# Environmental public health guidance for encampments during the COVID-19 pandemic

## Introduction

To prevent the transmission of SARS-CoV-2, the coronavirus that causes COVID-19, public health guidance promotes physical distancing, staying home when ill, good hand hygiene and environmental cleaning. The measures to reduce community-wide COVID-19 spread have also resulted in social supports being limited to people due to closures or limitations in their operations. For those most vulnerable in our communities, such as those experiencing unstable housing or homelessness, there appears to be clustering in encampments around the remaining services and for safety.[1] While they vary in size, encampments refer to any area where a group of people live together, often in tents, temporary structures, vehicles, or other forms of informal shelter.[2] The term *encampment* itself has connotations of both impermanence and continuity.[3] For those in an encampment without water or hygiene and sanitation facilities, the challenge to follow public health guidance is compounded.

Environmental Health ensures clean water, food, air, and living environments.[4] As such, this guidance document supports environmental health practitioners' response to encampments during the COVID-19 pandemic. The target audience is Environmental Health Officers (EHOs), although other health professionals, local governments, housing agencies and social service providers may also find this resource useful for their planning of services. This guide features environmental health protection and planning related to issues in encampments. Considerations for operations on hygiene, cleaning, and physical distancing are summarized. In addition, effective channels of communication and an emphasis on longer-term sustainable housing solutions are needed to reduce the occurrence of environmental health issues.

## Baseline health and homelessness

The State of Homelessness in Canada 2016 report estimated that 35,000 people are experiencing homelessness on any given night in Canada.[5,6] It is well documented that the natural lifespan can be reduced by 40% for those who live on the streets compared to those living in a home.[7,8] Furthermore, for those experiencing homelessness, 65 years and under, all-cause mortality is 5–10 times higher than those in the general population.[6,9] When compared to the rest of the population, those who are homeless have higher rates of premature mortality, especially from unintentional injuries and suicide, and an increased prevalence of a range of infectious diseases, mental health disorders, and substance misuse.[10,11] People become homeless through a complex interaction between individual and structural factors (e.g., poverty, health, substance misuse, violence, and unemployment). Homelessness can be a long-term state or a temporary transitional period related to circumstances such as domestic violence.[12]

***Unstable housing can enhance COVID-19 transmission risk***

People who are experiencing homelessness (or living in transitional housing) often have compromised immune systems and may be at an elevated risk for viruses like COVID-19.[13,14] They may also be at higher risk of developing complications due to COVID-19, as they are more likely to report having an underlying chronic condition (particularly asthma, chronic obstructive pulmonary disease, and heart conditions) compared to the general population.[15] The Public Health Agency of Canada and other public health organizations have provided further rationale below:

- Barriers to accessing traditional health services and social service provider resources.
- People experiencing homelessness may experience challenges receiving or following public health advice due to reduced social and communication interactions, including being able to effectively quarantine (self-isolate), isolate, or practise physical distancing, and perform proper hand hygiene.[15]
- The risks are amplified by congregate or transient living that can promote the transmission of SARS-CoV-2.[16]
- Those who are experiencing homelessness may have increased exposure to others as they move between locations.[15]
- Because many who already feel marginalized or stigmatized, or have undergone trauma, may not seek treatment, follow medical advice, take precautions or care for themselves or others, this may amplify transmission.
- There are underlying difficulties accessing shelters, which have been compounded by guidance to limit the crowding in over-capacity shelters, "decanting" or "thinning" (essentially relocating) people into other facilities, and/or leaving some without shelter.
- There are those who do not feel comfortable sheltering indoors due to previous experiences of violence in indoor shelter sites.
- There have been outbreaks or clusters of COVID-19 (and Hepatitis A) in the homeless population **in shelters** in Seattle,[17] Montreal,[18] Toronto,[19] and Calgary.[20,21]

An important distinction is that although people living in encampments may be homeless, they may not be. They could be fleeing domestic violence or experiencing job layoff or loss; they could be runaways or veterans in poverty, underemployed, seasonally employed, bottle collectors, street vendors, day labourers, an encampment supporter, or transient.[22]

## Environmental health concerns in encampments

There are many environmental public health concerns associated with encampments. Individuals in an encampment are exposed to the elements (i.e., heat, cold, wind, rain, snow) and struggle to find nutritious food, clean drinking water, and sanitation facilities. Many people in an encampment might not have access to hygiene supplies or showering amenities, which could facilitate virus transmission.[6] However, there is limited evidence on the transmission of COVID-19 outdoors, and what is available suggests it to be lower.[24] With more natural ventilation and dilution of shared air space, outdoor settings also offer people the option to practise physical distancing of 2 m or more. However, for those sharing tents, vehicles, and

other sleeping arrangements whereby physical distancing is not practicable, the risk for disease transmission may increase.

