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Perceptions of Care Coordination among Homeless Veterans Receiving Medical Care in the VHA and Community Care Settings: Results from a National Survey

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Abstract

Background: Initiatives to expand Veterans' access to purchased health care outside Veterans Health Administration (VHA) facilities ("community care") present care coordination challenges for Veterans experiencing homelessness.

Objective: Among Veterans with homeless experiences, to evaluate community care use and satisfaction, and compare perceptions of care coordination among Veterans using VHA services and community care to those using VHA services without community care.

Research Design: Cross-sectional analysis of responses to a 2018 mailed survey.

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Conflict of Interest: No potential conflicts exist.

Subjects: VHA outpatients with homeless experiences.

Measures: Self-reported use of community care, Likert-style ratings of satisfaction with that care, and Access/Coordination experiences from the Primary Care Quality-Homeless (PCQ-H) survey.

Results: Of 4777 respondents, 1325 (26.7%) reported using community care; most of this subsample affirmed satisfaction with the community care they received (83%) and its timeliness (75%). After covariate adjustment, Veteran characteristics associated with greater community care use included female gender, being of retirement age and non-married, and having higher education, more financial hardship, ≥3 chronic conditions, psychological distress, depression, and post-traumatic stress disorder. Satisfaction with community care was lower among patients with travel barriers, psychological distress, and less social support. Compared to those using the VHA without community care, Veterans using VHA services and community care were more likely to report unfavorable access/coordination experiences ([OR]=1.34, CI=1.15–1.57). This included hassles following referral (OR=1.37, CI=1.14–1.65) and perceived delays in receiving health care (OR=1.38, CI=1.19–1.61).

Conclusions: Veterans with homeless experiences value community care options. Potential access benefits are balanced with risks of unfavorable coordination experiences for vulnerable Veterans with limited resources.

Keywords

homelessness; care coordination; primary care; Veterans

Veterans with homeless experiences often have complex health care needs requiring well-coordinated primary care services. Compared to stably housed Veterans, those with homeless experiences sometimes have elevated rates of chronic medical, mental health, and substance use conditions,[1] and difficulty accessing needed services in traditional healthcare settings.[2–6] The Veterans Health Administration (VHA) has invested heavily in health and housing services for Veterans with homeless experiences. Effective primary care approaches for these patients prioritize care coordination, the organization of patient care activities and sharing of information across all providers involved in care,[7] as a central aspect of services design.[8] Yet, recent policy changes to improve Veterans' access to care through partnerships with the private sector may challenge care coordination efforts[9] for Veterans with homeless experiences.

Following media coverage of appointment delays and secret waitlists in 2014, the U.S. Congress passed the Veterans Access, Choice, and Accountability Act, allowing eligible Veterans to receive purchased health care outside VHA facilities.[10] Veterans were eligible for the Veterans Choice Program, established under the law, if their appointment wait time exceeded 30 days, they lived more than 40 miles from a VHA medical center, or they experienced excessive travel hardship. Third-party administrators (i.e., Tri-West and HealthNet) were contracted to establish outside provider networks, enroll eligible Veterans, and administer the program (e.g., obtain pre-authorizations for care, schedule Veteran appointments with non-VHA providers, bill the VHA for care provided). Implementation of the Veterans Choice Program greatly increased the number of Veterans who were eligible to

receive health care purchased by the VHA from community settings (hereafter, "community care").[11] However, the program's reception by Veterans vulnerable to inequities in health outcomes and care utilization, such as Veterans with homeless experiences, remains largely unknown.

Improving Veterans' access to community care may be at odds with care coordination goals. During the early implementation of the Veterans Choice Program, providers described difficulties coordinating care for Veterans, including challenges with interoperability across electronic medical records, role uncertainty, lack of formal communication systems, and duplication of tests and procedures.[12–15] In studies of general outpatients, Veterans using VHA services and community care, compared to those using the VHA without community care, reported poorer coordination experiences and more health system hassles.[16–18] Such gaps in care coordination are concerning because concurrent use of VHA services and non-VHA services increases patients' risk for adverse clinical outcomes (e.g., unsafe prescribing, poor quality of care, hospital readmission, premature mortality),[19–22] with uncoordinated care considered to be part of the causal pathway.[21] Given the rapid growth of community care in recent years,[2] it is important to identify and address care coordination gaps for highly vulnerable patients.

