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DOI: 10.1111/1475-6773.12992  
RESEARCH ARTICLE

# Continuity of Care among People Experiencing Homelessness and Mental Illness: Does Community Follow-up Reduce Rehospitalization?

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**Objective.** To examine whether timely outpatient follow-up after hospital discharge reduces the risk of subsequent rehospitalization among people experiencing homelessness and mental illness.

**Data Sources.** Comprehensive linked administrative data including hospital admissions, laboratory services, and community medical services.

**Study Design.** Participants were recruited to the Vancouver At Home study based on a-priori criteria for homelessness and mental illness ( $n = 497$ ). Logistic regression analysis was used to assess the relationship between outpatient care within 7 days postdischarge and subsequent rehospitalization over a 1-year period.

**Data Extraction.** Data were extracted for a consenting subsample of participants ( $n = 433$ ) spanning 5 years prior to study enrollment.

**Principal Findings.** More than half of the eligible sample (53 percent;  $n = 128$ ) were rehospitalized within 1 year following an index hospital discharge. Neither outpatient medical services nor laboratory services within 7 days following discharge were associated with a significantly reduced likelihood of rehospitalization within 2 months (AOR = 1.17 [CI = 0.94, 1.46]), 6 months (AOR = 1.00 [CI = 0.82, 1.23]) or 12 months (AOR = 1.24 [CI = 1.02, 1.52]).

**Conclusions.** In contrast to evidence from nonhomeless samples, we found no association between timely outpatient follow-up and the likelihood of rehospitalization in our homeless, mentally ill cohort. Our findings indicate a need to address housing as an essential component of discharge planning alongside outpatient care.

**Key Words.** Continuity of care, homelessness, health services, mental illness

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The high prevalence of comorbid mental and physical illnesses among people experiencing homelessness results in high rates of hospitalization for this subpopulation compared to the general public (Kushel, Vittinghoff, and Haas

2001; Kushel et al. 2002; Fazel, Geddes, and Kushel 2014). A critical period in health care delivery is the point at which patients, whether homeless or not, are discharged from inpatient hospital care and released into the community. Patients leaving hospital are at heightened risk of medical complications, hospital readmission, and death (Gill, Mainous, and Nsereko 2000; Kripalani et al. 2007). Continuity of care, including discharge planning and timely outpatient community follow-up, has been advocated as essential to improving health outcomes and preventing hospital readmission (Nelson, Maruish, and Axler 2000; Stein et al. 2000; Walraven et al. 2004; Adair 2005; Mitton et al. 2005). In a well-integrated health care system, discharge from hospital is followed by relevant outpatient health services (Kripalani et al. 2007). This example of continuity of care is used as an indicator of system performance for both psychiatric and general health services (Crawford et al. 2003; Adair 2005; Mitton et al. 2005; Burns et al. 2008).

Many studies have reported that timely outpatient follow-up significantly improved outcomes on a variety of measures, including reductions in hospital admissions, lower mortality, reduced symptom severity, improved community functioning, greater service satisfaction, and improved quality of life (Gill, Mainous, and Nsereko 2000; Nelson, Maruish, and Axler 2000; Adair 2005; Mitton et al. 2005; Burns et al. 2008; Tomita and Herman 2012; Lorine et al. 2015). Furthermore, several studies have examined practices aiming to optimize discharge planning in support of positive patient outcomes (Bindman et al. 2000; Coleman et al. 2006; Dixon et al. 2009), leading to the recommendation that treatment guidelines should encourage that outpatient follow-up should occur within 1 week or 1 month posthospital discharge (Bindman et al. 2000).

