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Seeking shelter: homelessness and COVID-19

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Abstract

Those experiencing homelessness in Canada are impacted inequitably by COVID-19 due to their increased exposure, vulnerability of environment and medical comorbidities, and their lack of access to preventive care and treatment in the context of the pandemic. In shelter environments one is unable to effectively physically distance, maintain hygiene, obtain a test, or isolate. As a result, unique strategies are required for this population to protect them and those who serve them. Recommendations are provided to reduce or prevent further negative consequences from the COVID-19 pandemic for people experiencing homelessness. These recommendations were informed by a systematic review of the literature, as well as a jurisdictional scan. Where evidence did not exist, expert consensus from key providers and those experiencing homelessness throughout Canada was included. These recommendations recognize the need for short-term interventions to mitigate the immediate risk to this community, including coordination of response, appropriate precautions and protective equipment, reducing congestion, cohorting, testing, case and contact management strategies, dealing with outbreaks, isolation centres, and immunization. Longer-term recommendations are also provided with a view to ending homelessness by addressing the root causes of homelessness and by the provision of adequate subsidized and supportive housing through a Housing First strategy. It is imperative that meaningful changes take place now in how we serve those experiencing homelessness and how we mitigate specific vulnerabilities. These recommendations call for intersectoral,

collaborative engagement to work for solutions targeted towards protecting the most vulnerable within our community through both immediate actions and long-term planning to eliminate homelessness.

Mandate and scope

This report seeks to outline the vulnerability of people experiencing homelessness at the time of COVID-19, its impact upon those who experience homelessness and those who serve them, and to make recommendations that would reduce or prevent further negative consequences in the event of this or another similar crisis in this community.

There are many groups and organizations involved in the homeless service and care community, not the least of which are those experiencing homelessness themselves. The following recommendations are directed principally to those responsible for policy decisions, providing social support including housing or shelters and health services. Many other individuals or organizations must also become engaged in solutions that protect and serve the homeless community at the time of the pandemic.

As described in this report, there is a great deal of variability in the concept of "homelessness", and the term itself cannot capture the diversity of settings and individuals impacted. Those experiencing homelessness come from numerous perspectives and are found in numerous settings throughout Canada, with each member of this community having their own unique challenges and opportunities. Homeless families, adolescents, the elderly, women, and those who are Indigenous or newcomers, face unique challenges, requiring unique solutions.

The circumstance of homelessness intersects with issues of racialization and other forms of marginalization and colonialism in addition to other forms of structural injustice that have come to the fore in 2020. The authors acknowledge the many intersections between homelessness and these related pressing concerns, and this document is by no means a comprehensive assessment of these interrelated issues and their management in COVID-19.

In this report we focus primarily on people in the urban context who are homeless or unstably housed, such as those who sleep outside (sleeping rough) or are staying within established shelters. The recommendations made in this report can be adapted to other settings and communities and support those recommendations of other reports of the Royal Society of Canada. However, the challenges faced in rural and remote settings, including Indigenous reserves, are beyond the scope of this report.

This briefing also does not address every issue facing people experiencing homelessness across Canada. The intent of this document is to elevate and advance care and equality for those experiencing homelessness by addressing some of the more prominent and acute issues.

> "Isolation is the big thing; they feel lonely, forgotten and frustrated at all the changes and the loss of services that they used to have."—Peer worker in the Ottawa Isolation unit

Introduction

The Royal Society of Canada has implemented a COVID-19 task force charged with producing evidence-informed policy briefs for decision-makers concerning the impact of the pandemic on vulnerable populations. This task force was struck as the burden of COVID-19 is not shared equally throughout communities within Canada,

Those experiencing homelessness in Canada are impacted inequitably due to their increased exposure, vulnerability of environment and medical comorbidities, and their lack of access to preventive care and treatment in the context of the pandemic. In shelter environments one is unable to effectively physically distance, maintain hygiene, obtain a test, or isolate. As a result, unique strategies are required for this population to protect them and those who serve them.

The recommendations provided in this policy brief are intended to reduce or prevent further negative consequences from the COVID-19 pandemic for people experiencing homelessness. This brief can also be applied to other rapidly emergent acute respiratory infections.

In creating this policy brief, a systematic review of the literature was undertaken, as well as a jurisdictional scan. Where evidence did not exist, expert consensus from key providers and those experiencing homelessness throughout Canada was included.

These recommendations recognize the need for short-term interventions to mitigate the immediate risk to this community, including coordination of response, appropriate precautions and protective equipment, reducing congestion, cohorting, testing, case and contact management strategies, dealing with outbreaks, isolation centres, and immunization. Longer-term recommendations are also provided with a view to ending homelessness by addressing the root causes of homelessness and by the provision of adequate subsidized and supportive housing through a Housing First strategy.

The authors of this report feel that this is an ideal opportunity to make meaningful changes in how we serve those experiencing homelessness and how we mitigate specific vulnerabilities. This brief calls for intersectoral, collaborative engagement to work for solutions targeted towards protecting the most vulnerable within our community through both immediate actions and long-term planning to eliminate homelessness.

Homelessness: a defining social challenge

Mass homelessness in Canada is a relatively new phenomenon that began in the 1980s and accelerated in the mid-1990s following a massive federal disinvestment in affordable housing, structural shifts in the economy, and reduced federal and provincial spending on social supports (ref: homelesshub.ca/SOHC2016).

Today an estimated 235 000 Canadians experience homelessness every year with an estimated 35 000 homeless on any given night (ref: homelesshub.ca/SOHC2016). Over 1.7 million Canadian households live in core housing need (meaning they live in poverty and are spending more than 30% of their gross income on housing) (ref: www12.statcan.gc.ca/census-recensement/2016/dp-pd/chn-biml/index-eng.cfm).

A recent poll conducted by Nanos Research found that 36% of Canadians have experienced homelessness themselves or know someone who has. Based on this research it's estimated as many as 1.6 million Canadians have experienced homelessness at some point in their lives (ref: recoveryforall.ca/poll).

Emergency shelters in Canada support a diverse population of men, women, families, newcomers, youth, LGBTQ2S peoples, and the elderly. Racialized and Indigenous Peoples are dramatically over represented in Canada's emergency shelters (ref: canada.ca/en/employment-social-development/programs/homelessness/reports-shelter-2016.html). Homelessness is not confined exclusively to large urban settings but is also problematic in rural and remote communities including reserves.

For the vast majority of people who experience homelessness in Canada the experience is relatively short with over 85% of people entering and exiting homelessness in days (ref: homelesshub.ca/SOHC2013). For some however, homelessness can be a prolonged or a repeated pattern over years. According to the State of Homelessness in Canada (2013)

> "People who are chronically homeless make up a small portion of the overall population but have the highest needs. The longer one is homeless, the greater likelihood that pre-existing and emergent health problems worsen (including mental health and addictions) and there is greater risk of criminal victimization, sexual exploitation and trauma. There is also a much greater likelihood of involvement in the justice system."

While chronically homeless individuals make up a minority of the total number of different people experiencing homelessness in a year, more than half of the resources in the homeless system (including emergency shelter capacity) is devoted to serving people experiencing chronic homelessness (ref: homelesshub.ca/SOHC2013).

Additionally, chronically homeless individuals often suffer from multiple medical, traumatic, and mental health conditions (ref: library.oapen.org/handle/20.500.12657/33266), and living in an emergency shelter makes receiving high-quality, integrated, and ongoing care difficult and in some cases impossible. Furthermore, the opioid crisis has disproportionately affected people experiencing homelessness, with fentanyl and its analogues leading to record setting daily overdoses and death (ref: www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/statistical/homeless.pdf).

While an increasingly diverse population seeks support in our shelters, the overwhelming majority share a lack of resources and a vulnerability that makes it hard, if not impossible, to move into a more appropriate environment without support. Emergency shelters have adapted and often include multi-sectoral programming with input from municipalities, public health, acute care, policing, and social services such as housing, education, and employment. Ultimately the best way to ensure positive long-term health outcomes is through appropriate, affordable, safe housing with supports in place.

Vulnerability and those experiencing homelessness

People experiencing homelessness have suffered through multiple and compounding public health crises including the health effects of a lack of housing and poverty, the opioid overdose crisis, and now the COVID-19 pandemic.

Experience with previous epidemics, including SARS and H1N1, as well as recurrent outbreaks of influenza, meningococcal disease, tuberculosis, and Hepatitis A suggest that COVID-19 is a significant threat for people experiencing homelessness in Canada. Roughly 30% of people experiencing homelessness report a cough at baseline, and 40% report shortness of breath with exertion, making screening and assessment particularly challenging. Inadequate and inappropriate care, planning, and management strategies raises critical individual health, public health, and bioethical concerns for people experiencing homelessness, personnel involved in their care, and the wider community (ref: cnh3.ca/wp-content/uploads/COVID19_briefing_note.pdf).

Our societal response to the vulnerability of homelessness has also contributed to the challenge of responding to a health crisis. Shelters are primarily considered housing facilities, often with limited attention to health care needs. There are multiple partners involved, often without clear lines of responsibility, communication, and governance. Shelter staff often lack the necessary training and equipment to protect their and their client's health. Finally, the physical circumstances of congregate

living and lack of access to optimal hygiene in a shelter does not allow for optimal health and health care provision.

This complex social problem has consequences for those directly involved and also for acute care facilities, the judicial system, as well as economic and community development. Solutions will require concerted, intersectoral, culturally appropriate interventions that involve housing, health care, social services, judicial support, and early intervention to prevent individuals from becoming homeless by recognizing and intervening with those individuals and communities at highest risk of homelessness.

COVID-19 and the homeless community

Reports of a rapidly spreading novel SARS Co-V 2 virus began to emerge from China in the late fall of 2019. COVID-19 was labelled a pandemic by the World Health Organization in March of 2020 as its global catastrophic consequences became increasingly evident. In the absence of an effective vaccine and antiviral treatment, it was clear that an overarching public health response was required that involved hand hygiene, physical distancing, aggressive testing and contact tracing, and appropriate isolation of positive cases.

Early on, it was clear that the impact of COVID-19 would not be felt equally throughout society. People who are homeless would experience a differential in exposure, susceptibility, and access to treatment.

Persons who experience homelessness have a higher prevalence of physical illness, mental health challenges, and addiction/substance use related concerns, which all contribute to an increased vulnerability to infectious disease. In the daily reality of those who experience homelessness, public health recommendations to physically distance, practice hand hygiene, wear masks, and get tested are not able to be met. It is often impossible to adhere to public health recommendations in a shelter environment where an individual may sleep in a 70-bed room, line up with hundreds waiting for meals, and have access to only one washroom with no other opportunities for hand hygiene.

Mental illness and addiction are often driving priorities, and individuals live in a constant world of crisis where advanced planning and prevention are neither considered nor possible. Equally, early warning symptoms of COVID-19 infection are often the usual experiences of a homeless individual who may have to deal daily with chronic illness, pain, addiction, mental illness, and violence.

The usual approach to aggressive testing and tracing is also problematic where individual contact among people experiencing homelessness is frequent and there is a general distrust of testing and confidentiality. Furthermore, initially no facilities existed for isolation while awaiting test results or ongoing isolation for those who were positive.

