Homeless Veterans' Use of Peer Mentors and Effects on Costs and Utilization in VA Clinics

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Objectives: The study compared health care utilization and costs among homeless veterans randomly assigned to peer mentors or usual care and described contacts with peer mentors.

Methods: Homeless patients at four Department of Veterans Affairs clinics were randomly assigned to a peer mentor (N=195) or to usual care (N=180). Administrative data on utilization and costs over a six-month follow-up were combined with peer mentors' reports of patient contacts.

Results: Most patients (87%) in the peer mentor group had at least one peer contact. Patients in this group spent the largest proportions of time discussing housing and health issues with peer mentors and had more outpatient encounters than those in usual care, although differences were not significant. No other between-group differences were found in utilization or costs.

Conclusions: Although significant impacts of peer mentors on health care patterns or costs were not detected, some patients had frequent contact with peer mentors.

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Homeless veterans enrolled in the U.S. Department of Veterans Affairs (VA) health care system have access to ambulatory care services, but their high level of use of acute health care has been well documented (1,2). Homeless veterans with multiple general medical and psychiatric comorbidities pose challenges for ambulatory care practices because these individuals have complex clinical and psychosocial needs for care.

Some interventions, such as such as case management and housing services (3,4), have reduced costly use of emergency departments (EDs) and hospitals by homeless patients. However, the effectiveness of case management is contingent on patients' having a trusting relationship with their providers, which is often lacking and which prevents homeless veterans from engaging in care (5). In addition, housing placement alone may not be sufficient to reduce high utilization of acute care (6). Some patients with chronic illnesses have benefitted from peer support programs, because peers can relate more closely to the concerns of other patients, support self-management techniques, and act as role models. Peer support has significantly reduced rehospitalization rates for psychiatric admissions and improved glucose control for veterans with diabetes from racial-ethnic minority groups (7,8). One nonrandomized study found that case management plus peer support reduced psychiatric hospitalizations and substance abuse problems for homeless patients (9). These studies suggest that peer support may benefit homeless patients with mental illness; however, this approach has not been tested as a stand-alone intervention.

We tested the use of peer mentors among homeless veterans in VA primary care clinics. We hypothesized that use of peer mentors would decrease use of EDs and hospital care through patients' greater engagement in ambulatory care and improved self-management behaviors. We compared health care use and costs over a six-month period for homeless veterans randomly assigned to peer mentors or to usual care, and we described the frequency and content of homeless veterans' contacts with peer mentors.

METHODS

A two-arm randomized trial comparing health care use and costs over a six-month follow-up period was conducted in four VA primary care clinics. Homeless patients using VA primary care at the time of enrollment were eligible for the study. Homelessness was defined as being unsheltered, staying in an emergency shelter, staying in time-limited transitional housing, or living in unstable, doubled-up arrangements with family or friends. Two sites had existing patient-centered medical home models tailored for homeless patients, called Homeless Patient Aligned Care Teams (H-PACT), and the other two sites were regular PACT sites at which general medical and behavioral health care staff members are commonly integrated. In addition to an integrated

clinical team, H-PACT sites offered specific services for homeless veterans, including open-access scheduling; case management for housing, food, and chronic disease management needs; social work; and extensive community partnerships.

Some potential participants were referred during VA primary care visits; others visited the study office in response to posted fliers advertising the study. Between January 1, 2012, and September 30, 2013, patients were screened for eligibility, and eligible patients who provided informed consent were enrolled in the study. Each site randomly assigned patients to the peer mentor or usual care arms. The study received approval from the VA Central Institutional Review Board (protocol 11–06).

A total of 195 homeless patients were randomly assigned to the peer mentor arm, and 180 patients were randomly assigned to the usual care arm. Patients in the peer mentor intervention received regular contacts with an assigned peer mentor over a six-month period in addition to their usual primary care from their PACT or H-PACT clinical team. Peer mentors were salaried employees embedded in the primary care team and were formerly homeless veterans who had extensive experience with VA health care services. Responsibilities focused on facilitating didactic exercises, serving as a role model, assisting veterans to articulate goals and needs, teaching problem-solving techniques, and providing assistance navigating the health care system. Prior to recruitment, mentors received an intensive, two-day training based on the MISSION-Vet manual, which describes a case management and peer mentor team intervention for homeless veterans with co-occurring mental and substance use disorders (10).