Studies focusing on homeless samples have emphasized high rates of rehospitalization within this population, underscoring system fragmentation and barriers to accessing services as primary contributing factors (Fortney et al. 2003; Tomita and Herman 2012). A recent study identified homelessness as a risk factor for psychiatric readmission in a general psychiatric population (Lorine et al. 2015). An American study found that the experience of homelessness and having a mental illness interacted to produce even higher levels

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of emergency department use and hospital readmission compared to those experiencing homelessness alone, mental illness alone, or neither (Lam, Arora, and Menchine 2016). More broadly, research findings have stimulated advocacy for increased emphasis and investments in continuity of care. Some studies have reported that despite timely follow-up posthospital discharge, readmission rates were not significantly improved among patients with psychiatric disorders (Sytema and Burgess 1999; Pfeiffer et al. 2012; Harrison et al. 2014). However, these findings were attributed by the authors to the quality of follow-up, whereby most patients were only engaged by telephone and not in person, and that the ability to engage in follow-up by phone may have more to do with the individual's level of functioning and therefore ability to be engaged by phone or to have access to a phone in the first place (Harrison et al. 2014). Furthermore, these findings and similar ones from other studies have not specifically focused on individuals experiencing both homelessness and mental illness and therefore limits the ability to generalize such findings to this specific subpopulation.

Compared to the general population, those who experience homelessness and mental illness have disproportionately high rates of hospital admissions and longer lengths of stay (Hwang et al. 2011, 2013). Although the benefits of timely outpatient follow-up are well established in general samples, little research has addressed the effectiveness of this practice standard among patients who experience both homelessness and mental illness. This study addresses this gap by investigating the relationship between timely in-person community medical care following hospital discharge and subsequent hospital readmission in a sample meeting criteria for both homelessness and mental illness. Based on findings from previous studies, we hypothesized that community follow-up within 1 week of hospital discharge would be associated with reduced risk of readmission.

## METHODS

### *Participants*

The *Vancouver At Home* (VAH) study recruited participants in two parallel longitudinal randomized controlled trials investigating housing and supports for people experiencing homelessness and mental illness in Vancouver, British Columbia (Somers et al. 2013a; ISRCTN57595077 and ISRCTN66721740). The VAH is part of a Canadian multicenter research project (Goering et al. 2011). All participants were at least 19 years of age and provided written,

informed consent prior to participating in the study. Participants recruited to the VAH study met inclusion criteria for recent absolute homelessness and current mental illness as assessed through the use of standardized assessment measures administered in-person by trained interviewers (Somers et al. 2013a). Separate consent was requested for researchers to receive administrative data regarding health service encounters. This study examined administrative data collected during the prerecruitment period (i.e., prior to randomization).

### *Data Sources*

Historical health service encounter data including hospital discharge and community health service use details were provided by a public institution (note: all citizens of the province are required to enroll in the Provincial Medical Services Plan [MSP] which records all outpatient physician encounters and laboratory services in the province). Institutional review and ethics approval was provided by Simon Fraser University's Office of Research Ethics, under the application entitled "Research Demonstration Project on Housing and Mental Health in Vancouver, BC" (application number 2009s0231).

### *Variables*

We defined index hospitalization as any acute hospital admission occurring in any hospital in BC during the study period (five-year period prior to randomization). Follow-up care was defined as any MSP services (examining medical appointments and laboratory services separately) received by the individual within a week after the last day of the index hospitalization.

### *Statistical Analysis*

We presented categorical or nominal variables (such as gender and ethnicity) in terms of counts ( $n$ ) and proportions (%) and continuous variables (such as age and number of services) in terms of mean with standard deviation (SD) or median with minimum (Min) and maximum (Max) as appropriate. We used independent sample  $t$ -tests to compare continuous variables and Pearson chi-square test to compare categorical variables between groups (such as rehospitalization "no" vs. "yes").

Follow-up medical care was our primary independent variable (a continuous measure) and rehospitalization (a binary variable, "no" vs. "yes") was the

outcome variable. Consistent with previous research investigating postdischarge follow-up, and to facilitate direct comparison with other studies, we conducted logistic regression analyses to examine the relationship between seven-day follow-up services and subsequent rehospitalization within 2 months, 6 months, or 1 year (Nelson, Maruish, and Axler 2000; Stein, Andersen, and Gelberg 2007; Lorine et al. 2015). Index hospital admissions that occurred within the year prior to their recruitment to the VAH were excluded because they were not associated with a full 12 months of follow-up. Furthermore, acute hospital admissions that occurred within a week of the index hospital discharge were excluded due to the fact that such hospitalizations often represented a transfer between hospitals and therefore may not reflect a true readmission (Pfeiffer et al. 2012).

