average, residents reported using around three different services, with case management, computer lab, and counseling being the most widely used. Overall satisfaction with services was high (Exhibit 10).

Exhibit 10. Use of & Satisfaction With Services



MOST HELPFUL SERVICES

We also simply asked each resident to tell us, in their on words, which services they found the most helpful and why. We transcribed these discussions and used qualitative analytical software to identify common themes in the responses.

In response to our open-ended inquiry, we found the following patterns of response:

Case Management: The most common response mentioned (31%) was case management for reasons such as having an advocate, someone to help keep them organized, or someone to help meet their overall needs, be it social or otherwise.

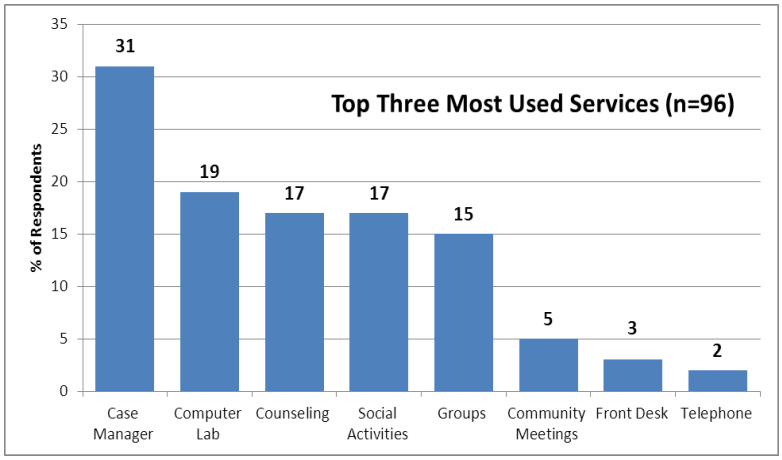
Social Activities and Groups: 30% said that the social activities and groups were the most helpful because it helped keep them engaged and gave them a chance to try and build community and make friends.

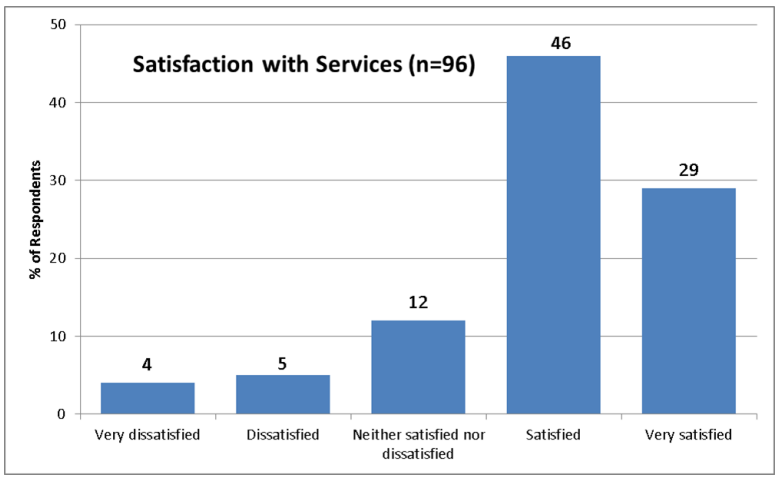
Housing: 21% of residents said that just having a roof over their head, a place to stay warm, put their things down, and feel secure was the most helpful.

Counseling: 16% of residents said counseling was the most helpful.

Resources: 6% people mentioned resources like food, toiletries, and bus passes were the most helpful because they could not afford them on their own.

Computer Lab: 6% of people mentioned the computer lab as the most helpful.

