



# HHS Public Access

Author manuscript

*J Prev (2022)*. Author manuscript; available in PMC 2024 August 23.

Published in final edited form as:

*J Prev (2022)*. 2023 December ; 44(6): 663–678. doi:10.1007/s10935-023-00739-x.

## Barriers to COVID-19 Prevention Measures Among People Experiencing Homelessness with Substance Use Disorder or Serious Mental Illness

Ashley A. Meehan<sup>1</sup>, Alexiss Jeffers<sup>1</sup>, Jordan Barker<sup>1,2</sup>, Colleen M. Ray<sup>1</sup>, Rebecca L. Laws<sup>1</sup>, Victoria L. Fields<sup>1</sup>, Stephanie S. Miedema<sup>1</sup>, Susan Cha<sup>1</sup>, Cynthia H. Cassell<sup>1</sup>, Barbara DiPietro<sup>3</sup>, Margaret Cary<sup>4</sup>, Maria Yang<sup>5</sup>, Hedda McLendon<sup>6</sup>, Ruthanne Marcus<sup>1</sup>, Emily Mosites<sup>1</sup>

<sup>1</sup>Centers for Disease Control and Prevention COVID-19 Emergency Response, Atlanta, Georgia

<sup>2</sup>Oak Ridge Institute for Science and Education (ORISE) Fellow, Oak Ridge Associated Universities, Oak Ridge, TN, USA

<sup>3</sup>National Health Care for the Homeless Council, Nashville, TN, USA

<sup>4</sup>Oregon Health Authority, Portland, OR, USA

<sup>5</sup>Seattle Downtown Emergency Service Center, Seattle, WA, USA

<sup>6</sup>Public Health – Seattle King County, Seattle, WA, USA

### Abstract

People experiencing homelessness (PEH) are at disproportionate risk of becoming infected and having severe illness from coronavirus disease 2019 (COVID-19), especially when residing in congregate settings like homeless shelters. Behavioral health problems related to substance use disorder (SUD) and severe mental illness (SMI) may have created additional challenges for PEH to practice prevention measures like mask wearing, physical distancing, handwashing, and quarantine and isolation. The study objective was to understand the perceived barriers PEH face regarding COVID-19 non-pharmaceutical prevention strategies and identify recommendations

This is a U.S. Government work and not under copyright protection in the US

Ashley A. Meehan, ashleymeehan20@gmail.com.

**Authors' Contributions** Study conception and design was developed by Ashley A Meehan, Rebecca L Laws, Victoria L Fields, Susan Cha, Barbara DiPietro, Margaret Cary, Maria Yang, Hedda McLendon, Ruthanne Marcus, and Emily Mosites. Material preparation, data collection and analysis were performed by Ashley A Meehan, Alexiss Jeffers, Jordan Barker, Colleen M Ray, Rebecca L Laws, Victoria L Fields, Stephanie S Miedema, Ruthanne Marcus, Emily Mosites. The first draft of the manuscript was written by Ashley A Meehan and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript. Specific contributions are as follows:

**Competing interests** The authors have no relevant financial or non-financial interests to disclose.

**Ethics Approval** This activity was reviewed by the Centers for Disease Control and Prevention (CDC) and was conducted consistent with applicable federal law and CDC policy (see e.g., 45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. § 241(d), 5 U.S.C. § 552a, 44 U.S.C. § 3501 et seq.).

**Consent to Participate** Verbal informed consent was obtained by phone and documented by both the interviewer and the notetaker after reading a standardized consent script. With BHSPs permission, phone interviews were recorded, and audio files were saved in a secure folder on CDC's private network only accessible by the study team.

**Consent for Publication** The informed consent script included information about use of participant data. Participants were informed that their responses would not be linked to them, and that data would be reported as aggregate only.

for overcoming barriers. From August-October 2020, qualitative phone interviews with 50 purposively selected behavioral health professionals across the United States serving PEH with SUD or SMI were conducted. Professionals described that PEH faced barriers to prevention that were structural (e.g., access to necessary resources), behavioral (related to SUD or SMI), or related to the priority of other needs. Recommendations to overcome these barriers included providing free prevention resources (e.g., masks and hand sanitizer), providing education about importance of prevention strategies, and prioritizing access to stable housing. Interviews took place before COVID-19 vaccines were available, so barriers to vaccination are not included in this paper. Findings can help support tailored approaches during COVID-19 and future public health threats.