We examined the effects of follow-up services on rehospitalization in both univariate and multivariable models. For the multivariable regression models, we included variables that were found in previous studies to be potentially associated with rehospitalization: age; gender; ethnicity; laboratory services; hospital admission and services prior to index admission; length of stay during index admission; and psychiatric reasons for index admission (Stein, Andersen, and Gelberg 2007; Lorine et al. 2015). In the model building process, we included all the variables that were significant in bivariate models ( $p \leq .05$ ). In addition, we forced other potential confounding variables and the primary independent variable (follow-up services) into the multivariable models regardless of significance in bivariate models. We also conducted subanalyses to estimate the association between 4-weeks follow-up services and rehospitalization using a similar set of confounding variables (results of this analysis reported in Appendix SA2). As measures of association (i.e., effect size), we reported both unadjusted and adjusted odds ratios (ORs) with 95 percent confidence intervals (CIs). All reported  $p$ -values were two-sided. IBM SPSS Statistics (version 22) was used to conduct these analyses.

## RESULTS

The sample of participants that provided consent to receive administrative data ( $n = 433$ ) did not differ meaningfully from the entire VAH sample ( $n = 497$ ; Somers et al. 2013a,b).

Table 1 presents the sociodemographic characteristics of individuals who had at least one hospital admission in the 5 years prior to VAH recruitment;  $n = 318$  (73 percent). Of those with at least one admission, the mean

Table 1: Sociodemographic Characteristics of Study Participants

<i>Variable</i>	<i>Eligible Sample*</i> <i>(n = 318)</i> <i>n (%) / Mean (SD)</i>	<i>Consented Sample†</i> <i>(n = 433)</i> <i>n (%) / Mean (SD)</i>	<i>Full Sample</i> <i>(n = 497)</i> <i>n (%) / Mean (SD)</i>
Age at randomization (in years)	40.3 (11.3)	40.8 (11.0)	40.8 (11.0)
Age of first homelessness (in years)	29.8 (13.5)	30.1 (13.4)	30.3 (13.3)
Female gender	90 (28)	112 (26)	134 (27)
Ethnicity			
Aboriginal	57 (18)	70 (16)	77 (16)
White	166 (52)	235 (54)	280 (56)
Other	95 (30)	128 (30)	140 (28)
Incomplete high school	184 (58)	247 (57)	280 (57)
Single/never married	218 (69)	293 (68)	343 (70)
Need level (high)	198 (62)	255 (59)	297 (60)
Housing first interventions	192 (60)	257 (59)	297 (60)
Lifetime duration of homelessness (in months)	57.8 (67.0)	58.3 (64.8)	60.2 (70.3)
Longest episode of homelessness (in months)	29.8 (38.9)	30.4 (39.5)	30.9 (40.1)
Less severe cluster of mental disorders	152 (60)	235 (54)	264 (53)
Severe cluster of mental disorders	227 (71)	311 (72)	363 (73)
Suicidality (high)	56 (18)	79 (18)	87 (17)
Substance dependence	181 (57)	252 (58)	288 (58)
Daily substance use	86 (27)	131 (30)	143 (29)
Daily drug use	77 (24)	118 (27)	126 (25)
Index hospital admission			
Admission date (Min, Max)	Jun 12, 07 (Oct 22, 04; Feb 27, 11)		
Discharge date (Min, Max)	Jun 26, 07 (Nov 05, 04; May 09, 11)		
LOS (mean, SD)	14 (24.1)		
LOS: 2–7 days ( <i>n</i> , %)	128 (40)		
LOS: > 1 week ( <i>n</i> , %)	126 (40)		
Psychiatric reason ( <i>n</i> , %)	201 (63)		
Hospitalizations in past 2 years prior to index admission (mean, SD)	0.7 (2.1)		

\*Included participants who had at least one acute hospital admission over a period of 5 years before randomization.

