Continuum of Care Assessment Report

June 2, 2023

Faulkner CONSULTING GROUP

Executive Summary

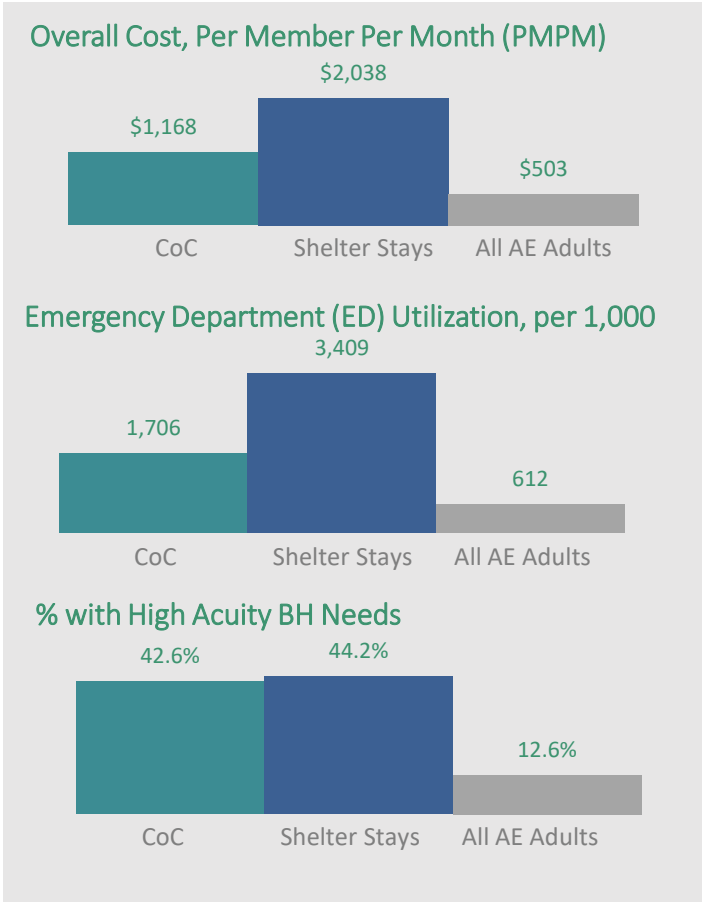
While we caution generalization of the results due to the study's limited small sample size, the residents in the Continuum of Care (CoC) program exhibited reduced costs and fewer hospitalizations, including Emergency Department (ED) visits, compared to Medicaid recipients residing in shelters.

Introduction and Approach

- **The CoC program** is a partnership between ONE Neighborhood Builders (ONE|NB), Providence Community Health Centers (PCHC), and Rhode Island Housing (RI Housing). The program relies on strong public/provider partnerships to deliver permanent supportive housing for Rhode Islanders experiencing both homelessness and high medical and behavioral health needs.
- **Task:** Impute performance on the CoC program as it pertains to health-related outcomes.
- **Approach:** Analytic evaluation of claims data, with a treatment, control and baseline population.
- **Data Sources:** An anonymized dataset provided through a Data Use Agreement (DUA) between Rhode Island's Executive Office of Health and Human Service's (EOHHS) and PCHC that included aggregate Medicaid managed care claims data and eligibility information from Rhode Island's Medicaid Management Information System (MMIS).

Key Findings (CY 2021-2022 Combined Dataset)

- Based on a blended dataset of CY 2021-22 data, CoC residents had a **43 percent lower average Per Member Per Month (PMPM) cost** than a similar group of Medicaid members in shelters, *although this difference was not significant with 95% confidence.*
- The hospital claims data suggested **reduced inpatient admissions and lower ED visits** among the CoC residents compared to the shelter group, although utilization of both groups remained significantly higher than the overall adult population.
- CoC residents had **comparable behavioral health needs** to those remaining in shelters, including the presence of a substance use condition. This implies that the CoC **supports a harm reduction approach** to social service delivery.
  - Relatedly, CoC residents received more preventive behavioral health services at Rhode Island's Community Mental Health Organizations.



Caveats and Constraints

- Small sample size limited the general applicability of results and conclusiveness of findings. However, the results are consistent with evaluations of other interventions addressing housing insecurity.
- Data was not adjusted for incurred but not reported (IBNR) or missing claims data.

Introduction: Two Program Partners

ONE Neighborhood Builders (ONE|NB)

- A nonprofit community development leader expanding its work to the broader Rhode Island area while maintaining its deep roots in its historic home of Olneyville.
- ONE|NB's mission is to **cultivate healthy, vibrant, and safe communities**.
- Since its founded in 1988, then as Olneyville Housing Corporation, ONE|NB has developed 466 affordable apartments; 130 for-sale homes for low- to moderate-income homebuyers; and nearly 35,000 square feet of commercial and community space—totaling more than $135 million of investments.

Providence Community Health Centers (PCHC)

- A non-profit health care organization and the only **Federally Qualified Health Center (FQHC)** in Providence, Rhode Island. PCHC provides quality primary health care services that are affordable, comprehensive and culturally sensitive to **more than 80,000 patients residing in Providence and its surrounding areas**.
- PCHC's mission is to **improve the well-being of the communities it serves by providing high quality, accessible, patient-centered care** regardless of cultural background, social barriers, race, ethnicity, gender, sexual orientation, belief systems or ability to pay.
- **PCHC services include** Family Practice, Internal Medicine, Pediatrics, Obstetrics, Gynecology, Behavioral Health, Optometry, Dental Care and Express Care (urgent care), as well as select specialty services.

