

# Shelter-based Convalescence for Homeless Adults

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## ABSTRACT

**Objectives:** Homelessness is associated with increased hospital costs and length of stay, and medical or surgical conditions are typically complicated by secondary diagnoses of substance abuse or mental illness. Convalescence care to provide timely treatment has not been analyzed. This is a retrospective study of diagnoses and utility of shelter-based convalescence in a cohort of homeless subjects.

**Methods:** A 20-bed shelter-based unit providing up to 3 months stay post hospital discharge, or for treatment of addictions or for those too ill to remain in the general shelter was studied. Charting was by the use of an electronic health record developed for the project. Demographics, reason for admission and outcomes are retrospectively described.

**Results:** 140 men had 181 admissions from July 2000-April 2003; 23.8% were post hospital discharge, 57.4% were from the general shelter. Average length of stay was 40 days. 83.4% were treated for a medical or surgical condition, 83.6% for psychiatric disease and 29.8% for addictions. Medication adherence was >80% in the majority. During admission, 20% obtained a new health card, 43.6% a new drug card, 89.3% received transportation to appointments, 60% applied for housing and 24.3% obtained housing.

**Conclusion:** A shelter-based convalescence unit can provide health care to homeless persons, treat medical and mental illness, ensure adherence to treatment regimes, decrease substance abuse and assist with housing.

**MeSH terms:** Homeless persons; convalescence; patient non-adherence; mental health; health services research; drug addiction; alcoholism

*La traduction du résumé se trouve à la fin de l'article.*

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Increased illness and mortality among the homeless calls for intervention, but no single factor has been identified to broadly address infirmity in this group. Common medical problems are often undertreated,<sup>1-4</sup> and those who do not receive timely health care often go on to require emergency care for medical and surgical problems which have followed their natural course. The homeless tend to be high users of emergency services for problems amenable to primary care,<sup>5,6</sup> and in a recent American study, 20% of hospitalizations of the homeless were for potentially preventable disorders such as respiratory, skin and infectious diseases.<sup>7</sup> Hospital discharge was delayed by an average of 4.1 days for homeless persons compared to housed, at a greatly increased cost. Delayed discharge was due to concerns that clean environments and proper follow-up were not consistently available, and excess stays were particularly high for those who underwent surgery. In another study, hospital length of stay for homeless patients was equalized to domiciled patients by establishment of a so-called hoptel to assist transition to ambulatory outpatient care.<sup>8</sup> Convalescence – healing through rest after sickness or injury – is difficult if not impossible for those living under shelter rules. Wound care, hospital follow-up appointments, diet restrictions, wheelchair accessibility and rest are challenging or not feasible. In addition, difficulty with adherence to therapy among the sheltered homeless has been documented in the treatment of tuberculosis, diabetes, HIV and hypertension.<sup>1,2,9-11</sup> Psychiatric illness, also common among the homeless,<sup>12,13</sup> is especially susceptible to relapse associated with non-adherence.<sup>14,15</sup> Problems with addiction to alcohol and substance abuse also repeatedly require emergency care or hospital admission,<sup>5,7</sup> and it is often difficult to find substance abuse treatment at the time it is requested or needed.<sup>16</sup>

Medical record keeping for the homeless is often not available at the point of care and is incomplete due to episodic, crisis-driven health care delivery by multiple caregivers at many sites.

Finally, the homeless are known to suffer high rates of early mortality, often from preventable or treatable causes.<sup>17-21</sup>

Access to appropriate and timely medical care, proper follow-up, measures to optimize adherence to therapy, programs

to treat substance abuse, and strategies to allow timely discharge from hospital are all essential in the health care of the homeless. The goal of this study was to describe the medical, surgical, psychiatric and addiction profiles of homeless persons with complicated health care needs admitted to a shelter-based convalescence unit. In-program care, medication, follow-up compliance and discharge location are also described.