†Of 497 participants, 433 provided consent to access to administrative data and were linkable to health records.

length of stay was 14 days, 40 author ( $n = 126$ ) were admitted for greater than 1 week, and 63 author ( $n = 201$ ) of admissions were for psychiatric reasons.

Table 2 presents the frequency of rehospitalization over the 1-year period following discharge from the index hospitalization. The frequencies of readmission are shown for different follow-up periods ranging from less than 1 week to several time points within 12 months. More than half (53 percent,  $n = 128^1$ ) of the eligible sample had been readmitted to hospital within 12 months.

Table 3 presents univariate contrasts between those who were rehospitalized and not rehospitalized at different time periods, and their association with community medical services. Comparison between those who were readmitted to hospital within the year following their index hospitalization versus those who were not readmitted showed no differential effect of medical service involvement across all time points. No significant differences were observed for either outpatient physician or laboratory services or the combination of these services.

Table 4 presents adjusted and unadjusted odds ratios, and 95 percent confidence intervals (CI) to estimate the association between outpatient medical and laboratory services and rehospitalization. The model indicates that neither outpatient medical services nor laboratory services within 1 week following discharge were associated with reduced likelihoods of hospital readmissions within 2 months (AOR = 1.17 [CI = 0.94, 1.46]) and 6 months (AOR = 1.00 [CI = 0.82, 1.23]). A marginally significant finding at 12 months (AOR = 1.24 [CI = 1.02, 1.52]) indicates that participants were more likely to be rehospitalized if they received outpatient medical care within 1 week of discharge. Neither age, gender, psychiatric reason nor length of stay was associated with rehospitalization. Aboriginal ethnicity and prior hospital admission were both associated with significantly greater likelihood of rehospitalization (Aboriginal ethnicity at 2, 6, and 12 months, and prior hospital admission at 6 and 12 months).

A sensitivity analysis investigating the association between follow-up 4 weeks (rather than 1 week) after discharge and rehospitalization is presented as Appendix SA2. Findings from this sensitivity analysis were comparable to those reported above.

## DISCUSSION

We found no protective association between community follow-up and the likelihood of rehospitalization in a sample recruited on the basis of both

Table 2: Rehospitalization over a Period of 1 Year among Eligible Study Participants ( $N = 318$ )

<i>Acute Hospital Admission</i>	<i>&lt; 1 week n (%)</i>	<i>1 month n (%)</i>	<i>2 months n (%)</i>	<i>3 months n (%)</i>	<i>6 months n (%)</i>	<i>12 months n (%)</i>
Overall (any reason)	46 (15)	72 (23)	99 (31)	109 (34)	138 (43)	174 (55)
Psychiatric	34 (11)	53 (17)	70 (22)	75 (24)	96 (30)	123 (39)
Medical	12 (4)	19 (6)	29 (9)	34 (10)	42 (13)	51 (16)
Hospitalization (any reason) as outcome*						
Yes		26 (10)	53 (21)	63 (25)	92 (37)	128 (53)
No		236 (90)	204 (79)	188 (75)	157 (63)	115 (47)
Psychiatric admission as outcome						
Yes		19 (6)	36 (14)	41 (16)	62 (25)	89 (37)
No		243 (94)	221 (86)	210 (84)	187 (75)	154 (63)
Medical admission						
Yes		7 (3)	17 (7)	22 (9)	30 (12)	39 (16)
No		255 (97)	240 (93)	229 (91)	219 (88)	204 (84)

\*Both numerator and denominator vary due to exclusion criteria. Participants with acute hospital admission within 1 week since their index discharge date were excluded from numerator (“yes” group). Due to the eligibility for follow-up, there were differences in the sample sizes available for inclusion at the different time points, as the index hospitalization for some participants occurred less than 1 year prior to recruitment in the study.

