

7 PANDEMIC PREPAREDNESS IN THE CONTEXT OF HOMELESSNESS: HEALTH NEEDS AND ANALYSIS OF PANDEMIC PLANNING IN FOUR CANADIAN CITIES

Jeannette Waegemakers Schiff, Bernie Pauly & Rebecca Schiff

Introduction

The health outcomes of homeless people are poor, with higher rates of acute and chronic conditions than the general population (Hwang et al., 2011). Even more troubling is that people experiencing homelessness are subject to premature death (Frankish, 2005; Hwang, 2009). It is well known that the conditions under which homeless people live, such as having a lack of permanent and stable housing, inadequate income combined with food insecurity, social isolation, discrimination and marginalization contribute to poor health and early death (Hwang, 2009). The dearth of resources for health care means that people who are homeless are increasingly vulnerable to specific health risks, including contracting communicable diseases during outbreaks. This is evident in the higher rates of HIV and Hepatitis C among homeless populations (Holton, Hwang, & Gogosis, 2010), as it is often difficult to manage and contain disease transmission in compromised and inadequate living situations.

During the past decade, events such as the SARS outbreak have raised serious public health concerns about the challenges of taking measures to reduce disease transmission during pandemics (or potential pandemics) for both the general population and those who are homeless. One such event was the 2009–2010 concern about a potential pandemic caused by the H1N1 virus. While the pandemic did not materialize as feared, it offered significant learnings. In this chapter, we focus on learnings related to the needs of people who are homeless. These learnings arise from the unique social conditions and circumstances that contribute to homeless people's heightened vulnerability to communicable disease transmission, and they offer insights into how to mitigate this population's potential vulnerability in a communicable disease outbreak.

Based on the results of a national survey in four Canadian cities, we explore findings related to health and access to health care in the event of a pandemic. Through a discussion of issues that emerged during the H1N1 period, we offer suggestions to inform future public health planning for communicable disease outbreaks, taking into consideration the unique needs and circumstances of those who are homeless. A closer examination of the stresses and vulnerabilities reported by people experiencing homelessness can help to guide health officials in planning for pandemics, prioritizing preventive practices, and offering health services in ways that will, we hope, mitigate the risks of serious health impacts in the event of future outbreaks of virulent communicable diseases.

Background

Research purpose and questions

As a result of a special call for proposals related to pandemic planning by the Canadian Institutes of Health Research (CIHR), a survey of people experiencing homelessness in four Canadian cities was conducted. The survey instrument consisted of a series of multiple-choice questions that inquired about living practices and health-seeking behaviours by persons who were homeless at the time. A copy can be found in the Appendices of this book.

Methodology

Participants were recruited at and near drop-in day programs and shelters in Toronto, Regina, Calgary and Victoria. They were offered a small stipend for their time and were asked about their health and experiences with health care during H1N1, as well as strategies to reduce risk in the event of a pandemic. Ethics approval was obtained from the University Ethics Boards of the principal investigators in each participating city. Data collection was facilitated by university-based researchers. Toronto and Regina employed students as research assistants, while Calgary and Victoria also included peer researchers as members of the research team. The collection period was over the colder months of the year, from October 2009 to March 2010, thus ensuring that most people who choose rough sleeping during the warmer months would be more likely to seek food and shelter at designated sites,

and thus be more available to be surveyed. The total sample consisted of 351 participants (Calgary, 118; Regina, 40; Toronto, 144; and Victoria, 44), which is proportional to the estimated homeless population in each city). Participants were recruited for the study at or near 24 drop-in programs and shelters that serve single adults across the four cities. The youngest was 16 years of age and the oldest 75, with 26% of the group aged 25 or younger. While the mean age was 38, the age spread is best depicted by Figure 1, which indicates that there was a significant cohort of young adults.