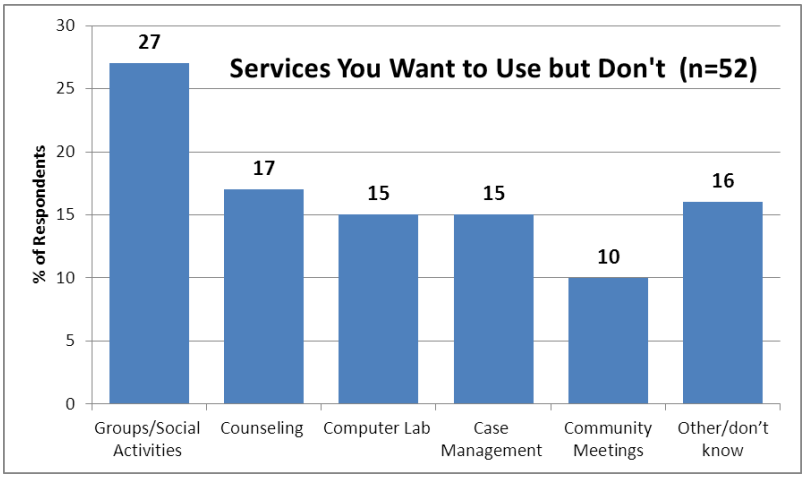




WHAT MIGHT HELP RESIDENTS USE MORE SERVICES?

We also asked residents what might help them utilize activities and services more. Though these conversations did not offer many concrete suggestions to improve take up of these services and some responses were unique and therefore unable to be categorized, we were able to detect some common patterns as to what might be holding residents back:

Exhibit 11. Services Residents Want to Use More, But Don't



Organization and Awareness: 16% of residents mentioned that they needed more help being aware of activities, staying organized, and managing their time better in order to take advantage of services offered.

Social Discomfort: 14% of people mentioned being uncomfortable in social situations; much of this discomfort was attributed to perceived bad behavior of other residents, like issues with sobriety and confidentiality.

Physical Health Barrier: Another common response (12%) was that a resident's physical health was a barrier to utilization.

Internal Motivation: 10% residents mentioned that they needed to work on their own motivation to use more services.

Incentive: 9% of residents suggested incentives, like food, to help encourage them to participate.

More Diverse Activities: 10% of residents expressed the desire for different types of activities (such as computer trainings and more day outings) that were more aligned with their personal interests.

Staff Turnover: A few residents (7%) mentioned that it was difficult to try and connect with services because of turnover among staff, and this dissuaded them from participating.

OTHER THEMES NOTED IN THE INTERVIEWS

We captured any other themes discussed with the study participant during their guided interview; specifically, themes that arose outside the context of specific survey questions. Note that these comments were volunteered by the residents and are not necessarily representative of the entire study population. We coded these data and found a few patterns of note:

Gratefulness: 28% of residents expressed outright gratefulness for their housing and services at BCC.

Creating Safety: 8% of interviewees remarked that having housing creates a safer environment than they experienced prior to living at BCC.

Maintaining or Achieving Sobriety: 11% of interviewees remarked that living among active drug/alcohol users and abusers made achieving and/or maintaining sobriety more difficult.

Safety Concerns: 11% remarked concern for their own safety as a result of living in the building, including being threatened by other residents and/or concerns about living among drug/alcohol abusers.

CONCLUSIONS

SUPPORTIVE HOUSING & HEALTH CARE: WHAT HAVE WE LEARNED?

COST SAVINGS

Residents with Medicaid coverage saw significant reductions in medical costs after moving into BCC: the average resident saw a reduction of over $13,000 in annual claims, an amount greater than the estimated $11,600 it costs annually to house a resident at BCC. Importantly, this reduction in claims was *maintained* into and beyond the second year of residency, suggesting that supportive housing had a profound and ongoing impact on health care costs for those living at BCC.

We examined historical, pre-BCC claims data for residents to determine whether some reduction in costs might have been expected in this population even in the absence of housing. We did not find evidence of a natural "regression to the mean" in costs for the population BCC serves; indeed, their health care costs steadily rose for the 2.5 years prior to moving into BCC, peaked just prior to move-in, and then immediately fell to a much lower level after move-in. In the absence of a formal experimental "control group" to compare outcomes, this represents the best available evidence that cost reductions are likely attributable to the acquisition of housing and would not have been expected to happen in its absence.