Table 3: Comparisons of Outpatient Services between Participants Who Were Rehospitalized and Who Were Not

	<i>Any Services</i>		<i>Outpatient Medical Services</i>		<i>Laboratory Services</i>	
	<i>Mean (SD)</i>	<i>p Value</i>	<i>Mean (SD)</i>	<i>p Value</i>	<i>Mean (SD)</i>	<i>p Value</i>
Rehospitalization in 2 months						
No	2.01 (3.12)	.144	1.56 (1.45)	.255	0.46 (2.52)	.250
Yes	2.77 (4.17)		1.81 (1.39)		0.96 (3.88)	
Rehospitalization in 6 months						
No	1.96 (2.59)	.156	1.59 (1.48)	.709	0.37 (1.95)	.137
Yes	2.60 (4.47)		1.66 (1.37)		0.94 (4.02)	
Rehospitalization in 12 months						
No	1.91 (2.77)	.211	1.43 (1.27)	.057	0.49 (2.27)	.595
Yes	2.47 (3.96)		1.78 (1.58)		0.69 (3.43)	

homelessness and mental illness. Our results diverge from those of previous studies with nonhomeless samples (Nelson, Maruish, and Axler 2000; Adair 2005; Mitton et al. 2005; Burns et al. 2008; Tomita and Herman 2012; Lorine et al. 2015) and suggest that people experiencing homelessness and mental illness may require additional services to prevent readmission. Using comprehensive administrative data in a context of universal health benefits coverage,



Table 4: Logistic Regression Analysis to Estimate the Association between Outpatient Services and Rehospitalization

	Rehospitalization in 2 months*		Rehospitalization in 6 months <sup>†</sup>		Rehospitalization in 12 months <sup>‡</sup>	
	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)
Outpatient medical services in week following index hospitalization discharge (per service)	1.12 (0.92, 1.37)	1.17 (0.94, 1.46)	1.04 (0.87, 1.24)	1.00 (0.82, 1.23)	1.19 (0.99, 1.43)	<b>1.24 (1.02, 1.52)</b>
Laboratory services in week following index hospitalization discharge (per service)	1.05 (0.96, 1.15)	1.08 (0.97, 1.20)	1.07 (0.97, 1.17)	1.09 (0.98, 1.22)	1.02 (0.94, 1.12)	1.05 (0.95, 1.16)
hospitalization discharge (per service)						
Age at index hospitalization (per year)	1.00 (0.98, 1.03)	1.01 (0.98, 1.04)	1.01 (0.98, 1.03)	1.01 (0.99, 1.04)	1.00 (0.98, 1.03)	1.01 (0.98, 1.04)
Male	1.06 (0.53, 2.10)	1.16 (0.57, 2.38)	0.95 (0.54, 1.69)	1.00 (0.54, 1.84)	0.67 (0.37, 1.19)	0.71 (0.39, 1.31)
Ethnicity						
Aboriginals	<b>2.88 (1.15, 7.24)</b>	<b>4.19 (1.55, 11.33)</b>	<i>2.04 (0.96, 4.37)</i>	<b>2.90 (1.26, 6.68)</b>	<i>1.92 (0.91, 4.05)</i>	<b>2.63 (1.16, 5.94)</b>
White	<i>2.00 (0.89, 4.50)</i>	<i>2.20 (0.93, 5.18)</i>	<i>1.69 (0.90, 3.16)</i>	<i>1.84 (0.94, 3.60)</i>	1.50 (0.83, 2.70)	1.51 (0.81, 2.81)
Mixed/other	Reference	Reference	Reference	Reference	Reference	Reference
Psychiatric admission (nov.s. yes)	1.23 (0.66, 2.30)	1.14 (0.57, 2.28)	1.43 (0.84, 2.44)	1.44 (0.79, 2.63)	1.42 (0.85, 2.38)	1.39 (0.78, 2.48)
Length of stay						
1 day	Reference	Reference	Reference	Reference	Reference	Reference
2-7 days	1.00 (0.43, 2.32)	1.08 (0.44, 2.67)	0.84 (0.42, 1.68)	0.75 (0.35, 1.60)	1.15 (0.58, 2.29)	1.27 (0.60, 2.69)
>7 days	1.17 (0.51, 2.71)	1.32 (0.53, 3.72)	0.86 (0.43, 1.74)	0.77 (0.36, 1.68)	1.26 (0.63, 2.51)	1.27 (0.59, 2.73)
Prior services (past month) before index hospitalization (per service)	1.00 (0.96, 1.05)	0.98 (0.93, 1.03)	1.01 (0.98, 1.05)	0.99 (0.95, 1.04)	1.00 (0.97, 1.04)	0.98 (0.94, 1.02)
Prior hospital admission (past 2 years) before index hospitalization (per admission)	1.09 (0.95, 1.24)	1.10 (0.96, 1.25)	<b>1.45 (1.15, 1.82)</b>	<b>1.50 (1.18, 1.92)</b>	<b>1.33 (1.05, 1.68)</b>	<b>1.35 (1.04, 1.74)</b>