### Keywords

COVID-19; Homeless persons; Substance-related disorders; Mental disorders

---

### Introduction

Compared to the general population, people experiencing homelessness (PEH) face disproportionate risk of SARS-CoV-2 infection, likely resulting from the congregate nature of homeless service sites (Imbert et al., 2020; Okonkwo et al., 2020; Roederer et al., 2020; Rogers et al., 2020). PEH also have higher rates of comorbidities, increasing the risk for poor COVID-19 related health outcomes, including death (Cha et al., 2021; Hsu et al., 2020; Leifheit et al. 2021). Additionally, PEH have higher rates of conditions such as substance use disorder (SUD) and severe mental illness (SMI) compared to the general population (Bartels et al., 2020; Dotson et al., 2020; Imbert et al., 2020; Karb et al., 2020; Neto et al., 2020; Tucker et al., 2020; Yoon et al., 2020).

During the COVID-19 pandemic, homeless service organizations and behavioral health service providers (BHSPs) made significant changes to their operations, impacting service provision for PEH to access timely care (Tucker et al., 2020). Other evidence suggests some PEH avoided shelters because of the fear of becoming infected with COVID-19, further limiting access to prevention resources provided in shelters, such as masks and hand sanitizers (Finnigan, 2021). The presence of an SUD or SMI may have further exacerbated challenges PEH face in accessing and adhering to COVID-19 prevention strategies. However, the behavioral health barriers to COVID-19 prevention have not been previously assessed for PEH.

The purpose of this study was to describe the perceived barriers faced by PEH with SUD or SMI regarding non-pharmaceutical interventions (NPIs) of mask wearing, physical distancing, handwashing and hygiene, and quarantine and isolation as expressed by BHSPs, as well as identify possible recommendations from BHSPs to mitigate those barriers. Interviews took place before COVID-19 vaccines were available, so barriers to vaccination are not included in this paper. Considering the low vaccination coverage among PEH, NPIs are even more critical for preventing COVID-19 (Montgomery et al., 2021a). Our specific aims were to: (1) describe barriers to COVID-19 prevention measures among PEH

as identified by BHSPs; and (2) describe strategies proposed by BHSPs to overcome these barriers.

## Methods

### Study Design

This is a sub-analysis from a larger qualitative study with BHSPs. The larger study aimed to assess changes to behavioral health service provision during COVID-19 (Marcus et al., 2022). Due to the scope of the larger study, it was most appropriate to interview BHSPs. As a result, PEH themselves were not interviewed. We assessed what BHSPs perceived as barriers to adhering to COVID-19 prevention measures for PEH with SUD or SMI and how they recommended mitigating these barriers. The prevention measures assessed in this study were mask wearing, physical distancing, handwashing, and quarantine and isolation for COVID-19.

### Participants

National Health Care for the Homeless Council (NHCHC), a national organization that brings together multisector partners at the intersection of health and homelessness, used health care for the homeless (HCH) networks to recruit potential participants. NHCHC distributed invitations through HCH listservs outlining the purpose of the study and participation criteria. Interested BHSPs were invited to reply and contacted by the study team.

In-depth, qualitative phone interviews were conducted with 50 BHSPs from August to October 2020. Study participants represented all 10 U.S. Department of Health and Human Services regions across the United States. BHSPs were defined as any individual who provided direct care to PEH for SUD or SMI, and included case workers, nurse practitioners, outreach workers, and psychiatrists. While homelessness, SUD, and SMI often co-occur, the BHSPs interviewed serve people meeting any permutation of those experiences. Our sampling frame was BHSPs from HCH clinics, so interviews focused primarily on experiences of PEH. Throughout interviews, participants were asked to distinguish between PEH, people with SUD, and people with SMI to identify barriers that are unique to each of these experiences. BHSPs could participate if they were aged 18 years or older and consented to a 60-90-minute interview. The portion of the interviews that captured the information presented here ranged from 15 to 30 min. Participants received \$100 gift cards for their time.

### Materials and Procedure

Study data were collected and managed using REDCap hosted at the Centers for Disease Control and Prevention (CDC) (Harris et al., 2009, 2019). BHSPs filled out a pre-interview survey on demographic characteristics and specific roles and services they and their facility provide.