## METHODS

The Ottawa Inner City Health Project was developed as a pilot research project in a partnership between the city health and social agencies and the University of Ottawa within a harm reduction paradigm, to deliver health services to homeless adults within the existing shelter system. The Special Care Unit (SCU) is a 20-bed shelter-based pilot project started July 2001 providing up to 3 months stay for homeless or unstably housed individuals with complicated health needs. Patients were admitted for convalescence post hospital discharge; for treatment of addictions; or if they were felt to be too unstable, for medical or psychiatric reasons, to remain in the general shelter. Referral was by hospital social workers, shelter staff, community family physicians, or community mental health workers, and all referrals were screened by a registered nurse. Admission criteria were broad, and included chronically homeless or unstably housed individuals with medical and psychiatric conditions, and those with addictions to drugs or alcohol. The SCU was based at a men's shelter where patients were housed in a designated area. Medical care was provided 24 hours on-call by 3 nurses and 2 physicians associated with the project, with daily nurse and weekly physician visits. At admission, the patient's history was taken by a project nurse, medications were organized in a dosette, and a treatment plan was established in consultation with a physician. Diagnosis of psychiatric disease was either confirmed by history or made by the physicians or psychiatric nurse practitioner. The project employed a client care worker 16 hours per day, 7 days per week to supervise the patients, help with activities of daily living, aid in applying for social benefits and drug cards, attend med-

**TABLE I**  
**Patient Characteristics**

	N=140	%
Age		
Range	17-82	
Mean (Standard Deviation)	47.7 (±14)	
Sex		
Male	139	99.3%
Transgender	1	0.7%
Psychiatric Disease		
Depression	95	67.9%
Anxiety	51	36.4%
Schizophrenia	27	19.3%
Other	3	2.1%
Addictions Use		
Yes	128	91.4%
No	12	8.6%
Addictions Type		
Tobacco	128	91.4%
Alcohol	90	64.3%
Street drugs (oral)	36	25.7%
Intravenous drugs	25	17.9%
Street Drugs Type		
Oxycodone	10	7.0%
Benzodiazepines	9	6.4%
Morphine	7	5.0%
Marijuana	7	5.0%
Crack/Cocaine	5	3.6%
Other	5	3.6%
Gravol	1	0.7%
Codeine	1	0.7%
Listerine	1	0.7%

ical appointments with the patients, and dispense regular medication. In addition, a physiotherapist, occupational therapist and chiropodist were available on consultation, as were phlebotomy services. Assistance by shelter staff was also provided for transportation to appointments and to complete housing applications.

Medical record keeping was performed using a secure, on-line medical record system developed by the Ottawa Inner City Health Project.<sup>22</sup> This shareable internet-based medical record – the Electronic Health Record – included fields for demographics, patient contacts, medications, medical and mental health history, substance use and patient encounters. Patient consent was obtained and security was addressed by using Secure Socket Layer 128-bit encryption, which most financial institutions currently employ for their web banking services. Project nurses, the psychiatric nurse practitioner, support workers and physicians charted for each episode of care provided. Charts were accessible both at the point of service (in the shelter) and remotely. Relevant medical information was printed and sent with the patient to hospitals and appointments.

Patients were included for analysis with approval from the research ethics board. Inclusion required admission to the SCU between July 1, 2001 and April 16, 2003. All 181 admissions were analyzed for

demographics, reason for admission, diagnosis, medical and psychiatric comorbidities, addictions and outcomes using the Electronic Health Record database. Compliance to medication, attendance to medical and psychiatric follow-up appointments and the services received were confirmed, using a form completed by the client care worker and reviewed by the primary registered nurse after the patients' discharge for each admission. Descriptive statistics using the mean and standard deviation were used for continuous outcomes.

## RESULTS

One hundred and forty (140) patients had 181 admissions to the SCU from July 1, 2001 to April 16, 2003 with admission length 1-234 days, mean 40 ± 42 days (Table I). Of these, 26 patients were admitted to the SCU more than once. Subjects ranged in age from 17-82 and all were male. The majority (83%) of the subjects were White, 14% were Aboriginal and 3% were African-American. Patients were admitted to the SCU after referral from the general shelter (57.4%) and from a hospital (23.8%).

Admissions to the SCU permitted convalescence or treatment for a medical or surgical condition in 83.4% of patients, treatment of complication of addiction in

**TABLE II**  
**Patient Admission Diagnoses**

Admission Diagnoses	N=181*	%
Non-medical	92	51%
Addiction – detoxification	28	15.5%
Post-surgical	22	12.2%
Fracture	15	8.3%
Elderly/Dementia/Unable to cope	15	8.3%
Trauma	7	4.0%
Other	5	2.8%
Medical	89	49%
Infection	22	12.2%
Human immunodeficiency virus	16	8.8%
Diabetes	14	7.7%
Cardiac	7	4.0%
Cancer undergoing treatment	5	2.8%
Chronic obstructive lung disease	5	2.8%
Hepatic failure	5	2.8%
Stroke/Parkinson's	4	2.2%
Gastrointestinal bleed	3	1.6%
Renal failure/dialysis	3	1.6%
Seizure disorder	2	1.0%
Gout	1	0.6%
Crohn's disease	1	0.6%
Pancreatitis	1	0.6%
Secondary Diagnoses		
Hepatitis C	64	35%
HIV	29	16%
Other	25	13.8%
Alcoholic cirrhosis	18	9.9%
Hepatitis B	9	4.9%
Ascites	5	2.8%
Malignancy	5	2.8%
Deep vein thrombosis	1	0.6%

\* 140 patients had 181 admissions.