\*Bold indicates  $p$  value  $\leq .05$  (significant) and italic indicates  $p$  value  $> .05$  and  $\leq .10$  (significance trend).

†Bold indicates  $p$  value  $\leq .05$  (significant) and italic indicates  $p$  value  $> .05$  and  $\leq .10$  (significance trend).

‡Bold indicates  $p$  value  $\leq .05$  (significant) and italic indicates  $p$  value  $> .05$  and  $\leq .10$  (significance trend).

we found no significant protective effect of timely medical or laboratory services on the likelihood of rehospitalization within 1 year. To the contrary, at the 12-month time point timely outpatient medical service use was associated with significantly greater likelihood of rehospitalization. Nearly three-quarters (73 percent) of our sample had at least one hospital admission in the 5-year observation period. Among those who were hospitalized, 53 percent were readmitted to hospital within 1 year of their index hospitalization regardless of their engagement with community medical services postdischarge.

Clinical best practices and previous studies have emphasized the importance of timely outpatient follow-up posthospital discharge, citing reduced morbidity and mortality as direct benefits (Nelson, Maruish, and Axler 2000; Stein et al. 2000; Walraven et al. 2004; Adair 2005; Mitton et al. 2005). Several studies have found that when patients are discharged and make connections with community health services within the first week postdischarge that outcomes improve in a wide variety of health domains, including psychiatric indicators (Bindman et al. 2000). Within our sample, however, these relationships were not replicated. Rather than questioning the importance of community follow-up, our results may indicate that timely postdischarge care is a necessary, but not sufficient means of reducing the risk of readmission among those who are homeless and mentally ill. Perhaps due to the interplay of factors such as poverty and social exclusion experienced by this particular subpopulation, it is possible that attempting to generalize previous findings from other populations cannot adequately capture the reality of those experiencing both homelessness and mental illness. Given the absence of research examining the impact of continuity of care for people who are both homeless and mentally ill, it is plausible, and perhaps probable, that adequate housing is a necessary condition to enable the benefits of community care to be realized.

Both hospital-based care and community-based outpatient follow-up practices are resource intensive. Previous studies have compared the cost of hospital admissions between homeless versus nonhomeless patients and found that homeless patients incur substantial excess costs due to longer than expected lengths of stay for those admitted for medical and surgical reasons, and for high costs of psychiatric admissions unrelated to length of stay (Hwang et al. 2011). One American study, which examined hospital-based service use 30-days posthospital discharge found that rates of emergency department use and hospital readmission were higher among people experiencing both homelessness and mental illness as compared to other subpopulations (Lam, Arora, and Menchine 2016). Additionally, previous studies have found that among individuals with mental illnesses, while less likely to seek medical services

overall, are more likely to seek medical care from urgent care settings (i.e., emergency departments) rather than via community-based primary care (Pines et al. 2011; Lam, Arora, and Menchine 2016). Regardless of the performance of the health care system, the condition of homelessness likely contributes directly to the high rate of readmission observed in our study.