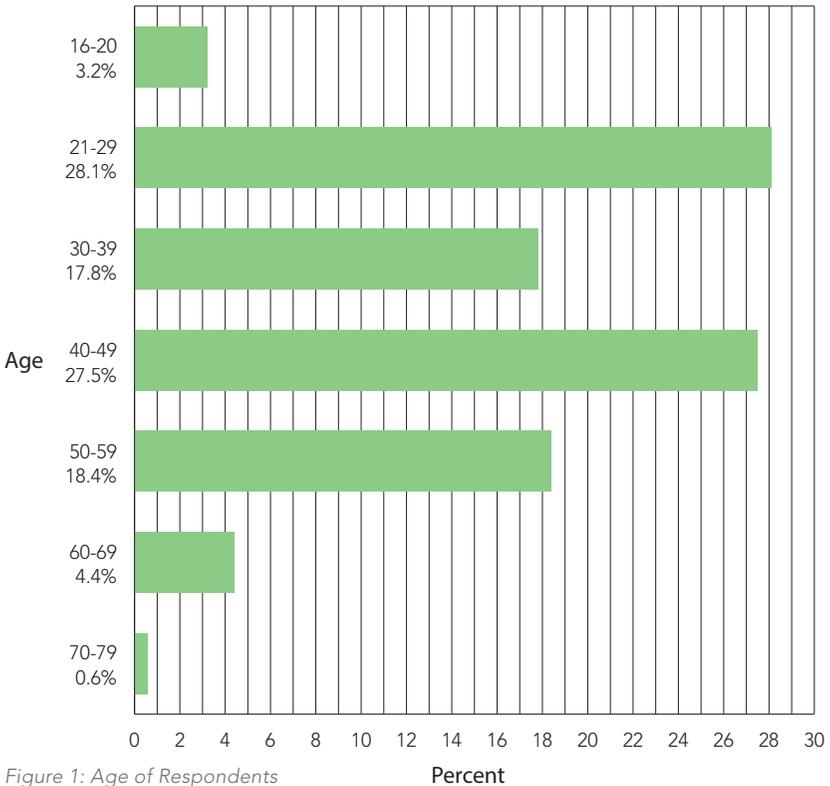


Figure 1: Age of Respondents

The cluster of young persons (aged 16–25) in part reflects the locations where we collected data. In Toronto, youth services constituted one data collection location, providing 65 respondents (46% of all respondents in that city). This skews the age cohort, since no youth services were targeted as data collection places in the other cities. However, as Figure 1 shows, the overall sample had a diverse age range.

Overall, 69% of respondents reported going to a shelter at night at least some of the time, and 66% said they go to a shelter every night. In Toronto and Victoria, 58% reported never using a shelter, while in Regina and Calgary this group was considerably larger at 82%. These differences between cities may relate to shelter bed availability in Victoria. Since 2010, that city's shelters have been running at over 100% capacity as once emergency beds are full, mats are being placed on the floor to accommodate the overflow (Pauly, 2013). These differences may also be due to the data collection sites: in Calgary and Regina the sites tended to be in and around shelters, while Victoria and Toronto also included respondents who only frequented drop-in programs and did not sleep at shelters. While shelter use among respondents varied across the cities, many issues that were raised about experiences with shelters did not elicit statistically different responses among these locations.

In the following sections, we highlight concerns related to the health vulnerability of people who are homeless, and their access to health services in the event of a pandemic, as well as their perceptions of where and how information and services would best be provided in a pandemic. Following this, we discuss insights and recommendations to inform public health and pandemic planning to meet the unique needs and circumstances of people who are homeless.

Self-reported Health Status of Homeless Canadians

For the survey, several questions related to self-reported health paralleled questions used by Statistics Canada (Statistics Canada, 2016) in its database of national health indicators. This made it possible, at least for some indicators, to compare the self-reported health of those who are homeless with the general population. As Statistics Canada reports 2-year rather than 1-year averages for the last 6 years, we were able to use the same time frame for comparison with our study data. Also, data among data periods (between 2009 and 2014) were quite similar (less than 1.0% difference between these time periods in each category we referenced). By extension, we posit that the data about health conditions and usage that emerged from this survey probably also reflect current and continuing health issues and concerns among homeless people.

Very good or excellent health was reported by 34% of our sample, while 72.6% of the general population reports very good or excellent health (Statistics Canada, 2016). Nationally, 39% of our subjects reported fair or poor health, compared to 11.6% percent of the general population. Of the four cities included in the research, we found that fair or poor health reported by study participants ranged from 33.4% to 47%. See Table 1 for the breakdown by city. In Toronto, 44% of our participants reported fair or poor health compared to 10.6% of the general population. In Regina, 33.4% of participants reported fair or poor health compared to 10.1% of the general population, while in Calgary, 47% of participants reported fair or poor health compared to 9% of the general population. Finally, for Victoria, fair or poor health was reported by 43.2% of participants compared to 11.8% of the general population. Thus, depending on the city, homeless people report fair or poor health at three to four and one-half times the rate for the general population across all provinces and territories.

Population	Average	Victoria	Calgary	Regina	Toronto
Homeless	39.0%	43.2%	47%	33.4%	44%
General (Statistics Canada)	11.6%	11.8%	9.0%	10.1%	10.6%

Table 1: Participants reporting fair or poor health by city: Comparing the homeless population to the general population

Across the four cities, 26.4% of our sample said their health was worse than a year ago, which is six times the national average of 4.6% in the general population. This means that among the homeless population, between one in three and one in four persons experienced deteriorating health, compared to fewer than one in 20 in the general population. In addition to reporting deteriorating health, just over half the respondents in the four survey cities consider themselves to have a disability that prevents them from engaging completely in work and leisure pursuits.