### *The role of Environmental Health Officers (EHOs)*

EHOs investigate public health hazards and are responsible for carrying out measures for protecting public health. They administer and enforce provincial (or federal, when applicable) legislation related to environmental health, to keep water, food, land, and air safe.[25,26] They are delegated their role under the Medical Health Officer and derive their duties respectively from the *Public Health Act*. While an encampment is outside an EHO's typical day-to-day inspections, they can be called on to review or inspect encampments, offering guidance to reduce environmental and community-acquired disease transmission. In response to COVID-19, some of the expertise they may provide includes (but is not limited to):

- Consultation regarding location, site plan, and operations for environmental health concerns (i.e., physical distancing, hygiene, sanitation, food safety, drinking water and infection control).
- Conducting inspections to provide environmental health recommendations and minimize related risks.
- Supporting Emergency Response Centres as an active participant, environmental health content expert, or liaison representing the public health department.
- When available, offering best practice priorities for safe decampment into alternate housing.
- Advocating for longer-term solutions (e.g., specialized, supportive, and good-quality housing for all) in line with core EHO competencies[27] and Healthy Built Environment (HBE) programming.[28]

EHOs have proficiencies in the topic areas listed that are of particular relevance and concern in encampments. Their recommendations must be specific to the site, scope of operations, and jurisdictional differences in health legislation; therefore, this list does not delve into specifics. However, if local resources are not available, detailed-oriented advice can be found at the Pan American Health Organization, Public Health Agency of Canada, or King County Health Unit, which offer foundational Environmental Health guidance.

- *Potable water:* Ensure safe and secure water supply access for domestic purposes including for drinking and sanitation onsite or at a nearby public facility.[1]
- *Liquid waste:* Make proper waste disposal available (appropriately sized and inclusive of grey water) in the form of porta potties and/or washrooms, 1 per 20 users.[29]
- *Solid waste:* If possible, collect garbage from people living in tents.[30] Provide adequate waste management and lidded containers.[1]
- *Pest control:* Ensure frequent garbage collection; in particular food removal must be considered to prevent attracting rodents or other pests, which may increase the chance of vector-borne disease.[1] It is advised that a pest control company be contracted to set up an integrated pest management program.

- *Food safety, service, and donations:* All food, if high-risk and to be distributed, must be from approved sources. There has been no evidence of transmission of COVID-19 spread through food although pre-packaged meals are the best option to limit people gathering.[31] Meal times should be extended or staggered to reduce crowding and enable physical distancing.[32] Food handlers must regularly wash hands or use hand sanitizer, even if they have no disease symptoms.[33]
- *Hoarding*: Allowable storage, to stow belongings, should be provided to alleviate excessive cluttering habits that may occur. If a dumpster is present on site, routine pick up is advised to curb dumpster picking.
- *Environmental exposures (heat and cold)*: Provide at least one area with heat for residents to warm up in the winter months.[29] Conversely, provide areas of shade during summer/warmer months to protect again heat stroke. Tarps used for shade must comply with any fire code requirements (e.g., fire rated and over one singular tent).
- *Air quality*: Open burning is prohibited in all areas.
- *Additional considerations*: Pets, fire safety, security, harm reduction and hygiene supplies, access to health care services, and outbreak planning.[15]

***Recommendations to mitigate the spread of COVID-19 in an encampment***

*Initial planning* — Prior to an encampment becoming established, site selection, planning, design, and layout should include:

- The size of the encampment. Some jurisdictions advise no more than five tents to congregate (i.e., San Francisco). Conversely, develop a rationale for larger encampments to better support service delivery and staffing as long as physical distancing can be observed.
- Deliberation for who is being housed in an encampment. Recommendations may be different for people experiencing homelessness who are asymptomatic and cannot find space in shelters compared to those that find it challenging to self-isolate in a hotel/motel setting.[34]
- Unless individual housing units are available, do not clear encampments during community spread of COVID-19. Clearing encampments can cause people to disperse throughout the community and break connections with service providers. This increases the potential for infectious disease spread.[1,23]
- Consideration of the proximity to services and social supports.