Interview guides covered topics regarding barriers to COVID-19 prevention measures, changes to service provision, and impact of these changes on clients and staff CDC

staff were interviewers and notetakers for the interviews. Interviewers and notetakers received standardized training prior to conducting interviews to ensure consistent data collection. Notetakers were responsible for ensuring the pre-interview surveys were complete, recording the audio, and keeping time during interviews.

Two pilot interviews were conducted with BHSPs to assess the flow of the interview guide, estimate interview duration, and streamline the process for interviewers and notetakers. Both pilot interviews were included in the analysis due to the richness of their responses and because the interview guide did not need to be modified significantly.

## Data Analysis

Interviews were transcribed verbatim using CaptionSync. Verbatim transcripts were thematically analyzed using MAXQDA 2020 version 20.0.7 software (VERBI, 2019). *A priori* codes and themes were identified using the original study questions and elements of the interview guide. Identifying emergent codes was an iterative process among three coders (AAM, AJ, JB).

Once the *a priori* codebook was developed, one interview was coded independently by the three coders to ensure consistent application of codes. Then, each subsequent interview was coded by two people independently. When two coders disagreed and could not reach consensus, the third coder resolved disagreements. Coders met weekly to address concerns and identify emergent codes. Coded segments were assessed for similarities and differences and summarized thematically according to the study questions and objectives. A post-hoc framework emerged during the analysis of these data (Fig. 1).

## Ethical Considerations

This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy<sup>1§</sup>. Verbal informed consent was obtained by phone and documented by both the interviewer and the notetaker after reading a consent script. With permission, phone interviews were recorded, and audio files were saved in a secure folder on CDC's private network only accessible by the study team.

## Results

### Professional Characteristics

Table 1 outlines demographic information of the 50 BHSPs who participated. The most reported services included case management and social service referrals, 46 (92%), followed by mental health counselling (40 [80%]) and substance use treatment services (38 [76%]). Forty-nine (98%) BHSPs described serving PEH, 49 (98%) serving people with SUD, and 44 (88%) serving people with SMI that interferes with their ability to perform activities of daily living without medication or additional support. BHSPs self-identified predominantly as non-Hispanic White (31 [62%]) and as female (42 [84%]).

---

<sup>1§</sup>See e.g., 45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. § 241(d), 5 U.S.C. § 552a, 44 U.S.C. § 3501 et seq.

## Overview of Perceived Barriers and Recommendations

BHSPs described perceived barriers to COVID-19 prevention measures among PEH with SUD or SMI from March to August 2020, which were coded as structural, behavioral, or in competition with daily life needs (Fig. 1). Structural barriers included challenges obtaining supplies – such as clean masks or hand sanitizers – or other resources needed to perform the prevention strategy. Behavioral barriers included challenges due to substance use or mental illness and were not related to issues of access or resources. An emergent theme that was neither structural nor behavioral was related to prioritization of needs. BHSPs perceived COVID-19 prevention measures were not salient in the hierarchy of needs of PEH. It was noted that some challenges experienced early in the pandemic were beginning to resolve by the time of the interview, but as resource challenges shift, these challenges may re-emerge.

When asked how these barriers could be alleviated, BHSPs suggested improving access to prevention resources, improving outreach to those living unsheltered, and building trusting relationships to provide education and information to their clients. One professional mentioned that the best place to start is by addressing the structural barriers:

The structural interventions that would support people to adhere to social distancing are more important than any behavioral or individual. Creating an environment where they can distance and providing them with masks, making it as easy as possible for people to follow the CDC guidelines. That’s what I think will work.

The primacy of structural barriers, as evidenced by this quote, were placed at the beginning of the flow chart for depicting barriers faced by PEH attempting to adhere to COVID-19 prevention strategies (Fig. 1). Once structural barriers are overcome, then there are additional considerations related to behavioral health challenges and hierarchy of needs barriers.

### Mask Wearing

BHSPs mentioned that early during COVID-19, their clients would come to clinics not knowing masks were needed. Not wearing a mask in these circumstances could not be considered a structural or behavioral barrier, but a lack of awareness or knowledge. Some BHSPs also noted that young adults aged 18–26 years had not been wearing masks because it is not “cool” and “[youth] are too involved with how they look[.]”