A series of questions focused on specific medical conditions (Table 2). A few diagnoses, including diabetes, cancer, HIV and tuberculosis, were explored. It is clear that people experiencing homelessness had numerous chronic conditions that would increase their vulnerability in the event of a pandemic.

Health condition	Homeless sample	General population
HIV/AIDS	3.8%	0.09 ¹
Lung cancer	5.3%	0.005%
Asthma	13.7%	8.1%
Hepatitis A, B or C	16.1%	6%-7% ²
Arthritis	23.9%	15.3%
Consider oneself to have a disability	50.6%	14.3%

Table 2: Self-reported health conditions

Over 50% of the participants experiencing homelessness reported a disability. In the general population, 10.1% of Canadians between the ages of 15 and 64 reported a disability (Statistics Canada, 2012). The participants in this study self-reported disability (“limited in what you can do at home, school or work because of a disability or chronic health problem”) at a rate five times that of the Canadian population as a whole (Statistics Canada, 2016). These findings confirm previous reports by Health Canada and other researchers that the overall health of homeless individuals is significantly poorer, by a wide margin, than that of the general population, and that being homeless increases the risk of deteriorating health (Frankish, 2005; Hwang, 2009). Furthermore, these data highlight that those experiencing homelessness are already experiencing poor overall health, and that situation, along with unstable living conditions, would increase their vulnerability in the event of a pandemic.

Use of Health Care

An important consideration for any type of health care services, including pandemic planning in the context of homelessness, relates to homeless people’s experiences with the health care system. In Canada, health care services, such as doctors and hospitals, are funded universally for all Canadian residents. Ready access to health care, outside of a crisis or a

¹ Rates reported by statistics Canada as 212 per 100,000 for AIDS and 56 per 100,000 for lung cancer have been converted to percentages.

² Variation between hepatitis B and C prevalence.

health emergency, begins with possession of a valid health card, which is obtained based on an established address within the province or territory of residence. In our study, nearly 83% of respondents reported having a valid health card. In other research, reported possession of a health card by homeless people was much lower, with 34% or more lacking a health card in two separate studies of homeless people in Toronto shelters (Hwang, Windrim, Svoboda, & Sullivan, 2000; Khandor et al., 2011). A possible explanation for the much higher rate of health card possession in this study may be the more recent attention to providing homeless people with access to personal identification, including health cards. Another possibility, since we did not ask our subjects to provide proof of health card possession, is that our positive response numbers were inflated. Because these rates were consistently high, hovering around 80% in all cities except Regina, where 95% of respondents reported having a health card, there is less possibility that differences in research assistants or data-gathering approaches account for these results. It is more plausible that reported recent advocacy efforts aimed at ensuring that homeless people have personal identification and a health card may have proven to be effective (St. Michael's Hospital, 2011).

While health card possession is an indicator of potential universal access to health care, it does not ensure that adequate and acceptable health care is readily available or accessible. In fact, many homeless people do not have a regular primary care provider or a regular source of care, which means, even with universal coverage, they may go without care or delay health care until it is an emergency. In this survey, we asked participants if they had a regular source of care, and if it was easy to see a doctor or nurse if necessary. Of our sample, 54.9% said they had a regular doctor or nurse. This percentage of respondents who indicated having a regular nurse or doctor is much lower than the 85.1% reported for the general Canadian population (Statistics Canada, 2014) and does not reflect how recently a person had seen that practitioner.

Most participants in our study (84.6%) reported that it would be easy to see a doctor if they needed to. However, when participants were asked whether they see a doctor for health care, only 30% of those who indicated they had a regular source of care said they saw the doctor or nurse identified as their

regular health care provider. In the general population, 81.3% of Canadians reported seeing their doctor in the last year. Of our participants, 39% reported having a doctor they see at least once a year, which is less than half the rate of the general Canadian population, despite much higher self-reports of poor health and prevalence of chronic disorders for the homeless population than for the rest of the population. Not only are homeless people more likely to suffer from a variety of serious and debilitating health problems, their substantially lower use of health care from a regular practitioner means they are likely to have less access to health services in the event of a pandemic.

When asked about where they usually access health care, 40% of respondents indicated accessing a community health clinic or a walk-in clinic, 20% receive health care at a shelter or drop-in program and 18% report using a hospital emergency department. Access to and use of health care services suggests that homeless people know where to obtain health care, but their identification of a personal practitioner may be based on minimal or infrequent contact. Responses may also have been based partly on a wish to provide a ‘socially desirable response,’ in that having a regular health care provider is considered a norm in Canadian society.