Continuum of Care (CoC) Program Overview

- Since 2019, **One Neighborhood Builders (ONE|NB)** has contracted with Rhode Island Housing (RI Housing) to provide rental housing units and related supportive services for homeless, disabled individuals and their families as part of the **Continuum of Care (CoC)** program.
- The CoC program, managed by the U.S. Department Housing and Urban Development (HUD), awards competitive federal grants to nonprofit organizations, States, and local governments to operate programs that assist individuals and families experiencing homelessness and provide the services needed to help these people move into transitional and permanent housing. All States participate in the CoC program.
- One|NB provides the following as part of the CoC:
  - Up to twenty (20) Permanent Supportive Housing (PSH) opportunities in affordable rental communities that match the needs of very low-income and extremely low-income individuals and families.
  - Housing varies from one, two, and three-bedroom units and is supplemented by the coordination and provision of supportive services.
- Supportive services are provided by the **Providence Community Health Centers (PCHC)** and include regular outreach, housing stabilization services, crisis support, referral to clinical and behavioral health resources, and related services. PCHC is a Federally Qualified Health Center that can bill Medicaid for services, including certain housing stabilization services.
- Individuals and families are referred to these PSH opportunities by the **Rhode Island Coordinated Entry System.**
- To be **eligible for the CoC program**, Rhode Islanders must meet the following criteria**:**
  - Identified in the states' Homeless Management Information System (HMIS)
  - Record of chronic homeless, which is defined as documentation of at least 9 of 12 months of homelessness
  - Verification of disability
  - Established as a PCHC patient, which is defined as being seen by seen by a PCHC provider within 24 months.

Project Goals and Objectives

- This evaluation serves the broader public's interest as it aligns with Rhode Island Executive Office of Health and Human Service's (EOHHS) explicit goal to expand Rhode Island Medicaid's home stabilization services offerings as exhibited in its current extension to its 1115 Demonstration Waiver and investment in its Accountable Entities (AE) program as a means for addressing systemic social determinants of health.
- This project is the first of its kind in Rhode Island. Prior to this project, no systematic evaluation of the Continuum of Care (CoC) partnership between ONE Neighborhood Builders (ONE|NB), Rhode Island Housing, and Providence Community Health Centers (PCHC) had been executed. The goal of this project was to work with these three partners as well as EOHHS and its affiliated departments, as needed, to develop and execute a targeted Medicaid claims-based assessment of the CoC program.
    - ONE|NB and PCHC contracted with Faulkner Consulting Group (FCG) to perform a preliminary, yet comprehensive, quantitative evaluation of Rhode Island's CoC program.
    - This assessment specifically focused on Medicaid cost & service utilization - comparing the health care costs and utilization of PCHC's Accountable Entity (AE) members enrolled in One|NB's CoC program to other AE-attributed members experiencing housing instability.
- More broadly, this work's intent was to inform project partners and a broader audience about the potential health-related implications of investments in quality permanent supportive housing solutions and supporting strong partnerships between mission-aligned housing providers, social service providers, and health care providers.

Data Development and Supporting Data Use Agreements

- This independent study was made possible by funding from One Neighborhood Builders (ONE|NB) and a Data Use Agreement (DUA) executed between the Rhode Island Executive Office and Health and Human Services (EOHHS) and Providence Community Health Centers (PCHC).
- The DUA specified the detailed data elements and time period of approximately 100 attributed members identified by PCHC as having a housing-related Health Related Social Need (HRSN).
- EOHHS provided PCHC with an anonymized data extract of these members' historical Medicaid data to conduct its review of the program.
- Certain analytics were limited by the sample size and restrictions releasing any data with a cell size (i.e., the number of observations meeting the defined criteria) of less than 10 to maintain confidentially of CoC participants.
    - Given the small number of participants in this study, some desired metrics or analyses could not be performed due to limited sample size.
- In the future, ONE|NB hopes to expand the sample size and replicate the analysis and evaluation as additional CoC units are brought online, and longitudinal data becomes available.

Faulkner Consulting Group (FCG) performed an outcome-based evaluation, comparing the Medicaid claims experience of CoC program participants to a pseudo-randomized control group and the overall population.

- **The treatment group** included the 16 adult members, who as head of the household, were actively participating in the Continuum of Care (CoC) program.
- **A control group** of Medicaid adults experiencing housing insecurity, defined as either shelter stays, living on the streets, or in transitional housing, but not in CoC, was pseudo-randomly generated by PCHC.
- To create a **baseline comparison**, FCG generated a group of "all" adult members enrolled in Medicaid managed care and attributed to an Accountable Entity.
- **All members** were limited to Medicaid Only Adults aged 19 through 64 without an authorization for long term care services and supports.

Data Summary

Faulkner Consulting Group (FCG) assigned members with a history of housing insecurity to one of three groups: "Continuum of Care (CoC)", "Shelter Stay", or "Other Unhoused."

- The "Shelter Stay" group included CoC members prior to their enrollment data into the CoC program.
- Members identified as "Living on the Street" or as having "Transitional" housing in the dataset were assigned to the "Other Unhoused" group. While these subgroups were considered separately, due to small sample size and extreme variability in their descriptive statistics, they were excluded from final analysis.

For purposes of this analysis, the CoC group was the identified treatment group; the Shelter Stay group was considered the control group. The "Other Accountable Entity (AE)" was included for baseline and comparative purposes.

Other methodological notes:

- Except for the CoC group, the member remained in the assigned group for the entire study.
- A CoC resident was assigned to the program beginning 6 months prior to their "move-in" date. This was due to the provision of services by One Neighborhood Builders (ONE|NB) prior to their entering into a lease
- For purposes of analysis, the observational unit was a member-year except where a Per Member Per Month (PMPM) was calculated using member-months.
- Note that a CoC member may contribute 2 member-year observations within the year in which they begin the program (i.e., 1 observation for Shelter Stay and 1 observation for CoC. However, any PMPM costs were calculated based on assignment of costs to appropriate grouping based on the incurred date of the service).