**TABLE III**  
**Treatment and Service Data**

	N=181	%
Admissions From		
General shelter	104	57.4%
Hospital	43	23.8%
Community housing	29	16.0%
Jail	3	1.7%
Not available	2	1.1%
Length of Stay (#days)		
Range	1 - 234	
Mean (Standard Deviation)	40.2 (±43.9)	
Discharged to		
General shelter	66	36.5%
Housing	53	29.3%
Left against medical advice	15	8.3%
Palliative care hospice	12	6.6%
Other	12	6.6%
Not available	10	5.5%
Hospital	5	2.8%
Jail	4	2.2%
Nursing home	4	2.2%
SCU Admission Permitted		
Convalescence/stabilization of a medical or surgical condition	151	83.4%
Treatment of an addiction	54	29.8%
Timely discharge from hospital	39	23.8%
Compliance		
Appointment Attendance		
>80% of time	98	54.1%
30-80%	47	26.0%
<30%	31	17.1%
Not applicable	5	2.8%
Medication		
>80% of time	108	59.7%
30-80%	43	23.8%
<30%	18	9.9%
Not applicable	12	6.6%

29.8% and apt discharge from hospital in 23.8%. A range of conditions were treated within the SCU (Table II). Half were admitted for medical conditions, most commonly infections; 15% were admis-

sions to detoxify from alcohol or drugs. Post-surgical convalescence, fractures and trauma were provided as the reasons for admission in 24% of patients, and 8% were admitted to the SCU because of con-

cerns that they were too elderly or frail to cope safely in the regular shelter system. Secondary diagnoses contributing to the burden of illness included hepatitis C and infection with HIV.

Patients received medical treatment, wound care, pain management, psychiatric treatment and detoxification protocols (Table III). Many were evaluated by the psychiatric nurse practitioner, were started on appropriate medications and followed for previously untreated psychiatric disease. New family physicians were obtained for 18.6%. One quarter of patients required referral or follow up in a hospital outpatient department. Emergency department referrals were required by 13.6%; these were mainly 911 calls after daytime hours by shelter staff or for clients while off the shelter premises.

At baseline, addictions were reported by 91.4% of individuals (Table I); 64.3% reported addiction to alcohol, 25.7% to street drugs taken orally, and 17.9% reported intravenous drug use.

Subjects reported or presented with symptoms consistent with a diagnosable psychiatric illness in 83.6%. Depression was noted in 67.9%, anxiety in 36.4% and schizophrenia in 19.3%.

Of the 140 patients, 119 had been prescribed 1-22 medications, a mean  $6.1 \pm 4.9$ . Adherence to medications, defined as taking the medication as prescribed greater than 80% of the time, was observed in 59.2%. Similarly, patients' adherence to attending appointments on time was "almost always" (>80% of the time) in 55%.

Social services assistance was received by most patients, including such services as transportation for medical appointments (89.3%), assistance with housing applications (60%), with obtaining a drug card (43.6%) and obtaining a health card (20%).

Upon completion of treatment and discharge from the SCU, 24.3% of patients obtained housing and 2.2% received placement in a nursing home. Over one third returned to the general shelter, including those medically stable with housing pending. 8.3% left against advice or prior to completing treatment, 6.6% were discharged to palliative care, 2.8% were admitted to hospital, and 2.2% were incarcerated for prior offences.

## DISCUSSION

We describe a population of homeless medically and psychiatrically vulnerable individuals at the time of admission to a convalescent care unit. The SCU provided convalescent care with 181 admissions over a 22-month period for 140 patients. The spectrum of disease and burden of illness per person was similar to that previously described among the homeless,<sup>1-5,7,13,16</sup> with high numbers in this study suffering from infections, diabetes and fractures, as well as recovery after surgery. Most of the patients described in this cohort had alcohol and drug addictions and had a diagnosable mental illness in addition to the medical or surgical conditions for which they were admitted.

Care was coordinated between the convalescence unit and the hospital social workers, who reported that there were delays in discharge prior to the implementation of the program whereas there were not after, thus allowing for timely discharge from hospital.