There is a general perception, fueled by studies in the United States (Kushel, Perry, Bangsberg, Clark, & Moss, 2002), that homeless people frequent hospital emergency departments for general health care (Frankish, Hwang, & Quantz, 2005). Despite concerns about overuse of emergency services by the homeless population, overall, only 18.3% of our study participants indicated obtaining health care at an emergency department. While most shelters have some form of health care available, often through the use of nursing staff, most study participants did not use shelters to obtain health care. In our four study cities, only one in five (20%) participants said they would seek health care at a shelter. When we looked at other places where people experiencing homelessness sought health care, the most frequently used sources were community or outreach programs.

The use of community health centres and walk-in clinics for health care, and some use of health facilities at shelters, indicates that homeless people probably use a variety of resources, rather than a single service. Community

health clinics and outreach health care are, in some cases, specifically tailored to meet the needs of people experiencing homelessness in terms of hours and ways that services are delivered. This highlights that these services are important sources of care. It has been demonstrated in other research that these resources are often more likely to be accessed because they are trusted sources of care (Pauly, 2014). Indicators of health care system use and trust in health care providers are important considerations for providing health care for homeless people, especially in the event of a pandemic.

Our findings suggest that both intervention and prevention efforts should target walk-in clinics and community health centres located where shelters and drop-in programs are located, to provide readily accessible and acceptable service locations, while also targeting those who have specific health needs exacerbated by their current living situation. In the next section, we explore the living conditions that increase vulnerability for people who are homeless; we also discuss participants' perceptions about access to information and sources of care during a pandemic.

Living Conditions: Sheltering of Homeless People

Earlier in this chapter, we highlighted that people experiencing homelessness are already experiencing poorer health and less access to health care services than the general population. In this section, we examine the living conditions of homeless people that increase their structural vulnerability in the event of a pandemic. Shelters, in particular, are environments that often increase the risk of communicable disease transmission (Sasaki, Kobayashi, & Agui, 2002). However, not all homeless people use shelters, or use them all the time. Of the participants in this study, 69% of respondents indicated they use emergency shelters, and 66.1% reported sleeping in shelters on a regular basis. In Regina and Calgary, the percentage of those sleeping in shelters every day was 85%, while in Toronto and Victoria only 48% and 30%, respectively, reported regular shelter use. In Calgary there was a clear preference for certain shelters, with 91.1% of respondents indicating they preferred certain shelters over others. Calgary's shelters vary in terms of number of beds (ranging from under 50 to 1,200), strictness of rules, religious orientation, available activities

and expectations, so shelter users' preferences for certain accommodations over others is understandable. In Toronto and Victoria, 68% of participants preferred certain shelters, while in Regina the preference rate of 36.4% was substantially lower than in other locations. These differences may be due, as described previously, to the predominant use of shelters as a site for recruiting study participants in Toronto and Calgary.

Our survey did not include questions addressing reasons for shelter preferences, so we did not identify whether shelter design and spatial proximity were factors in users' preferences. However, these are critical to consider in relation to transmission of communicable diseases. In the qualitative interviews in Victoria and Regina, we found there were few options for isolation rooms, and it was often difficult to maintain spatial proximity requirements in shelters (see chapters by Schiff and Pauly, Cross, & Perkin, in this book). Shelters often occupy spaces retrofitted for this use, rather than spaces designed specifically for housing homeless people (Walsh et al., 2010). It is common for shelters to be dormitory-style, with the maximum possible number of bunks in one room, to respond to the pressures of homelessness in urban centres. In this study, there were concerns about shelter capacity being stretched past the maximum, and in at least one city, Victoria, the response to growing concerns about homelessness was to increase shelter capacity by adding mats on the floor in shelter common areas. While this arrangement must meet fire regulations, it is possible, even likely, that it would not meet guidelines for ensuring one to two meters between beds. This arrangement could also mean up to 40 people in a common area, with overburdened washroom facilities and little privacy. Additionally, people experiencing homelessness, who are service recipients, are generally not consulted in the design of these spaces (Walsh et al., 2010). It is important to consider the advice of people with lived experience of homelessness regarding shelter design and usage, including how these apply to reducing health risks.

Not surprisingly, participants reported sleeping regularly in overcrowded places. Of all respondents, 58.5% reported having slept in a crowded environment in the past year, and 45.3% in the past month. However, rates varied substantially across cities. In Victoria, 80% reported sleeping in a crowded place in the past year. In Regina, that number was only 25%, while Toronto and Calgary had around 50% of respondents reporting crowded

sleeping environments. As previously noted, Victoria shelters have run over capacity since 2010. This overcrowding is especially important when considering the risk of disease transmission by airborne routes, for example, through contact with those who have tuberculosis, in an influenza pandemic or with other infectious diseases. We allowed respondents to self-identify the concept of ‘overcrowded,’ and thus do not know if our figures refer only to shelters, or also to other housing such as ‘doubling up,’ the practice of having two or more times the allowable number of persons in a living unit.