Results from studies conducted in civilian settings suggest that Veterans with homeless experiences may face unique challenges when accessing services through VHA's new community care initiatives. Persons with homeless experiences report barriers of competing priorities, lack of income and transportation, and stigma.[2,3,6,23,24] Serious mental illness, substance use disorders and trauma histories might also affect Veterans' experiences with community care since that care might not be prepared to address their needs. A historical look at community care use under the Veterans Choice Program, satisfaction with that care, and perceptions of care coordination from a VHA primary care environment offer a window to potential coordination challenges for Veterans with homeless experiences at present. Such analyses could inform the development and refinement of care coordination programs for vulnerable Veterans receiving care in the VHA and community settings.

Our study was designed to answer the following: 1) what percentage of Veterans with homeless experiences used community care at the time of the Veterans Choice Program, 2) what factors were associated with community care use and satisfaction, and 3) does use of VHA services and community care, compared to VHA services without community care, relate to unfavorable care coordination experiences from a VHA primary care environment? We hypothesized that Veterans using VHA services and community care, compared to those using VHA services without community care, would be more likely to report unfavorable care coordination experiences.

Methods

Design

We conducted a cross-sectional analysis of responses to a national survey conducted as part of the Primary Care Quality-Homeless Services Tailoring (PCQ-HoST) study. All study procedures were approved by the VHA's Central Institutional Review Board.

Survey Recruitment and Administration

As described elsewhere,[25] the PCQ-HoST study recruited Veterans with recent experiences of homelessness from 26 VHA medical centers that had implemented both homeless-patient aligned care teams (H-PACTs) and traditional VHA primary care services ("Mainstream") as of 2017. The goal of the PCQ-HoST study was to determine if H-PACTs offered a superior primary care experience, compared to Mainstream primary care in the same facilities. Compared to other VHA facilities, those implementing H-PACTs tend to be located in urban areas and serve relatively large numbers of Veterans experiencing homelessness.[26] Veterans were considered eligible for the survey if they received two or more primary care visits in a study site, and had evidence of homelessness[27] documented in the VHA's administrative records at any time from May 2015-November 2017. From the pool of 57,220 eligible Veterans, a random sample was selected from each facility at a 2:1 H-PACT to Mainstream ratio for survey recruitment. The size of the sampling frame (n=14,656) was based on initial power calculations and expected survey response.

A contracted professional survey organization, Strategic Research Group (SRG), recruited participants to complete surveys in March-October, 2018. Given concerns of changing contact information, SRG cross-checked addresses listed in the VHA's administrative records against a commercial address database prior to mailing the surveys, then called initial non-responders up to five times with an option to complete the survey by telephone. The survey mailings, telephone script, and voicemails included a telephone number for recipients to update addresses, voice concerns, decline participation, or request no further contact. The survey cover sheet and telephone script noted that participation was voluntary and completing the survey implied consent. Upon survey completion, Veterans received a $10 prepaid gift card.

The PCQ-HoST response rate was 40.2% (n=5,766),[25] comparable to other mailed surveys in the VHA (25–45%),[22,28,29] with 92.6% of surveys completed by mail and 7.4% over the telephone with the SRG interviewers. The analytic cohort consisted of respondents who completed items on community care use/satisfaction, and experiences with care coordination from a VHA primary care environment (described below).

Survey Measures

Self-Reported Use of Community Care.—One item asked, *In the last 2 years, have you received any medical care outside the VA using the Veterans Choice Program?*

Satisfaction with Community Care.—Subsequent satisfaction was assessed with two Likert-type items rated from strongly disagree (1) to strongly agree (4): *I am satisfied with the care I received using the Veterans Choice Program*, and *I am satisfied with how quickly I received care under the Veterans Choice Program*. For each item, Veterans were coded as satisfied if they agreed or strongly agreed with the satisfaction statement.