Other organizational challenges exist that can impair an effective COVID-19 response. The focus of the homeless shelter is on general support and housing and not necessarily health care. The majority of shelter staff are not trained nor prepared for the health challenges faced. It is often not clear as to who is ultimately responsible for emergency preparedness and the response to the virus within shelter settings. Shelters are not included in Infection Prevention and Control (IPAC) standards, and there is inadequate client screening and personal protective equipment (PPE) availability. Testing is not available and communication between public health, the health care sector, homeless shelters, and agencies is spotty at times and contradictory at other times. Effectively, shelters exist in a public health vacuum: on the one hand, they have essential health functions because failures in achieving minimum health standards is deadly for the inhabitants and their community, but on the other hand, shelters are not positioned as health institutions and cannot be held to health standards such as IPAC. This structural challenge is at the core of the inequity and health disenfranchisement that has occurred in COVID-19.

With the advent of the pandemic, the street drug supply has become much more toxic and with less medical and mental health services, there has been an increase in physical violence, overdose deaths, and suicides as outlined in the Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2020, From Risk to Resilience: An equity approach to COVID-19 (canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html#a2.2).

As a result, in cities across Canada many shelter clients moved to encampments. Particular populations among this group, including single women, families, and newcomers to Canada were found to be increasingly more vulnerable.

It came as no surprise then, in some shelter settings COVID-19 outbreaks became prominent.

The community responds, lessons learned

When faced with the potential impact of the pandemic, the diverse community supporting those who are homeless responded and the following are just a few examples of successful responses.

- In locations where there were embedded shelter-based health services and effective collaborative programs, there was a more immediate and effective health and social services response. This response engaged public health, shelters, health services, and municipalities.
- Where there was collaborative planning between organizations, there was the opportunity to share of resources, such as personal protective equipment or testing materials as well as better communication. When it was clear that there would be shortages in PPE, some members of the community responded by making masks and gowns for staff and clients or by donating hand sanitizer or surgical masks.
- In some settings peers with lived experience immediately came forward to support the planning and introduction of effective interventions to engage homeless individuals in encampments, isolation units, and shelters. They accepted new roles and responsibilities without hesitation.
- Mobile or outreach testing by trusted providers proved essential in reaching out to those homeless who would otherwise not have access to opportunities for testing.
- Unused hotels or community centres volunteered their facilities to decant shelters or to provide isolation units.
- Policy makers at many levels made improved access to harm reduction strategies a priority.
- The efforts of those on the front lines such as personal support workers (PSWs) were recognized with a COVID-19 stipend.
- Special efforts to communicate with and engage staff at all levels was vitally important in reducing stress and enhancing cooperation.

Systematic review

To inform this brief, a systematic review was completed to identify effective strategies to mitigate infectious respiratory epidemics among people experiencing homelessness. Specifically, the review was designed to answer the following research questions.

1. What are key components of interventions aimed at minimizing the spread and effects of communicable disease outbreaks in people experiencing homelessness?
2. What outcome measures have been used in trials of interventions aimed at minimizing the spread and effects of communicable disease outbreaks in people experiencing homelessness?

Methods

This review was prepared based on the PRISMA statement for Preparing Reporting Items for Systematic Reviews and Meta-analyses evaluating prognosis or diagnosis.

Inclusion criteria

1. Population: homeless defined as individuals with no fixed address, who rely on temporary accommodation such as institutions/shelters.
2. Intervention/exposure: any interventions evaluated with any design aimed at mitigating effects of communicable disease in the homeless sector, during a disease outbreak.
3. Comparison: interventions compared with usual care (however defined) or an alternative intervention. Trials will be considered eligible for inclusion if the intervention is delivered in place of, or in addition to, usual care.
4. Outcomes: outcomes as listed below

Primary outcomes

The effectiveness of mitigation strategies. Measures of effectiveness will include:

1. Reductions in disease prevalence or incidence over time
2. Reductions in mortality
3. Uptake or adherence of strategies

Secondary outcomes

1. The cost effectiveness of programs/interventions
2. Quality of life of study participants

Exclusion criteria

1. Individuals with a history of homelessness but are no longer experiencing homelessness. Homelessness because of war, conflict, or natural disaster.

Search strategy

The search strategy was designed in partnership with an information specialist. We conducted a systematic search of electronic databases, including Medline, Cochrane, Embase, PubMED, and CINAHL. We included several related terms including ("homeless" OR "houseless" OR "precariously housed" OR "unhoused" OR "no fixed address") AND ("communicable diseases" OR "COVID-19" OR "coronavirus" OR "virus" OR "influenza" OR "acute respiratory distress", OR "acute respiratory infection" OR "acute respiratory syndrome" OR "tuberculosis" OR "pandemic" OR "epidemic" OR "SARS") We also searched the references of included studies to ensure a comprehensive review.

Screening and data extraction

Abstract and full-text screening was done in duplicate, with any disagreements resolved by discussion with a third team member. A standardized data extraction form was developed and piloted, and the extracted information included, but not limited to: study setting, study population and participant characteristics, details of intervention, methodology, recruitment, and outcomes.

Risk of bias (quality) assessment

The quality of the included studies was assessed by two reviewers, independently using criteria using the Newcastle Ottawa Scale.

Results

The review retrieved 22 papers that include 7 case studies and 15 observational studies. Of these, 11 studies were related to the effects of COVID-19 on homelessness, 3 focused on multiple respiratory diseases (including H1N1), and 7 examined the impacts of Tuberculosis. The primary themes the interventions considered involved testing ($n = 12$), screening ($n = 9$), environmental and hygiene changes ($n = 5$), location changes ($n = 5$), isolation ($n = 4$), and education ($n = 2$).

A key theme from this review was the utility of tracking positive cases through the shelter system. Specifically, tracking positive cases was implemented through contact tracing as well as spatial analysis models that considered the distance between individuals in the shelters as a well as the duration of their exposures. There were specificities of contact tracing to homeless shelters including the importance of tracking client bed locations within shared rooms. In addition, due to the client high-turnover rates of shelters, tracking of all contacts in the context of a pandemic irrespective of whether an active outbreak represented a useful component of outbreak prevention and mitigation among clients and staff. Upon detection of symptomatic or confirmed cases, studies demonstrated the importance of rapid client isolation to prevent onward transmission to other clients and staff. However, as shelters are typically highly populated and congregated, studies reinforced the challenges of physical distancing and importance of restructuring shelter accommodations in the context of outbreaks to minimize outbreak risks. Primary models emerged at evaluating strategies to restructure client accommodations or leveraging more space outside of the shelter in the community. Specifically, studies highlighted the potential for the provision of support for symptomatic individuals to be transferred to temporary shelters or hotel sites designed to isolate probable or confirmed cases of COVID-19. Although successful in containing outbreaks, minimizing transmission, and increasing shelter space, such strategies are expensive and require significant human resources

Another theme that emerged was the use of infection screening strategies—either daily or before entry to shelters. In one study, a risk-based triage was designed where clients were designated with different risk levels that support implementation of adaptive interventions ranging from normal sleeping arrangements, distanced sleeping arrangements, or emergency room referral and a private room. One study suggested that mandated screening may be more effective when done based on empiric risk levels rather than by population. Large-scale testing was also evaluated in one study among people experiencing homelessness. Specifically, the authors examined a shelter where large-scale testing was done for all individuals entering the shelter, despite symptom level among clients. Through large-scale testing, the authors identified a high proportion (86%) of cases facilitating rapid transfers to isolation sites. In response, the authors suggested the utility of large-scale testing of residents and staff irrespective of symptoms to support case findings and limit the risks of outbreaks.

Notably, the systematic review did not identify any experimental interventions or large-scale evaluations using non-randomized designs. This remains a significant limitation in the ability to effectively serve people experiencing homelessness. The limited investment in research and programs for people experiencing homelessness in Canada and around the world remains a major barrier to comprehensive pandemic preparedness plans for respiratory outbreaks given well-understood risks in shelter settings. Moving forward necessitates interventional research to mitigate the risks of infectious disease outbreaks in shelter settings.

Recommendations

There are two sets of fundamental recommendations that are required to mitigate the effects of COVID-19 in a shelter or encampment setting. The first set addresses the immediate response required to minimize the impact to those who are experiencing homelessness, while the second set is designed to reduce vulnerability in the longer term of our most at-risk community members through aggressive housing strategies as well as rethinking how shelters operate.

We have looked for documented evidence to support our recommendations. However, there is often no supporting published evidence and we have relied upon a jurisdictional scan and consensus from those involved with the homeless community and those experiencing homelessness themselves. The jurisdictional scan was done through focus groups set up with 7 different agencies in Vancouver, Seattle, Edmonton, Calgary, Toronto, Ottawa, and Montreal. The focus groups were conducted with frontline providers, people of lived experience, shelter workers, and operational leads at isolation facilities. Transcripts were taken from these interviews and thematic analysis was done to determine common elements and themes by two independent reviewers.

The following recommendations are intended for health care and service providers, including public health, acute care institutions, addictions and mental health services, housing agencies and shelters, provincial and regional policymakers including municipalities and finally, community groups and business improvement associations.

A. The immediate response to COVID-19 in the homeless environment

Recommendation 1.1: Implement an effective regional COVID-19 response for people experiencing homelessness that is centrally coordinated, meaningfully resourced, locally delivered, adaptive, data informed, and integrated among the diverse partners.

Preparation is key to prevent the spread of COVID-19.

It is essential that an effective coordinating group that recognizes the diverse health and social services active within the homeless sector be engaged to work with other regional initiatives underway yet at the same time ensure that there is a smooth integrated and effective response to pandemic planning, communication, and monitoring of progress. Clarity of roles and responsibilities of the housing/shelter sector, public health, acute care, social agencies, and the various levels of government within a broader hub-and-spoke organizational model is required. Equally, the voices of people who are homeless must shape a response to the crisis.

The central coordinating group can consist of key influential decision-makers and resource mobilizers such as local social services and shelter providers, frontline health care providers, outreach services, municipal representation, ministerial representation, and health authorities. It may include policy makers, funders, and operational experts but should include those experiencing homelessness.

This central group should be charged with planning and coordinating culturally appropriate services to include:

- communicating with and educating all partners, staff, and clients;
- advocating for and monitoring the availability of the appropriate PPE for care providers, staff, and clients and training in their use;
- the proper implementation and monitoring of shelter IPAC;

- appropriate physical distancing strategies including reducing overcrowding and cohorting (as described below and in Appendix 1);
- reducing the flow of clients in and out of shelters, screening for staff and client symptoms;
- facilitating client and staff testing and contact tracing;
- maintaining a confidential client registry to coordinate and support care;
- managing services for encampments;
- the rapid implementation of isolation centres and additional housing support.

Each partner knows their community well and has their own role to play in keeping their staff and clients safe. Settings where health care providers have been embedded within shelters and are trusted partners are well positioned to educate staff and clients as well as coordinate health services and care.

The central coordinating group should also work directly with those broader sectors around it responsible for a regional COVID-19 response, such as hospitals, municipalities, regional public health, the paramedics, and police. It is necessary to collect and report reliable data relevant to the status of COVD-19 within the shelter setting to facilitate a flexible and timely response. The homeless sector directly affects and is impacted by other sectors around it.

Recommendation 1.2: Support service providers and shelter staff to ensure that they and the clients they serve are safe, informed and included.