The following Summary Table — *Environmental Public Health Guidance for Encampments Specific to COVID-19* – has been collated from national, provincial, and local public health department guidelines. It points to many embedded links extracted from best practice recommendations based on the current understanding that the primary modes of COVID-19 transmission are droplet spread from an infected individual or indirect contact with a contaminated fomite. The topic areas listed prioritize the most pressing environmental health risks, i.e., hygiene, cleaning, and physical distancing.

| Environmental Public Health Guidance for Encampments Specific to COVID-19 | | |
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| **Topic Area** | **Guiding Questions** | **Public Health Measures to Reduce COVID-19 Transmission Risk** |
| *Hygiene* | *Handwashing and toilet facilities*:<br>• How many washrooms are available?<br>• How many hand sinks (whether fixed or temporary)?<br>• Is hand sanitizer provided?<br>• What is the frequency of replenishing hand washing supplies?<br>*Showers:*<br>• Where are showers?<br>• What is the procedure for cleaning?<br>• How is use time staggered between individuals?<br>*Laundry:*<br>• Where are laundry facilities?<br>• What is the process for cleaning and staggering use? | *Handwashing and toilet facilities*:<br>• Ensure nearby restroom facilities remain open 24 hours per day to people experiencing homelessness.[23]<br>• If toilets or handwashing facilities are not available nearby, provide access to portable latrines with handwashing facilities for encampments of more than 10 people.[23]<br>• Ensure water taps are functioning and facility is stocked with soap and drying materials.[23]<br>• Provide a minimum ratio of a least one toilet per 20 users, paired with nearby handwashing facilities.[17,35]<br>• Provide sinks or handwashing stations: 1 per 15–20 persons.[36]<br>• Offer a temporary handwashing station or provide a makeshift sanitation station[37] if additional handwashing stations are deemed necessary.[38]<br>• Provide alcohol-based hand sanitizer (at least 60%) in conjunction with or, if needed, in lieu of handwashing stations.[15,38]<br>• Provie hand-sanitizer stations: 1 per 10 persons,[36] with consideration to safety and access, as hand sanitizers can be poisonous if consumed.[39]<br>*Showers:*<br>• In public entities, consider the use of staffed mobile showering facilities in areas with the highest need.[17]<br>• Provide amenities such as soap, shampoo, a bag for clients to store personal belongings while bathing, and clean towels.[17]<br>• Clean showers between clients with appropriate sanitizer and take janitorial precautions.<br>• Provide sanitation kits, i.e., adequate cleaning supplies of hygiene materials for all individuals.[36]<br>An example of information to provide, can be seen in this resource from Vancouver Coastal Health.[40]<br>*Laundry:*<br>• See a comprehensive resource put together by NCCEH, on laundry for multi-unit homes, which details laundry best practices.[41]<br>• Give consideration to laundry supplies if onsite, or provide laundry service resources (where to go) available.[29] |

