BREAKING DOWN BARRIERS BY KNOCKING ON DOORS: AN INNOVATIVE HEALTH INTERVENTION IN VANCOUVER'S DOWNTOWN EASTSIDE

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ABSTRACT

In August 2007 Vancouver Coastal Health Authority (VCH) implemented the Clinical Housing Team (CHT) intervention aimed at improving the health of tenants residing in low barrier housing in Vancouver's downtown eastside (DTES). In April 2008 a preliminary program evaluation was carried out by VCH in order to assess the impact of the intervention. The resulting report was intended for use within VCH and was focused on the specific intervention that was evaluated. Hence, the report did not provide an in depth discussion of findings beyond the specific intervention that was evaluated. The current paper aims to provide a more in depth examination of findings from the evaluation from a population health perspective. Included is a review of relevant literature, an overview of the original CHT evaluation, and a discussion including areas for future research, implications of findings from the CHT evaluation, and recommendations.

Keywords: Supported Housing; Homelessness; Health Care; Population Health

DEDICATION

I dedicate this to those who struggle to cope with poverty, addiction, homelessness, and mental illness.

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TABLE OF CONTENTS

INTRODUCTION

Public Health Problem

In 1986 the Ottawa Charter for Health Promotion, a document produced by the World Health Organization after the first international conference in health promotion, recognized shelter as fundamental to health (World Health Organization, 1986). Research clearly demonstrates that homelessness and unstable housing create barriers to accessing health care (Begin, Casavani, Miller, Chenier, Dupuis, 1999; Hwang, Windrim, Svoboda & Sullivan, 2000; Kushel, Vittinghoff & Hass, 2001) and have numerous detrimental effects on health (Barrow, Herman & Cordova, 1999; Hibbs et al., 1994; Levy & O'Connell, 2004; Shaw, 2004).

Despite the fact that shelter was formally recognized as a basic prerequisite to health by the World Health Organization (WHO) over 20 years ago, in 2005 there were still an estimated 150,000 to 300,000 homeless individuals in Canada. At present, Canada does not have a national housing strategy (Laird, 2007), however efforts are being made at the provincial and community level to reduce homelessness and improve health. One example of such an effort is the recently implemented Clinical Housing Team (CHT) intervention in Vancouver British Columbia's poverty stricken downtown eastside (DTES). This paper will review findings from the preliminary program evaluation of the CHT intervention and provide a more in depth examination of findings than the original report offered.

In British Columbia the Premier recently formed the Task Force on Homelessness, Mental Illness and Addiction. This task force brings together the provincial and local governments in an attempt to develop innovative strategies that will help people with mental health and addiction problems obtain more stable housing (Province of British Columbia, 2009). This task force recognizes the complex interplay between homelessness, mental illness, and addiction, and the barriers that are faced by these individuals in accessing care and maintaining housing. Given these barriers, the province supports a Housing First Approach (Province of British Columbia, 2009), which is "permanent independent housing with non-contingent support services" (Patterson, Somers, McIntosh, Sheill & Frankish, 2008, p.10). The Housing First Approach is a type of supported housing, in which housing is linked to support staff that assist tenants with stabilizing their lives, enhancing life skills and reconnecting with the community (City of Vancouver, 2007). A major difference of the Housing First approach compared to more traditional supported housing models is that individuals are provided with permanent, independent housing without the requirement of first participating in mental health or addictions treatment.

The Ministry of Health is BCs provincial health care authority, and the province is divided into 6 different health authorities. The Ministry of Health "sets province-wide goals, standards and performance agreements for health service delivery by the health authorities" (Ministry of Health Services, British Columbia Health Authorities). Vancouver Coastal Health Authority (VCH) serves 25% of BCs population and receives 2.8 billion in funding per year (Vancouver Coastal

Health). The importance of housing to health is recognized by VCH and currently VCH funds non-profit organizations to provide on-site tenant support staff in 16 Single Room Occupancy and other social housing sites in Vancouver's DTES (VCH, 2008).

The DTES, which is within VCHs region, is often referred to as Canada's poorest postal code and is known for its visible problems of poverty, addiction, homelessness, prostitution and petty crime (Downtown Eastside, n.d.). The problem in the DTES has been described as a "health and social crisis" (Lightfoot, Panessa, Hayden, Thumath, Goldstone & Paly, 2009). Recently, an innovative intervention was piloted by VCH aimed at improving the health of individuals residing in 8 of the 16 VCH supported sites in the DTES. These 8 sites were targeted after a previous study conducted by VCH found that 50% of the residents had not accessed any VCH heath services in the previous year (VCH, 2007). Seven of the 8 sites are single room occupancy hotels (SROs), and 1 is comprised of self contained apartments. While demographic information for the 8 specific sites are not available, a recent study by BC Housing (2008) provides a general profile of individual's residing in DTES SROs.

The study conducted by BC Housing (2008) showed that the majority of residents in DTES SROs are male (79%), live in single person households (90%), and are between 35 and 54 years old. Approximately 68% of residents are Caucasian and 21% are aboriginal or Métis. Seventy-seven percent of residents report an income of less than $15,000/year and 60% receive income assistance. Seventy-nine percent reported health concerns with 47% reporting multiple health

concerns. Nearly half of the residents reported having visited an emergency room in the past year (40%) and 21% had been hospitalized. Drug use is common among this population, with 52% reporting drug use and 77% reporting smoking. Over half of the residents reported being previously homeless (52%) and having stayed at a shelter (52%). Nearly half (45%) of residents reported that they had been living in their current housing for less than a year.