It is important to recognize the importance of staffing within the shelter environment at the time of COVID-19. Not only must they be protected with the appropriate PPE and be well informed, but staff may also represent a vector for bringing COVID-19 into the shelter. There may be staffing shortages as individuals may potentially become ill themselves or be required to provide essential care to their family. Staff may work in multiple homeless settings or possibly in other settings such as the long-term care sector, which would put themselves and others at increased risk. The staff of shelters are essential first-line responders. Their well-being must be central in our response.

Shelters have a special role to play in implementing appropriate IPAC interventions; however, they cannot do this without the support of all partners including their clients. Staff should have secure supplies of PPE, consistent with their exposure, as well as masks for clients. Shelters must maintain rigorous cleaning procedures and have ready opportunity for hand hygiene. In addition, clients should be discouraged from moving between multiple shelters. Shelter clients should be screened at entry for symptoms suggestive of COVID-19. Clients should be cohorted so that they move in a smaller group and have meals in a staggered fashion to avoid long lines where physical distancing is impossible. Each shelter should assign an individual as their IPAC lead. See Appendix 1 for suggested best practices.

Recommendation 1.3: Engage shelters and housing partners in strategies to reduce overcrowding through temporary housing and appropriately redistribute services and service delivery models to areas of increased need.

Overcrowding represents a major risk for the uncontrolled spread of COVID-19. Immediate efforts should be taken to reduce overcrowding within a shelter or encampment. Shelters should relocate many of their clients into less crowded settings such as vacant community centres or hotels where physical distancing, masking, and hygiene are more readily available. This can be achieved by working with the housing sector and municipality. Rapid triage techniques can be applied to support clients moving to appropriate temporary housing or supportive housing settings. Where possible,

non-congregate living spaces are encouraged to maintain physical distancing. Congregate living spaces may be advantageous to individuals who are triggered by isolation and may feel institutionalized.

Encampments: Many people experiencing homelessness have chosen to move out of congested shelters at the time of COVID-19 to form loose encampments. These encampments lack services, make testing challenging, and often do not allow for physical distancing. As the weather turns colder, it has been suggested that these homeless be forced to return to a shelter environment; however, that would only worsen concerns of overcrowding. Alternate strategies are needed that permit individuals to receive services and stay in a safer setting yet not worsening shelter overcrowding.

Should encamped clients refuse shelter and housing, alternative supports for these individuals should be considered including day warming centres, screening, and social supports.

There are many services that can be delayed or delivered in a different way during the pandemic. At the same time, there are services that need to be augmented and that can be delivered in no other way other than face-to-face contact. There is a difficult balance that arises between providing safe but also essential services. For example, safe consumption and treatment services need to reduce spots to incorporate physical distancing; yet, at the same time, there is an increased need for this service as individuals are more likely to use substances alone in the context of an increasingly toxic drug supply (canada.ca/en/health-canada/services/substance-use/supervised-consumption-sites/apply/how-to-apply.html). Harm reduction services (sterile substance supplies and paraphernalia including needles, syringes, filters) and programs such as oral and IV opioid agonist therapy or safer supply programs should be enhanced to address the exceptionally high number of overdose deaths.

Immunization strategies need to be enhanced as seasonal infectious diseases such as influenza may obscure COVID-19 symptoms. Mass immunization programming of all homeless clients should be conducted to administer the annual influenza vaccine. Other vaccines such as pneumococcal vaccine, hepatitis A, and meningococcal vaccine should be administered when appropriate.

Culturally appropriate and trauma-informed mental and physical health services should also be augmented (not discontinued); however, this is challenging to provide remotely and electronically. As mentioned, finding that balance between effective service delivery models and staff protection is difficult but essential.

Recommendation 1.4: Develop and put in place an evidence-informed Outbreak Prevention and Mitigation Plan for all facilities/providers supporting the homeless.

When vulnerable individuals congregate in crowded facilities such as homeless shelters it is inevitable that there will be outbreaks. Public Health must provide clarity regarding definitions and approaches to outbreak management. All partners must be included in this discussion to ensure that there is a coordinated response that protects the health of the clients and staff yet minimizes the impact to the facility. Clarity of roles and responses will be required and communication to all is essential. This will also include a focus on specific IPAC strategies that can be implemented to minimize the chances of transitioning from a suspect outbreak to documented on site transmission. See Appendix 1 for specific suggested best practices.

Recommendation 1.5: Create Isolation Sites for those homeless who cannot safely self-isolate while awaiting test results and for those who test positive for COVID-19.

An essential principle in managing COVID-19 is the ability to test and then self-isolate when exposed or if symptomatic. For individuals living in shelters or encampments self-isolation is frequently not

possible and as such, isolation centres must be developed to support isolation while awaiting test results or if positive. These isolation centres must provide comprehensive services for mental health, substance use (including harm reduction strategies), and primary care.

Where possible, additional services to support effective transition from isolation to supportive housing, attachment to primary care, and other services should be provided.

Examination of isolation models and key characteristics: results of the jurisdictional scan

Alberta Health Services conducted a jurisdictional scan as described above to determine key learnings from agencies across North America who were providing isolation services for those experiencing homelessness. A summary of the results follows.

- The overarching goal of isolation facilities was to create an atmosphere of comfort akin to a home, with the eventual goal of transitioning clients to permanent housing where possible. The facilities should be made as comfortable and dignified as possible. Providing a sense of safety and security, especially for women or individuals who suffered intimate partner violence. Isolation facilities can resemble institutions, and efforts must be made to ensure the facilities are trauma and culturally informed. In keeping with reducing the sense of institutionalization, stress was placed on limiting security and police presence onsite, but rather supporting clients with the utilization of peers and trauma informed staff familiar to clients who are able to redirect clients appropriately.

- Ensuring the isolation facility was close to client shelters and encampments helped reduced anxiety in clients when being transported to the isolation facility. Other key aspects to support clients included specialized and secure spaces for client belongings including onsite storage for bikes, shopping carts, and other personal items.

- A large proportion of those experiencing homelessness are of Indigenous backgrounds. Specialized cultural supports for Indigenous clients was highlighted by the majority of the facilities including methods to connect Indigenous clients to Elders, specialized food requests, as well as specialized ceremonies such as smudging.

- Both congregate and private room isolation facilities were used in different jurisdictions, with pros and cons noted in each model. Congregate models provided a reduced sense of social isolation, but also increased the transmission risk of COVID-19 for clients with pending COVID-19 results. Single room accommodation allowed for privacy and steps towards independent living, but also increased the risk of isolation, and increased the risk for substance overdose as clients were alone.

- Funding models varied with many jurisdictions using cooperative funding from public and private streams.

- Strategies to improve client retention rates for the duration of isolation included the utilization of peer-support workers who could relate to client on a personal level. Additionally, support tailored towards the specific needs of individual clients was crucial to improving client experiences and managing the patients, such as dietary requirements and entertainment. Importantly, access to substances including on-site provision of tobacco, cannabis, and alcohol was identified as a key mechanism to support client isolation. A prominent reason for clients leaving isolation was identified as the need for access to cigarettes, cannabis, alcohol, and other substances. Co-location of on-site programs for supporting mental health and substance use was deemed essential for retention and safety such as harm reduction resources including IV or oral opioid replacement programs and overdose prevention.

See Appendix 1 for suggested best practices.

Recommendation 1.6: Establish and implement screening, testing and case and contact management strategies that are evidence informed, flexible and applied consistently.

To contain the spread of COVID-19 there must be aggressive screening and then appropriate testing with tracing strategies. There are inherent challenges that must be overcome for testing and tracing in the homeless environment that include: trust, the mobility of clients, confidentiality, and assessing symptoms in the presence of severe mental health and substance use. All partners including the shelters, health services providers, and Public Health must be engaged in developing effective and acceptable testing strategies. It is important to include staff in the testing strategy as evidence suggests that they are also at risk of getting and transferring the virus.

In addition to PCR testing the Rapid COVID-19 Antigen test is an evolving strategy that could be employed in shelters and community-based agencies. The tests can be conducted fairly quickly and the test demonstrates high specificity, helping to identify COVID-19 positive clients. If a client has a negative test, however, secondary swabbing and evaluation must be conducted to determine if the test is a true negative. Currently, the real-world application of rapid antigen testing in this setting is being evaluated and further research on this strategy is required to demonstrate its true utility.

See Appendix 1 for suggested best practices.

Recommendation 1.7: Establish culturally sensitive and trauma informed approaches to care, service delivery, and support that apply to the wide diversity of individuals who reside within the homeless community.

The homeless community is diverse, and a strategy may be effective in a unique setting but unsuccessful in others due to differences in sex/gender, culture/ethnicity, age, or location. It is essential that these communities are engaged in a COVID-19 response plan and participate in responses that are appropriate to them, their circumstances, and perspectives.

Special populations

Indigenous health

Indigenous individuals, families, and communities experience a higher rate of respiratory diseases such as asthma. These individuals may be more likely to experience increased severity of symptoms of COVID-19.

Isolation practices should be done in consultation with Indigenous leaders to ensure alignment with Indigenous practices that acknowledge contemporary colonial perspectives, intergenerational trauma, healing-centered engagement, including access to supports such as Elders, traditional healing practices and culturally appropriate food and activities.

Youth and adolescent health

Young adults and youth have increased risks of experiencing homelessness especially as they transition from receiving support from parents, guardians, and the government. Major supports for youth such as school services and other student peers and their families may no longer be available. Additional risks of homelessness arise in those who are relying on student housing with postsecondary residence closures and reduced ability to couch surf due to physical distancing requirements.

Youth often do not identify themselves as having categorically similar levels of homelessness as older chronically homeless clients, and as such prefer to have separate and specialized supports.

Where possible, tailored supports for youth outside of standard isolation supports should be catered towards their needs, with preferable isolation occurring with other similar aged individuals.

Women and gender minorities

Women and gender minorities including transgender and non-binary individuals are particularly vulnerable. Sensitivities regarding safety when mixing genders in similar spaces may arise due to many gender minorities having faced physical and sexual violence as well as stigma and discrimination. Care must be taken when mixing genders within similar spaces for the purpose of isolation to ensure security. This could include provision of gender-specific isolation spaces, private rooms, and washrooms. Providing gender-minority clients choice in their isolation type (congregate vs. private space and gender mixing vs gender-specific spacing), is key in ensuring adequate support for these clients.

Elderly populations as well as individuals with special needs

Elderly populations are at high risk of poor COVID-19 outcomes. In addition, they are the fastest growing demographic in populations facing homelessness. Priority for isolation and support should be provided to this population. Where possible, rooms equipped to support clients with their activities of daily living should be provided for elderly clients as well as other clients with mobility concerns and other special needs such as cognitive decline and dementia. Wheelchair access, walker provision, and other mobility aids should be organized for clients.

Families

Families experiencing homelessness or who are housing insecure requiring isolation should be provided with private accommodation with their own private kitchen and washroom space where possible. This can come in the form of private suites or motel rooms. Families should be isolated together as opposed to separately, with the exception of domestic violence concerns and partner violence.

Rural populations

Rural homelessness, as well as homelessness outside of major jurisdictions within satellite communities, can pose unique challenges for isolation during COVID-19. Where possible, provisions for isolation should be provided to this population in their own community with local supports. If this is not possible, pre-arranged access to the nearest isolation facility including transportation to this facility should be organized.