Mentors scheduled routine visits with their assigned patients over a six-month period to reinforce care plans identified in the clinic visit. The context of the contacts was dictated by the primary care team to reinforce compliance related to care plans and by patient-identified needs. Mentors were supposed to meet with each participant twice a week for the first month, once a week during months 2–4, and once every two weeks for months 5–6. Patients randomly assigned to usual care continued to receive primary care without any other additional services. [More details about patient eligibility, study sites, and the peer intervention are included in an online supplement to this report.]

We obtained data from the VA Medical Statistical Analysis System files to identify inpatient and outpatient services and from the Managerial Cost Accounting files to identify VA health care costs. Use and costs of non-VA services that were sponsored by the VA were obtained from the Fee Basis files. Non-VA hospital stays that were not sponsored by the VA were obtained by patient self-report, and these costs were estimated on the basis of length of stay and the diagnosis-related group from hospital bills. Contacts with peer mentors were recorded in weekly time logs and summarized the time spent with each patient, mode of contact, topics discussed, and other patient care activities. Costs of peer mentors were obtained from salaries and length of time employed.

Health care utilization was measured for six months prior to and six months following study enrollment. Use of outpatient care was measured separately for primary care, specialty care, mental health and substance abuse services, intensive program services (including mental health integrated case management, group visits, and methadone treatment), homeless program services, and telephone visits. Acute care was measured by all-cause ED visits and hospitalizations and ED visits and hospitalizations for an ambulatory care–sensitive condition—that is, a condition that can be effectively treated on an outpatient basis (11). Total annual costs of care were calculated for each patient for the pre- and postrandomization periods. Demographic characteristics, such as age, sex, race-ethnicity, marital status, education, history of homelessness, general medical health, and chronic conditions were obtained from a patient survey at baseline.

We used an intention-to-treat analysis for the randomized groups, and all patients using VA care were included in the analysis whether they had left the peer intervention (N=64, 33%) or not (N=131, 67%). Two-sample t tests and chi-square tests were performed to compare the peer mentor and usual care patients' baseline characteristics. Bivariate analyses for mean utilization and costs by randomization group were conducted by using two-sample t tests. We also compared outcomes for patients assigned to mentors with different caseloads (fewer than ten patients and ten or more patients). Multivariate analysis was also used to predict total costs, controlling for treatment group, site, number of peer mentor contacts, PACT or H-PACT site, general medical health score, housing status, and prerandomization costs in a generalized linear model with a gamma distribution and a log-link function. All data analyses were conducted with SAS 9.4. The statistical significance for all tests was set at p=.05.

RESULTS

Baseline characteristics of the peer mentor and usual care arms were not significantly different, except for marital status. In both groups, most patients were men (peer mentor group, N=188, 96%; usual care group, N=171, 95%). In both groups, the largest proportion of patients was white (peer mentor: 45% [N=88] white, 34% [N=66] black, 4% [N=8] Hispanic, and 17% [N=33] other; usual care: 43% [N=78] white, 37% [N=66] black, 5% [N=9] Hispanic, and 15% [N=27] other). The mean±SD age of patients in the two groups was 52±10. Most patients in both cohorts had at least one mental health condition; the largest proportions had depression or anxiety or both [see online supplement for additional details].