Given the large amount of research demonstrating the many barriers to obtaining appropriate health care this population meets (Gelberg, Gallagher, Andersen & Koegel, 1997; Hwang, Windrim, Swoboda & Sullivan, 2000; Kushel et al., 2001), the finding by VCH (2007) that 50% of tenants had not accessed any VCH health services in the past year is not surprising. Many of the other 50% who had accessed health care in the previous year had likely done so through the emergency department, given the BC Housing (2008) study which showed 40% of DTES SRO residents had visited the emergency department in the past year (BC Housing, 2008). This finding is troubling given the large body of research suggesting that this population is in great need of health care (Barrow, Herman, Cordova & Struening, 1999; Hibbs, et al.1999; Hwang, 2001; Wren, 1990; Pizem, Massicotte, Vincent & Barolet, 1994).

In August 2007, VCH implemented the CHT intervention in an attempt to better address the multiple and challenging health needs of the approximately 444 individuals that reside in the 8 housing sites (VCH, 2008). As mentioned above, 7 of the 8 sites are SROs, in which tenants share bathrooms and kitchen facilities (when available) and 1 building is comprised of self contained apartments. The

CHT provides a full range of health care services, including primary care and mental health and addiction interventions. The CHT services are tailored to individual health needs and do not require individuals to meet any specific eligibility requirements. The CHT works in partnership with the three non-profit housing providers who manage on-site tenant support staff in the 8 sites– RainCity Housing, The Lookout Emergency Aid Society, and The Portland Community Services Society (VCH, 2008).

The 8 sites targeted by the CHT intervention are categorized by VCH as low barrier housing and the majority of tenants have a history of chronic homelessness and problems related to mental illness, substance use, and other challenges. Vancouver Coastal Health Authority distinguishes between "supported housing" and "low barrier" housing, although both types are considered support*ive* housing by the City of Vancouver (City of Vancouver, 2007). Supportive housing is used within a Housing First approach in Vancouver, in that permanent housing is offered to individuals right away, regardless of whether they choose to engage in treatment for mental health or addiction issues. This is in contrast to a more traditional continuum of care model, in which individuals move through a series of steps including transitional housing and treatment before being offered permanent, independent housing (Tsemberis & Eisenberg, 2000). Supported housing within VCH's framework consists of mental health supported housing and addiction supported housing. These types of supported housing work with individuals who are actively addressing mental health and addiction issues, and clinical support and

treatment are offered along with housing. Low barrier housing offers stable housing to individuals who are not actively engaged in treatment. On-site support staff in the low barrier housing sites maintain a safe and secure environment and work to link tenants, whenever possible, with medical, mental health, and addiction treatment, and social and community services (VCH, 2008). However, the on-site staff do not generally provide outreach services to assist clients in linking with health services and they do not provide clinical services. In terms of accessing professional health services off site, some tenants find this difficult and/or they do not meet the mandate for specific health services. VCH clinical staff do provide some outreach health services to supported housing sites; however, the capacity for outreach services is constrained by staff resources that are already stretched to their limits (VCH, 2008).

Often Assertive Community Treatment (ACT) is offered within a Housing First Approach. Assertive Community Treatment is a type of case management for the mentally ill in which skill teaching is combined with clinical management and the provision of support (Public Health Agency of Canada [PHAC], 1997). Defining features of the ACT model are that it utilizes a multidisciplinary team, provides services 24 hours a day, provides assertive outreach, and the provision of support takes place in the community (as opposed to in an office setting) (Public Health Agency of Canada, 1997). While the CHT does not adhere strictly to the principles of an ACT approach, many features of the CHT model fit within the ACT model; The CHT is multidisciplinary, engages in assertive outreach and provides services in the community. However, the CHT does not provide

services 24 hours a day and does not have a staff representing a complete multidisciplinary team (e.g. the team does not have a physician or psychiatrist). At the time of the evaluation, the CHT consisted of 5 full time clinical staff – a team coordinator, 3 case managers with combinations of nursing and/or training in dealing with mental health and addiction concerns, and a Nurse Practitioner. Consistent with a Housing First approach and appropriate given that the CHT targets low barrier housing, the CHT utilizes a harm reduction approach.

The overall intent of the CHT intervention was to develop a coordinated and integrated service model that would streamline access to community health care for residents in the DTES. The four main goals of the intervention were identified as:

1. To improve overall tenant health through delivery of on-site integrated clinical health services in supported housing sites in the DTES
2. To improve tenant access to health services for individuals who were not accessing services on a regular basis
3. To understand the benefits and challenges of the partnership model in improving health service delivery
4. To achieve more appropriate use of hospital emergency services (VCH, 2008)

Purpose

In April 2008 a preliminary evaluation of the CHT intervention was carried out under supervision of the (then) Director of Housing within VCH. The stated goals of the evaluation were to review, where possible, the impact of the CHT

intervention relative to the stated goals of the intervention. This writer was involved with the evaluation as a practicum student from Simon Fraser University's Faculty of Health Science, as part of the requirements for the Master of Public Health degree. The resulting report, entitled *Preliminary Evaluation of the Downtown Eastside Clinical Housing Team* (VCH, 2008), was intended to be used for applied purposes related to the specific intervention within VCH (e.g. places for improvement within the model, to support continued project funding, etc.). Hence, an in depth discussion of findings and areas for future research were not included, implications of findings were not discussed beyond the specific intervention, and no recommendations were made. Given that housing and health is an issue of interest to researchers, health care professionals, policy makers, and community members, the current paper aims to provide a more in depth examination of findings from the CHT evaluation and consider implications of these findings from a population health perspective.