Medicaid Enrollment and Expenditures, CY 2020 – 2022

Source: Rhode Island Medicaid (MMIS and Data Warehouse)

	2020	2021	2022
Member Months			
Continuum of Care	36	76	121
Shelter Stay	522	537	505
Other Unhoused	262	295	299
Other AE Adults	1,035,212	1,238,607	1,299,092
Total Spending			
Continuum of Care	$56,331	$72,506	$154,682
Shelter Stay	$863,742	$1,116,390	$962,952
Other Unhoused	$177,430	$376,256	$410,425
Other AE Adults	$545,308,380	$614,531,594	$637,468,714
PMPM			
Continuum of Care	$1,565	$954	$1,278
Shelter Stay	$1,655	$2,079	$1,907
Other Unhoused	$677	$1,275	$1,373
Other AE Adults	$527	$496	$491

Summary Descriptive Statistics, CY 2021-22 Combined

Source: Rhode Island Medicaid (MMIS and Data Warehouse)

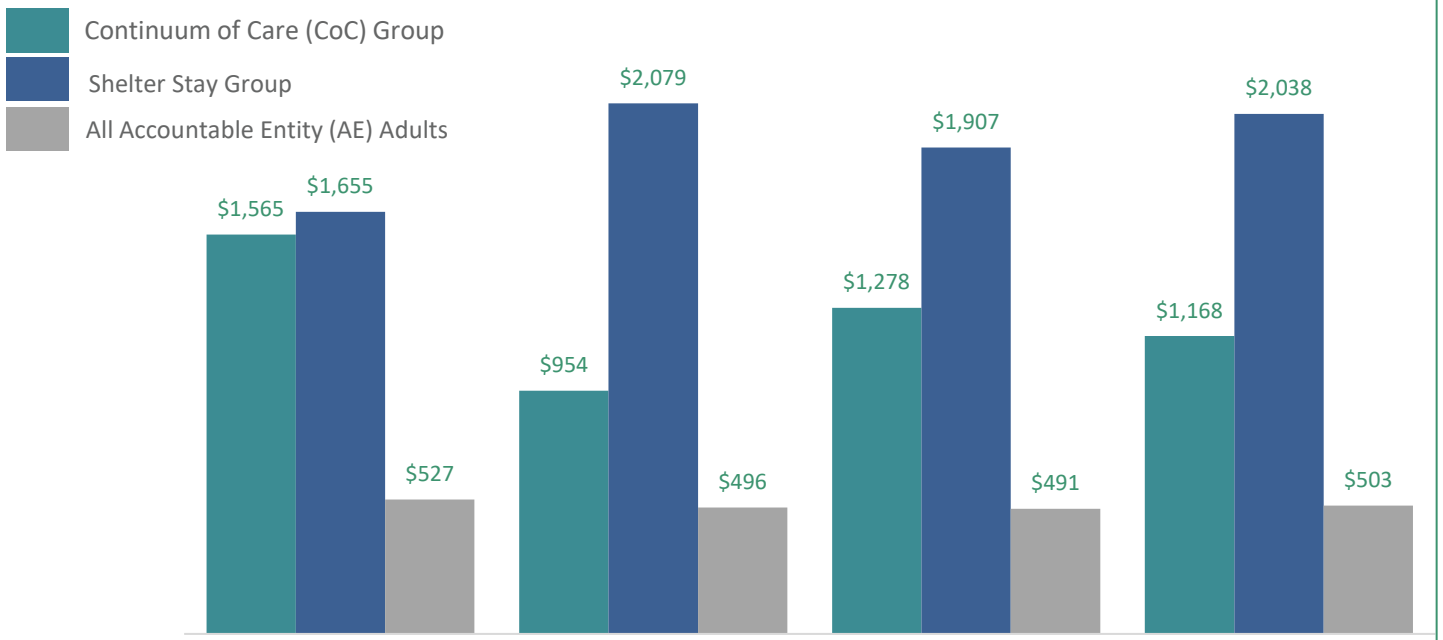
	Continum of Care (CoC) Group	Shelter Stay Group
Member Months:		
Observations (Member Months)	197	1025
Paid	$227,188	$2,065,000
Overall PMPM	$1,153	$2,015
Inflation-Adjsuted Overall PMPM	$1,168	$2,058
Distinct Member-Years:		
Observations (Distinct Member-Years)	21	96
Mean PMPM	$1,379	$2,278
Standard Error	406	264
Median	1006	1324
Standard Deviation	1862	2586
Kurtosis	8.17	5.42
Skewness	2.68	1.97
Confidence Level(95.0%)	848	524

Overall Member Costs

Despite limited observations, the average Medicaid-related health care spending on members in the Continuum of Care (CoC) was consistently lower than Medicaid recipients who continued to experience housing insecurity.

Overall Per Member Per Month[1] – Medicaid Claims Expenditures

CY 2020-22 and CY2020-21 Combined[2]

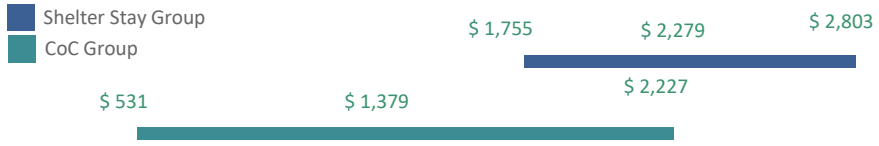


	2020			2021			2022			Combined: 2021-22		
Distinct Members	[3]	44	89.9k	[3]	47	106.1k	[3]	43	110.7k	21	90	216.8k
Member Months	36	534	1.04M	76	537	1.24M	133	505	1.30M	209	1,042	2.54M
Total Spend	$56k	$864k	$545M	$76k	$1.16M	$615M	$155k	$963k	$637M	$227k	$2.08M	$1.3B