**Structural Barriers to Mask Wearing**—The most common structural barrier to mask wearing described by BHSPs was the lack of access to intact masks that fit properly and resources to keep reusable masks clean. Some BHSPs mentioned that even if PEH were able to wash their masks, their masks could be stolen if left out to dry. Additionally, BHSPs described that PEH did not have sufficient resources to replace single-use masks. These barriers created challenges for accessing public facilities where masks were mandated but not provided to visitors.

**Behavioral Barriers to Mask Wearing**—BHSPs described that masks were uncomfortable and made breathing difficult for their clients. For PEH with SMI such

as trauma disorders, mask wearing could trigger severe symptoms of psychosis. BHSPs mentioned some people with SMI struggle not being able to see another person's face or facial expressions which could trigger paranoia, fear, or anxiety. One professional further expanded:

[People with severe mental illness have] a lot of paranoia [and worry that] people can kill me. And their face won't be seen. So, a lot of disbelief and fear that not being able to see a face was a motivation to commit a crime of some type. Or with trauma disorders, [there is] a lot of hypervigilance [and] a lot of anxiety, so when your system is jacked up all the time, a mask can really make clients feel like they can't breathe.

BHSPs also described different challenges to mask wearing based on mental health diagnosis. They observed that PEH with depression or anxiety disorders engaged in mask wearing easier than persons experiencing symptoms of psychosis, such as schizophrenia. It was noted that this difference was not due to lack of effort or empathy, but that active psychosis may present more challenges to body awareness than other mental illnesses.

BHSPs reported that people with SUD may not wear masks around others, particularly if they shared items during smoking or drinking. They explained that being intoxicated or under the influence of drugs alters body awareness and judgement, making it hard to wear a mask appropriately: "*mask wearing is so far removed from what's happening for [people who are under the influence].*"

**Hierarchy of Needs and Barriers to Mask Wearing**—Some BHSPs shared that in clinics, clients were required to wear masks to receive services. When faced with this choice, clients understood that wearing masks was non-negotiable and were able to wear masks to receive services. However, outside of these settings, masks may not have been a priority for PEH. One example mentioned was that if people had to choose between buying a clean mask or buying food, they would buy food.

**Recommendations for Mitigating Barriers to Mask Wearing**—BHSPs recommended that clinical settings offer free disposable masks to eliminate access barriers to masks. They also recommended that jurisdictions have free surgical masks available at public facilities. BHSPs described that tailored outreach and education in shelters and encampments about the severity of COVID-19 and effectiveness of masks would be one solution. Education, in combination with continual "*nudging*" or ongoing reminders by BHSPs and peers had potential to improve mask adherence, according to BHSPs.

## Physical Distancing

**Structural Barriers to Physical Distancing**—Even though many homeless shelters reduced capacity to allow for physical distancing, BHSPs shared that staying six feet apart from others was difficult. In many shelters, individual rooms were unavailable, and clients did not always get to choose who they were sleeping next to or bed spacing. BHSPs mentioned that facilities struggled to keep people distanced at mealtimes or when clients waited in line to use the bathroom. Maintaining distance in shelters was also complicated

by extreme weather; some cities, especially those with extreme summers or winters, had policies that required shelters to admit all PEH no matter what. Additionally, BHSPs expressed that people living in encampments may not have control over the amount of space between themselves and others due to limited safe spaces for sleeping outdoors.

### **Behavioral Barriers to Physical Distancing**

BHSPs shared that PEH with SUD would often share items like cigarettes, drugs and alcohol, and essentials for living like food and drinks, bringing them in close contact with one another. One BHSP mentioned that counseling patients to never use substances alone is a key strategy to prevent overdoses. With this recommendation to be around others, BHSPs mentioned that they noticed people were not maintaining six feet of separation.

### **Hierarchy of Needs and Barriers to Physical Distancing**

BHSPs mentioned that PEH in encampments may have different perceptions of COVID-19 risk, especially if they spend most of their time outside. One BHSP described encampments like a large home with multiple roommates, where people come and go but ultimately “*share the same air*” and are not as concerned with distancing or mask wearing. Many PEH rely on those around them for safety and survival and thus prefer to remain in groups. One professional described:

One of the things that’s really important to people who are living outside is community and the sense of closeness with each other, and that’s something that is really essential to their survival. It’s not just a preference. You need each other to survive on the streets. And so, the dangers and the risks of COVID come secondary to the risks you would face if you didn’t have your community.