This paper will first provide a review of literature relevant to the discussion of findings from the CHT evaluation from a population health perspective. This literature review will present evidence demonstrating the impact housing (or lack of) has on health, review the different types of housing models offered for individuals who are chronically homeless and/or have mental health problems (including a discussion of the housing available in the DTES), and present literature detailing the barriers to obtaining appropriate health care that this population faces. This literature review is not intended to be exhaustive, as a comprehensive literature review in this area is beyond the scope of this paper.

Instead, it is meant to provide a basis for discussion about results from the CHT evaluation taking into account evidence from research in the subject area. Methods and findings from the CHT evaluation will be reviewed, as it is not possible to discuss the findings without first outlining what those findings were. A discussion related to findings from the CHT evaluation, including areas for future research, will follow, along with a discussion of implications and recommendations from a population health perspective.

Critical Review of the Literature

Housing and Health

Nowhere is the impact housing has on health more evident than in research on the impact of homelessness on health. Homeless individuals are at much greater risk of health problems than their housed counterparts, including a greater risk of death (Barrow, Herman & Cordova, 1999; Benner & Klugman, Spencer, Macchia, Mellenger & Fife,1994; Hibbs et al., 1994; Hwang, 2001). Homeless individuals are also more likely to suffer from a range of chronic medical conditions such as HIV/AIDS, diabetes, tuberculosis, and Hepatisis C (Shaw, 2004) and have higher rates of mental illness and addiction (Hwang et al., 2009; Savage, Gillespie & Lindsell, 2008; Shaw, 2004). Skin conditions such as scabies (Moy & Sanchez, 1992; Shaw, 2004), foot problems (Shaw, 2004; Wren, 1990; Wren, 1991) and poor oral health (Pizem et al., 1994) are also common.

It is important to note that while the majority of research related to housing and health focuses on "homeless" individuals, there are varying definitions of homelessness. Definitions of homelessness include "absolute" homelessness, in which individuals are sleeping on the streets, to "relative homelessness" in which individuals have basic shelter, but that does not meet basic standards of safety and/or health (Hwang, 2001). Relative homelessness has also been described as unstable/insecure housing in which individuals share bathrooms, kitchen and living areas (Herman, Evert, Harvey, Gureje, Pinzone & Gordon, 2004). The definition of "relative homelessness" is similar to, and often interchanged with, "marginally housed", which has been defined as living in substandard housing that does not meet health and safety standards and does not offer personal safety or affordability (Ploeg, Hayward, Woodward & Johnston, 2008). Housing in which people are "doubled up" (i.e. staying in someone else's home as a result of having nowhere else to go) has also been termed "marginal housing" (Eyrich-Garg, Cacciola, Carise, Lynch & McLellan, 2008). It has been suggested that the similarities between homeless and marginally housed individuals outweigh their differences (Eyrich-Garg et al, 2008). Hence, research on homelessness and health is relevant to a discussion regarding individuals residing in low barrier housing in the DTES, as the majority have a history of chronic absolute homelessness and could still be defined as marginally housed or relatively homeless.

In addition to research showing that homeless individuals (both absolutely and relatively homeless) face significant health problems, there is also research

specific to the marginally housed indicating that they also face significant health problems similar to those of homeless individuals. One study found a 42% lifetime prevalence of psychotic disorders and substantially higher rates of substance use among the marginally housed. Despite higher rates of substance use, fewer than 10% of respondents reported using addiction services. In addition, these individuals were found to be socially isolated and felt unsafe (Herrman et al, 2004). Marginally housed and homeless individuals living with HIV were found to have more food insecurity (Weiser, Bangsberg, Kegeles, ;Ragland, Kushel & Frongillo, 2009). Given that those residing in low barrier housing in the DTES can be defined as either relatively homeless or marginally housed, and that both populations have been found to have significant health problems similar to those of absolutely homeless, it is assumed that research indicating health problems of homeless are relevant to the population involved with the CHT intervention.

Types of Housing

Housing in the DTES can be grouped into 4 broad categories: single-room occupancy hotels (SROs), non-market housing, special needs residential facilities (SNRF) and market housing (City of Vancouver, 2006). SROs are the most basic shelter provided for by the market, and are often the last option before homelessness. SRO units are small rooms with a shared bathroom, usually in independently owned and managed buildings that were built before the First World War (City of Vancouver, 2006). Non-market housing is housing that is owned by the government, a non-profit society, or a co-operative society and

provides housing to individuals who cannot afford to pay market rent (City of Vancouver, 2009). Rents are determined by an individual's ability to pay, not by the market (City of Vancouver, 2009). Most non-market housing in Vancouver is comprised of self contained units, with individual bathroom and cooking facilities. However, some SROs in the DTES are operated as non-market housing (City of Vancouver, 2006). Special Needs Residential Facilities are residential facilities for individuals who are presently unable to live independently because of age, illness, disability, or other factors. SNRFs are usually funded by government and target groups with special needs such as mental illness, brain injury, and severe developmental disabilities. Market housing is housing that is privately owned rental or owner-occupied housing (City of Vancouver, 2006).

In the past individuals struggling with mental health and addiction issues would often be placed in housing falling under SNRFs (e.g. residential psychiatric institutions, group homes). However, more recently the use of non-market housing in the form of supported housing has become the more popular approach. Supported housing is defined as "affordable housing where tenants have access to support services in addition to housing. These services vary and can include life skills training, income management, job training, medication management, medical care, social activities, problem substance use rehabilitation programs, and case management" (French & McNeil, 2007, p.1). Supported housing helps people lead more stable, productive lives and targets both individuals and families who are not only homeless, but face other

challenges such as low income, mental illness, addiction, and HIV/AIDs (Corporation for Supportive Housing, n.d.).