Racialized, ethnic, and refugee populations

Racialized, ethnic, and religious minorities as well as refugee populations should be provided culturally sensitive care including access to specialized diets, interpretation services where possible, and culturally adapted programming. Understanding of cultural and religious norms used to inform client shelter planning is essential including provision, where possible, of prayer space and access to religious supports and for providers, access to medical–religious ethical advice where needed.

Recommendation 1.8: Develop and implement, as a priority, a coherent and practical immunization strategy for the homeless community.

As COVID-19 vaccines become available in Canada, there must be an immunization strategy that recognizes the vulnerability of those who experience homelessness and the importance of those who provide them services. In addition to the clinical resources required, this strategy must take into consideration the complexity of this environment in terms of the location and the mobility of clients,

their trust, willingness and ability to consent, the need to track and confirm a second dose and finally, a confidential data base supporting this effort.

Staff involved in service provision must also be prioritized and encouraged to become immunized.

This program would normally fall under the organizational responsibility of Public Health but will require engagement from those experiencing homelessness, service providers, and support services in the development and implementation of this immunization strategy.

People experiencing homelessness have been historically under immunized and face elevated rates of vaccine-preventable disease. Outbreaks of vaccine-preventable diseases such as Hepatitis A, influenza, and meningococcal disease occur frequently. Without a focussed and dedicated strategy for COVID-19 immunization among people experiencing homelessness, COVID-19 outbreaks in shelters will persist long after the national crisis lifts, and long after the curve in our general population is flat. Without dedicated immunization strategies for shelters, COVID-19 outbreaks in these settings could be a fixture of homelessness for decades to come.

B) Decreasing the prevalence of homelessness as a strategy to reduce the harms related to COVID-19

Recommendation 2.1: Recognize that homelessness is an independent risk factor contributing to the vulnerability of this community to COVID-19.

Short-term or immediate responses as above must be accompanied by longer-term strategies targeted toward decreasing the prevalence of homelessness to effectively avert the harms from COVID-19 or other pandemics of the future.

In our comprehensive review of interventions to prevent illnesses contracted through casual contact in homeless populations, we found no studies addressing the direct effect of housing as an effective means of preventing illness. Systematic reviews of housing interventions, similarly found no such studies (Bassuk et al. 2014; Ly and Latimer 2015; Beaudoin 2016; Guhne et al. 2017; Munthe-Kaas et al. 2018; Aubry et al. 2020). There is, however, significant indirect evidence that housing can prevent such outbreaks.

Communicable diseases transmitted through casual contact are more prevalent among those who are homeless (Badiaga et al. 2008; Fazel et al. 2014). This includes tuberculosis, influenza, invasive group A streptococcus, invasive pneumococcal disease, and methicillin-resistant Staphylococcus aureus (Plevneshi et al. 2009; Beijer et al. 2012; Ottomeyer et al. 2016; Leibler et al. 2017; Teatero et al. 2018; Miyawaki et al. 2020). Tuberculosis prevalence ranges from 34 to 452 times that in the general population (Beijer et al. 2012). Influenza hospitalizations during the H1N1 pandemic were 30 times higher among those who were homeless (Miyawaki et al. 2020). The risk of transmission during invasive group A streptococcus (iGAS) outbreaks was found to be higher among those homeless (Plevneshi et al. 2009; Teatero et al. 2018) while colonization appears to be no different (Bargh et al. 2007).

The higher prevalence of all diseases among those who are homeless, may suggest that individual level factors are drivers of high communicable disease prevalence (Hwang 2001; Fazel et al. 2014). However, authors in the reviewed studies all cited higher risk of transmission in congregate settings as the most likely explanation (Plevneshi et al. 2009; Beijer et al. 2012; Ottomeyer et al. 2016; Leibler et al. 2017; Teatero et al. 2018; Miyawaki et al. 2020). This has been further confirmed through serotype and genomic analyses in tuberculosis, iGAS, and influenza (Nardell et al. 1986; MacFadden et al. 2018; Teatero et al. 2018; Lemay et al. 2019).

Congregate settings are also disproportionately affected by COVID-19 (Leclerc et al. 2020). COVID-19 cases in the first wave of the Toronto pandemic were 64- and 19-fold higher among long-term care facility (LTCF) and homeless shelter residents, respectively (Wang et al. 2020). The authors cite increased transmission risks within these congregate settings as the principal factor (Wang et al. 2020).

Transmission vulnerability in congregate settings can be divided into two categories: (*i*) physical distancing design barriers (e.g., shared quarters) and (*ii*) under-resourcing of infection prevention and control (Lee et al. 2020; Tsai and Wilson 2020; Wang et al. 2020). Homeless shelters lack medical providers, infection control staff, and LTCF infection control standards. Early identification of respiratory symptoms of illness are less likely, while gaps in infection control are more likely (Levin-Rector et al. 2015; Tsai and Wilson 2020). Such deficiencies have been found to lead to LTCF outbreaks in general and COVID-19 in particular (Lee et al. 2020). This is despite a regulatory environment, accreditation, specialized staffing, and much higher degrees of infection control resourcing (Estabrooks et al. 2020; Lee et al. 2020; Wang et al. 2020). There may be a threshold beyond which further investment in infection control and health care resourcing within homeless shelters, as suggested earlier in this report, may exceed the costs of simply housing individuals who are homeless. Some analyses suggest that such costs have already been exceeded (Gaetz 2013).

Recommendation 2.2: Recognize that initiatives that prevent homelessness are a priority as a component of effective outbreak prevention.

Strategies to reduce the prevalence of homelessness can be broken down into interventions related to preventing individuals who are housed from becoming homeless and to housing those who are homeless.

Ending homelessness includes primary, secondary, and tertiary strategies. Housing individuals who are experiencing homelessness is discussed in the next section (Gaetz et al. 2016).

Primary prevention strategies mitigate structural factors that increase the likelihood of homelessness such as: inadequate income, lack of affordable housing, poverty, untreated mental illness and substance use, as well as economic paradigms and assumptions and policies that drive these factors (Shapcott 2006; Gaetz et al. 2016). Secondary prevention strategies assist those in imminent risk of homelessness or shorten time an individual is homeless through enhanced, coordinated services (Gaetz et al. 2016). Healthy public and social policy can ameliorate these factors through cross sectoral changes at local, municipal, provincial, and federal levels rather than implementing a single community-wide tertiary program (Lalonde 1974; Shapcott 2006; Gaetz et al. 2016; Hancock 2017). As with health care, upstream approaches are critical in minimizing the cost and need for an otherwise ever growing tertiary approach (Shapcott 2006; Adamo et al. 2016; Swanson and Sagaii 2017; Tedesco 2019).

While critical, these upstream interventions are not the direct focus of this report.

Recommendation 2.3: Adopt and implement at all levels of government, a comprehensive and realistic National Housing Strategy to effectively end homelessness.

Housing as a means of reducing the harms of COVID-19 and future respiratory pandemics among those who are homeless can be evaluated by reviewing its costs and benefits. Potential benefits include improvements in health, decreases in societal costs and communicable respiratory illness among those who are homeless, indirect societal benefits, as well as the averted costs from inaction. Costs include the costs of implementing housing programs and plans.

Housing interventions that have been studied

High-quality studies and systematic reviews increasingly show benefit from housing those who are homeless (Bassuk et al. 2014; Ly and Latimer 2015; Beaudoin 2016; Guhne et al. 2017; Munthe-Kaas et al. 2018; Aubry et al. 2020). The latest, a review by Aubry et al. (2020), identified 41 publications examining 15 studies including 8 randomized control trials. All evaluated Housing First, an approach aimed at immediately housing and providing supports for individuals, and then compared them to existing treatment. Each evaluated unique combinations of housing and supports (Aubry et al. 2020). Housing provision included interventions such as rent supplements (Hurlburt et al. 1996; Martinez and Burt 2006; Hwang et al. 2011; Aubry et al. 2016; Cherner et al. 2017; Gubits et al. 2018), housing owned by agencies and governments (Lipton et al. 1988; Tsemberis et al. 2004; Rich and Clark 2005; Stefancic and Tsemberis 2007; Hwang et al. 2011; Gubits et al. 2018), approaches to congregation: singles units (McHugo et al. 2004; Rich and Clark 2005) or family style communal homes with private bedrooms (Goldfinger et al. 1999; McHugo et al. 2004), and lastly the distribution of units scattered across the city (Hurlburt et al. 1996; Stefancic and Tsemberis 2007; Cherner et al. 2017) or multi-unit sites including entire buildings or floors of buildings (Sadowski et al. 2009; Hwang et al. 2011).

Types of support included:

- Assertive Community Treatment (ACT) or Intensive Case Management (ICM), teams featuring less than 20 individuals per case manager, nursing, a physician, and a dedicated psychiatrist (Hurlburt et al. 1996; Tsemberis et al. 2004; Siegel et al. 2006; Young et al. 2009; Aubry et al. 2016).
- Multidimensional non-ACT/ICM support including recreational programs, work programs, case management, and priority linkage to psychiatric services (McHugo et al. 2004; Stefancic and Tsemberis 2007; Sadowski et al. 2009).
- Substance use treatment including harm-reduction programs requiring multidimensional residential treatment (Young et al. 2009) and opioid agonist treatment (Cherner et al. 2017).

The health and psychosocial impacts of housing interventions

The experience of homelessness has multifaceted impacts on health that compromise physical and mental well-being by increasing risk of disease transmission, disability, and all-cause mortality (Hwang 2000; Beijer et al. 2012; Lewer et al. 2019). Stressors that can exacerbate health status include physical and psychosocial hazards from unstable accommodations, exposure to substance misuse, stigma, and social isolation (Hodgetts et al. 2007; Meanwell 2012; Fitzpatrick et al. 2013; Fazel et al. 2014; Bramley and Fitzpatrick 2018).

Housing First uses an evidence-based approach to address homelessness by increasing housing stability through the provision of supportive permanent housing. Two-year findings of the At Home/Chez Soi randomized controlled trial reported that 71% of participants with serious mental illness who received Housing First with Assertive Community Treatment were in stable housing at 24 months, compared to 29% among those who received usual care (Aubry et al. 2016). Interventions that combined long-term housing with opportunities to provide care through case management services reported reductions in psychiatric symptoms (McHugo et al. 2004; Young et al. 2009). Housing and case management programs have also shown a reduction in the number of emergency department visits and hospital days (Culhane et al. 2002; Gilmer et al. 2009; Stergiopoulos et al. 2015). The benefits of stable housing have been replicated in numerous studies in the United States and Canada, highlighting the need to consider targeted housing programs as an effective approach to reducing homelessness in Canada and improve the health status of populations

experiencing homelessness (Tsemberis et al. 2003, 2004; Cherner et al. 2017; Stergiopoulos et al. 2019).

Economic impacts of housing interventions

Cost-effectiveness analyses evaluating the economic impacts of housing interventions have reported increased program expenditure costs that outweighed the total cost offset produced by stable housing (Culhane et al. 2002; Gilmer et al. 2009; Gilmer et al. 2010; Mares and Rosenheck 2011; Stergiopoulos et al. 2015; Aubry et al. 2016). Studies have also reported cost offsets from intervention-related savings in medical and social services (Schinka et al. 1998; Larimer et al. 2009; McLaughlin 2011; Srebnik et al. 2013; Hunter et al. 2017; Lenz-Rashid 2017). A review of the literature examining the costs of the Housing First interventions from 2007 to 2015 found permanent supportive housing offers great benefits to populations experiencing homelessness, while also producing significant cost offsets (Ly and Latimer 2015).