SHIFTS IN UTILIZATION

We examined utilization data in order to understand the *mechanism* by which costs were reduced. We found evidence that residents maintained connections to outpatient behavioral health, primary care, and pharmacy after moving in, but saw significant declines in inpatient and ED utilization. This suggests that cost savings among the BCC residents came from efficiently managing health care in appropriate settings, helping to reduce acute health crises and avoid more expensive types of utilization.

We also examined self-reported utilization data in order to determine if similar patterns held true for non-Medicaid residents. We found patterns in the self-report data that matched those in the claims: continued engagement in outpatient care accompanied by a reduction in acute events.

Hospitals absorb significant uncompensated care costs for such events. Given these costs, the "true" savings associated with housing at BCC are likely considerably higher than our Medicaid-only estimate.

ACCESS, HEALTH, & TRAUMA

Residents saw significant declines in unmet health care needs, and significant improvements in self-reported physical and mental health, after moving into BCC. There was also a significant increase in overall happiness.

Trauma histories were very common among BCC residents; even after moving in many residents still face traumatic events in their lives. Understanding the link between trauma survivorship and health care utilization/costs will be a key component of caring effectively for this population.

CHALLENGES

Our interviews with residents also revealed some challenges of the supportive housing model. Some residents told us that getting clean and sober was actually more difficult than they expected in an environment where others are still actively using. Others mentioned feeling unsafe or threatened by others living in the building, which sometimes hampered their involvement in social activities or use of other services. New strategies to overcome these challenges will help residents fully engage in the BCC model.

IMPLICATIONS FOR REFORM

These results suggest that health care reformers would be well served to think carefully about the relationship between housing and health, particularly in vulnerable populations such as those served by BCC. Among those in our study, getting into stable housing resulted in a significant reduction in total health care costs; these savings were greater than the estimated annual cost of housing someone at BCC, do not appear likely to have reflected natural regression to the mean, and were maintained over time. Housing also improved self reported health outcomes. In this acutely ill and vulnerable population, supportive housing was effectively a health care intervention, and it appears to have worked.

Additional research can help replicate and substantiate these findings. For now, however, these results suggest that Oregon's commitment toward a broader view of health care—one that thinks beyond service delivery and encompasses the social determinants of health — may have real potential to help bend the cost curve. Policy and funding pathways to support and expand such models should be strongly considered as part of Oregon's ongoing transformation effort.

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Methods

SURVEY SAMPLING:

Inclusion Criteria: Discerning the cognitive capacity of participants was a process we approached on a case-by-case basis. In consultation with the BCC staff, research assistants determined in advance that no volunteers would be turned away from an interview due to their possible cognitive limitations. These limitations included:

- Mental health conditions such as schizophrenia, hallucinations, TBI, and PTSD
- Observably triggered responses to trauma recall
- Intoxication
- Low literacy or non-literacy
- Extremely poor physical health

Our decision to interview all volunteers was made in part to establish rapport with the wider population (we relied heavily on word-of-mouth advertising), and in part because the majority of SPs shared one or more of these limitations. It would not have been impossible to draw an adequate sample size from this population if we relied on more standard criteria for cognition.

Exclusion Criteria: However, while all volunteers who presented for an interview were allowed to participate and received full compensation, research assistants made the decision to exclude certain interviews from analysis and/or skip sections of the survey with certain SPs. This decision was based on one or more of the following factors:

- SP appeared unable to comprehend the basic content of most questions
- SP was unable to give a coherent verbal response to most questions
- SP was intoxicated or chronically ill in a way that caused them to "nod" (i.e. doze off) so frequently that the interview could not be completed (for some this seemed to indicate recent heroin intake; others reported it as the symptom of chronic illness associated with long-term substance use)
- -SP was intoxicated or triggered in a way that caused them to express deep distress, panic, or suicidal ideation while describing traumatic experiences

SURVEY

We administered 99 structured surveys to residents of BCC to assess their experience living in the housing complex, perceived health care, healthcare utilization, and traumatic experiences. One survey was not completed and removed from the final analytical sample.