Experiences with Care Coordination.—To measure Veterans' experiences with care coordination from a VHA primary care environment, we used a measure of access/care coordination from the Primary Care Quality-Homeless (PCQ-H) survey, a 33-item

instrument that was developed and validated for use in homeless populations.[30] The items originated from qualitative work on aspects of services design deemed important to persons who had been homeless and the providers who care for them.[31] The PCQ-H Access/ Coordination scale includes 11 Likert-type items rated from strongly disagree (1) to strongly agree (4). We categorized responses to each item as unfavorable or not, counted the number of unfavorable experiences (0–11), and categorized patients as having unfavorable access/ coordination if they reported unfavorable experiences on 3+ items.[30] We focused specifically on unfavorable experiences, rather than favorable experiences or mean scores, because prior studies have shown links between poor coordination experiences and adverse outcomes.[32] We also examined responses to the two specific scale items assessing care coordination: *My primary care provider helps to reduce the hassles when I am referred to other services*, and *I have to wait too long to get the health care services my primary care provider thinks I need*.

Covariates

This inquiry was guided by the Behavioral Model of Health Services Utilization for Vulnerable Populations[33] and results from prior studies of dual system use.[20,28,34–37] Survey items assessed demographic characteristics, housing circumstances, income and travel barriers, social support, and medical, mental health, and substance comorbidities.

We assessed housing circumstances with 3 items: current homelessness (i.e., sleeping outdoors or in place not meant for sleeping, staying in shelters or temporary accommodations for homeless persons, staying with a relative or friend without knowing whether you would be able to stay long term), unsheltered experiences (i.e., number of nights spent sleeping outdoors or in a place not meant for sleeping), and chronic homelessness (i.e., 4+ times homeless in last 3 years, or longest duration of homelessness lasted > 1 year). Difficulty paying for basic needs was assessed with 1 item (i.e., *How hard is it for you to pay for the very basics like food and heating?*), travel difficulties with 1 item (i.e., *Does the distance you have to travel make it difficult to receive care at [VA facility]?*), and social support with 7 items assessing emotional support, social isolation, and tangible support[25] from the National Institutes of Health Patient Reported Outcomes Measurement Information System (PROMIS).[38,39]

We counted the number of chronic medical conditions reported by participants (0–8; hypertension or high blood pressure, arthritis, diabetes, asthma, coronary artery disease, cerebrovascular disease or stroke, emphysema, myocardial infarction or heart attack),[40] and dichotomized responses as high (3–8 conditions) or low (0–2 conditions) co-morbidity. The Two-Item Conjoint Screening test assessed alcohol and drug problems in the past 12 months.[41] We assessed psychological distress in the past two weeks with 6 items (Cronbach's α=0.88): the 4-item Patient Health Questionnare[42] plus 2 items assessing psychotic symptoms from the Colorado Mental Health Symptom Index.[43] We coded patients as having significant psychological distress if they reported experiencing multiple symptoms in the past 2 weeks (score >10 out of 24).

From administrative records, we determined type of primary care at the time of recruitment (H-PACT or Mainstream). We also extracted diagnoses for common mental health

conditions in the 24 months prior to recruitment: depression, anxiety, post-traumatic stress disorder, and bipolar disorder and schizophrenia.

Statistical Analyses

We used cross-tabulations to describe community care use and satisfaction with that care, and X^2 tests to compare the distribution of characteristics of Veterans using VHA services and community care, compared to those using the VHA without community care. We then used multivariable logistic regression models to test associations between participant characteristics and community care use. Next, for the subgroup of participants who reported using community care, we used multivariable logistic regressions to test for associations between participant characteristics and satisfaction with that care.

To test the hypothesis that Veterans using VHA services and community care would have poorer experiences with care coordination, compared to Veterans using the VHA without community care, we used logistic regressions to test for differences in likelihood of unfavorable experiences.

All analyses were conducted using Stata version 15, included non-response weights, accounted for clustering within facilities, and controlled for type of VHA primary care clinic at the time of recruitment (H-PACT or Mainstream). We calculated survey weights, intended to minimize potential bias attributable to differences in who responded to the survey, as the inverse probability of response from demographic and clinical characteristics derived from the VHA's medical records (see Table, Supplemental Digital Content 1, for comparisons of characteristics of respondents and non-respondents).

Results

Of the 5,766 participants who responded to the survey, 5,216 (90%) completed the items assessing community care use, satisfaction with that care (1+ item), and access/coordination (4+ items) from a VHA primary care environment. After excluding data from 439 respondents (8.4%) with missing values on study covariates, the analytic sample included 4,777 Veterans with homeless experiences; 1,325 (26.7%) reported community care use.