Annual costs for Housing First with Assertive Community Treatment are approximately $22 257 Canadian dollars per participant, while the program itself creates a 96% net cost offset from decreases in hospital admissions, emergency shelter visits, and the number of arrests (Aubry et al. 2016). Similarly, the cost of Housing First with intensive case management was a mean of CAN$14 496 per person per year, and a 46% reduction from cost offsets was reported from a range of service use, bringing the net cost to $7868 (Latimer et al. 2019).

The need for national housing programs to end homelessness

As stated following a reduction in financial support for housing programs in the 1980s and 1990s, there were large increases in homelessness across Canada (Shapcott 2006). The Federation of Canadian Municipalities Big City Mayor's Caucus declared homelessness a "national disaster" in 1998 (Graham 2014; Adamo et al. 2016). Housing investment programs made no further reductions in homelessness (Graham 2014). Between 2008 and 2011, major cities including Calgary, Vancouver, Ottawa, and Toronto, adopted 10-year plans modeled after plans by the US National Alliance to End Homelessness (NAEH) to end homelessness (Adamo et al. 2016). In 2012, the Canadian Alliance to End Homelessness (CAEH) was formed, modeled after the NAEH (Gaetz 2012). The CAEH, a coalition of individuals, communities, and agencies, aims to end homelessness by mobilizing governments and communities to develop 10-year plans (Gaetz 2012; Adamo et al. 2016; CAEH 2020). Despite a large number of municipal 10-year plans, homelessness in Canada continued to rise (Gaetz 2013; Adamo et al. 2016). A comprehensive analysis suggested that, although important, such plans have been grossly underfunded, barely offsetting private market rental housing losses. Weak affordability requirements typically make new units largely unaffordable to low income earners (Adamo et al. 2016). Cities also have limited jurisdiction over key drivers of homelessness such as low incomes, declining affordable private market housing stock, migration, and unemployment (Pomeroy 2008; Adamo et al. 2016). For these reasons policy analysts, advocates, and scientists point to the need for a national housing program (Hulchanski 2002; Shapcott 2006; Adamo et al. 2016; Gaetz et al. 2016; Hancock 2017; Tedesco 2019).

The current 2017 National Housing Strategy (NHS) will not end homelessness or meet program goals

In 2017, the Federal Government introduced the NHS, a 10-year plan with a current budget of $55 billion. Of the 1.7 million in core housing need, the plan aims to remove 530 000 families from housing need, reduce the 25 000 Canadians who are chronically homelessness by 50%, modernize 300 000 homes, and build 125 000 new homes (Swanson and Sagaii 2017; Young 2019; Government of Canada 2020). Federal budgets from 2017 onwards have contained a mix of provisions for funding,

grants, and loans focused on housing to meet these goals (Young 2019). The strategy was followed up by the *National Housing Strategy Act* committing the government to national goals and priorities, to a long-term policy vision for housing, to public participation in policy generation and implementation, and to a focus on those in greatest housing need (Branch 2019; Young 2019).

The Act recognizes the right to adequate housing as a fundamental human right. Housing as a human right has long been called for by housing advocates and other levels of government. The Act however does not establish a legally enforceable individual right but rather provides "accountability mechanisms" focused on reporting, oversight, and participation in decision-making. While there may be merit to housing as a right where the right can be claimed collectively, others suggest that housing as a right in which an individual without housing can't claim that right and be housed is not a right (Swanson and Sagaii 2017; Tedesco 2019).

The NHS has been heavily criticized, some going as far as calling it the "National Strategy to Maintain Homelessness" (Pomeroy 2017; Swanson and Sagaii 2017; Young 2019). Most notably it was heavily critiqued by a Parliamentary Budget Officer (PBO) Report in 2019 (Giroux et al. 2019).

The PBO analysis suggests that it is unlikely that there will be any change in the total number of households in core housing need, especially among low-income households at greatest risk of homelessness given weak affordability rules and lower spending on affordable housing than previous years based on real purchasing power. It is also unlikely that there will be any significant reduction in homelessness as the PBO estimates that the NHS amounts to only a 4% increase in total spending on homelessness by the federal government. Municipalities, provinces, and territories contribute much more to funding housing interventions, at an average of $12.90 per federal dollar (Giroux et al. 2019).

In contrast, the 2020 $1 billion Rapid Housing Initiative is adequately targeted in several ways. It is targeted to those in severe housing need, that is provide affordable housing (30% or less of household income going to shelter costs) to those paying 50% or more of their pretax income on shelter or are homeless or at risk of becoming homeless (Canada Mortgage and Housing Corporation 2020). At 3000 new homes, it is however a very small fraction of what is needed nationally. For example, in Toronto alone there were 91 994 individuals on waiting lists for social housing in 2016, 27 805 Torontonians requiring rents to be less than $750/month to be affordable, are paying more than 50% of income toward rent (Canadian Centre for Economic Analysis and Canadian Urban Institute 2019).

A targeted national 10-year plan to end homelessness

In July 2020, the CAEH released Recovery for All (RFA), a 10-year plan to end homelessness as a response to the COVID-19 pandemic (Pomeroy 2020). The RFA targets the end of acute and chronic homelessness and low income households (Giroux et al. 2019; Pomeroy 2020). This is in contrast to the NHS, which targets mostly middle-income Canadians, has a stated goal of reducing chronic homelessness by only 50%, and which a PBO analysis suggests may have little impact on homelessness. The CAEH 10-year plan has a total budget of $55 billion of new money in addition to the $11.2 billion in new money of the NHS. It proposes to produce 300 000 new permanently affordable and supportive housing units (in contrast to the 20-year requirement in the NHS), including 50 000 units targeted to those chronically homeless and a homeless housing benefit rental supplement for 55 000. The plan performs a detailed analysis of the inflows and outflows of individuals in acute, chronic, and at risk of homelessness to stop the inflow and rapidly increase the outflow (Pomeroy 2020). Supports for housing would be provided by the provinces with the significant moneys saved from averted homelessness. The RFA would create about 500 000 jobs, about 150 000 each year

(Srebnik et al. 2013). There would be significant reduced pressures through savings based on At Home/Chez Soi data, where 46% of housing and support costs were offset by savings including from shelter and health care costs (Latimer et al. 2019).

To help inform a societal willingness to pay for such a housing program, we compare it to estimates of the direct and indirect cost of homelessness federally, provincially, and municipally each year. Direct costs are difficult to establish as there are many paying jurisdictions and levels of government and the amount they pay is not centrally tracked (Segel-Brown 2020). Using the PBO figure of $12.9 being spent for every federal dollar ($139 million) this adds up to $1.93 billion in direct spending per year (Employment and Social Development Canada 2018; Giroux et al. 2019). Indirect and direct costs collectively have been estimated to be $7 billion annually (Gaetz 2013). The RFA lies somewhere between these estimates. Our experience with the COVID-19 pandemic adds more to both the direct and indirect costs when we consider the costs of temporary hotels, PPE provision to shelter staff and residents, and the health care costs of individuals who are homeless hospitalized for COVID-19. Federally, the RFA is a relatively small amount. It amounts to $139 per Canadian annually which compares favourably at 2% of the $7068 per capita spent annually on health care in 2019 (CIHI 2020). We applaud the federal government for recognizing housing as a fundamental human right. The RFA or a similarly funded and structured program would be an opportunity for Canadian society to make good on that right in real terms. Based on our analysis of the available evidence, such a program would be the most effective and cost-effective approach to mitigating and preventing the impact of COVID-19 on those who are experiencing homelessness.

Recommendation 2.4: Plan for and implement a reconfigured shelter system that supports a Housing First approach with rapid triage to subsidized housing or stabilization of mental health and addictions followed by transfer to a supportive housing environment.

If Canada does make significant progress towards ending homelessness, it will be essential to reconsider our existing shelter structures. With an adequate national housing program there may only be a need for short periods of emergency shelter support for individuals who acutely fall into homelessness if they lose housing or have significant health issues that prevent stable housing. Many shelter-based organizations are currently offering life skills programming to support individuals to regain housing. There is also a need to provide effective shelter-based medical stabilization as a prelude to ongoing supportive housing. This need is sometimes being met by larger shelter–health care partnerships.

Ideally such stabilization and rehabilitation would occur in low-threshold residential health care facilities. These facilities could emulate the type of programming currently being provided in some shelter settings with strong health care partnerships. There will always be a need for crisis intervention and a flexible and responsive emergency supportive housing model that has a strong focus on stabilization and the early management of addictions and mental and physical illness. In this setting, shelters and their partners would have a dual housing and rapid triage function in the context of an acute but very short-term health care mission.

In summary, there is convincing evidence to support a Housing First strategy as the leading approach for preventing harms from COVID-19 and future pandemics among those who are homeless from a health and economic perspective.

Homelessness is a complex social challenge that crosses many sectors. Immediate solutions not only involve housing and improved access to effective health care, but it is also essential to address the many factors that may lead to a life of homelessness such as poverty, intergenerational trauma, social inequity, and early childhood development. There have been calls and commitments to end

homelessness, but these plans have failed as they are short lived without the necessary scope, structure, and accountability. Interventions must be intersectoral, adequately resourced, evidence informed, accountable, and supported by all three levels of government. The federal government should take the lead in a National Strategy to End Homelessness that extends beyond housing. COVID-19 and its impact on this vulnerable community makes this a priority for decision makers.

C) Improving the evidence base for informed decision-making

Recommendation 3.1: Implement a comprehensive research strategy with targeted funding from Canada's research councils focussing on interventions aimed at reducing the vulnerability of those experiencing homelessness.

Research in the setting of homelessness is challenging. Client mobility, lack of trust, free and informed consent to participate in research, as well as follow up are all significant logistic and ethical barriers. When these factors are combined with the lack of funding and the challenges of multicentre interventions it has led to a lack of clear evidence supporting many interventions that could allow for better evidence-informed policy decisions. Nevertheless, there is a growing homelessness research community that must be engaged to find answers to some of these more difficult policy questions.

Multicentre, participatory, and community-based research must be a priority for academic centres and funding organizations to give direction to decisions that will reduce the vulnerability of those experiencing homelessness in the short and long term.

Summary

Vulnerability is not unique to the homeless community. It arises in part from the characteristics of the individuals involved who may suffer from illness or other social or economic factors such as, poverty, isolation, or lack of education or employment.

However, this vulnerability is also compounded by external or organizational factors, such as, a lack of support and resources or inappropriate governance or institutional responses. Meaningful change requires intersectoral collaboration, resources, and committed governance and policy directions. In the absence of this, these communities will have an intrinsic vulnerability to any crisis whether that be another pandemic or an economic or environmental tragedy of the future.

During this pandemic, we have witnessed dramatic changes in temporary housing and the creation of isolation centres, all within days. Change can take place quickly and effectively if there is alignment in governance, resources, and motivation. Sustained change will require an ongoing commitment to reduce the vulnerability of this and the many other communities throughout Canada that deserve our support.