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| *Environmental cleaning* | *For high-touch surfaces (e.g., doors, toilets, sink faucets, urinals, light switches, etc.):*<br>• Who is to provide this service?<br>• Do they have a procedure for cleaning these areas?<br>• What sanitizers will be used?<br>• What is the frequency of cleaning high-contact surfaces?<br>• If tents are provided for those without, what is the cleaning process? | *Cleaning frequency:*<br>• Cleaning high-touch surfaces is advised a minimum two times per day, more if possible and when visibly soiled. The Public Health department of Seattle King County[17] has put together detailed guidance on routine and deep cleaning recommendations.<br>*For service providers:*<br>• See both Health Canada[42] and the US Environmental Protection Agency[43], which have recently published lists of acceptable disinfectants for COVID-19.<br>• Operators should look for products that have a Drug Identification Number (DIN) and are an approved disinfectant.<br>• Use common disinfectants that have an active ingredient of chlorine bleach solution, 0.5% hydrogen peroxide, quaternary ammonia; or products containing 70% ethanol are effective and have been approved for use in Canada.<br>• Whatever product is being used, never mix cleaners, and ensure the concentration is adequate for disinfection (see fact sheet from PHAC[44] or BCCDC[45]). PPE may be required for the use of some products (e.g., gloves). |
| *Physical distancing* | • How will physical distancing be met in and around the encampment site?<br>• If physical distancing cannot be maintained, what measures are in place (i.e., use of PPE)?<br>• What communication tools are being used (e.g., signage) to encourage physical distancing? | • People staying in encampments should set up their tents with 2 $m^2$ (or as suggested by the US CDC, 4 $m^2$) between tent sites.[13,23]<br>• Ask people to stay one person per tent (unless in a couple or familial unit).<br>• Tent lots should be demarcated and consideration be given to minimum width and height restrictions for any outside storage of personal belongings (e.g., not exceeding 1 m in height).<br>• Ensure sidewalks are kept clear to support physical distancing.[30]<br>• If an encampment is not able to provide sufficient space for each person, relocation should occur by linking those at higher risk for severe illness[38] to safe shelter.[23] |
| *N.B. This table does not cover all public health issues (e.g., mental health and addictions; drug overdoses; supervised consumptions sites, harm reduction, chronic diseases; other infectious diseases; public health nursing; contact tracing; or cultural safety). In addition, other questions could arise on environmental health issues (e.g., PPE, sick person policies). The list above intends to offer clarity on the highest priority items related to COVID-19.* | | |

## Communications and engagement

There is complexity in the role and responsibilities of agencies involved in an encampment, as each one covers a different domain of oversight. It is key to connect with partners, e.g., local government staff (police and fire), health care providers (mental health, nursing, or harm reduction), social service providers and encampment residents, through established lines of communication. Encampment prevention and response is best served through a coordinated multi-sectoral approach.[1] A community coalition or Emergency Response Centre (ERC) may indeed accomplish this.

### *Emergency Response Centres*

In many instances, a formal Emergency Response or Operations Centre (ERC)[46] is established in the event of a major emergency, such as the COVID-19 pandemic. ERCs may be structured to specifically support the pandemic response for people who are experiencing or are at risk of homelessness and are unable to self-isolate. The immediate objective is to facilitate physical distancing, provide spaces for people to safely self-isolate, alleviate overcrowding in shelters, and provide shelter to those who have none.[34,47]

The table below lists examples of potential stakeholders on the ERC. These representatives illustrate the importance of each of these roles. If membership is missing from that respective group, then that expertise may also be lacking. While the table is not exhaustive, it demonstrates the need for a community-wide approach to COVID-19 preparedness to support the health of people experiencing homelessness. Collaboration of members can support timely communication in the short term and/or during a public health emergency, and in the long term find safe and healthy housing solutions.

### *ERC representation*

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| *Health unit supports* | Medical Health Officers, Environmental Health Officers, Primary Care/Clinical Nurse, Mental Health and Substance Use Services, Harm Reduction, linkage to health services not provided at the ERC |
| *Key partners* | Housing authorities, local governments (staff and/or leadership), law enforcement, fire prevention, emergency management, outreach teams, homeless service providers, people with lived experiences of homelessness, other support services |
| List extracted and blended from CDC Interim Guidance on Unsheltered Homelessness and Coronavirus Disease 2019[23] and the BC COVID-19: Joint Provincial Program Framework for Emergency Response Centres[34] | |

### *Communication with occupants sheltering in an encampment*

While the above highlights the necessity to have a mode of communication to leadership and partners, e.g., to ensure sanitation facilities are on-site and inform on environmental health risks, there needs to be an avenue to educate those in the encampment. It is essential to identify people who are encampment leaders, peers, and advocate groups, those who are key to helping

communicate with people in encampments.[1] The role of peers[48] is instrumental in meeting people where they are, disseminating advice, and empowering individuals to reduce their potential exposure and transmissibility, and keep them safe.