### **Recommendations for Mitigating Barriers to Physical Distancing**

BHSPs described that continued decompression of homeless shelters was important to ensure enough space, while also emphasizing the need for additional housing. They suggested tailoring education for PEH in shelters and encampments describing the importance of physical distancing and severity of COVID-19. However, they also noted it was difficult to provide recommendations to improve distancing because many PEH lacked control over their surroundings in shelters and encampments (Table 2).

### **Handwashing and Hygiene**

**Structural Barriers to Handwashing and Hygiene**—Almost every BHSP described challenges accessing resources as the largest barrier to handwashing and hygiene for PEH, regardless of the presence of SUD or SMI. Clients were unable to practice proper hand hygiene due to limited handwashing stations or public spaces with water and soap. This was further complicated by the closure of public facilities. In locations where public facilities were open, they were not always accessible to those without masks. Some BHSPs noted that accessing resources to maintain hygiene was an issue before COVID-19 and the pandemic made challenges worse.

BHSPs mentioned that in cases where they interacted with a client and a bottle of hand sanitizer was available, the client would use it without prompting. However, they described that procuring and keeping personal bottles of hand sanitizer was difficult for people with limited funds or who must carry their own belongings. BHSPs who visited clients in encampments noted that if there were portable toilets and handwashing stations, they often lacked supplies and were not maintained. One BHSP described that an encampment of about 100 people had only one portable toilet and one handwashing pump, which was out of soap.

**Behavioral Barriers to Handwashing and Hygiene**—Behavioral barriers to handwashing and hygiene were similar to behavioral barriers to mask wearing. BHSPs described that people under the influence of drugs or alcohol or experiencing symptoms of psychosis often lack body awareness and personal cleanliness. However, if provided with facilities and supplies and prompted by BHSPs to wash their hands, they were willing to comply.

**Hierarchy of Needs and Barriers to Handwashing and Hygiene**—BHSPs explained that the experience of homelessness coupled with SUD or SMI had compounding and inhibiting effects, creating challenges to maintaining personal hygiene. For example, if traveling to or waiting in line for a restroom would cause PEH to miss an opportunity for food or other care services such as addiction support, it might fall lower on the list of priorities for survival and daily needs.

**Recommendations for Mitigating Barriers to Handwashing and Hygiene**—BHSPs recommended mitigating barriers to handwashing and hygiene by providing restrooms and handwashing stations in parks, near encampments, and in other locations frequented by PEH. Another recommendation to improve access to restrooms was to have public facilities managed and monitored by the city or county open for bathrooms, even if not for usual service. BHSPs also mentioned the benefits of providing personal hand sanitizer to their clients.

## Quarantine and Isolation

**Structural Barriers to Quarantine and Isolation**—Public health recommendations to quarantine after close contact or isolate after testing positive for COVID-19 were difficult for PEH. One BHSP described that even with a private tent, PEH would still leave to use the bathroom, get food, and maintain other daily needs. Some jurisdictions – but not all – had non-congregate shelter (NCS) hotels for isolating PEH who received positive test results. While this facilitated quarantine and isolation (Q&I) for many people, NCS was not available everywhere.

**Behavioral Barriers to Quarantine and Isolation**—Many BHSPs described behavioral health concerns with the use of NCS for Q&I. Individuals who had been living in congregate shelters with others were suddenly placed in single rooms and told to remain there alone for 10–14 days, often without supportive services for SUD or SMI. They also described that placement in hotels or alternative care sites for Q&I could feel like being in prison and might lead to increased substance use or negative mental health outcomes:



The idea that you were mandated to stay in this room is so similar to being in jail or on a psychiatric hold, and that can bring up [trauma] for people.

BHSPs mentioned the paranoia, loneliness, depression, psychosis their clients experienced in Q&I facilities, and that their clients “[*had nothing*] to quiet their thoughts.” They shared that some PEH with SMI thought they were being “*watched*” in hotels, and one professional said many PEH with SMI refused to go to a room at a hotel because they were “*too traumatized, afraid, and scared*.” As a result, BHSPs saw people leave Q&I sites earlier than recommended.

For those that did stay in NCS, substance use and misuse became an issue. Many BHSPs described movement between rooms, allowing people to share substances more easily. Individuals would leave isolation hotels to use and acquire substances, manage or alleviate symptoms of withdrawal, or access medication or other health care services for SUD.