- Demographics and personal history characteristics of each resident, such as age and gender;
- Self-assessments of physical and mental health and how it has changed over time;
- Self-assessments of access to needed care and services and how it has changed over time;
- Present health engagement measures, including utilization of integrated BCC services;
- Recalled utilization of key service domains over the prior three years using a “guided lookback” method
- Measures of trauma experiences and how they have changed over time

POST SURVEY ASSESSMENTS

After each guided survey the interviewer recorded their impressions of the study participant. They focused on other stories that came up in conversation, but were not captured by the specific questions in the survey. These assessments were coded with qualitative analytical software to look for themes.

CLAIMS

Of the 99 individuals who consented to take part in the survey analysis, 57 were Medicaid members and therefore had data available for claims analysis.

Bud Clark Commons Survey Tool

Gender: _____
Age:_____

PART 1: LIFE AT BCC

What services do you use at BCC? *Check all that apply.*

- ❑ mental health counseling
- ❑ groups like Creative Writing, Women's Group, Coffee Group
- ❑ case manager
- ❑ computer lab
- ❑ social activities
- ❑ community meetings

Of these, what services do you use the most?
1.
2.
3.

Are there any services that you don't use that you would like to?
1.
2.
3.

What would help you to utilize these services or attend more activities?

_____

_____

What services/activities would you like to see or get connected to?
1.
2.
3.

What service(s) are the *most* helpful and why?

1. _____

2._____

Overall, how satisfied are you with the services at BCC?

- ❑ Very dissatisfied
- ❑ Dissatisfied
- ❑ Satisfied
- ❑ Very satisfied

Overall, how satisfied are you with the housing at BCC?

- ❑ Very dissatisfied
- ❑ Dissatisfied
- ❑ Neither satisfied or dissatisfied
- ❑ Satisfied
- ❑ Very satisfied

PART 2: TIMELINE

Move in date: _____

Look-back period start date: _____

"To begin we are going to talk about your health. I'll be asking about whether you've been in the hospital or emergency room, and if you've had visits to a doctor. I want to talk about two periods of time: the year before you moved into BCC, and the time after you moved in."

One year <u>before</u> moving into BCC:

How would you rate your physical health at that time? ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**How would you rate your mental health at that time?** ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**Hospitalization** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____	**Emergency Department** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____
Outpatient Y___N___ ❑ Physical Health ❑ Mental Health ❑ Other: _____	**PCP** Y___N___ How many visits?:_____	**Was there care or other services you needed at this time that you didn't get?** Y___N___ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Social Determinants of Health Notes:_____ _____ _____	**Can you tell me about your health at that time?** _____

One year after moving into BCC:

How would you rate your physical health at that time? ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**How would you rate your mental health at that time?** ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**Hospitalization** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____	**Emergency Department** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____
Outpatient Y___N___ ❑ Physical Health ❑ Mental Health ❑ Other: _____	**PCP** Y___N___ How many visits?:_____	**Was there care or other services you needed at this time that you didn't get?** Y___N___ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Social Determinants of Health Notes:_____ _____ _____	**Can you tell me about your health at that time?** _____

If resident for longer than one year, second year after moving into BCC:

How would you rate your physical health at that time? ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**How would you rate your mental health at that time?** ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**Hospitalization** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____	**Emergency Department** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____
Outpatient Y___N___ ❑ Physical Health ❑ Mental Health ❑ Other: _____	**PCP** Y___N___ How many visits?:_____	**Was there care or other services you needed at this time that you didn't get?** Y___N___ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Social Determinants of Health Notes:_____ _____ _____	**Can you tell me about your health at that time?** _____

If resident for longer than two years, third year <u>after</u> moving into BCC:

How would you rate your physical health at that time? ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**How would you rate your mental health at that time?** ❑ Excellent ❑ Very Good ❑ Good ❑ Fair ❑ Poor	**Hospitalization** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____	**Emergency Department** Y___N___ How many?:_____ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Other: _____
Outpatient Y___N___ ❑ Physical Health ❑ Mental Health ❑ Other: _____	**PCP** Y___N___ How many visits?:_____	**Was there care or other services you needed at this time that you didn't get?** Y___N___ **Primary reason:** ❑ Physical Health ❑ Mental Health ❑ Social Determinants of Health Notes:_____ _____ _____	**Can you tell me about your health at that time?** _____

PART 3: TRAJECTORY

Thank you for helping me understand your health for the past few years. I want to ask you some questions about your life.

I. Would you describe your childhood and teenage years as:

- ❑ Very happy
- ❑ Pretty happy
- ❑ Not too happy

In a few sentences, can you tell me what were the best things about your childhood and teenage years? *Check all that apply*

- ❑ Family/social support
- ❑ Special Memory
- ❑ School
- ❑ Financial Stability
- ❑ Other _____

We want to know if there was anything that made your childhood and teenage years difficult. For example, have you experienced any of these during that time? *Check all that apply*

❑A really bad illness, accident, or injury Once___A few times___Many Times___
❑Someone you cared for dying Once___A few times___Many Times___
❑A difficult breakup, divorce, or other falling out with someone you cared for
Once___A few times___Many Times___
❑Addiction to alcohol or other substance Once___A few times___Many Times___
❑Being physically assaulted or attacked Once___A few times___Many Times___
❑Being sexually assaulted or attacked Once___A few times___Many Times___
❑Spending time in jail or prison Once___A few times___Many Times___
❑Any other really frightening or traumatic events_____
❑NA

II. Would you describe your adult life before you moved into the BCC as

- ❑ Very happy
- ❑ Pretty happy
- ❑ Not too happy

In a few sentences, can you tell me what are the best things in your adult life were before you moved into BCC? *Check all that apply*

- ❑ Family/social support
- ❑ ?
- ❑ ?
- ❑ ?
- ❑ ?
- ❑ Other _____

We want to know if there was anything difficult about your adult life before you moved into the BCC. For example, have you ever experienced any of these during that time? *Check all that apply*

❑A really bad illness, accident, or injury Once___A few times___Many Times___
❑Someone you cared for dying Once___A few times___Many Times___
❑A difficult breakup, divorce, or other falling out with someone you cared for
Once___A few times___Many Times___
❑Addiction to alcohol or other substance Once___A few times___Many Times___
❑Being physically assaulted or attacked Once___A few times___Many Times___
❑Being sexually assaulted or attacked Once___A few times___Many Times___
❑Spending time in jail or prison Once___A few times___Many Times___
❑Any other really frightening or traumatic events_____
❑NA

III. Would you describe your life after you moved into the BCC?

- ❑ Very happy
- ❑ Pretty happy
- ❑ Not too happy

In a few sentences, can you tell me what the best things about your life are after you moved into the BCC are? *Check all that apply*

- ❑ Family/social support
- ❑ Housing
- ❑ ?
- ❑ ?
- ❑ ?
- ❑ Other _____

We want to know if there has been anything difficult in your life after you moved into the BCC. For example, have you experienced any of these since moving in? *Check all that apply*

❑A really bad illness, accident, or injury Once___A few times___Many Times___
❑Someone you cared for dying Once___A few times___Many Times___
❑A difficult breakup, divorce, or other falling out with someone you cared for
Once___A few times___Many Times___
❑Addiction to alcohol or other substance Once___A few times___Many Times___
❑Being physically assaulted or attacked Once___A few times___Many Times___
❑Being sexually assaulted or attacked Once___A few times___Many Times___
❑Spending time in jail or prison Once___A few times___Many Times___
❑Any other really frightening or traumatic events_____
❑NA

What are your hopes and dreams for the future?

_____

_____

_____