Models of housing and support can be seen along a continuum ranging from street outreach services, to shelters, to short term or transitional housing, to low barrier housing, to permanent housing (Patterson et al, 2008). In the traditional continuum of care approach to housing individuals who are considered "hard to house", individuals receive treatment and transitional housing before moving into permanent independent housing when they are deemed ready. This model assumes that before an individual can successfully live independently they must address any psychiatric or substance use concerns. It is thought that by encouraging sobriety and compliance with mental health treatment that the individuals' "housing readiness" is increased (Tsemberis, Gulcur & Nakae, 2004). "Housing readiness" has traditionally meant "'clean and sober'", stabilized on psychiatric medications, and familiar with the rudiments of housekeeping" (Patterson et al, 2008, p.51). The requirement of "housing readiness" creates a barrier for individuals not ready or able to address these issues.

In contrast to the traditional continuum of care model, the Housing First approach provides permanent, independent supported housing to individuals immediately and utilizes a harm reduction philosophy (Tsemberis et al., 2004). Support is offered to tenants, but they are not required to utilize these supports or engage in treatment within the Housing First approach. Similar to the Housing First approach, low barrier housing does not require individuals to engage in treatment, and often offers a range of support services. Unlike the Housing First

approach, low barrier housing is a congregate living style in which support services are provided on site. Low barrier housing is usually transitional in nature, but does not force tenants out after a certain amount of time (Patterson et al, 2008). It has been suggested that non-congregate housing such as Housing First models may lead to decreased functioning, including increased loneliness, isolation (Walker & Seasons, 2002) and increased substance use (Dickey et al, 1996). However, preliminary evidence suggests that a Housing First approach may be more effective than the traditional linear continuum of care model (Canadian Institute for Health Information, 2007; Patterson et al, 2008).

While supported housing has been shown to improve housing stability and decrease the risk of hospitalization, the impact of supported housing on other health related outcomes is unclear (Patterson et al, 2008); one study found that homeless individuals who were placed in supportive housing had reduced emergency department (ED) use and hospitalization (Martinez & Burt, 2006) when compared to those not placed in supported housing, while another found that supported housing did not affect health service utilization (Kessel, Bhatia, Bamberger & Kushel, 2006). Another study investigated the effect of supported housing coupled with assertive outreach services for individuals with HIV who were homeless or at risk of homelessness. This intervention resulted in all clients being registered with a GP, an increase in self-reported health and an improvement in objective measure of health (Cameron, Lloyd, Turner & Macdonald, 2009).

Barriers to Health Care

Barriers to obtaining appropriate health care are many for the homeless population, even in Canada which has universal health insurance (Begin et al., 1999). One study found that nearly 25% of the homeless adults interviewed had needed medical care in the past year but had not been able to receive it (Kushel et al., 2001). A survey conducted in the United Kingdom found that homeless individuals were more than 40 times more likely not to be registered with a General Practitioner (Office of the Deputy Prime Minister, 2002). In addition, homeless individuals often do not possess the proper identification in order to receive heath care (Begin et al, 1999; Crowe & Hardill, 1993; Hwang et al., 2000), are unable to make or keep appointments, or have difficulty maintaining continuity of care due to their transience (e.g. not having a phone or permanent address) (Begin et al, 1999). On top of the barriers related to social isolation and transience, homeless individuals may be preoccupied with necessities other than health care such as shelter, food, bathroom facilities (Gelberg et al., 1997) or with the procurement of drugs (Patterson et al., 2008).

Mental illness and addiction issues can also pose problems for accessing health care. Previous research shows that a large proportion of homeless individuals have a mental illness or addiction problem (Franskish, Hwang & Quantz, 2005; Savage et al., 2008). Homeless individuals diagnosed with a serious mental illness face a "complex array of psychosocial and socioeconomic problems" (Kim et al, 2007, p.363) which increases their risk for chronic health problems while at the same time decreasing their access to health care services (Kim et al, 2007;

Savage et al., 2008). According to veterans diagnosed with a mental illness and hospitalized for psychiatric concerns in one study, barriers to obtaining both mental health and medical health care were many; these barriers included transportation issues (care is too far away, no transportation), time constraints, provider/institutional constraints (too long to get care, refused services, not given an appointment), alliance and rapport (afraid provider would yell, afraid of what provider would say, don't like the provider, provider thinks problems are caused by mental illness) and personal factors (personal crisis, couldn't explain self, don't know how to make an appointment, forgot when appointment was) (Drapalski, Milford, Goldberg, Brown & Dixon, 2008). Another study focused specifically on mentally ill, homeless individuals found that significant barriers to care were not knowing where to go for care, too much confusion, hassle, or wait in order to receive care or having been denied the care previously. Individuals with increased psychiatric symptoms reported encountering more barriers to accessing care (Rosenheck & Lam, 1997). Addiction can be seen as an additional barrier to health care for homeless, mentally ill individuals. In the study mentioned above examining barriers to care for homeless, mentally ill individuals, it was found that 57% of participants had both a mental illness and substance use disorder (Rosenheck & Lam, 1997).

While the above evidence related to barriers to health care focuses on homeless individuals, more recent research has focused on barriers of those who are unstably housed and/or economically disadvantaged. This research shows that individuals with unstable housing also face barriers to accessing health care

(Reid, Vittinghoff & Kushel, 2008). A recent study found that 26% of unstably housed individuals had no usual source of health care compared to 14%-17% in the general population. This research also showed that 17% of unstably housed individuals postponed necessary medical care compared to 6%-11% of the general population and were more likely to have been hospitalized in the past 12 months (Reid et al, 2008).