**Hierarchy of Needs and Barriers to Quarantine and Isolation**—BHSPs expressed that Q&I were not at the top of any clients’ lists of needs. PEH who had a place to isolate or quarantine from others would have to leave their social networks. BHSPs described how clients would rather risk infection with COVID-19 than sleep alone outside in a location that may be unsafe. Some BHSPs described workplaces not understanding of time off for Q&I, which led many of their clients to prioritize work and income over Q&I.

**Recommendations for Mitigating Barriers to Quarantine and Isolation**—BHSPs described that Q&I hotels were a temporary solution, and more support services were needed at these sites. BHSPs recommended jurisdictions continue funding these hotels but have trained staff to aid and support PEH with SUD or SMI. They also recommended bringing behavioral health services directly to these hotels to improve SUD and SMI outcomes for people in Q&I. One professional described how their city incentivized people to complete their full isolation stay in their hotels by paying them a daily stipend in addition to lodging. Many BHSPs mentioned that getting PEH into safe and stable housing would be the best solution for multiple challenges presented here, and that a housing first approach should continue to be prioritized.

## Discussion

In this qualitative study we sought the perspectives of BHSPs around perceived barriers to COVID-19 prevention measures among PEH with SUD or SMI. Suggestions were also provided on how to overcome structural and behavioral barriers to COVID-19 prevention measures among PEH, including improving access to resources, improving outreach to those living unsheltered, and building trusting relationships to provide information to their clients.

Barriers to COVID-19 prevention strategies were often exacerbated by behavioral health conditions such as SUD or SMI. BHSPs described a hierarchy of priorities among PEH, which influenced participation in COVID-19 prevention strategies. Survival priorities, such as security and safety, or food, often took precedence. The findings regarding barriers to handwashing and hygiene in the current study are consistent with barriers to handwashing

and hand hygiene during COVID-19 described by others; limited access to facilities and supplies is the largest barrier to handwashing (Montgomery et al., 2021b).

The findings from this study provide opportunities to improve community-level strategies for mitigating barriers to NPIs that can be considered for current and future infectious disease outbreaks or pandemics. One of the most common recommendations mentioned by BHSPs was improving access to prevention items, like masks or hand sanitizer, for PEH. Additionally, jurisdictions can consider opportunities to strengthen existing education and discuss COVID-19 with PEH during client-BHSP interactions. This can be accomplished using a “whole community” approach that engages local health departments, homeless service providers, peer leaders, and BHSPs in the community (FEMA, 2020).

As described by BHSPs, using hotels for Q&I was a temporary solution. They suggested that as funding for these sites ends and COVID-19 transmission continues, jurisdictions should prioritize access to housing. Prioritizing housing would prevent overcrowding at homeless shelters and eliminate structural barriers to PEH adherence to recommended prevention measures.

It is worth noting that the perceived barriers described in this paper and some of the recommendations provided by BHSPs may not differ from the barriers and recommendations for the general population. When barriers or recommendations are similar between PEH with SUD or SMI and the general population, PEH with SUD or SMI can be incorporated into community-wide prevention strategies, which may help destigmatize these populations.

This study has some limitations. First, our study interviewed BHSPs rather than PEH directly. It should be noted that the characteristics of the BHSPs interviewed (mostly non-Hispanic, White females) differs from the characteristics of the population of PEH in the U.S. (disproportionately Black, Indigenous, and other people of color) (APA, 2018; NAEH, 2020). However, BHSPs have considerable insight into the lives and challenges of PEH. BHSPs observe how social determinants of health and structural or systemic factors that influence the lives of PEH can potentially create challenges meeting COVID-19 prevention strategies. While interviewing PEH directly would also answer these research questions, the BHSPs interviewed offer an additional perspective that should be factored into community planning.

Second, there are limitations to purposive sampling; BHSPs who chose to participate may have different perspectives than those who did not participate. Including BHSPs from throughout the U.S. also presented limitations because COVID-19 transmission and mitigation strategies varied by location. For example, mask mandates differed by state, and some jurisdictions did not partner with hotels to provide NCS for Q&I.

These data can help support tailored approaches for PEH during the current pandemic and future public health threats. BHSPs described structural, behavioral, and hierarchy of need barriers. Providing free resources such as masks and hand sanitizer, improving access to and services provided at Q&I sites, promoting stable housing, and continuing outreach and

education about the severity of COVID-19 are key strategies for addressing barriers among PEH.