Those most vulnerable must be engaged in a joint consensus to ensure that the impact of this pandemic or any other crisis of the future is not born uniquely on the backs of those least capable to shoulder the load.

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Author contributions

SB, AMO, TR, AR, TS, JT, and AW conceived and designed the study. SB, EB, NE, SMG, JP, TR, TS, JT, and AZ performed the experiments/collected the data. SB, MEG, AMO, TS, and JT analyzed and interpreted the data. SB, AB, AB, EB, NE, DF, SMG, MEG, AMO, JP, TR, AR, CS, TS, JT, AW, and AZ contributed resources. SB, AB, AB, DF, MEG, AMO, TR, AR, CS, TS, JT, and AW drafted or revised the manuscript.

Competing interests

The authors have declared that no competing interests exist.

Data availability statement

All relevant data are within the paper.

References

Adamo A, Klodawsky F, Aubry T, and Hwang S. October 2016. Ending homelessness in Canada: a study of 10-year plans in 4 Canadian cities.

Aubry T, Goering P, Veldhuizen S, Adair CE, Bourque J, Distasio J, et al. 2016. A multiple-city RCT of housing first with assertive community treatment for homeless Canadians with serious mental illness. Psychiatric Services, 67(3): 275–281. PMID: 26620289 DOI: 10.1176/appi.ps.201400587

Aubry T, Bloch G, Brcic V, Saad A, Magwood O, Abdalla T, et al. 2020. Effectiveness of permanent supportive housing and income assistance interventions for homeless individuals in high-income countries: a systematic review. Lancet Public Health, 5(6): e342–e360. PMID: 32504587 DOI: 10.1016/S2468-2667(20)30055-4

Badiaga S, Raoult D, and Brouqui P. 2008. Preventing and controlling emerging and reemerging transmissible diseases in the homeless. Emerging Infectious Diseases, 14(9): 1353–1359. PMID: 18760000 DOI: 10.3201/eid1409.080204

Bargh GJ, Hoch JS, Hwang SW, Speechley M, Willey BM, and McGeer A. 2007. Group A streptococcal carriage among residents of an urban homeless shelter. Canadian Journal of Infectious Diseases and Medical Microbiology, 18(5): 316–317. PMID: 18923730 DOI: 10.1155/2007/629312

Bassuk EL, DeCandia CJ, Tsertsvadze A, and Richard MK. 2014. The effectiveness of housing interventions and housing and service interventions on ending family homelessness: a systematic review. American Journal of Orthopsychiatry, 84(5): 457–474. DOI: 10.1037/ort0000020

Beaudoin I. 2016. Efficacité de l'approche « logement d'abord » : une revue systématique. Drogues, santé et société, 14(2): 43–69. DOI: 10.7202/1037732ar

Beijer U, Wolf A, and Fazel S. 2012. Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: a systematic review and meta-analysis. Lancet Infectious Diseases, 12(11): 859–870. PMID: 22914343 DOI: 10.1016/S1473-3099(12)70177-9

Bramley G, and Fitzpatrick S. 2018. Homelessness in the UK: who is most at risk? Housing Studies, 33(1): 96–116. DOI: 10.1080/02673037.2017.1344957

Branch LS. 9 July 2019. National Housing Strategy Act. S.C. 2019, c. 29, s. 313 [online]: Available from laws-lois.justice.gc.ca/eng/acts/N-11.2/FullText.html.

CAEH. 2020. CAEH—our partners. CAEH [online]: Available from caeh.ca/our-partners/.

Canada Mortgage and Housing Corporation. 2020. Rapid housing initiative [online]: Available from cmhc-schl.gc.ca/en/nhs/rapid-housing-initiative.

Canadian Centre for Economic Analysis and Canadian Urban Institute. January 2019. Toronto housing market analysis: from insight to action. 57 p. [online]: Available from toronto.ca/legdocs/mmis/2019/ph/bgrd/backgroundfile-124480.pdf.

Cherner RA, Aubry T, Sylvestre J, Boyd R, and Pettey D. 2017. Housing first for adults with problematic substance use. Journal of Dual Diagnosis, 13(3): 219–229. PMID: 28414579 DOI: 10.1080/15504263.2017.1319586

CIHI. 2020. Health spending [online]: Available from cihi.ca/en/health-spending.

Culhane DP, Metreaux S, and Hadley T. 2002. Supportive housing for homeless people with severe mental illness. LDI Issue Brief, 7(5): 1–4. PMID: 12528737

Employment and Social Development Canada. 2018. Evaluation of the homelessness partnering strategy—Canada.ca [online]: Available from canada.ca/en/employment-social-development/corporate/reports/evaluations/homelessness-partnering-strategy.html.

Estabrooks C, Straus S, Flood C, Keefe J, Armstrong P, Donner G, et al. 2020. Restoring trust: COVID-19 and the future of long-term care. Royal Society of Canada.

Evans L, and Klodawsky F. 2014. Homelessness on the federal agenda: progressive architecture but no solution in sight. *In* Canada in cities: the politics and policy of federal-local governance. *Edited by* KAH Graham and C Andrew. McGill-Queen's University Press, Montreal, Quebec and Kingston, Ontario. pp. 75–101 [online]: Available from academia.edu/10956155/Homelessness_on_the_Federal_Agenda_Progressive_Architecture_but_No_Solution_in_Sight.

Fazel S, Geddes JR, and Kushel M. 2014. The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. The Lancet, 384(9953): 1529–1540. DOI: 10.1016/S0140-6736(14)61132-6

Fitzpatrick S, Bramley G, and Johnsen S. 2013. Pathways into multiple exclusion homelessness in seven UK cities. Urban Studies, 50(1): 148–168. DOI: 10.1177/0042098012452329

Gaetz S. 2012. New Canadian Alliance to End Homelessness will make an impact! Homeless Hub [online]: Available from homelesshub.ca/blog/new-canadian-alliance-end-homelessness-will-make-impact.

Gaetz SA. 2013. The state of homelessness in Canada 2013 [online]: Available from homelesshub.ca/ResourceFiles/SOHC2103.pdf.

Gaetz S, Dej E, Richter T, and , Canadian Observatory on Homelessness Press. 2016. Homelessness Canada in the state of 2016 [online]: Available from deslibris.ca/ID/10065873.

Gilmer TP, Manning WG, and Ettner SL. 2009. A cost analysis of San Diego County's REACH program for homeless persons. Psychiatric Services, 60(4): 445–450. PMID: 19339318 DOI: 10.1176/ps.2009.60.4.445

Gilmer TP, Stefancic A, Ettner SL, Manning WG, and Tsemberis S. 2010. Effect of full-service partnerships on homelessness, use and costs of mental health services, and quality of life among adults with serious mental illness. Archives of General Psychiatry, 67(6): 645–652. PMID: 20530014 DOI: 10.1001/archgenpsychiatry.2010.56

Giroux Y, Mahabir M, Segel-Brown B, Beauchamp N, Scrim J, and Vanherweghem R. June 2019. Federal program spending on housing affordability. Office of the Parliamentary Budget Officer, Ottawa, Ontario.

Goldfinger SM, Schutt RK, Tolomiczenko GS, Seidman L, Penk WE, Turner W, et al. 1999. Housing placement and subsequent days homeless among formerly homeless adults with mental illness. Psychiatric Services, 50(5): 674–679. PMID: 10332905 DOI: 10.1176/ps.50.5.674

Government of Canada. 2020. Canada's first ever National Housing Strategy. A place to call home [online]: Available from placetocallhome.ca.

Gubits D, Shinn M, Wood M, Brown SR, Dastrup SR, and Bell SH. 2018. What interventions work best for families who experience homelessness? Impact estimates from the family options study. Journal of Policy Analysis and Management, 37(4): 835–866. PMID: 30272428 DOI: 10.1002/pam.22071

Guhne U, Stein J, Weinmann S, Becker T, and Riedel-Heller SG. 2017. [Housing interventions in severe mental illness—international evidence from RCTs]. Psychiatrische Praxis, 44(4): 194–205 [in German]. PMID: 28125851 DOI: 10.1055/s-0042-118594

Hancock T. 2017. Beyond health care: the other determinants of health. CMAJ, 189(50): E1571. PMID: 29255107 DOI: 10.1503/cmaj.171419

Hodgetts D, Radley A, Chamberlain K, and Hodgetts A. 2007. Health inequalities and homelessness: considering material, spatial and relational dimensions. Journal of Health Psychology, 12(5): 709–725. PMID: 17855457 DOI: 10.1177/1359105307080593

Hulchanski JD. December 2002. Housing policy for tomorrow's cities. Discussion Paper. 40 p. [online]: Available from urbancentre.utoronto.ca/pdfs/researchassociates/Hulchanski_Housing-Policy-C.pdf.

Hunter SB, Harvey M, Briscombe B, and Cefalu M. 2017. Evaluation of housing for health permanent supportive housing program [online]: Available from rand.org/pubs/research_reports/RR1694.html.

Hurlburt MS, Wood PA, and Hough RL. 1996. Providing independent housing for the homeless mentally ill: a novel approach to evaluating long-term longitudinal housing patterns. Journal of Community Psychology, 24(3): 291–310. DOI: 10.1002/(SICI)1520-6629(199607)24:3<291::AID-JCOP8>3.0.CO;2-#

Hwang SW. 2000. Mortality among men using homeless shelters in Toronto, Ontario. JAMA, 283(16): 2152–2157. PMID: 10791509 DOI: 10.1001/jama.283.16.2152

Hwang SW. 2001. Homelessness and health. CMAJ, 164(2): 229–233. PMID: 11332321

Hwang SW, Gogosis E, Chambers C, Dunn JR, Hoch JS, and Aubry T. 2011. Health status, quality of life, residential stability, substance use, and health care utilization among adults applying to a supportive housing program. Journal of Urban Health, 88(6): 1076–1090. PMID: 21638115 DOI: 10.1007/s11524-011-9592-3

Lalonde M. 1974. A new perspective on the health of Canadians. National Collaborating Centre for Determinants of Health, Ottawa, Ontario [online]: Available from nccdh.ca/resources/entry/new-perspective-on-the-health-of-canadians.