Given the barriers homeless and unstably housed individuals face in accessing the necessary health care, it is not surprising that they use the ED more often than the general population (Crow & Hardill, 1993; Padgett, Struening, Andrews & Pittman, 1995; Reid et al, 2008).

METHODS

Population Health Perspective

A population health approach aims to improve the health of the entire population, or a particular sub-population (Community Health and Social Services Network [CHSSN], 2003; Public Health Agency of Canada [PHAC], 2002). The overall goal of this approach is to maintain and improve the health of an entire population and to reduce inequities in health between population groups (PHAC, 2002). The population health perspective emphasises the significance of the determinants of health, many of which are outside the health care system (CHSSN, 2003; Kumanyika & Morssink, 2006; PHAC, 2002). Examples of the determinants of health are income, social support, working conditions, and the social environment (Canadian Institute for Health Information, 2009; CHSSN, 2003; PHAC, 2002).

A population health approach involves actions targeting societal, community, structural, or system level, and requires collaboration between multiple sectors (CHSSN, 2003; PHAC, 2002). The CHT intervention can be seen as a population health intervention, in that the goal of the intervention is to improve the health of a specific population and thus reduce inequities between groups. In addition, it involves collaboration between non-profit housing providers, primary health care clinics, mental health clinics, and the CHT.

Given that the CHT is an intervention aimed at improving population health, and the original CHT evaluation utilized a population health approach, the current paper will utilize a population health approach as well. It is recognized that alternative frameworks, such as psychological, sociological, or medical, could be used to discuss the CHT intervention and evaluation results. These perspectives have much to offer in regard to the current discussion; for example, a psychological perspective would offer insight into psychological differences between tenants targeted by the CHT and thus suggest ways the intervention could be tailored to meet individuals needs; a sociological perspective could offer insight into the unique "culture" of individuals residing in low barrier housing or the wider society in which they live relevant to improving upon the CHT intervention; and a medical perspective would offer insight on better treating the medical problems of the target population. While these frameworks would be useful to the current discussion, the utilization of a population health framework was chosen for this paper as it is the most relevant given the perspective of the original evaluation and stated goals of the intervention.

A summary of the original evaluation entitled *Preliminary Evaluation of the Downtown Eastside Clinical Housing Team* (VCH, 2008) is included below under the heading "Findings", and discussion of findings within this section is from the original report on the CHT evaluation (VCH, 2008). The report was completed in 2008 under the supervision of the (then) Director of Housing within VCH. The "Discussion" section of this paper follows, and all discussion in this section, except where noted, is original to this paper. This section will provide a more in

depth discussion of findings from the CHT evaluation than was provided in the original report, discuss implications of the findings, and make recommendations from a population health perspective.

Ethical Issues

The current paper is a critical review of findings from the evaluation of the CHT originally undertaken by VCH (2008). Findings from the original report are considered publicly available, data from the original study were not used, and no participants were involved. As such, ethics approval from Simon Fraser University was not necessary. Consent was obtained from the acting Director of Housing within VCH to discuss findings from the original CHT evaluation in this paper.

Review of Original Evaluation

Methods

A mixed methods design was used for the evaluation; the quantitative components utilized a pre-test post-test design and the qualitative component included conducting interviews and focus groups with informants consisting of Tenant Support Workers (TSW's) at the housing sites, non-profit organization administrators, Community Health Centre and mental health clinic staff/managers and the CHT. Quantitative data were obtained from the Primary Access Regional Information System (PARIS) database (the electronic recording and institutional database for VCH) and Emergency Department (ED) records at Providence Health Care & Vancouver General Hospital. Quantitative data used

were from the period between August 1, 2007 (when the CHT intervention was implemented) and April 18, 2008 (when the CHT evaluation began).

Analysis of the profile of services being offered by the CHT and hospital ED records included a component which analyzed client data in relation to number of visits with the CHT (<6 versus >=6). It was felt that there might well be differences in service use patterns and outcomes for individuals who had only minimal involvement with the CHT or were at an early engagement stage (under 6 visits) and clients who were seen by the team 6 or more times (VCH, 2008).

Findings

1. Did the intervention of the CHT result in overall improved health outcomes?

Given the short timeframe covered by the evaluation (8 months), health outcomes were not evaluated. However, the report did identify and analyze the number and type of health service interventions provided by the CHT. Of the 444 tenants in the sites, 327 (74%) were seen by the CHT. Of these 327 individuals, 140 were seen 6 or more times by the team. Nursing interventions were the principal reason documented for most visits with the CHT. However, the focus group with the CHT staff suggested the accuracy of service utilization information was likely skewed by the fact that only one reason for each visit can be chosen. According the CHT staff, multiple issues are often addressed in one visit (e.g. wound care and counseling) and this documentation method did not allow for a complete picture of what interventions were provided. This issue is being addressed by modifying PARIS recording to allow for additional purposes of visit to be recorded.

2. Did the intervention of the CHT result in improved health service access?

Of the 327 tenants provided with services by the CHT, 134 (41%) had not accessed any VCH health services in the 12 months prior to first contact with the CHT. Of these 134 clients, 30% of those who saw the CHT 6 or more times were linked up with additional VCH health service post-intervention by CHT. In comparison, only 8% of clients who were seen by the team less than 6 times were linked up with additional VCH health services. These findings are significant because they highlight that the CHT successfully links with people who had previously not been receiving any VCH services. In addition, it suggests that the stronger the connection with the CHT the more likely an individual is to access other VCH health services.

As part of the evaluation of service access, informants were asked why they believed some clients did not access care. The two factors cited by the majority of informants as the most significant reasons were fear and previous negative experiences with the health care system. Additional reasons cited included health not being a priority for this population, a lack of resources, logistics, and women specific issues (see Appendix 2 for a more detailed outline of findings).