Characteristics of Veterans Who Used Community Care

Veterans who used VHA services and community care differed from those using the VHA without community care in several regards (Table 1). Those who used community care were older and more likely to be female, married, and have more than high school education (all p's<0.05). They reported more financial hardship (p<0.01), were more likely to have travel difficulty, ≥3 chronic medical conditions, psychological distress, depression, anxiety, and post-traumatic stress disorder (all p's<0.01), and less likely to be managed in an H-PACT (p<0.001). Overall, 14% of participants were currently homeless, 15% lacked shelter in the past 6 months, and 19% experienced chronic homelessness. None of the housing variables were statistically associated with community care use (all p's>0.05).

Some of the patterns of association from the bivariate results changed after covariate adjustment (see Table, Supplemental Digital Content 2, for adjusted odds ratios). Travel

distance, social support, and anxiety were not statistically associated with community care use when controlling for other variables (all p's>0.05).

Satisfaction with Community Care

The majority of Veterans who used community care were satisfied with the community care they received (83%; Table 1), and 75% were satisfied with how quickly they received community care. Veterans who were older, female, or had greater social support were more likely to be satisfied with the community care they received (adjusted odds ratio[OR]s>1.0; Table 2). Veterans managed in an H-PACT, compared to Mainstream primary care, were more satisfied with their time to receiving community care (OR=1.58). However, Veterans with travel difficulties were less likely than those without travel difficulties to report satisfaction with their community care received and its timeliness (ORs=0.54 and 0.50, respectively).

Experiences with Coordination from a VHA Primary Care Environment

Veterans who used VHA services and community care, compared to those using the VHA without community care, were more likely to endorse unfavorable access/coordination experiences in primary care, as assessed on the overall PCQ-H scale (Table 3; OR=1.34). The same pattern was observed for the two specific coordination items: hassles following referral (OR=1.37) and waiting too long for care their provider thought was needed (OR=1.38). Other patient characteristics associated with increased odds of unfavorable care coordination experiences included greater financial hardship, and having travel difficulties and psychological distress (ORs>1.0). Conversely, characteristics associated with lower odds of unfavorable coordination experiences included retirement age, higher social support, and H-PACT primary care (ORs<1.0). Veterans who reported being homeless at the time of the survey were less likely than Veterans with prior homeless experiences to have unfavorable experiences with hassles following referral (OR=0.69).

Discussion

As the VHA partners with the private sector to improve Veterans' access to care, it is important to determine if the ensuing care fragmentation adversely impacts vulnerable patients. In a national sample, more than one quarter of Veterans with homeless experiences reported using community care through the Veterans Choice Program and most of those Veterans were satisfied with the quality and timeliness of their care received. Consistent with the study hypothesis, Veterans using VHA services and community care reported poorer coordination experiences from a VHA primary care setting, compared to those using the VHA without community care. Satisfaction with community care was also lower for Veterans with travel difficulties and limited social support. However, satisfaction with time to receiving community care was greater for Veterans enrolled in an H-PACT, a primary care model that is resourced to facilitate care coordination.

Concerns regarding poor coordination experiences resonate with prior work demonstrating challenges in co-managing Veterans in the VHA and community care settings.[12–15] One study found ratings of care coordination to be poorer in community care settings, compared

to ratings in the VHA.[18] Our study builds on this prior work and shows that some of these challenges apply for Veterans with homeless experiences. The findings have clinical relevance because patient reports of care coordination problems correlate with adverse outcomes thought to be preventable through better communication among providers.[32] While the current study did not assess downstream outcomes, our finding of less favorable coordination experiences among Veterans using VHA services and community care may signal risk for poor outcomes due to care fragmentation.[20–22,44] However, our data also show that the community care received outside the VHA was valued by the patients themselves, hinting at the potential value of efforts to mitigate care fragmentation.

Consistent with studies conducted in general outpatients,[28,45] women with homeless experiences were more likely than men to use community care. Women may choose community care if they are poorly received in the VHA[46,47] or if specialty services (*e.g.*, mammography) are not available in their VHA facility. Needs for specialty care services might also explain our finding of greater community care use in older Veterans and those with chronic medical conditions.[35,48] Unique to the current study, we found greater likelihoods of community care use among Veterans with psychological distress and financial hardship. Moreover, nights without shelter, current homelessness, and chronic homelessness did not appear to limit Veterans' access to community care. The findings imply that the VHA's evolution from a direct provider to a payer of health services has not impeded healthcare access for highly vulnerable Veterans.