Larimer ME, Malone DK, Garner MD, Atkins DC, Burlingham B, Lonczak HS, et al. 2009. Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. JAMA, 301(13): 1349–1357. PMID: 19336710 DOI: 10.1001/jama.2009.414

Latimer EA, Rabouin D, Cao Z, Ly A, Powell G, Adair CE, et al. 2019. Cost-effectiveness of housing first intervention with intensive case management compared with treatment as usual for homeless adults with mental illness: secondary analysis of a randomized clinical trial. JAMA Network Open, 2(8): e199782. PMID: 31433483 DOI: 10.1001/jamanetworkopen.2019.9782

Leclerc QJ, Fuller NM, Knight LE, Funk S, and Knight GM. 2020. What settings have been linked to SARS-CoV-2 transmission clusters? Wellcome Open Research, 5: 83. PMID: 32656368 DOI: 10.12688/wellcomeopenres.15889.2

Lee MH, Lee GA, Lee SH, and Park Y-H. 2020. A systematic review on the causes of the transmission and control measures of outbreaks in long-term care facilities: back to basics of infection control. PLoS ONE, 15(3): e0229911. PMID: 32155208 DOI: 10.1371/journal.pone.0229911

Leibler JH, León C, Cardoso LJP, Morris JC, Miller NS, Nguyen DD, et al. 2017. Prevalence and risk factors for MRSA nasal colonization among persons experiencing homelessness in Boston, MA. Journal of Medical Microbiology, 66(8): 1183–1188. PMID: 28771129 DOI: 10.1099/jmm.0.000552

Lemay J-A, Ricketson LJ, Zwicker L, and Kellner JD. 2019. Homelessness in adults with invasive pneumococcal disease in Calgary, Canada. Open Forum Infectious Diseases, 6(10): ofz362. PMID: 31419302 DOI: 10.1093/ofid/ofz362

Lenz-Rashid S. 2017. Supportive housing program for homeless families: foster care outcomes and best practices. Children and Youth Services Review, 79: 558–563. DOI: 10.1016/j.childyouth.2017.07.012

Levin-Rector A, Nivin B, Yeung A, Fine AD, and Greene SK. 2015. Building-level analyses to prospectively detect influenza outbreaks in long-term care facilities: New York City, 2013–2014. American Journal of Infection Control, 43(8): 839–843. DOI: 10.1016/j.ajic.2015.03.037

Lewer D, Aldridge RW, Menezes D, Sawyer C, Zaninotto P, Dedicoat M, et al. 2019. Health-related quality of life and prevalence of six chronic diseases in homeless and housed people: a cross-sectional study in London and Birmingham, England. BMJ Open, 9(4): e025192. PMID: 31023754 DOI: 10.1136/bmjopen-2018-025192

Lipton FR, Nutt S, and Sabatini A. 1988. Housing the homeless mentally ill: a longitudinal study of a treatment approach. Psychiatric Services, 39(1): 40–45. DOI: 10.1176/ps.39.1.40

Ly A, and Latimer E. 2015. Housing first impact on costs and associated cost offsets: a review of the literature. The Canadian Journal of Psychiatry, 60(11): 475–487. PMID: 26720505 DOI: 10.1177/070674371506001103

MacFadden DR, McGeer A, Athey T, Perusini S, Olsha R, Li A, et al. 2018. Use of genome sequencing to define institutional influenza outbreaks, Toronto, Ontario, Canada, 2014–15. Emerging Infectious Diseases, 24(3): 492–497. PMID: 29460729 DOI: 10.3201/eid2403.171499

Mares AS, and Rosenheck RA. 2011. A comparison of treatment outcomes among chronically homelessness adults receiving comprehensive housing and health care services versus usual local care. Administration and Policy in Mental Health, 38(6): 459–475. PMID: 21259068 DOI: 10.1007/s10488-011-0333-4

Martinez TE, and Burt MR. 2006. Impact of permanent supportive housing on the use of acute care health services by homeless adults. Psychiatric Services, 57(7): 992–999. PMID: 16816284 DOI: 10.1176/ps.2006.57.7.992

McHugo GJ, Bebout RR, Harris M, Cleghorn S, Herring G, Xie H, et al. 2004. A randomized controlled trial of integrated versus parallel housing services for homeless adults with severe mental illness. Schizophrenia Bulletin, 30(4): 969–982. PMID: 15957201 DOI: 10.1093/oxfordjournals.schbul.a007146

McLaughlin T. 2011. Using common themes: cost-effectiveness of permanent supported housing for people with mental illness. Research on Social Work Practice, 21: 404–411. DOI: 10.1177/1049731510387307

Meanwell E. 2012. Experiencing homelessness: a review of recent literature. Sociology Compass, 6(1): 72–85. DOI: 10.1111/j.1751-9020.2011.00432.x

Miyawaki A, Hasegawa K, and Tsugawa Y. 2020. Lessons from influenza outbreaks for potential impact of COVID-19 outbreak on hospitalizations, ventilator use, and mortality among homeless persons in New York State. Journal of General Internal Medicine, 35(9): 2781–2783. PMID: 32500333 DOI: 10.1007/s11606-020-05876-1

Munthe-Kaas HM, Berg RC, and Blaasvær N. 2018. Effectiveness of interventions to reduce homelessness: a systematic review and meta-analysis. Campbell Systematic Reviews, 14(1): 1–281. DOI: 10.4073/csr.2018.3

Nardell E, McInnis B, Thomas B, and Weidhaas S. 1986. Exogenous reinfection with tuberculosis in a shelter for the homeless. New England Journal of Medicine, 315(25): 1570–1575. PMID: 3097543 DOI: 10.1056/NEJM198612183152502

Ottomeyer M, Graham CD, Legg AD, Cooper ES, Law CD, Molani M, et al. 2016. Prevalence of nasal colonization by methicillin-resistant *Staphylococcus aureus* in persons using a homeless shelter in Kansas City. Frontiers in Public Health, 4: 234. PMID: 27826546 DOI: 10.3389/fpubh.2016.00234

Plevneshi A, Svoboda T, Armstrong I, Tyrrell GJ, Miranda A, Green K, et al. 2009. Population-based surveillance for invasive pneumococcal disease in homeless adults in Toronto. PLoS ONE, 4(9): e7255. PMID: 19787070 DOI: 10.1371/journal.pone.0007255

Pomeroy S. January 2008. Sustaining the momentum: recommendations for a national action plan on housing and homeless. Federation of Canadian Municipalities, Ottawa, Ontario [online]: Available from data.fcm.ca/documents/reports/Sustaining_the_Momentum_Recommendations_for_a_National_Action_Plan_on_Housing_and_Homelessness_EN.pdf.

Pomeroy S. November 2017. Making sense of the funding allocations in the National Housing Strategy. Report No. 3. Centre for Urban Research and Education (CURE), Ottawa, Ontario [online]:

Available from google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjQz-SG867tAhUOGVkFHUqLDEcQFjAAegQIARAC&url=https%3A%2F%2Fir.library.carleton.ca%2Fpub%2F27765%2FCURE-Brief-9-Assessing-the-Funding-in-the-National-Housing-Strategy.pdf&usg=AOvVaw3fjxzb_ICo01VchUHw_6O6.

Pomeroy S. July 2020. Recovery for all: proposals to strengthen the National Housing Strategy and end homelessness. Canadian Alliance to End Homeless, Ottawa, Ontario. 37 p. [online]: Available from caeh.ca/wp-content/uploads/Recovery-for-All-Report-July-16-2020.pdf.

Rich AR, and Clark C. 2005. Gender differences in response to homelessness services. Evaluation and Program Planning, 28(1): 69–81. DOI: 10.1016/j.evalprogplan.2004.05.003

Sadowski LS, Kee RA, VanderWeele TJ, and Buchanan D. 2009. Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: a randomized trial. JAMA, 301(17): 1771–1778. PMID: 19417194 DOI: 10.1001/jama.2009.561

Schinka JA, Francis E, Hughes P, LaLone L, and Flynn C. 1998. Comparative outcomes and costs of inpatient care and supportive housing for substance-dependent veterans. Psychiatric Services, 49(7): 946–950. PMID: 9661231 DOI: 10.1176/ps.49.7.946

Segel-Brown B. 2020. Personal Correspondence: RE: COVID/Homelessness Royal Society of Canada report: help with figures from PBO report Federal Program Spending on Housing Affordability.

Shapcott M. 2006. Framework for the blueprint to end homelessness in Toronto. Wellesley Institute, Toronto, Ontario.

Siegel CE, Samuels J, Tang D-I, Berg I, Jones K, and Hopper K. 2006. Tenant outcomes in supported housing and community residences in New York City. Psychiatric Services, 57(7): 982–991. PMID: 16816283 DOI: 10.1176/ps.2006.57.7.982

Srebnik D, Connor T, and Sylla L. 2013. A pilot study of the impact of housing first-supported housing for intensive users of medical hospitalization and sobering services. American Journal of Public Health, 103(2): 316–321. PMID: 23237150 DOI: 10.2105/AJPH.2012.300867

Stefancic A, and Tsemberis S. 2007. Housing first for long-term shelter dwellers with psychiatric disabilities in a suburban county: a four-year study of housing access and retention. The Journal of Primary Prevention, 28(3): 265–279. DOI: 10.1007/s10935-007-0093-9

Stergiopoulos V, Hwang SW, Gozdzik A, Nisenbaum R, Latimer E, Rabouin D, et al. 2015. Effect of scattered-site housing using rent supplements and intensive case management on housing stability among homeless adults with mental illness: a randomized trial. JAMA, 313(9): 905–915. PMID: 25734732 DOI: 10.1001/jama.2015.1163

Stergiopoulos V, Mejia-Lancheros C, Nisenbaum R, Wang R, Lachaud J, O'Campo P, et al. 2019. Long-term effects of rent supplements and mental health support services on housing and health outcomes of homeless adults with mental illness: extension study of the At Home/Chez Soi randomised controlled trial. Lancet Psychiatry, 6(11): 915–925. PMID: 31601530 DOI: 10.1016/S2215-0366(19)30371-2

Swanson J, and Sagaii S. 30 November 2017. A National Housing Strategy to maintain homelessness for decades to come. The Tyee [online]: Available from thetyee.ca/Opinion/2017/11/30/National-Housing-Strategy-Maintain-Homelessness-Decades-Come/.

Teatero S, McGeer A, Tyrrell GJ, Hoang L, Smadi H, Domingo M-C, et al. 2018. Canada-wide epidemic of *emm74* group A *Streptococcus* invasive disease. Open Forum Infectious Diseases, 5(5): ofy085. PMID: 29780850 DOI: 10.1093/ofid/ofy085

Tedesco G. 2019. Housing rights are human rights: assessing the potential for progressive policy shifts in Canada's housing system through the right to housing and the National Housing Strategy [online]: Available from macsphere.mcmaster.ca/handle/11375/24910.

Tsai J, and Wilson M. 2020. COVID-19: a potential public health problem for homeless populations. Lancet Public Health, 5(4): e186–e187. PMID: 32171054 DOI: 10.1016/S2468-2667(20)30053-0

Tsemberis S, Gulcur L, and Nakae M. 2004. Housing first, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. American Journal of Public Health, 94(4): 651–656. PMID: 15054020 DOI: 10.2105/AJPH.94.4.651

Tsemberis SJ, Moran L, Shinn M, Asmussen SM, and Shern DL. 2003. Consumer preference programs for individuals who are homeless and have psychiatric disabilities: a drop-in center and a supported housing program. American Journal of Community Psychology, 32(3–4): 305–317. PMID: 14703266 DOI: 10.1023/B:AJCP.0000004750.66957.bf

Wang L, Ma H, Yiu KCY, Calzavara A, Landsman D, Luong L, et al. 2020. Heterogeneity in testing, diagnosis and outcome in SARS-CoV-2 infection across outbreak settings in the Greater Toronto Area, Canada: an observational study. CMAJ Open, 8(4): E627–E636. PMID: 33037070 DOI: 10.9778/cmajo.20200213

Young M. September 2019. Policy brief: National Housing Strategy. Broadbent Institute, Ottawa, Ontario [online]: Available from broadbentinstitute.ca/margotyoung/policy_brief_national_housing_strategy.