Peer mentor patients had an average of 5±8 contacts per patient with their mentor over the six months, and 169 (87%)

TABLE 1. Utilization and costs over a six-month follow-up of 375 veterans randomly assigned to a peer mentor or to usual care

	Peer mentor (N=195)		Usual care (N=180)				
Variable	M	SD	M	SD	t[a]	df	p
Utilization							
Peer mentor visits	5	8	0	—			
Primary care visits	5.1	6.0	4.4	4.3	−1.4	350	.16
Specialty care visits	2.3	4.3	1.7	2.5	−1.5	318	.14
Mental health and substance abuse visits	5.5	7.9	5.3	7.6	−.3	373	.75
Intensive program visits	8.4	22.7	8.6	23.6	<.1	373	.95
Homeless program visits	7.7	11.0	7.4	11.7	−.3	373	.79
Telephone visits	1.9	3.4	1.9	2.8	<−.1	368	.93
All inpatient admissions[b]	.2	.7	.2	.7	.3	373	.79
Admissions for ambulatory care–sensitive conditions (ACSC)[c]	0	.3	0	.2	<.1	332	.94
All emergency department (ED) visits[c]	1.4	3.0	1.3	2.3	−.5	360	.61
ED visits for ACSCs[c]	.1	1.0	0	.4	−.7	242	.49
30-day VA prescription drug fills	24.4	23.8	25.4	26.1	.4	373	.72
Costs ($)							
Peer mentor visits	737	0	0	—			
Primary care visits	1,796	2,488	1,434	1,573	−1.7	331	.09
Specialty care visits	1,335	3,151	1,004	2,727	−1.1	371	.28
Mental health and substance abuse visits	2,095	3,107	2,128	3,729	<.1	349	.93
Intensive program visits	1,750	4,076	1,839	4,115	.2	373	.83
Homeless program visits	1,801	2,697	2,011	3,659	.6	328	.53
Telephone visits	339	548	310	449	−.6	368	.57
All inpatient admissions[b]	4,226	17,127	3,601	12,789	−.4	358	.69
Admissions for ACSCs[c]	304	4,248	260	2,744	−.1	335	.90
All ED visits[c]	1,144	2,662	943	1,753	−.9	338	.38
ED visits for ACSCs[c]	102	1,246	29	333	−.8	224	.43
30-day VA prescription drug fills	1,082	1,966	1,489	7,831	.7	200	.50
Total	18,919	22,941	17,483	20,261	−.6	373	.52

[a] Two-sided t tests compared the difference between groups.
[b] Includes VA-provided, VA-sponsored, and non-VA–sponsored admissions
[c] Includes VA-provided and VA-sponsored ED visits

had at least one mentor contact. Patient-mentor discussion time was greatest for housing issues, general medical health and medication, mental health, and substance abuse issues. Patients also spent time discussing basic needs (such as food and clothing), VA benefits, work experience, and social issues. Mentors spent considerable time documenting interactions and relatively little time participating in training or meeting with the primary care team [see online supplement for additional details].

Almost all patients received VA care during the follow-up period; only four patients did not use VA care during the period. The peer mentor group had slightly higher use of outpatient care, but the differences were not statistically significant (Table 1). During the follow-up period, patients in the peer mentor group had a mean of 5.1 primary care visits, compared with 4.4 for the usual care group. The peer mentor group had 5.5 mental health or substance abuse visits, compared with 5.3 for the usual care group. For both groups, the mean numbers of intensive program (for example, group visits and methadone treatment), specialty care, homeless program, telephone, and ED visits were similar. Both groups also had a similar mean number of inpatient admissions, either VA provided or sponsored or not VA sponsored. Outcomes were also similar by patient caseload of the mentors.

Costs of peer mentor visits were estimated to be $737 per patient. Total costs for all health care was similar between groups—$18,919 for the peer mentor group and $17,483 for usual care. We conducted additional analyses to adjust for number of peer contacts, site, general medical health, housing status, and prerandomization costs, but we did not find any significant differences in costs between the randomized groups.

DISCUSSION

In our study, some homeless veterans assigned to a peer mentor had frequent visits with their peer mentor over a six-month period, and others engaged very little with their mentors. Patients discussed specific health care concerns with their peer mentors, including general medical health, mental health, and substance abuse, in addition to housing and other issues. Peer contact frequency varied between patients, and some veterans engaged with peer mentors throughout the observation period. Patients in the peer mentor arm had a slightly higher number of primary care, specialty care, and mental health encounters than those in usual care, although we were not able to detect significant differences between the groups. Both groups had similar levels of utilization for ED visits, inpatient care, and prescription drugs.