Posters, translated into appropriate languages or graphic in nature, should be posted in conspicuous locations for all members of an encampment. PHAC,[49] Peel Region of Public Health[50] and Fraser Health Authority[51] have created a few examples, specifically for shelters, in translated content, although when possible, use locally relevant signage. Signs on hand hygiene, respiratory hygiene, and cough etiquette should be posted in strategic places.[15] While ensuring communication with clients about the location of services such as food and water, information on hygiene facilities[23] is also provided.

***The continuum of COVID-19 response***

There are key pillars in the COVID-19 Response Framework for People Experiencing Homelessness, and flow is essential to reduce the impact of the COVID-19 pandemic on the homeless population.[52] In an encampment, flow and design in and triage out of the site must be planned for, such as testing, surveillance, coordination, risk stratification, isolation shelters for persons under investigation , and cohorting COVID-19 positive cases.[53] Questions for consideration in the continuum of COVID-19 Response Framework include:

- Where and how will initial screening occur?
- Is there an alternate place to shelter for those with underlying conditions, or at higher risk of complications due to COVID-19?
- Where is testing available for suspected cases?
- What is the protocol for contact tracing and surveillance (especially with a more typical transient, and stigmatized, population)?
- What is the protocol for transportation or addressing suspected cases?
- What are social service providers' plans (e.g., safety, precautions, and sick worker policy)?
- What is standard for isolation (in the encampment, in a separate area, or providing isolation housing), for those awaiting test results, or those who are confirmed COVID-19 positive?
- What is the plan for decampment?
- Where will people go once the COVID-19 pandemic is over?

## Housing is a core social determinant of health

As rapid action is needed to respond to the COVID-19 crisis, an opportunity exists to speak to the health linkages to health and insecure housing.[13] Securing temporary hotels and motels and creating encampments does not alleviate the much deeper issue of homelessness. EHOs working in the field of HBE connect with local governments to provide a health lens to land use planning, which may include housing strategies. Health evidence demonstrates the need to prioritize access to permanent and safe housing for those who are homeless as this decreases their use of emergency services and helps them stay safe from violence, injury and communicable disease.[28] From a perspective of human rights, the UN Special Rapporteur (2020) states that:

> *Much of the stigma attached to encampments is a result of governments failing to ensure access to essential services, including access to clean water, encroach upon a range of human rights, including rights to housing, health, sanitation facilities, electricity, and heat, as well as support services. In these conditions, residents face profound threats to dignity, safety, security, health, and well-being...*[2]

Housing is a core social determinant of health. It is a topic of health equity and human rights. "Safe and secure shelter and housing, with sanitation facilities, are definitely preferable to people living in encampments."[1] They are not a long-term solution but can offer a sense of community and security, and can be a key point of contact for social and housing service providers and a temporary solution when other shelter options are not available.[1] The availability of low-cost housing is considered the most crucial structural determinant for homelessness.[10]

***Alternative models for supportive housing***

While encampments are not ideal, the question is how they might be upgraded to something safer, cleaner, semi-permanent — and even pleasant. Models such as the Dignity Village[54] or Right to Dream Too in Portland, Oregon,[55] Modular Homes under construction in the City of Vancouver[56] or the Journey Home Strategy in Kelowna, BC,[57] may offer a few select case examples when discussing entry into the continuum into housing. For instance, Dignity Village[54] is a tiny house village focussed on community and capacity building. The model has municipalities exploring its potential. Situated in a predominantly industrial area, it has communal washrooms and a kitchen. Additionally, in keeping with the scope of this resource, the health department checks that health and safety standards are met.

## Conclusion

When other options are not available, encampments may be temporarily necessary to provide shelter for those experiencing homelessness during the COVID-19 pandemic. While linkages to safe, secure, and permanent housing should continue to be a priority, in the interim, residing in an encampment presents specialized considerations requiring attention to minimize disease spread. These include environmental health risks associated with the physical environment, such as access to clean water, food, and sanitation. Public health measures (e.g., hand hygiene, environmental cleaning, and physical distancing) are also much-needed interventions to prevent the transmission of SARS-CoV-2, the virus responsible for COVID-19. In terms of alleviating exposure risks, EHOs could be called to offer their expertise. This paper synthesized available evidence and best practices to serve as guidance for environmental health practice reviewing an encampment site, as an integral part of a multi-sectoral approach, to ensure people stay safe and healthy during their time in an encampment.[1]

## Resources


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