3. What are the benefits and challenges of the partnership model?

Informants were asked about the benefits and challenges in regard to the model. Due to the preliminary nature of the evaluation, a decision was made not to interview tenants although this is planned for future evaluations.

In general, there was consensus that clients had improved health and quality of life since implementation of the CHT. According to informants these

improvements are the result of receiving medical care more quickly, decreased hospital stays, health issues being caught earlier, stabilized health and increased participation in recreational/social activities. The ability of CHT staff to build relationships with clients was identified by the majority of informants as the most critical component of the CHT model. The reason often cited for the importance of building this relationship is the lack of trust that this client population has, especially of health service providers. The other most important benefits of the intervention were the ability of CHT staff to spend more time with clients, to share information with TSW's, and the fact that the CHT brings medical care to the clients as opposed to waiting for clients to go to medical care. The main challenges and barriers brought up by informants were the fact that the CHT only operated during regular business hours, that they did not have adequate transportation and that they needed a more diverse team (i.e. a doctor and health care worker would be of great benefit).

4. Did the intervention of the CHT result in more appropriate Emergency Department Use?

The intent of the CHT was to reduce the number of visits to the emergency department with a Canadian Emergency Department Triage and Acuity Scale (CTAS) level 4 & 5 (less urgent or non-urgent respectively) (See Appendix 2). Visits at a CTAS level 1—3 were not included in the analysis, given that these visits were seen to constitute more appropriate use of the ED. Analysis of ED records shows that, for clients who were high users of the ED pre-intervention and were seen by the CHT 6 or more times (engaged) there was a substantial

reduction in ED visits. Results showed that the more an individual relied on the ED pre-intervention the bigger the impact the CHT had on reducing ED use post-intervention. A significant reduction in ED visits was not observed for clients seen less than 6 times by the CHT.

DISCUSSION

The use of mixed methods for the CHT evaluation was a tremendous strength of the evaluation. Quantitative or qualitative data alone would not have provided the same conclusions and recommendations that were reached as a result of using both methods. For example, if quantitative data regarding "reason for visit" were not supplemented with qualitative data from CHT staff, the issue of being able to record only one reason for visit would not have been brought to light. As a result, erroneous conclusions regarding what services tenants were receiving and in need of may have been made and the PARIS database would not have been modified to allow for more accurate recording. Alternately, without quantitative data, concrete evidence regarding ED use would not have been possible.

Despite the CHT being in operation for less than a year, and an even shorter time with a full staff complement, a number of findings indicate that the CHT is an appropriate intervention for the target group. Findings demonstrate that the CHT is able to successfully make contact with tenants who may otherwise not have accessed necessary health services, as is evidenced by the fact that 41% of those contacted by the CHT had not accessed any VCH services in the year prior to the intervention (VCH, 2008). There is the possibility that the reason these tenants had not accessed any VCH services in the past year is because they did not reside in the Vancouver Coastal Health area during that time. While the original evaluation did not examine this possibility, a recent survey by BC

Housing (2008) suggests that this is not the case. This study, which examined the socio-economic and demographic profile of social housing and SRO occupants in the DTES, found that 45.5% of tenants had lived in the DTES for over 5 years, with an additional 32.6% who had resided in the DTES for 1-5 years (BC Housing, 2008). Given that this research was conducted on a similar population as the CHT evaluation at approximately the same time, the notion that tenants had not accessed VCH services as a result of not living in the VCH area is likely not the case.

The finding that TSW's, non-profit organization administrators, and Community Health centre Team staff/managers support the CHT model and find it to be a valuable and much needed initiative is an important finding, as partnerships between the health authority and other agencies is necessary if the determinants of health are to be addressed and population health is to be improved (CHSSN, 2003; PHAC, 2002).

Future Research

Engagement

One limitation of the CHT evaluation is the arbitrary definition of an "engaged" tenant as one who is seen 6 or more times by the CHT. While the investigators though it was important to distinguish between those clients seen many times by the CHT from those seen only a few times (VCH, 2008), investigating the effect of this definition would be an important place of future analysis.

Further investigation into the reason the CHT successfully engaged with some tenants while they did not with others is another important area for future investigation. There are a number of possible explanations for why some tenants were engaged and some were not; it could be discovered that those seen less than 6 times were tenants whose needs had been met in a shorter number of visits, which could add evidence in support of the effectiveness of the CHT. Alternatively, perhaps the tenants seen less than 6 times were qualitatively different that those seen more than 6 times, the difference could be in terms of physical health needs or their willingness to engage with the CHT as a result of their trust of health care professionals. Another logical explanation for why some tenants were not engaged is that at the time of the evaluation the CHT had been in operation for a very short time, and hence some tenants simply may not have had the chance for more than a few contacts with the CHT. In any case, and examination of characteristics of tenants seen less than 6 times is an important place of future research.

Emergency Department Use

Further examination of the reason that individuals with the greatest reduction in ED use were those who used it the most prior to the interventions is warranted. This finding could be the result of the CHT successfully linking these individuals with appropriate health care in the community. Alternately, these tenants may have had reduced ED use because the CHT began to provide the care that these tenants had been seeking out in the ED. While the current evaluation examined use of the ED as an outcome measure, research examining actual health

outcomes for those targeted by the intervention would be the logical next step. Also, an examination of tenant perceptions of the CHT and how tenants believe the intervention could be improved upon would also be valuable information with ensuring the intervention is optimally effective and acceptable to the target population.