It is perhaps surprising that barriers related to travel distance did not correlate with community care use, as travel distance to the VHA is one of the main eligibility criteria for the Veterans Choice Program. Distance criteria based on mileage might not have applied to the many Veterans experiencing homelessness in urban areas where the key concern may be the routes covered by public transportation. As the VHA seeks ways to mitigate access barriers for all Veterans, it must determine which barriers can best be remedied by the private sector for Veterans with homeless experiences.

Although many Veterans were satisfied with community care, those with travel barriers, financial hardship, and low social support were less likely to be satisfied with the quality and timeliness of their community care. These results might reflect challenges faced by vulnerable Veterans as they navigate a new system of care. Veterans with homeless experiences may also feel poorly received by providers and office staff in community care settings.[23,29,49] More intensive efforts to understand Veteran experiences outside the VHA, such as network analyses around the "web of care" that Veterans use under community care initiatives, could reveal the unique personal pathways and strategies vulnerable patients develop to navigate care. Determining sources of dissatisfaction with community care and reasons for suboptimal care coordination experiences from a VHA primary care environment could also help to direct future system-level interventions.

Our findings inform ongoing VHA initiatives to remedy care coordination challenges brought to the foreground by the Veterans Choice Program. For instance, poorer coordination experiences for Veterans with barriers related to lack of shelter, financial hardship, travel difficulties, and lower social support imply a need to increase coordination

efforts for Veterans with limited personal resources. Strategies to mitigate care coordination challenges could focus on developing communication systems to facilitate warm handoffs between providers in the VHA and those in community settings. Solutions to address the interoperability of EHRs remain critical to these efforts. Providers caring for Veterans may also benefit from more time in the clinical encounter for decision-support, referral, and care coordination so that coordination activities do not further add to provider stress.[50] Finally, our finding of higher satisfaction with community care among patients enrolled in an H-PACT may indicate that certain H-PACT characteristics facilitate care coordination for Veterans who are homeless. Future work should investigate facilitators to care coordination, such as those applied in the H-PACTs, to improve linkages between medical, mental health, and social services for Veterans who receive Mainstream primary care in the VHA and community care settings.

Our results should be interpreted in light of the following limitations. First, the cross-sectional design limits our ability to determine the directionality of the observed relationships. Second, our care coordination items capture one aspect of coordination (i.e., referrals), and poor experiences in this area could reflects challenges with both the accessibility of the desired service and care coordination. Additional research into other aspects of care coordination (e.g., how providers share information) and healthcare quality in community care settings is needed. Third, our measure of community care use during the Veterans Choice Program was based on self-report. While the wording of our question was designed to prevent confusion, some Veterans might have reported on any medical care received outside the VHA. Fourth, we did not assess patient expectations, which could relate to patient perceptions of care received. Finally, generalizability is limited by modest survey response. Yet, a strength of the current study is our recruitment strategies to include the perspectives of Veterans with homeless experiences (e.g., inclusion of non-residential addresses, use of telephone follow-up) and our application of non-response weights to offer generalizable estimates.

Conclusions

In a national sample of Veterans with homeless experiences, we found frequent use of community care during the Veterans Choice Program. Community care options are valued by Veterans and could mitigate access barriers for some Veterans with homeless experiences. Ongoing and future programs to expand community care initiatives must be coupled with infrastructure to promote intra-provider communication and effective care coordination, especially for Veterans at risk for poor outcomes associated with fragmented care.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1.