- For the 2021-2022 period, the average inflation-adjusted Medicaid spending on members in the CoC Group was **$1,168 Per Member Per Month (PMPM)** compared to **$2,038 PMPM** among members in the Shelter Stay Group.
  - The two groups were matched along multiple dimensions, including presence of diagnoses for behavioral health and substance use (including the severity of such diagnoses), gender, age, Medicaid experience, Accountable Entity (AE) participation, and exclusion of extreme outliers. We caution against any generalization of relative performance given the limited time series and minimal sample size.
- When using the **member-year as the unit of observation**, as opposed to member-month, the difference remains but the results were not as robust:
  - Participants in the CoC Group had lower costs (M=$1,379 PMPM, SD=$1,862) than Shelter Stay Group (M=$2,278 PMPM, SD=$2,586); however, the results were not statistically significant at 95% confidence, $t(39) = 1.86$, $p < 0.10$.
- The chart below reflects the mean and overlapping 95% Confidence Intervals of the Average PMPM of members in the CoC compared to in Shelters:

Comparative Range of PMPM Spending (95% C.I.)

CY 2020-22 Combined [1]



[1] Cost represent Medicaid Management Information System (MMIS) claims data submitted through April 15, 2023. Overall PMPM is calculated as total spending divided by total count of member months.
[2] Combined costs are adjusted by US Department of Labor inflation factor for health care to CY 2022 for comparability.
[3] Count of observations in each year are too small to display .

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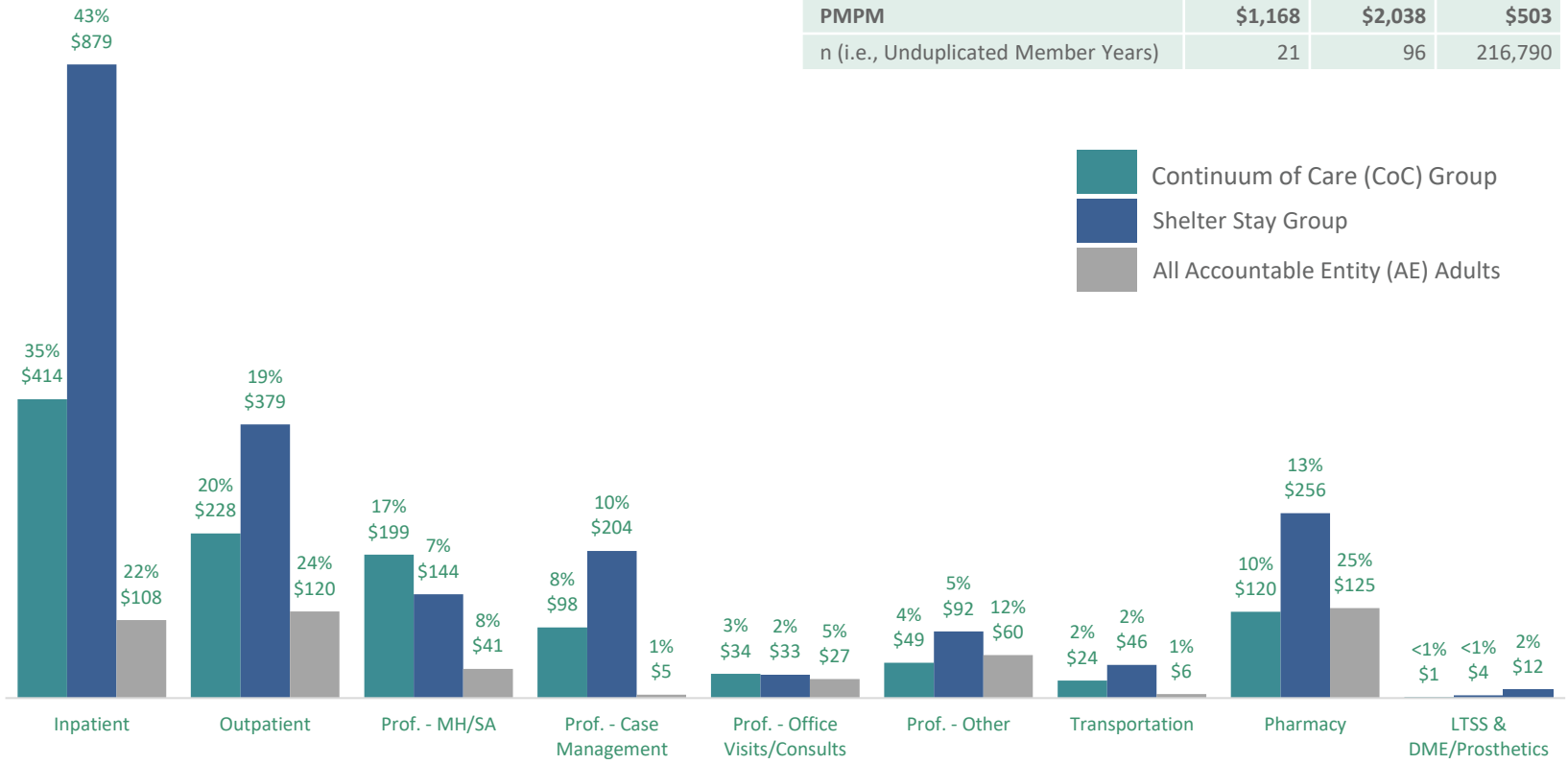
Spending by Service Type

Notwithstanding the caveats around the sample size, Medicaid members enrolled in the Continuum of Care (CoC) had approximately 50% lower spending on hospital services and pharmaceuticals (and fewer prescriptions per members) than those remaining in shelters.