The length of stay per admission to the convalescent unit was anticipated to be a maximum of three months; however in 26/181 admissions, lengths of stay were longer than 90 days. A lack of alternate care environment resulted in longer stays, and patient diagnoses were mainly for chronic diseases, e.g., malignancy, dialysis dependence, dementia and brittle diabetes.

Nearly 60% of admissions to the convalescence unit in this study were from the general shelter. It is possible that these admissions circumvented the need for emergency care or hospitalization by providing timely care, though this requires study in a prospective fashion. It has been previously noted that 20% of hospitalizations of the homeless are for potentially preventable disorders such as respiratory, skin and infectious diseases.<sup>7</sup>

This model provided timely management of alcohol and drug addictions as opposed to wait listing for treatment programs and potentially missing an opportunity for detoxification. Psychiatric illness was addressed and treated in many patients in the SCU, and regular attendance of a psychiatric nurse practitioner in the shelter allowed continuity of care and the development of a therapeutic alliance.

Primary care was provided, and primary care physicians were found or prior care maintained to allow continuity of care post discharge from the SCU. Compliance to medication in the SCU was comparable to that achieved in the general population.<sup>11</sup> Once health needs are met, higher levels of need can be met, and basic entitlements such as health cards and drug cards, which are difficult for the homeless to obtain if challenged by illiteracy or medical or psychiatric illness, were obtained for many. One quarter of the homeless in this study was discharged to housing.

Medical health record keeping of the chronically homeless with the use of internet technology has made accurate and up-to-date patient information accessible to multiple health care providers, improving continuity of care between shelter and hospital, for example, by providing a printout of a medication list and care summary prior to appointments or transfer. Future directions include connecting internet-based access to the surrounding hospital emergency departments.

Further goals include screening for disease and immunization in keeping with current guidelines. Additionally, dementia was observed in a significant number of patients; in those unsuitable for long-term care due to younger age or addictions, a shelter-based dementia unit could address this need. Finally, this project was structured in a men's shelter; clearly, services should be extended to serve homeless women as well.

Shelter operators, having already demonstrated competence in caring for the homeless, were integrated into a shelter-based medical model of care to address previously unmet needs for those requiring convalescence but being without a home or natural caregivers. This served to overcome barriers to needed care by providing it in a location where the homeless stay. Those responsible for the homeless should consider the implementation and prospective evaluation of such programs, by integrating health services with homeless shelters.

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## RÉSUMÉ

**Objectifs :** L'itinérance est associée à des frais d'hospitalisation plus élevés et à une durée d'hospitalisation plus longue, et les troubles médicaux et chirurgicaux sont en général plus compliqués en présence d'un diagnostic secondaire de toxicomanie ou de maladie mentale. Les soins à offrir pendant la convalescence pour traiter ces problèmes en temps utile n'ont pas été analysés. Notre étude rétrospective, fondée sur une cohorte de sans-abri, porte sur les diagnostics des sujets hospitalisés et sur l'utilité d'une convalescence en maison d'hébergement.

**Méthode :** Nous avons étudié une maison de 20 lits pouvant héberger pendant trois mois des sans-abri sortant de l'hôpital, recevant un traitement en toxicomanie ou trop malades pour séjourner dans un centre d'hébergement ordinaire. La représentation graphique des données a été réalisée à partir d'un dossier médical informatisé mis au point pour le projet. Le profil démographique des sujets, la raison de leur hébergement et son résultat sont décrits rétrospectivement.

**Résultats :** Cent quarante hommes ont séjourné 181 fois en maison d'hébergement entre juillet 2000 et avril 2003. De ces hommes, 23,8 % sortaient de l'hôpital et 57,4 % venaient d'un centre d'hébergement ordinaire. Ils ont passé en moyenne 40 jours dans la maison d'hébergement. De ces personnes, 83,4 % ont été traitées pour un trouble médical ou chirurgical, 83,6 % pour une maladie psychiatrique, et 29,8 % pour une toxicomanie. L'observance médicamenteuse a été supérieure à 80 % dans la majorité des cas. Pendant leur séjour, 20 % ont obtenu une nouvelle carte-santé, 43,6 % une nouvelle carte d'assurance-médicaments, 89,3 % ont été transportés à leurs rendez-vous, 60 % ont fait une demande de logement, et 24,3 % ont obtenu un logement.

**Conclusion :** Une maison d'hébergement pour les sans-abri en convalescence peut fournir des soins de santé, traiter les troubles médicaux et les maladies mentales, favoriser l'assiduité aux traitements, réduire la toxicomanie et aider ces personnes à trouver un logement.

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