Health Care Needs/Access

The discrepancy in CHT staff recording of reason for visit (e.g. Nursing (general) versus Nursing (wound care)) would be another area for further research. The PARIS database has been modified to allow for more than one reason for visit to be recorded. This modification to data recording will likely give a more accurate picture of what services tenants are receiving from the CHT, information which will be useful in moving forward with implementation of similar interventions and discerning what health care services this population is in greatest need of.

The finding that 41% of those contacted by the CHT had no contact with VCH services in the past year is consistent with the previous study by VCH which showed 50% had not contact in the prior year (VCH, 2007). One limitation of the CHT evaluation was that it only examined use of VCH services. Future research/evaluations of the CHT would benefit from looking at whether clients had access *any* health care services and not just VCH services. In addition, examination of other services tenants may be using in the community, such as drop in centres, social/recreational groups, or vocational support, would be useful. This would provide information related to determinants of health other

than housing and health care and provide a more comprehensive picture of how these determinants may be affecting tenants' health.

Relationship with Health Care Providers

More research into the "relationship" aspect of the CHT model is needed, as this aspect came up in nearly every focus group and interview as vitally important to working with this population. This is not surprising given research that shows this population has experienced higher rates of trauma (Christensen , Hodgkins. Garces, Estlund, Miller & Touchton, 2005; Buhrich, Hodder &Teesson, 2000) , posttraumatic stress disorder and victimization (Taylor & Sharpe, 2008) and had negative experiences with health care providers in the past (Patterson et al, 2008). More in depth examination of this factor with professionals and the target population would be invaluable in moving forward with planning interventions targeting a similar population and in improving upon the CHT intervention. Specifically, what the "relationship" factor consists of and how the relationship is built would be especially informative when it comes to hiring and training staff for future interventions such as the CHT.

Health Outcomes

Evaluation of programs such as the CHT is essential in order to determine which interventions offer the most benefit to individuals in regard to health and quality of life and to society in terms of cost-benefit. Further research examining the effect of the intervention on tenant health outcomes is recommended as a next step in determining effectiveness of the intervention. This further research should not

only examine traditional objective measures of health outcomes, but should ensure that a qualitative component which engages the target population is included. A qualitative component would allow for follow up on some of the findings from the current evaluation from a tenant perspective (e.g. the importance of relationship) and would also ensure that future quantitative findings have insight from the tenant perspective.

IMPLICATIONS AND RECOMMENDATIONS FOR PUBLIC HEALTH PRACTICE

There are an estimated 4,993 SRO hotel units and 5,171 social housing units in the DTES, and research suggests that the health of these individuals is poor (BC Housing, 2008). The number of individuals residing in social housing/SROs in the DTES and the research suggesting they do not access necessary health care (VCH, 2007; VCH, 2008) is of public health significance, and the magnitude of the problem cannot be understated. As stated above, the goal of the population health approach is to maintain and improve health among specific population groups and reduce inequities between groups (PHAC, 2002). Results from the CHT evaluation (VCH, 2008) provide insight into how to effectively improve the health of individuals residing in low barrier housing in Vancouver's DTES from a population health perspective.

Findings from the focus groups and interviews with professionals who work with the CHT suggest that barriers regarding access to care for the tenant population are well known to health care professionals working in the DTES. Informants from the CHT evaluation suggested that tenants feel stigma and discrimination when accessing health care outside the DTES (VCH, 2008). It is likely this is because health care professional outside the DTES who do not work with multi-barriered populations regularly are not as aware of these barriers. Given this, it is recommended that education for health care professionals include a

component on working with marginalized populations which includes contextual background, a discussion about the social determinants of health, and clinical issues specific to homeless, mentally ill, and other multi-barriered populations.

Health care professionals must not only be aware of how to effectively address the immediate health care needs of these individuals, but must be able to take into account the individual's life situation. For example, discharging an individual and instructing them to rest and take their medications 3 times a day may not be an effective discharge strategy if the individuals is living on the streets and has more immediate needs such as safety that take precedence over ensuring medications are taken at the correct time (Hwang, 2001) (if the individuals even owns a watch). Education on issues such as post-traumatic stress disorder would also be of benefit, as the majority of tenants have had trauma in their lives (Christensen et al., 2005; Buhrich, et al., 2000) and many suffer from posttraumatic stress disorder (Taylor & Sharpe, 2008).

In addition, education regarding the wider social and political context of the issue would likely create health care professionals who are more sensitive to the situation and less likely to act in a manner that perpetuates the negative experiences and beliefs of those who are already reluctant to seek care. For example, the DTES has a larger proportion of individuals from aboriginal ancestry (City of Vancouver, 2006), and a study by the Canadian Nurses Association found that negative attitudes and stereotypes from health care providers was a major barrier to accessing health care for urban aboriginal individuals (Shestowsky, 1995). This same study suggests that health care

providers should be "willing and able to work within the cultural framework and value system of the consumer" (Shestowsky, 1995, p. 25).

If health care providers were educated on these issues they would be better equipped to provide appropriate care that is sensitive to the needs of this population. This in turn would result in multi-barriered individuals having better experiences with health care providers and likely lead to them access care earlier. This would be a positive step toward improving the health of this population.

Findings from the CHT evaluation highlight the importance of health care that is flexible and in accordance with the changing needs of populations. The finding that the CHT had contact with nearly all tenants in the 8 sites despite that 41% had not accessed health care in the past year (VCH, 2007) suggests that the CHT intervention is more accessible and/or acceptable to the target population than traditional health services. Administrators within the health care system need to recognize the need for new and innovative interventions and be willing to implement them if they truly want healthy populations.