Characteristics of Veterans with homeless experiences who received Veterans Health Administration services and community care

	VHA services and community care (n=1,325)		VHA services without community care (n=3,452)		
	N	**Weighted %**	**N**	**Weighted %**	***p*-value**
Gender					<0.001
Male	1124	85.6	3172	92.3	
Female	192	13.7	263	7.2	
Other / missing	9	0.7	17	0.6	
Age					0.02
18–54	381	35.0	921	34.5	
55–65	623	45.4	1826	49.6	
66+	321	19.7	705	15.9	
Race/ethnicity					0.02
Non-Hispanic White	531	39.0	1336	38.0	
Non-Hispanic Black	463	34.2	1337	37.7	
Hispanic	140	11.0	369	11.7	
Other	160	13.5	316	10.0	
Missing	31	2.3	94	2.6	
More than high school education	889	66.5	2060	60.0	<0.001
Marital status					<0.001
Married / living as married	290	21.9	611	17.4	
Previously married	743	54.5	1866	52.7	
Single / never married	292	23.6	975	29.9	
Currently homeless	163	13.0	455	14.2	0.49
Nights without shelter in last 6 months					
0	1,136	84.7	2956	84.5	
1–6	87	7.0	211	6.5	
7+	102	8.3	285	9.0	
Chronic homelessness	221	18.1	631	19.9	0.42
Hard paying for needs (1–5: mean, sd)	2.74	1.32	2.62	1.30	0.008
Difficult to receive care: travel distance	428	33.3	978	29.3	0.01
Social support (0–6: mean, se)	4.23	1.98	4.26	2.00	0.44
Three or more chronic medical conditions	443	30.5	976	24.5	<0.001
Psychological distress	486	38.0	1019	31.8	<0.001
Mental health diagnoses past 24 months					
Depression	816	62.1	1887	55.5	<0.001
Anxiety	420	33.3	948	29.3	0.009
Post-traumatic stress disorder	425	34.8	837	27.3	<0.001
Bipolar and schizophrenia disorders	236	20.6	642	21.8	0.54
Alcohol problem	368	29.5	993	30.1	0.82
Drug problem	160	13.3	484	15.6	0.10

	VHA services and community care (n=1,325)		VHA services without community care (n=3,452)		
	N	**Weighted %**	**N**	**Weighted %**	***p*-value**
VHA homeless-tailored primary care	706	57.9	2138	65.6	<0.001
Satisfied with community care received[a]	1082	82.7			
Satisfied with time to receiving community care[a]	968	74.5			

Note. Data from Primary Care Quality-Homeless Services Tailoring (PCQ-HoST) survey, collected nationally in 2018. P-value obtained from logistic regression model that was weighted for survey response (calculated as 1/probability of response), included facility as design strata, and controlled for type of VHA primary care clinic at the time of recruitment (homeless-tailored or not). Chronic conditions, assessed in the PCQ-HoST survey, were hypertension or high blood pressure, arthritis, diabetes, asthma, coronary artery disease, cerebrovascular disease or stroke, emphysema, myocardial infarction or heart attack. Mental health diagnoses were determined from International Classification of Disease (ICD) diagnoses recorded in VHA inpatient or outpatient visit records in the 2 years prior to recruitment.

VHA – Veterans Health Administration: Veterans had 2+ primary care visits documented in VHA electronic health records

Community care – Veterans affirmed receiving community care through the Veterans Choice Program

[a]Satisfaction items were administered only to participants in the VHA **services** and community care group.

Table 2.

Predictors of reporting satisfaction with the quality and timeliness of community care, among Veterans with homeless experiences