Spending by Category of Service

CY 2021-22 Combined [1]

	CoC Group	Shelter Stay Group	All AE Adults
Total Expenditures	$230.1k	$2.12M	$1,276.6M
Member Months	197	1,042	2.56 M
PMPM	**$1,168**	**$2,038**	**$503**
n (i.e., Unduplicated Member Years)	21	96	216,790



- Medicaid recipients with housing insecurity were significantly different in overall costs and spending by service category than other Medicaid recipients in Rhode Island's Accountable Entity (AE) program.
- CoC residents had inpatient spending equivalent to $414 Per Member Per Month (PMPM), or 35% of all spending. In comparison, Medicaid enrollees residing in a shelter had inpatient spending more than twice that amount at $879 PMPM, equivalent to 43% of their total spending.
- Similarly, outpatient hospital spending was also lower among Medicaid recipients in the CoC program compared to those still residing in shelters: $228 PMPM versus $379 PMPM, respectively.
- Professional services accounted for nearly a third of all claims activity for the CoC Group ($379 PMPM or 32.5%) but less than a quarter for the Shelter Stay Group ($473 PMPM or 23.2%)

[1] Cost represent MMIS claims data submitted for dates of service in CY 2020 through 2022. Costs are adjusted by US Department of Labor inflation factor for health care to CY 2022 for comparability.

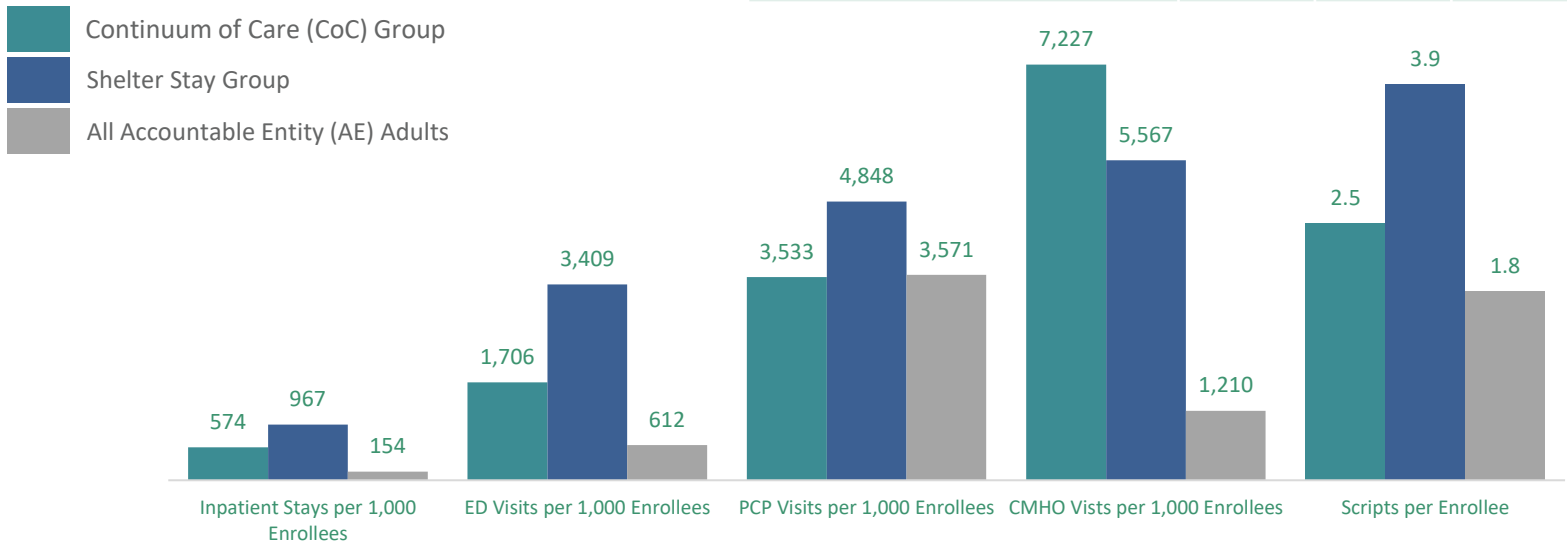
Select Utilization & Costs

Residents in the Continuum of Care (CoC) had lower utilization of hospital-based care, including both inpatient admissions and Emergency Department (ED) visits but more frequently saw licensed behavioral health providers at Community Mental Health Organizations (CMHO).

Acute Care Utilization

CY 2020-22 Combined [1]

	CoC Group	Shelter Stay Group	All AE Adults
Member Months	209	1,042	2.56M
N (i.e., Unduplicated Member Years)	21	96	216,790



Average Cost per Acute Care Service

CY 2020-22 Combined [1]

	Inpatient Stay	ED Visit	CMHO PMPM	Prescription
Continuum of Care	$14,336	$798	$345	$69
Shelter Stay	$8,963	$871	$342	$73
AE Adults	$8,097	$707	$26	$69