Previous studies have identified system fragmentation and limited access to community care as reasons for poor health outcomes among people experiencing homelessness and mental illness (Tomita and Herman 2012; Doran et al. 2013). The high rates of community medical and laboratory service use within our sample suggest that the cohort accessed services beginning soon after hospital discharge, perhaps related to universal health coverage for patients in the province. Homelessness has been previously identified as a risk factor for psychiatric hospital readmission (Lorine et al. 2015); however, current discharge planning fails to sufficiently detail the housing needs of patients leaving hospital. Without directly addressing housing, health care investments may be insufficient to achieve recovery. Discharge planning and interventions that directly attend to health care needs as well as the conditions on which health is predicated (e.g., housing) have promise to reduce the burden on the health care system and create opportunities that promote recovery and prevent hospital readmission in both the short and long term. Regardless of whether the health care system is publicly or privately funded, interventions that explicitly incorporate housing as an essential component of recovery, including Critical Time Intervention and Housing First, may offer better outcomes than continuity of health care services alone, particularly for people experiencing homelessness and mental illness (Herman et al. 2011; Tomita and Herman 2012).

### *Strengths and Limitations*

Limitations of this study include the fact that data were available only for those participants (87 percent) who consented for researchers to receive their administrative health records. Hospital admissions and community care encounters outside of the province were not included in these data. The retrospective nature of the study means we cannot be certain that each person met criteria for both homelessness and acute mental illness at each time point historically; however, as reported in previous studies, the average onset of homelessness was 10 years prior to recruitment in our sample (Somers et al. 2013a). The generalizability of our findings may be limited by the fact that the majority of our

sample was white and male, and health service use occurred in the context of a publicly funded health care system. Furthermore, those who were eligible and consented to participate in the study may differ on unmeasured variables from those who did not consent to participate or were excluded. Given the quantitative nature of the data used in this study, we were unable to assess the more qualitative aspects of the care received for both inpatient and outpatient care, and therefore we are not able to evaluate the quality of posthospital discharge community-based care. As reported in previous studies, patient-level characteristics including severity of illness and intensity of service provision are likely to have an impact on health service use, including readmission rates (Hernandez et al. 2010; DeLia et al. 2014). Given the nature of the data used in our analysis, we were unable to assess severity of illness within a particular diagnostic category or intensity of service provision beyond factors such as length of stay and frequency of service use. The logistic regression analysis was chosen for this study, as well as the time points at which rehospitalization was assessed were chosen to be consistent with previous studies that have examined continuity of care in relation to hospital readmission, to allow for comparison between our findings and those of previous studies. However, analyses using other intervals of time may produce slightly different results.

Notwithstanding these limitations, the administrative data used in this study offered comprehensive medical records of both inpatient and community health care encounters during the 5 years prior to recruitment for the vast majority of participants. Furthermore, criteria used to assess study eligibility in terms of both homelessness and mental illness were rigorously applied for all participants. Finally, universal provision of medical services in the province reduces the role that economic disincentives may play in the delivery of care to patients who live in poverty. This study is one of the first to assess continuity of care within a sample of participants experiencing both homelessness and mental illness.

## CONCLUSION

Investments in continuity of care following hospital discharge are not likely to have optimal desired effects if people remain homeless. While continuity of care has been shown to be a valuable and effective mechanism for promoting recovery in the general population, for those without adequate and stable

housing the same benefits may not be realized. The findings presented in this study indicate a compelling need to address housing as an integral component of hospital discharge planning. Collaborative solutions spanning health, housing, and social welfare sectors are strongly indicated to prevent rehospitalization and to meet the needs of those experiencing homelessness and mental illness.

## ACKNOWLEDGMENTS

*Joint Acknowledgment/Disclosure Statement:* This research was supported by a grant to Simon Fraser University, made possible through a financial contribution from Health Canada to the Mental Health Commission of Canada. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. The Vancouver At Home Research Team would like to extend special thanks to the participants, service providers, and field research team members. The authors also thank the At Home/ Chez Soi project collaborative. The authors state that they have no conflict of interest. No other disclosures.

*Disclosure:* None.

*Disclaimer:* None.

## NOTE

1. The eligible sample denominator varies here compared to the denominator used in Table 1 due to exclusion criteria. Patients who had hospital admissions within 1 week since their index discharge date were excluded from the “yes” group as they likely represented transfers between hospitals and not true readmissions.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article:

Appendix SA1: Author Matrix.

Appendix SA2: Sensitivity Analysis.