	Satisfied with community care received			Satisfied with time to receiving community care		
	OR	**95% CI**	**p-value**	**OR**	**95% CI**	**p-value**
Gender						
Male (ref)	1.0			1.0		
Female	1.71	1.02, 2.85	0.04	1.00	0.66, 1.50	1.00
Other / missing	1.16	0.19, 7.10	0.88	2.29	0.42, 12.54	0.34
Race/ethnicity						
Non-Hispanic White (ref)	1.0			1.0		
Non-Hispanic Black	1.28	0.88, 1.86	0.20	1.05	0.76, 1.45	0.76
Hispanic	0.84	0.50, 1.39	0.49	0.75	0.48, 1.18	0.22
Other	1.31	0.79, 2.19	0.30	1.02	0.65, 1.59	0.94
Missing	0.90	0.34, 2.36	0.82	0.44	0.19, 1.00	0.05
Age						
18–54 (ref)	1.0			1.0		
55–65	1.54	1.07, 2.23	0.02	1.23	0.89, 1.71	0.21
66+	1.27	0.82, 1.98	0.29	1.47	0.98, 2.22	0.07
More than high school education	0.84	0.60, 1.19	0.33	0.94	0.70, 1.27	0.71
Marital status						
Married / living as married (ref)	1.0			1.0		
Previously married	0.99	0.66, 1.47	0.95	1.22	0.86, 1.73	0.27
Single / never married	1.08	0.66, 1.75	0.76	1.37	0.90, 2.10	0.14
Currently homeless	0.87	0.52, 1.48	0.62	0.66	0.41, 1.08	0.10
Nights without shelter in last 6 months						
0 (ref)	1.0			1.0		
1–6	0.70	0.39, 1.26	0.24	1.19	0.67, 2.10	0.56
7+	0.77	0.43, 1.38	0.38	0.79	0.46, 1.39	0.42
Chronic homelessness	1.13	0.71, 1.79	0.60	1.15	0.75, 1.77	0.53
Hard paying for basic needs (1–5)	0.95	0.83, 1.08	0.41	0.96	0.86, 1.07	0.46
Difficult to receive care: travel distance	0.54	0.39, 0.74	<0.001	0.50	0.38, 0.66	<0.001
Social support (0–6)	1.16	1.07, 1.26	<0.001	1.12	1.04, 1.21	0.003
Three or more chronic medical conditions	1.04	0.88, 1.23	0.66	1.06	0.91, 1.23	0.47
Psychological distress	0.69	0.48, 0.98	0.04	0.92	0.66, 1.27	0.60
Mental health diagnoses						
Depression	1.33	0.94, 1.90	0.11	1.07	0.79, 1.45	0.65
Anxiety	0.97	0.68, 1.37	0.85	1.33	0.96, 1.82	0.08
Post-traumatic stress disorder	1.05	0.73, 1.50	0.79	0.82	0.59, 1.12	0.21
Bipolar and schizophrenia diagnoses	0.95	0.63, 1.41	0.79	0.92	0.65, 1.31	0.66
Alcohol problem	1.43	1.00, 2.05	0.05	1.11	0.81, 1.52	0.52
Drug problem	1.00	0.62, 1.62	0.99	1.09	0.69, 1.74	0.71

	Satisfied with community care received			Satisfied with time to receiving community care		
	OR	**95% CI**	**p-value**	**OR**	**95% CI**	**p-value**
VHA homeless-tailored primary care	1.37	0.99, 1.89	0.06	1.58	1.19, 2.10	0.002

Satisfaction assessed with two Likert-type items (i.e., *I am satisfied with the care I received using the Veterans Choice Program; I am satisfied with how quickly I received care under the Veterans Choice Program*) rated from strongly disagree (1) to strongly agree (4). Coefficient indicates the odds of agreeing (i.e., Agree, Strong Agree) with the satisfaction statement, administered to participants who affirmed using community care through the Veterans Choice Program.

Table 3.

Associations between community care use and patient-reported experience of access/coordination from a VHA primary care environment, among Veterans with homeless experiences

	Global: unfavorable access / coordination experiences[a]			Unfavorable experiences on specific coordination items[b]					
				Hassles following referral			Wait too long for care my provider thinks is needed		
	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value
VHA **services** + community care (versus VHA **services** without community care)	1.34	1.15, 1.57	<0.001	1.37	1.14, 1.65	0.001	1.38	1.19, 1.61	<0.001
Gender									
Male (ref)	1.0			1.0			1.0		
Female	0.92	0.72, 1.18	0.51	0.86	0.64, 1.17	0.35	1.08	0.84, 1.38	0.55
Other / missing	1.53	0.63, 3.70	0.35	0.83	0.25, 2.74	0.76	1.37	0.45, 4.20	0.58
Race/ethnicity									
Non-Hispanic White (ref)	1.0			1.0			1.0		
Non-Hispanic Black	1.00	0.85, 1.18	1.00	0.96	0.79, 1.17	0.68	0.86	0.73, 1.01	0.07
Hispanic	0.96	0.74, 1.23	0.73	0.82	0.60, 1.10	0.19	0.92	0.72, 1.17	0.49
Other	0.86	0.68, 1.10	0.24	1.05	0.79, 1.39	0.75	0.87	0.68, 1.11	0.26
Missing	1.46	0.95, 2.24	0.08	1.02	0.59, 1.76	0.94	1.43	0.92, 2.22	0.11
Age									
18–54 (ref)	1.0			1.0			1.0		
55–65	0.83	0.70, 0.98	0.03	0.92	0.75, 1.12	0.40	0.77	0.65, 0.91	0.003
66+	0.70	0.56, 0.87	0.002	0.72	0.55, 0.95	0.02	0.84	0.68, 1.04	0.12
More than high school education	1.04	0.90, 1.21	0.57	1.01	0.85, 1.20	0.92	1.13	0.98, 1.31	0.10
Marital status									
Married / living as married (ref)	1.0			1.0			1.0		
Previously married	1.00	0.82, 1.21	0.97	0.95	0.75, 1.19	0.64	0.85	0.71, 1.03	0.10
Single / never married	0.95	0.76, 1.19	0.67	0.97	0.75, 1.26	0.83	0.85	0.68, 1.05	0.13
Currently homeless	0.83	0.62, 1.09	0.18	0.69	0.50, 0.96	0.03	1.07	0.82, 1.40	0.61
Nights without shelter in last 6 months									
0 (ref)	1.0			1.0			1.0		
1–6	1.01	0.75, 1.37	0.93	1.21	0.87, 1.68	0.26	1.15	0.87, 1.51	0.33