Another important consideration for health and well-being among homeless people is food security, which is critical to a person’s susceptibility to disease transmission and recovery. A significant number, 41.5% of respondents, indicated they had gone without food at least once per week in the past month. This is significantly higher than nationally reported (8%), where skipping meals is considered to be an indicator of severe food insecurity (Tarasuk, Mitchell, & Dachner, 2014). Additionally, 7.3% of respondents had gone without food at least once per day in the past month. Nutrition is important to overall health and immunity, so that food insecurity among homeless people is an important factor when considering risks for disease transmission and health outcomes during a pandemic.

Homeless Canadians’ Experiences During the H1N1 Pandemic

An important aspect of this research was examining homeless people’s experiences during the H1N1 pandemic, including their knowledge about the disease and their access to vaccination. Almost all respondents (97% in Toronto and Victoria and 100% in Calgary and Regina) remembered hearing about H1N1 during the 2010 outbreak. When asked what they remember hearing about it, the answers in some cases showed a lack of specific information or knowledge about H1N1. Most study participants (84.9%) did not know that H1N1 was contagious. Less than half the sample (44.1%) thought it was serious or deadly, except in Regina, where 60% of participants thought it was serious or deadly. When asked specifically whether they were aware that a vaccine was available, 93.4% said Yes. Additionally, 93.4% were aware there was a vaccine for H1N1, and 76.9% were aware of vaccine

clinics in their city. This varied somewhat across locations, with Calgary reporting the highest percentage of awareness at 83.8%, while only 62.5% of respondents in Regina were aware of H1N1 vaccine clinics (Table 3).

	Total study population	Victoria	Calgary	Regina	Toronto
Knew about H1N1 outbreak	98.6%	97.3%	97.7%	100%	100%
Did not know it was contagious	84.3%	84.1%	79.1%	84.6%	90.0%
Knew it was serious or deadly	44.1%	39.3%	53.5%	41.0%	60.0%
Concerned about being infected	44.4%	49.3%	43.9%	41.0%	37.5%
Aware of a vaccine	93.4%	93.9%	90.9%	94.9%	90.0%
Knew vaccine was available	15.4%	20.7%	25.6%	6.0%	12.5%

Table 3: Percentage of study participants aware of the H1N1 outbreak

Across all cities in the study, there was a pervasive lack of awareness that some groups (children, seniors, pregnant women) are more vulnerable to the dangers of contracting H1N1. While 44.1% knew the virus was a serious, potentially deadly illness, 94.8% of all respondents were unaware there were some groups of people who were especially vulnerable. This lack of awareness by a majority of participants may translate into limited concern about becoming infected or taking protective and preventive measures, and indeed, only 45% of study participants were concerned about becoming infected with H1N1. This might also explain rates of vaccination, with 34.9% of respondents being vaccinated, lower than the national average of 41% of Canadians over the age of 12 being vaccinated during the H1N1 outbreak (Statistics Canada, 2016). While more than 90% of participants were aware there was a vaccine, only 15.4% of participants knew it was

available. The rate in Victoria was higher and closer to provincial rates. This may be because there was a concerted effort to vaccinate those who were homeless in British Columbia, not necessarily the case in other centres (Pauly et al., this book).

Infection with H1N1 was reported by only 6% of the study participants, which was lower than the 10% infection rate for the general population. Participants were more likely to have the diagnosis identified by a doctor at a medical clinic than through other sources, although some mentioned self-diagnosis based on reports in the media. An additional 24% of participants reported having had influenza or a chest infection, but of these, 87% said they did not know if they had contracted H1N1, which suggests the possibility of an under-identification of H1N1. Homeless people, who must focus on meeting survival needs, often place less priority on addressing concerns related to their physical health if symptoms are not urgent or debilitating. These findings also indirectly affirm the observation that homeless people are not likely to seek medical help unless symptoms and distress are severe (Pauly, 2008).

Homeless Canadians' Suggestions for Prevention, Planning and Health Care in the Event of Future Pandemic Outbreaks

In light of some of the challenges homeless people experience with their health and health care, we wanted to investigate what might help to improve preventive care and pandemic planning in the context of homelessness. Since homeless people are the experts on their experiences and needs, we were particularly interested to learn, from their perspectives, what might work.