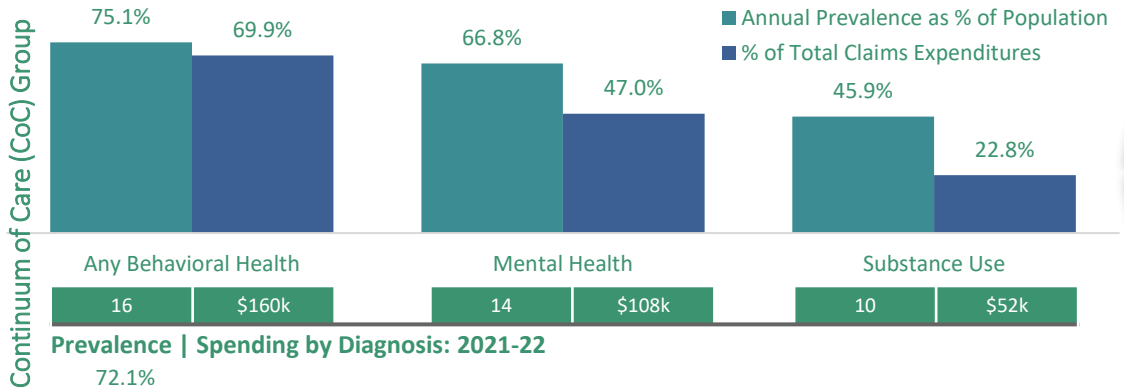
- Residents in the CoC program appear to experience a reduction in inpatient stays and ED visits when compared to those residing in a shelter.
  - Among the CoC residents, the aggregate result of 574 inpatient hospital admissions per 1,000 full-time equivalent enrollees was 40% less than the comparable result for shelter residents of 967 stays per 1,000.
  - Similarly, ED visits were 50% lower for CoC residents compared to those in a shelter: 1,706 versus 3,409 ED visits per 1,000.
- CoC residents utilized their primary care physician similarly to the general population and had lower prescription drug utilization, on average, than those in shelters.
- CoC residents had the greatest utilization of CMHO-associated services at 7,227 visits per 1,000.

Note that 1,000 enrollees is equivalent to 12,000 member months for purposes of comparative metrics.

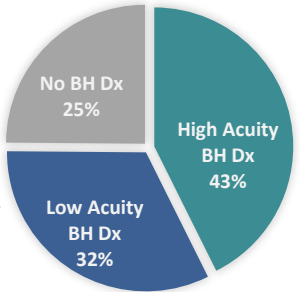
[1] Cost represent Medicaid Management Information System (MMIS) claims data submitted for dates of service in CY 2020 through 2022. Costs are adjusted by US Department of Labor inflation factor for health care to CY 2022 for comparability.

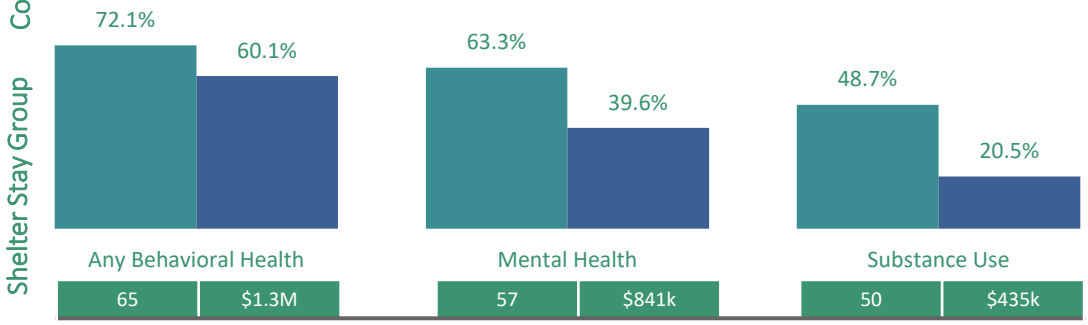
Behavioral Health Diagnoses & Acuity

Medicaid members with a history of homelessness were significantly more likely to have a behavioral health conditions than the general Accountable Entity (AE) membership.

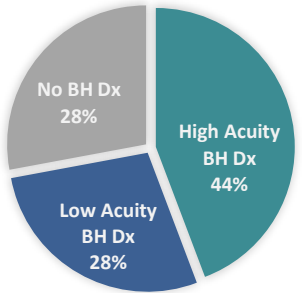


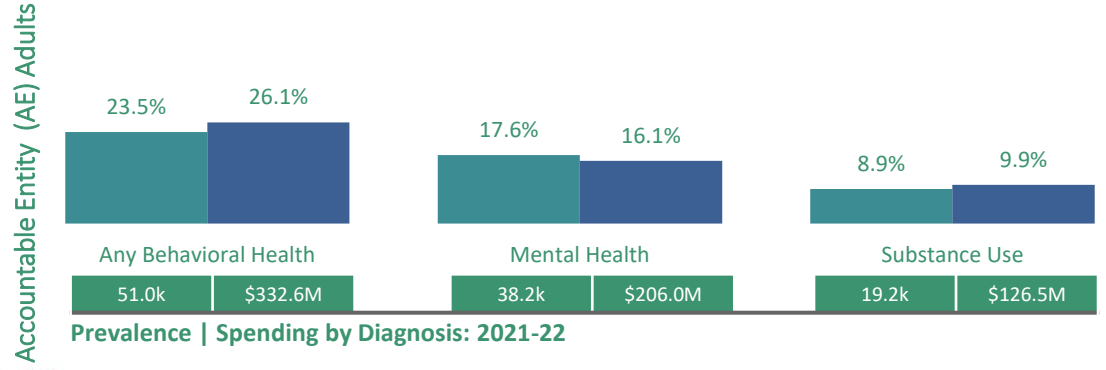
Prevalence | Spending by Diagnosis: 2021-22