Our results suggest that some homeless patients will engage with peer mentors. Peer mentors may serve a key role in building trust between patients and providers to foster engagement with the health care system. However, further investigations are needed with larger sample sizes and longer follow-up periods to determine whether peer mentors can increase use of outpatient care and reduce use of acute care to improve care overall. The lack of effect on utilization and costs may also be due to the high prevalence of mental health conditions among the study patients, who were homeless. Peer mentors may not have been as skilled as health

professionals in addressing complicated mental health issues among these patients. Peer mentors may be less able to affect engagement with health care providers and self-management behaviors among homeless veterans than among patients in the general population, who have been shown to respond to peer support (7,8). Also, patients in this study already had access to primary care and exhibited high levels of acute care utilization at baseline. Therefore, it may be difficult for ambulatory care interventions to affect use of acute care by these types of patients. Another limitation was that we did not measure outcomes in terms of quality of life or social support, and future work should examine whether peer mentors can affect these outcomes. One promising study of intensive peer-support case management delivered in a group format found that the program was associated with more social integration and use of case manager services among homeless patients (12). Although that study did not look at health care utilization, this type of group peer support model might be used to affect health care–seeking behaviors.

CONCLUSIONS

We found that many homeless veterans will engage with peer mentors, and thus peers may provide psychosocial support that can complement traditional health care encounters. Although peer mentors are a relatively low-cost intervention, we did not find any cost savings associated with the use of peer mentors. There may be potential for peer mentors to improve homeless patients' satisfaction and overall experiences with VA care, but further work is needed to determine whether ambulatory care–based interventions can address reliance on acute care by homeless patients.

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REFERENCES

1. Doran KM, Raven MC, Rosenheck RA: What drives frequent emergency department use in an integrated health system? National data from the Veterans Health Administration. Annals of Emergency Medicine 62:151–159, 2013
2. O'Toole TP, Buckel L, Bourgault C, et al: Applying the chronic care model to homeless veterans: effect of a population approach to primary care on utilization and clinical outcomes. American Journal of Public Health 100:2493–2499, 2010
3. Sadowski LS, Kee RA, VanderWeele TJ, et al: Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: a randomized trial. JAMA 301:1771–1778, 2009
4. Nelson G, Aubry T, Lafrance A: A review of the literature on the effectiveness of housing and support, assertive community treatment, and intensive case management interventions for persons with mental illness who have been homeless. American Journal of Orthopsychiatry 77:350–361, 2007
5. O'Toole TP, Johnson EE, Redihan S, et al: Needing primary care but not getting it: the role of trust, stigma and organizational obstacles reported by homeless veterans. Journal of Health Care for the Poor and Underserved 26:1019–1031, 2015
6. Kessell ER, Bhatia R, Bamberger JD, et al: Public health care utilization in a cohort of homeless adult applicants to a supportive housing program. Journal of Urban Health 83:860–873, 2006
7. Long JA, Jahnle EC, Richardson DM, et al: Peer mentoring and financial incentives to improve glucose control in African American veterans: a randomized trial. Annals of Internal Medicine 156: 416–424, 2012
8. Sledge WH, Lawless M, Sells D, et al: Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. Psychiatric Services 62:541–544, 2011
9. Smelson DA, Kline A, Kuhn J, et al: A wraparound treatment engagement intervention for homeless veterans with co-occurring disorders. Psychological Services 10:161–167, 2013
10. Smelson D, Kline A, Hills S, et al: The MISSION Consumer Workbook. Rockville, Md, Substance Abuse and Mental Health Services Administration, 2007.
11. Prevention Quality Indicators Resources: AHRQ Quality Indicators. Rockville, Md, Agency for Healthcare Research and Quality, 2015
12. Tsai J, Rosenheck RA: Outcomes of a group intensive peer-support model of case management for supported housing. Psychiatric Services 63:1186–1194, 2012