Between 86.5% and 90% of respondents said they were exposed or had access to useful information about H1N1 during the outbreak. We also asked participants specifically about preferred communication strategies. Individual health care providers were viewed as the most reliable sources of information in the event of an outbreak of a viral illness, followed by television (see Table 4). Internet and other forms of media, such as radio and newspapers, were considered much less reliable. This attitude may be

influenced by relative lack of access to the internet and unfamiliarity with its resources. Agency staff were not often seen as reliable informants, which reinforces reports from providers (Waegemakers Schiff & Lane, in this book) that agency staff often felt unprepared and lacked substantive knowledge about H1N1. Less than 1% of the sample considered outreach teams reliable, which is interesting, since these teams sometimes include health professional members, though they are clearly not perceived that way by people experiencing homelessness. Family and friends were also not considered very reliable sources of information. When respondents were asked about future pandemics and information dissemination, between 35% and 46% of participants in Calgary, Toronto, and Victoria indicated that more information sessions would be useful in the event of future pandemics. Many respondents also said more posters would be helpful. However, responses about posters varied widely across cities: in Victoria, 44% recommended this strategy, while in Regina only 9.8% of respondents felt that more posters were needed. Without further information from participants in individual cities, it is difficult to determine if this difference was based on the number of posters distributed or local preferences for obtaining information.

Most reliable source	Total study population	Victoria	Calgary	Regina	Toronto
Health care providers	32.6%	38.6%	19.0%	32.6%	39.4%
Television news	20.5%	11.4%	31.0%	17.5%	15.3%
Agency staff	5.9%	9.1%	4.3%	2.5%	7.3%
Posters and pamphlets	5.6%	11.4%	3.4%	10.0%	4.4%
Newspapers	5.0%	0%	11.2%	7.5%	0.7%
Family	5.0%	4.5%	2.6%	5.0%	7.3%
Friends	3.0%	0%	2.6%	0%	5.1%
Internet	3.0%	6.8%	5.2%	0%	0.7%

Table 4: Most reliable source of health information, according to participants

We also asked if people would change their shelter-seeking behaviour in the event of an outbreak of contagious illness, and 57% said they would still use a shelter. So while there would be a reduction in those who normally stay in a shelter, more than half indicated they would continue to use a shelter. However, 43% indicated that if H1N1 had become more widespread, they would have avoided shelters and drop-in centres. This response was generally consistent across cities, with Toronto, Regina and Calgary reporting between 50% and 57% of respondents who would avoid shelters in the event of a more widespread outbreak. This response was higher in Victoria, at 78%, which might reflect the milder climate in Victoria, allowing participants to choose rough sleeping as an alternative to shelters in the winter, with less risk from weather conditions. A second factor for the higher number in Victoria may be that shelters often run over capacity there. As we did not inquire further about possible reasons, it is impossible to know whether people believed there would be no alternative, or if they believed the potential risk of contagion was not high, since only 44% reported being concerned about contracting H1N1 in the event of an outbreak.

Respondents also indicated they would be more likely to avoid food services at drop-ins and shelters. Under those circumstances, the food insecurity experienced daily by homeless people could be increased. Participants were, in general, also more likely to avoid hospital emergency departments and walk-in clinics. When asked about whether they would change where they went to get health care in a more severe pandemic, there was a wide variation in responses across cities. In Toronto, 70.4% of respondents said they would change where they sought health care. This response was selected by 22.2% of respondents in Victoria, 15.2% in Regina, and only 5.2% in Calgary. This variation in responses may have reflected where respondents usually sought health care. However, this survey did not include questions that would allow for such an analysis. The survey did not ask participants directly about how they would have their needs met in the case of a more severe outbreak. These findings leave important unanswered questions about where homeless people could sleep, find food and access health care in the event of more severe pandemic outbreaks, suggesting the current vulnerability associated with their living conditions could be exacerbated.

When we asked about future preparations for a pandemic, it appears that few people had thought of this possibility. The response rate for specific actions a respondent would take in the event of a pandemic (where to go for the day, where to sleep at night, where to obtain food, where to get health care) dropped from over 80% for most previous questions to between 34% and 40%, even though this question, “If H1N1 had gotten a lot worse, and more people had gotten sick, would that have changed your views about going to drop-ins or shelters?” had a positive response rate of 87%. Clearly, respondents felt more able to react to a presenting situation than to plan ahead for a possible future situation. We suggest this is because being homeless is challenging, and those who must worry about where to stay right now do not have the psychological and social resources to plan for future needs. They may also not want to consider a future where they remain without housing, that is, they do not want to consider the possibility of continuing to be homeless. Given that many people experience cyclical homelessness, and some are homeless only once, these are reasonable reactions. However, these reactions could also make future planning more problematic.