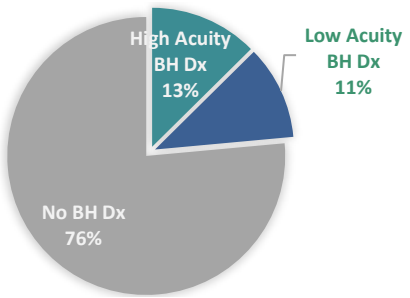


Prevalence | Spending by Diagnosis: 2021-22





Prevalence | Spending by Diagnosis: 2021-22



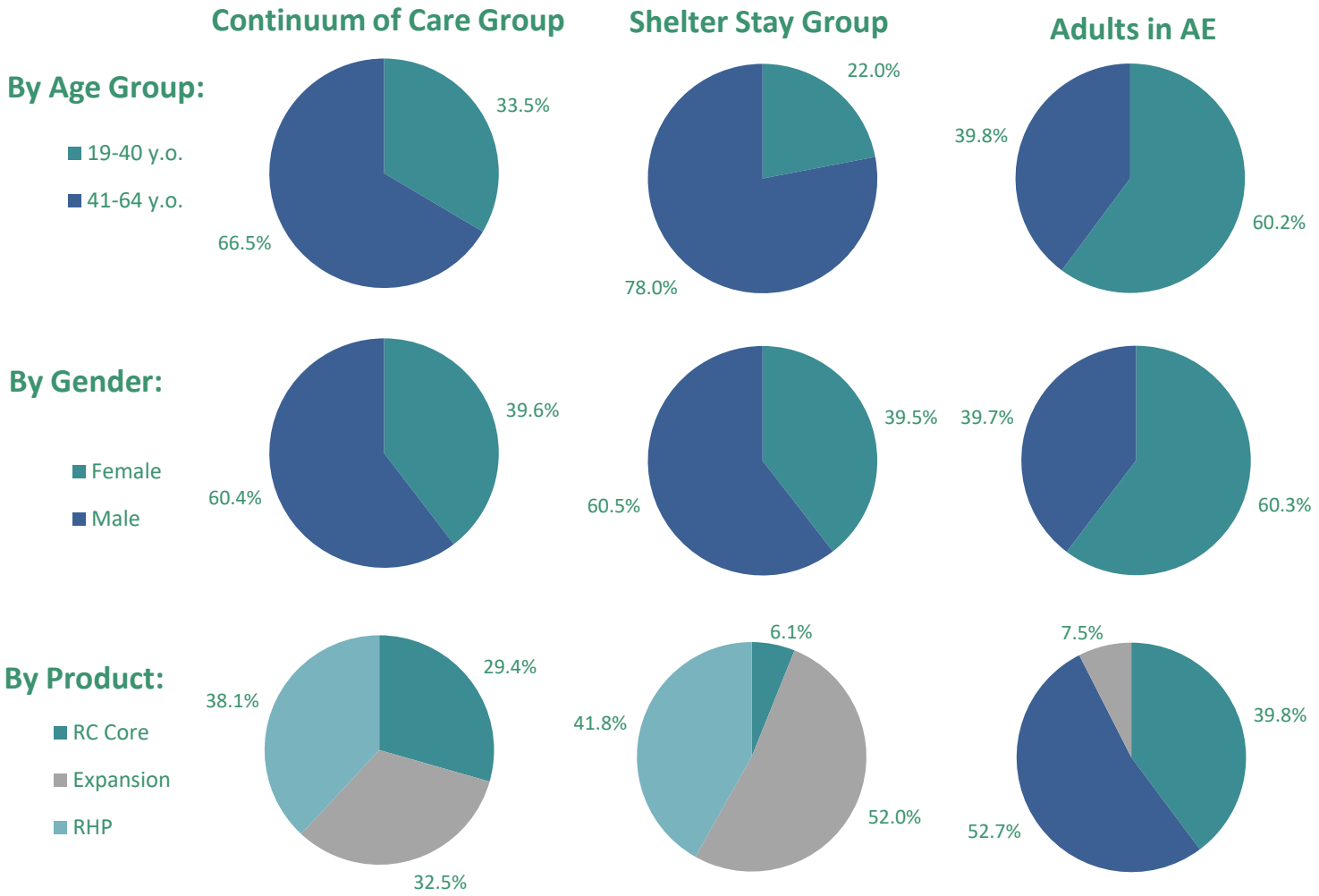
- Both members in the Continuum of Care (CoC) and Shelter Stay Groups had a high prevalence of behavioral health conditions, including both mental health and substance use disorders.
- Further, members with a history of housing insecurity were 3.5x (43-44% compared to 13%) more likely than overall adult AE population to have a severe behavioral health condition that could be classified as Severe and/or Severe and Persistent Mental Illness based on the presence of a specific subset of ICD-10 diagnoses codes.
- Whether for institutional or community-based treatments, 60-70% of total spending on those in the CoC or shelters was for services with behavioral health as primary diagnoses; this compares to "just" 26% among overall population.
- Please note, ICD-10 diagnoses indicating development disabilities were excluded from analysis.

An example of how to interpret the prevalence & spending charts:

- Among CoC residents, 85.7% had claims where a "behavioral health" condition was the primary diagnosis. Among all costs incurred by these residents, 69.9% were associated with a primary diagnosis for a behavioral health condition.

Other Descriptive Statistics:

Across basic demographic information as age, gender, and eligibility criteria, the Continuum of Care (CoC) and Shelter Stay group were more alike than the overall Accountable Entity (AE) enrollment.