Young MS, Clark C, Moore K, and Barrett B. 2009. Comparing two service delivery models for homeless individuals with complex behavioral health needs: preliminary data from two SAMHSA treatment for homeless studies. Journal of Dual Diagnosis, 5(3–4): 287–304. DOI: 10.1080/15504260903359015

Appendix 1. Suggested best practices

Recommendation 1.2: Ensure that services providers and shelter staff and the people they serve are safe, informed, and included in systems planning.

Suggested best practices:

Education:

- Provide appropriate information to clients on what COVID-19 is and how it can impact their lives and stay within the shelter.
- Provide education on proper sanitation and prevention strategies regarding COVID-19 empowering clients to protect themselves during the pandemic.
- Support staff through ongoing wellness programs.

Masking:

- Clients should be masked at all times while in shelter with the exception of during meals or sleeping.
- Clients with no access to masks should be provided masks upon entering shelter.
- Within encampments, clients entering communal tent spaces should wear a mask.

Handwashing:

- Handwashing stations should be provided in all shelter spaces as well as encamped spaces.
- Alcohol-based hand sanitation can be used with awareness that clients may consume the alcohol hand sanitation.
- Alcohol-based hand sanitation should be avoided when hands are visibly dirty, when work is being handled, and when clients have gastrointestinal symptoms such as diarrhea and vomiting. Hand washing should be used in this context.
- Handwashing or sanitization should occur after touching communal or highly used surfaces.

Cohorting:

- Preventative cohorting can be an effective strategy to keep support clients in the prevention of spread of COVID-19 but also for contact tracing.
- Cohorting is a process of keeping clients in set groups with limited entry in and out of shelters. Cohorts less than 15 are ideal. Cohorting ensures that if one member becomes positive with COVID-19, the entire cohort can collectively isolate together.
- Cohorting enables easier contact tracing with both clients and staff.
- Consideration of cohorting with cigarette breaks and outside time.
- Consideration of cohorting encampments to limit numbers may also help limit COVID-19 spread.

Inter-facility and intra-facility movement:

Where possible, shelters should discourage movement of clients between shelter sites and within the shelter site. This can be done through several strategies including:

- Implementing policies to encourage or require clients to access an assigned shelter and not others.
- Limiting the number of clients or visitors at drop-ins or other day programs.
- Canceling or postponing group activities if they are not essential.
- Providing incentives to reduce mobility, for example, re-organizing services so that three meals are offered at one facility or floor instead of one meal each at three different agencies.
- Where possible, clients cycling between encampments and shelters should be encouraged to limit moving from site to site and if possible enter a safer environment.

Mealtimes and shared hygiene facilities:

- Stagger mealtimes to reduce crowding and enable physical distancing in shared eating facilities.
- Stagger the schedule for use of common/shared kitchens.

- Provide bagged meals for clients to take away or individual plates of food to clients.
- Stagger meals to specific cohorts/groups and floors.

Bathrooms and bathing:

- Create a staggered bathing schedule to reduce the amount of people using the facilities at the same time.
- Frequent (at least three times a day) cleaning and disinfecting of shared bathroom facilities is recommended.

Physical distancing:

- Clients should be spaced at least 2 meters apart at all times and practice physical distancing.
- Clients should not share bunk spaces.
- All beds should be positioned at least 2 meters apart. The top bunks of bunk beds should not be used.
- Where possible, additional barrier protection in facilities between staff and clients should be provided with improved ventilation and HVAC systems.
- Additional space—such as hotels, unoccupied facilities, and other space—should be repurposed for housing and sheltering to meet these minimum physical distancing parameters. In all cases, reducing the size of congregate settings, enhancing physical distancing, and cohorting will reduce COVID-19 transmission and the magnitude of shelter outbreaks. It is better to have two groups of 30 people in different facilities than one group of 60 people in a single facility.

Shelter space contingency management:

- Extending shelters hours if possible and applicable.
- Identifying shelter mechanisms to continue essential services.
- Preemptively identifying locations where clients can be referred to if the shelter space is full or an outbreak situation occurs in a facility.

Recommendation 1.4: Develop and implement an evidence-informed Outbreak Prevention and Mitigation Plan for all facilities/providers supporting people who are homeless.

Suggested best practices:

- Be clear as to what constitutes an outbreak. Outbreak definitions vary by province and may change based on recommendations from provincial Medical Officers of Health.
- Create clear established roles and responsibilities as well as a central coordination plan to manage an outbreak situation including who performs mass screening, facility cleaning, transportation of clients to isolation facilities, and staff support.
- Engage parties early who may be required in an outbreak situation including the local health authority, shelter staff, food services, police and security services, and auxiliary medical supports.
- Establish clear lines of communication between the various parties involved in outbreak management.
- Educate shelters and staff on what an outbreak means and provide supportive guidance and continued support to clients on how to maintain their health and well-being during the outbreak.

- Consider moving clients where possible who are unexposed and asymptomatic to a less crowded setting during an outbreak situation especially if the facility itself needs to be shut down.
- Identify appropriate alternative shelter sites so that clients who can no longer access one shelter have an alternate site to go.
- Create a systematic approach to contact tracing within shelter facilities as well as encampments.
- Define the duration and resolution of an outbreak as determined by the Public Health authority.
- Return to usual preventive and screening measures once the outbreak is declared over.

Recommendation 1.5: Create Isolation Sites for those individuals who are homeless who cannot safely self-isolate while awaiting test results as well as those who test positive for COVID-19.

Suggested best practices:

Transportation:

- Transportation while maintaining isolation and physical distancing precautions should be established and coordinated with both the receiving isolation facility as well as the referring facility.
- Full PPE must be utilized while transportation is occurring.

Intake:

Standard intake processes should encompass core principles including reducing administrative barriers for clients and operators, improving client flow, and determination of key requirements for clients. Other aspects include:

- Medical evaluations: vitals, COVID-19 symptom review, baseline medical concerns and past medical history, mental health history, cognition assessment if applicable, and current substance use history if applicable.
- Social evaluations: evaluation of housing, clothing, income support, and justice supports. Cultural evaluation of cultural and religious requirements. Behavioral evaluation for clients with complex behavioral concerns.
- A centralized intake process working collaboratively with the referring agency helps provide additional client-specific contexts that can aid with supporting the client while in isolation. Using the medical, social, and behavioral evaluations, the central intake operators will be enabled to appropriately triage clients based on available resources and facilities including both community and acute care resources.
- Discussion on personal directives and palliation should be conducted upon admission to respect patient autonomy with potential end of life care.
- A discussion with clients upon facility arrival regarding services provided on site including food and entertainment as well as medical services, how to access help when needed, and do and don'ts of the facility.

Onsite policies and procedures:

These are aimed at supporting clients during their isolation with tailored approaches to meet client needs and improve isolation compliance. This includes:

- Client-centric services that empower clients to make choices regarding their own health, special needs, and supports.

- Access to wrap around services and connection to social and community supports, including housing assessments, financial supports, personal hygiene, and meeting basic needs like clothing.
- Specialized programing in regards to mental health and addiction supports are required including access to detoxification, psychiatric pharmacotherapy, and psychosocial therapy where appropriate, opioid agonist treatment, anti-craving medication management, and other managed substance supports.
- Other key aspects to retaining clients include behavioral management support, cognitive support, social isolation management, and the mental health strain associated with it, trauma informed approaches. Clients may find isolation spaces institutionalizing and focus on providing a comfortable setting is paramount to successful isolation.
- Client access to power, Wi-Fi, and personal technology products including cellphones and tablets. Client access to laundry and snacks when needed.
- Access to substance use management support and overdose prevention services.
- Access to medications for medical concerns as needed.
- Cultural supports are required where appropriate including access to specialized diets and religious services, as well as access to Elder supports, traditional healing practices.
- Safe and personalized spaces for women and gender minority clients who may feel uncomfortable in congregate spaces with other genders as well as spaces for families and children affected by homelessness.

Discharge planning:

- Discharge planning should begin upon admission to the isolation facility bearing in mind the core principle of providing appropriate transitions in care post-isolation. This includes examination of client needs and requirements in the community including both medical supports such as medication management and ongoing chronic disease management with community agencies, but also social supports with transition planning towards housing, connection with justice and legal supports, and access to income support.
- Where at all possible, ideal discharges should not be back to homelessness but to housing that is based on client needs and requirements.

Additional considerations:

Some key aspects to dealing with social isolation include:

- Hybrid congregate and individual space approach, where clients who prefer to isolate alone can be supported in this option, and those who find it very institutionalized and prefer a cohort arrangement can have this option as well.
- Once to twice daily check-ins on clients by site staff are necessary for symptom assessment for COVID-19 positive as well as meal and snack provision.

Trigger points for scaling up and scaling down:

- Pandemic planning should allow for quick scaling of facility and services as needed if there are increased number of cases.
- Pandemic planning should also allow for specialized supports for subpopulations including families, children, cultural, and gender minorities.

Palliative care:

- Situations may arise where admitted patients may require palliative care services. Access to such services and more advanced respiratory care including oxygen maybe required. Planning for such services would be beneficial for clients.

Ethical and legal perspectives

- Ethical considerations in regards to personal directives, palliation, substance use support, and clients wanting to leave against medical advice may require ethical considerations.
- Legal considerations maybe required for issues such as managed substances and overdose prevention sites amongst other issues and considerations.

Recommendation 1.6: Establish and implement Screening, Testing and Case and Contact Management strategies that are evidence informed, flexible, and applied consistently.

Suggested best practices:

Establish key screening and contact tracing strategies on both an ongoing basis as well as during an outbreak situation for both sheltered and non-sheltered (encamped) populations. Of note, baseline screening can be done by all staff with and without medical training.

Screening clients and staff:

- Preemptive actions for encampments such as encampment census gathering and mapping of encampment locations, can aid in contact tracing should an encampment outbreak occur.
- Opportunities for screening should be done strategically.
- Key places of screening include during entry into shelters, as well as outreach screening in encampments.
- Screening should be conducted for both staff and clients daily.
- Screening should be done daily with clients and forms of identification of successful screening including stamps or wrist bands should be used.
- Screening should include a review of key COVID-19 symptoms in keeping with up to date provincial guidance.
- Screening can consist of a two step process:
    - Primary screening is a quick questionnaire examining key symptoms such as cough, fever, sore throat, shortness of breath, runny nose, or gastrointestinal concerns. Primary screening can be conducted by any staff.
    - Secondary screening is conducted on clients with positive symptoms to the above questionnaire where a health care professional examines the clients further to confirm symptoms, contextualizes symptoms, helps isolate the client and performs a throat swab.
- Sentinel screening in which active testing occurs for asymptomatic clients can be a consideration for regular monitoring of COVID-19 within shelter and encamped populations.
- Swabbing: Where possible, swabs should have a short turn over time of <48 hours. Consideration of rapid testing, where feasible, should be conducted.

Tracking and contact management recommendations:

- Public Health surveillance of clients, staff and visitors: where possible, in cases of potential COVID-19 exposure, a system for registering all clients and visitors entering the facility should be conducted. This includes names and contact information if available.
- Daily tracking of the number of clients staying each night, as well as those with clinical symptoms and those referred for COVID-19 testing to an isolation site.
- A system to track who is assigned to what section/cohort/bed (where possible) to more easily determine others who might have been exposed in an outbreak situation.
- Assign and track clients to a specific sleeping mat or sleeping unit to help with contact tracing should a client later test positive for COVID-19.

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