Many respondents offered specific comments on the changes in shelter and drop-in program practices during the H1N1 outbreak. Hand sanitizers were in more frequent use and hand washing was encouraged more often. Gloves were more often used in food preparation and service areas and masks were more often used, sometimes only by staff, but in other situations by both clients and staff. Facilities were observed to be cleaner and, while there were some exceptions, staff was seen as more gentle and understanding overall. Suggestions for improvements in the event of a future outbreak ranged across issues of cleanliness, availability of information, health and hygiene resources. Lack of robust response may be because of general satisfaction, or response fatigue at the end of a lengthy interview.

Discussion

To date, much of what we know about the health and health-seeking behaviours and preferences of homeless people comes from studies in several Canadian cities (Toronto, Vancouver and Montreal), but no single study has

provided an overview of different regions. One study that examined the plight of homeless people provided qualitative examples of difficult shelter experiences (Daiski, 2007). We are not aware of any studies that related the perceptions of people who are homeless in terms of pandemic experiences and preparedness. The present study provides the data to show similarities and differences in perceptions in diverse geographic areas, and therefore aims to be more representative of the plight of homeless people in general. The specific focus of this study on events and actions in a potential pandemic (H1N1) allowed us to look at the extent to which health and shelter concerns are similar across communities of different sizes in different areas, and the degree to which they may differ, based on specific local conditions.

The response patterns for questions included in this analysis indicated a very good response rate among our sample increasing confidence in the findings. Most specific items were answered by over 97% of all participants, thus we encountered few items where missing data would influence results. We noted that items focused on health related behaviours and conditions, as well as responses to pandemic planning, were included in the low rate of missing information. Instance of lower rates of replies occurred in some items where people were asked about ways in which services could be improved, which may reflect a desire to minimize criticism, or simply response fatigue at the end of a lengthy interview. In summary, the data set proved to be robust.

We found alarming rates of poor health, and lower self-reported health care utilization than appeared necessary for the adequate care, health and living conditions of our participants. While it was heartening to learn that most homeless people possess a health card, our findings are confirmation that this does not necessarily mean that people experiencing homelessness have consistently available access to a regular source of health care. We also identified that people tend to access community clinics and outreach sources of health care services. Reported rates of disability have important implications for considering the approaches and types of services required by homeless people to allow them to acquire and maintain self-sufficiency. The extent of disability in the homeless population is an important determinant to understanding their requirements for pandemic preparedness, as access to and need for health services are affected by pre-existing conditions and other health vulnerabilities.

Our respondents were very helpful in indicating where they received most of their health-related information, and this knowledge will guide health authorities in planning for future viral outbreaks. Health care workers are considered the most reliable source of information. This is consistent with the findings of the Victoria study (Pauly et al., in this book), in which health care providers were a key source of information, and community clinics and street nurses were integral to effective responses. The media, especially television, is more often relied on than posters and newspapers as sources of accurate information. Health authorities should therefore not rely, at least at present, on shelter workers to disseminate health information, as they are not perceived by clients as having the necessary information. Instead, authorities should plan to deliver accurate and timely information as quickly as possible through homeless people's preferred means. Finally, authorities should include homeless people as important informants for planning dissemination strategies.

Conclusion

Outbreaks of contagious and deadly illnesses will continue to be part of the human condition. In communities where there are people with pre-existing health issues and limited access to health care, and living in close proximity to others is the norm, the potential for transmission is high, and vulnerability to the threat of a communicable disease is increased. Given these realities, it is incumbent on health authorities to protect the most vulnerable members of society from further harm. In the present study, we provide relevant information about homeless people's current health and their access to health care, as well as the multiple vulnerabilities that place them among those who are at increased risk during a pandemic. It is essential that service providers and policy-makers not only recognize this heightened vulnerability, but also understand that a key source of that vulnerability rests in the living conditions to which homeless people are subject. We hope, in the event of future pandemics, the important lessons from H1N1, an outbreak that did not turn out to be as severe as expected, will be taken up by regional and provincial health planners to ensure the health and safety of people who are homeless. There is also a clear need to initiate a public health response to homelessness, even when there is no imminent threat of a pandemic.