While the intervention and evaluation were local and small scale, light was shed on how this particular intervention is working in the local context. Findings were in line with previous research with similar populations and VCH now has evidence to support continued funding of the CHT intervention. If future evaluation shows positive outcomes on tenant health, it would be of value to conduct a cost-benefit analysis. Conducting a cost-benefit analysis is important from a population/public health perspective. To improve population health with

limited health care dollars requires that interventions are cost effective. Given the large number of supported housing units in the DTES with tenants who have similar health profiles to those involved with the CHT, evidence showing the intervention is cost effective, along with clinically effective, would allow for the expansion of the program and the improvement of health among the larger population of individuals residing in the DTES. Given the poor health status of individuals residing in the DTES as compared to Vancouver as a whole, improving their health would represent a considerable step forward from a population health perspective.

CRITICAL REFLECTION

While the CHT intervention in itself will not improve the health of all homeless, multi-barriered individuals residing in Vancouver's DTES, it is a starting point for addressing the complex issue of improving their health and well-being. The CHT evaluation demonstrates that VCH is committed to providing programs that are effective and strives for continuous improvement in service delivery. While the evaluation was effective at elucidating how the intervention is working and how it could be improved, there were a number of limitations of the study; these included the lack of a comparison group, the fact that the tenants in the housing sites were not included in the qualitative data component, and that results did not take into account variation within the target population (e.g. gender or race). The partnership between housing providers and health care providers suggests that positive changes are being made in the City of Vancouver toward addressing health and social problems from a population health perspective. However, if long term gains are to be made in the health of this population then determinants of health other than housing and health services, such as income, social support, education, and social/physical environments, will also need to be addressed. The emphasis on the link between housing and health in this paper is reflective of my position as a student of population and public health, given the emphasis within the discipline on determinants of health. The discussion, implications, and recommendations considered would no doubt be much different if analyzed

through a different lens (e.g. psychology, sociology, medicine). Examination through an alternative lens would provide additional insight that could be used toward achieving population health goals. A population health perspective was taken for this paper given that the original CHT evaluation was undertaken with this perspective and because it is most relevant to my position as a student of Population and Public Health.

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Appendix 1

CHT Service Utilization Breakdown (August1, 2007 - April 18, 2008)

Service Type	**Number of Visits**	**% of Total Visits**
Engagement	213	8%
Brokerage	341	13%
Accompaniment	122	5%
Nursing (General)	1013	39%
Nursing (Wound Care)	435	17%
Nursing (Testing/Dx)	120	5%
Counseling (General)	130	5%
Counseling (MH)	47	2%
Counseling (Addiction)	17	0.5 %
Counseling (MH & Addiction)	22	0.5%
No Primary Purpose	123	5%

Appendix 2

Fear

- Of potential diagnoses (are often in denial about health problems)
- Of losing housing if hospitalized

Of being judged (**shame/stigma**) by health care providers and other patient

- because of their appearance
- because they're a drug user or have a mental illness
- because they are involved in the sex trade

Previous Negative Experiences with Health Care System

- Received inadequate care (e.g. discharged too early)
- Doctors/nurses assume their problems are addiction related
- Have received negative diagnoses, lost housing, been discriminated against, or been judged (as outlined above).

Health is not a Priority

- Preoccupied with addiction
- Preoccupied with other issues such as finding shelter or food
- Hopelessness
    - Have lost hope they can change their life situation
    - Think they're not worthy of care/don't deserve care
    - Addiction is the client self medicating
    - Depression– clients don't care if they die/want to escape

Logistics

- No transportation to appropriate health care
- Clinics in area not taking new patients
- Hours – many clients nocturnal and therefore cannot access many services
- Not aware of what services available and/or how to access them
- Accessing services too difficult
    - Long wait times at clinics

- Calling back detox every day not realistic (many do not have easy access to a phone)
- Inability to make and/or keep appointments (mental health issues, chaotic schedule, no alarm clock, etc.)

Lack of Resources

- Gaps in service/mandate issues – can't access mental health services until addiction issues dealt with; can't access addiction services until mental health issues dealt with
- DTES Clinics not accepting new patients,
- don't want to see a different doctor every time
- Doctors in other areas don't want to take on these clients

Women Specific Health Issues

- many women don't want to wait with \ men when they may have been abused by men in the past
- Shame about being involved in the sex trade
- Don't want PAP tests, etc. because of past sexual trauma
- Never see the same doctor at clinics; relates to issues of trust and relationship building, which is especially important when getting PAP tests or dealing with sensitive issues related to sexuality
- Often male doctors in clinics and some women may not feel comfortable

Appendix 3

The CTAS is a tool that enables emergency departments to prioritize patient care requirements and allow ED nurses and physicians to:

- Triage patients according the type and severity of their presenting signs and symptoms
- Ensure that the sickest patients are seen first when ED capacity has been exceeded due to visit rates or reduced access to other services
- Ensure that a patient's need for care is reassessed while in the ED

CTAS Levels

Level 1:Resuscitation

Conditions that are threats to life or limb (or imminent risk of deterioration) requiring immediate aggressive interventions

Level 2: Emergent

Conditions that are a potential threat to life limb or function, requiring rapid medical intervention or delegated acts.

Level 3: Urgent

Conditions that could potentially progress to a serious problem requiring emergency intervention. May be associated with significant discomfort or affecting ability to function at work or activities of daily living.

Level 4: Less Urgent (Semi urgent)

Conditions that related to patient age, distress, or potential for deterioration or complications would benefit from intervention or reassurance within 1-2 hours).

Level 5: Non Urgent

Conditions that may be acute but non-urgent as well as conditions which may be part of a chronic problem with or without evidence of deterioration. The investigation or interventions for some of these illnesses or injuries could be delayed or even referred to other areas of the hospital or health care system.

From the Canadian Association of Emergency Physicians (2008)