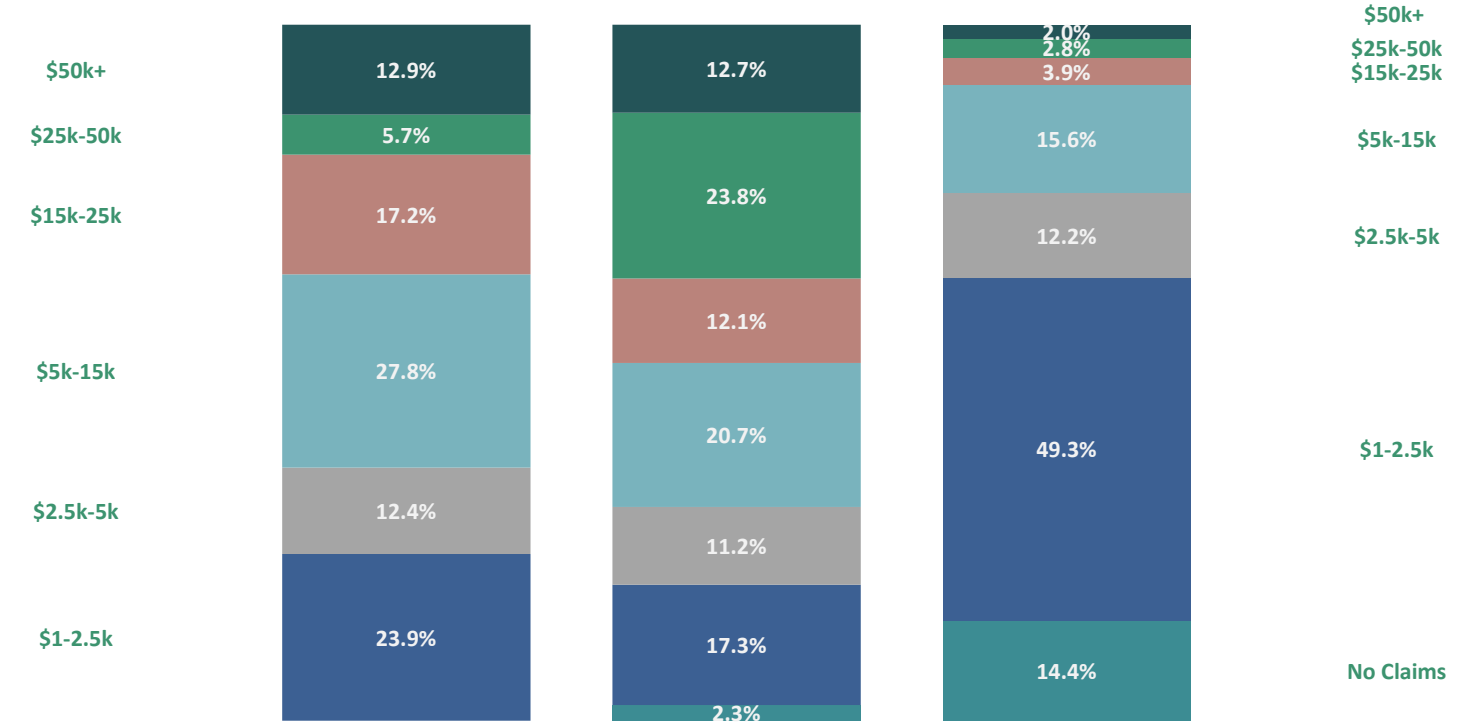
- Both members in the CoC and Shelter Stay Group were more likely to be older than adults attributed to Accountable Entities (AEs).
- The ratio of men to women was higher among those experiencing housing insecurity, including those residing in a shelter and those who were participating in CoC program, in comparison to the overall population attributed to AEs.
- The proportion of members in the CoC and Shelter Stay groups that were in Rhody Health Partners was nearly 5-6x greater than the overall AE program (i.e., 38.1-41.8% compared to 7.5% across entire AE program for adults).
- The CoC Group was 5x more likely to include parents with children and therefore enrolled in Rite Care—the State's Medicaid managed care program for Children and Families—than those remaining in a Shelter where half of members are childless adults (i.e., 29.4% compared to 6.1% enrollment in Rite Care) .

Other Descriptive Statistics:

Annal spending among the Continuum of Care (CoC) group appeared to be more clustered around the mean with a lower proportion of members classified as high-cost users in the $25,000-50,000 range in comparison to the Shelter Stay group.

% of Members by Annualized Total Cost of Care Spending

CY 2020-22 Combined [1]



	Continuum of Care Group	Shelter Stay Group	All AE Adults
Member Months	197	1,042	2,537,699
PMPM inc. outliers	$1,585	$1,992	$543
PMPM	$1,168	$2,038	$503

- Total Cost of Care spending among the CoC Group was more heavily clustered around $5,000-$15,000 (i.e., $400-$1,250 PMPM) and had a more "normal distribution" of results than those in the Shelter Stay Group or among the Accountable Entity (AE) Adult Group.
  - From a distributional perspective, nearly one-third of the Shelter Stay Group had costs in excess of $25,000 per annum, compared to less than one-in-five among the CoC Group exceeding this threshold in annual spending; whereas the all-AE Adult (control) Group included 14% of members having no claims activity and less than 5.0% with costs exceeding $25,000
- Note that annual total cost of care spending by member was not annualized to reflect the number of member months enrolled.

Current Limitations and Future Opportunities

The lack of sustained experience among Continuum of Care (CoC) participants and limited sample size hampered the ability to generalize and perform robust analytics on the sample and generalize from the limited descriptive statistics.

- Consider opportunities to expand the study size by incorporating additional CoC participants and/or people identified in the Homeless Management Information System (HMIS) as chronically homeless or receiving permanent supportive housing.
  - Expand Medicaid analyses to control for subpopulations such as children, childless adults, parents, and members with Supplemental Security Income (SSI).
    - Noteworthy, in most instances the CoC participant was identified as the head of household on a Medicaid case. Including everyone associated with the case would have expanded the sample size; however, these additional household members were generally children and due to limited sample sizes and inappropriateness of combining these two groups from healthcare utilization perspective, all children were excluded from requested data extracts provided by EOHHS.
  - Expand to include additional diagnoses that could not be included in this study, such as diabetes and asthma, to allow for additional controls.
- Continue studying the ONE Neighborhood Builders (ONE|NB) - Providence Community Centers (PCHC) partnership using a longitudinal time series analysis to understand participant performance and opportunities over time.
- Consider the non-healthcare benefits of providing supportive housing, such as employment, reduced recidivism and strengthening of familial supports.
- PCHC and ONE|NB should consider providing its subject matter expertise to Rhode Island's Executive Office of Health and Human Service (EOHHS) as the State expands the availability of housing stabilization and supports services to assure a robust and timely program evaluation.