References

- Chambers, C., Chiu, S., Scott, A.N., Tolomiczenko, G., Redelmeier, D. A., Levinson, W., & Hwang, S. W. (2014). Factors associated with poor mental health status among homeless women with and without dependent children. *Community Mental Health Journal, 50*(5), 553-559.
- Daiski, I. (2007). Perspectives of homeless people on their health and health needs priorities. *Journal of advanced nursing, 58*(3), 273-281.
- Fischer, P. J., & Breakey, W. R. (1991). The epidemiology of alcohol, drug, and mental disorders among homeless persons. *American Psychologist, 46*(11), 1115.
- Frankish, C. J., Hwang, S. W., & Quantz, D. (2005). Homelessness and health in Canada: Research lessons and priorities (Commentary). *Canadian Journal of Public Health, 96*(Supplement 2).
- Glantz, S., & Gonzalez, M. (2012). Effective tobacco control is key to rapid progress in reduction of non-communicable diseases. *Lancet, 379*(9822), 1269.
- Holton, E., Hwang, S., & Gogosis, E. (2010). *Housing Vulnerability and Health: Canada's Hidden Emergency: a Report on the REACH3 Health and Housing in Transition Study*. Research Alliance for Canadian Homelessness, Housing, and Health (REACH3).
- Hwang, S. W., Aubry, T., Palepu, A., Farrell, S., Nisenbaum, R., Hubble, A. M., ... & Dowbor, T. (2011). The health and housing in transition study: a longitudinal study of the health of homeless and vulnerably housed adults in three Canadian cities. *International journal of public health, 56*(6), 609-623.
- Hwang, S. W., Wilkins, R., Tjepkema, M., O'Campo, P. J., & Dunn, J. R. (2009). Mortality among residents of shelters, rooming houses, and hotels in Canada: 11 year follow-up study. *British Medical Journal, 339*, b4036.
- Hwang, S. W. (2001). Homelessness and health. *Canadian Medical Association Journal, 164*(2), 229-233.
- Hwang, S. W., Windrim, P. M., Svoboda, T. J., & Sullivan, W. F. (2000). Physician payment for the care of homeless people. *Canadian Medical Association Journal, 163*(2), 170-171.

- Khandor, E., Mason, K., Chambers, C., Rossiter, K., Cowan, L., & Hwang, S. W. (2011). Access to primary health care among homeless adults in Toronto, Canada: results from the Street Health survey. *Open Medicine*, 5(2), 94-103.
- Krausz, R. M., Clarkson, A. F., Strehlau, V., Torchalla, I., Li, K., & Schuetz, C. G. (2013). Mental disorder, service use, and barriers to care among 500 homeless people in 3 different urban settings. *Social psychiatry and psychiatric epidemiology*, 48(8), 1235-1243.
- Kushel, M. B., Perry, S., Bangsberg, D., Clark, R., & Moss, A. R. (2002). Emergency department use among the homeless and marginally housed: results from a community-based study. *American Journal of Public Health*, 92(5), 778-784.
- Pauly, B. M. (2008). "Shifting moral values to enhance access to health care: harm reduction as a context for ethical nursing practice." *International Journal of Drug Policy*, 19, p. 195 - 204.
- Pauly, B. M., et al. (2013). Facing Homelessness: Greater Victoria Report on Housing and Supports 2012/2013. Victoria, BC, Greater Victoria Coalition to End Homelessness and Centre for Addictions Research of British Columbia.
- Pauly, B. M. (2014). Close to the street: Nursing practice with people marginalized by homelessness and substance use. *Homelessness and Health in Canada*. S. Hwang and M. Younger. Ottawa, University of Ottawa Press.
- Perry, J., & Craig, T. K. (2015). Homelessness and mental health. *Trends in Urology & Men's Health*, 6(2), 19-21.
- Sasaki, T., Kobayashi, M., & Agui, N. (2002). Detection of Bartonella quintana from body lice (Anoplura: Pediculidae) infesting homeless people in Tokyo by molecular technique. *Journal of medical entomology*, 39(3), 427-429.
- Snow, D. A., Baker, S. G., Anderson, L., & Martin, M. (1986). The myth of pervasive mental illness among the homeless. *Social Problems*, 33(5), 407-423.
- St. Michael's Hospital. (2011, May 24). No health card means no family doctor for many homeless people. Retrieved from: http://www.stmichaelshospital.com/media/detail.php?source=hospital_news/2011/20110524_hn

- Statistics Canada. (2012). Disability in Canada: Initial findings from the Canadian Survey on Disability. Retrieved from <http://www.statcan.gc.ca/pub/89-654-x/89-654-x2013002-eng.htm>
- Statistics Canada. (2016). Health indicator profile, two-year period estimates, by age group and sex, Canada, provinces, territories, census metropolitan areas and influence zones. Retrieved from <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1050592>
- Tarasuk, V., Mitchell, A., & Dachner, N. (2014). Household food insecurity in Canada 2012. Retrieved from <http://proof.utoronto.ca/resources/proof-annual-reports/annual-report-2012/>
- Waegemakers Schiff, J. (2015). *Working With Homeless and Vulnerable People*. Chicago: Lyceum Books, Inc.
- Walsh, C., Beamer, K., Alexander, C., Shier, M., Loates, M., & Graham, J. (2010). Listening to the silenced: Informing homeless shelter design for women through investigation of site, situation, and service. *Social Development Issues*, 32(3), 35-49.