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	Global: unfavorable access / coordination experiences[a]			Unfavorable experiences on specific coordination items[b]					
				Hassles following referral			Wait too long for care my provider thinks is needed		
	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value
7+	1.42	1.06, 1.88	0.02	1.30	0.94, 1.79	0.12	1.32	1.00, 1.74	0.05
Chronic homelessness	1.03	0.81, 1.30	0.80	1.29	0.99, 1.68	0.06	1.09	0.87, 1.36	0.44
Hard paying for basic needs (1–5)	1.21	1.14, 1.28	<0.001	1.11	1.04, 1.19	0.003	1.17	1.10, 1.23	<0.001
Travel difficulties	2.51	2.16, 2.91	<0.001	1.66	1.39, 1.98	<0.001	1.99	1.71, 2.31	<0.001
Social support (1–6)	0.82	0.79, 0.85	<0.001	0.84	0.81, 0.88	<0.001	0.87	0.84, 0.91	<0.001
Three or more chronic medical conditions	1.06	0.98, 1.15	0.13	0.97	0.88, 1.07	0.54	1.06	0.98, 1.14	0.16
Psychological distress	1.37	1.16, 1.63	<0.001	1.53	1.25, 1.87	<0.001	1.23	1.04, 1.46	0.02
Depression	0.95	0.81, 1.11	0.50	0.91	0.76, 1.10	0.35	1.05	0.90, 1.23	0.53
Anxiety	1.19	1.00, 1.41	0.049	1.19	0.98, 1.46	0.08	1.04	0.88, 1.23	0.64
Post-traumatic stress disorder	1.05	0.89, 1.25	0.55	1.00	0.82, 1.22	0.99	1.12	0.94, 1.32	0.20
Bipolar and psychotic disorders	0.92	0.77, 1.11	0.39	0.88	0.71, 1.10	0.26	0.87	0.73, 1.05	0.15
Alcohol problem	0.91	0.76, 1.07	0.25	0.92	0.75, 1.13	0.45	0.98	0.83, 1.15	0.77
Drug problem	1.14	0.91, 1.43	0.26	0.90	0.69, 1.17	0.43	1.10	0.88, 1.38	0.39
VHA homeless-tailored primary care	0.58	0.50, 0.67	<0.001	0.58	0.48, 0.69	<0.001	0.67	0.58, 0.78	<0.001

Note. Data from Primary Care Quality-Homeless Services Tailoring (PCQ-HoST) survey, collected nationally in 2018.

[a]The Access/coordination scale included 11 Likert-type items, with response to each item categorized as unfavorable (i.e., disagreement with positive valence items, or agreement with negative valence items) or favorable. Patients were categorized as having unfavorable experiences if they reported 3+ unfavorable experiences out of 11 possible on the scale, roughly the highest tertile of unfavorable experiences. The OR is the adjusted odds of reporting 3+ unfavorable experiences on the access/coordination scale.

[b]Two specific items from the access/coordination scale assessed coordination directly: "*My primary care provider helps to reduce the hassles when I am referred to other services*" and "*I have to wait too long to get the health care services my primary care provider thinks I need.*" OR is the adjusted odds of reporting an unfavorable experience for the specific scale item.