The authors have no relevant financial or non-financial interests to disclose.

## Acknowledgements

We would like to acknowledge the contribution of members from the CDC Homelessness and Public Health Working Group during data collection, specifically: Thara Venkatappa, Lakshmi Radhakrishnan, Lindsey Barranco, Brandi Dupervil, Aleta Christensen, and Greg Bautista. We would also like to thank Alaina Boyer from National Health Care for the Homeless Council for her contributions in the preparation of this manuscript. Lastly, we would like to acknowledge each of the participants and their respective organizations and agencies serving people experiencing homelessness with substance use disorder and severe mental illness.

## Funding

This work was conducted as part of the Center for Disease Control and Prevention's (CDC) COVID-19 Emergency Response, and no additional or external funding was provided to CDC staff to complete this research. The authors did not receive support from any organization for the submitted work. National Health Care for the Homeless Council (NHCHC) provided gift cards to participants as a token of appreciation for their time, but no funding was received to conduct the study or prepare this manuscript.

## Data Availability

The datasets generated during and/or analyzed during the current study are not publicly available because the data in this study reflect a subset of a larger qualitative data collection effort and contain identifiable information.

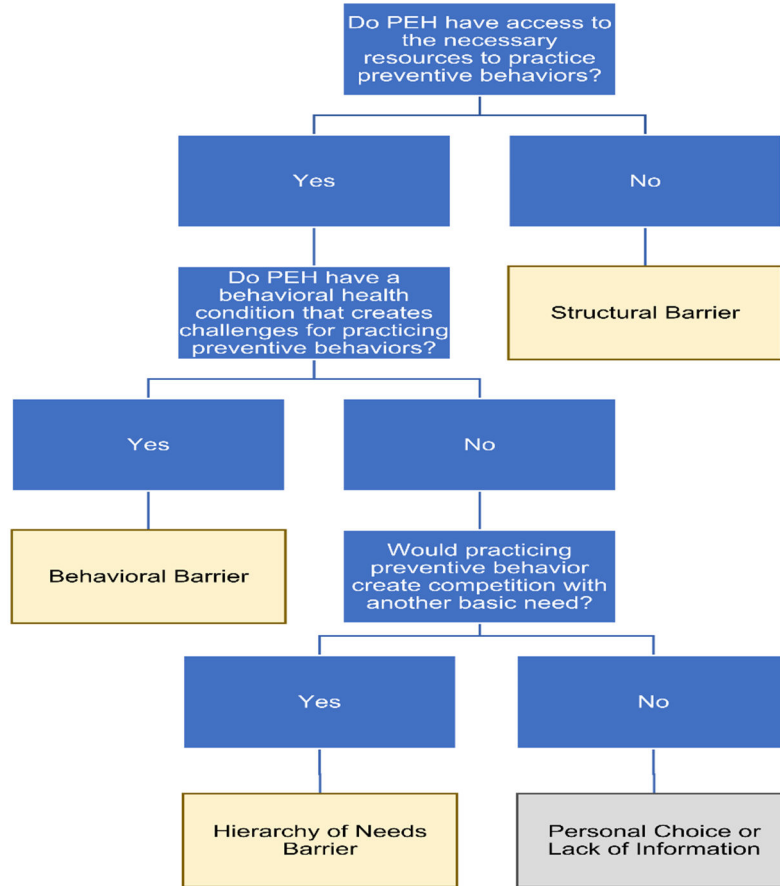
## Code Availability

No statistical code is available.

## References

- American Psychological Association (APA). (2018). How diverse is the psychology workforce? News from APA's Center for Workforce Studies. *Monitor on Psychology*, 49(2), 19. Accessed on June 27, 2022 from <https://www.apa.org/monitor/2018/02/datapoint>.
- Bartels SJ, Baggett TP, Freudenreich O, & Bird BL (2020). COVID-19 emergency reforms in Massachusetts to support behavioral health care and reduce mortality of people with serious mental illness. *Psychiatric Services*, 71(10), 1078–1081. 10.1176/appi.ps.202000244. [PubMed: 32487009]
- Cha S, Henry A, Montgomery MP, et al. (2021). Morbidity and mortality among adults experiencing homelessness hospitalized with COVID-19. *The Journal of Infectious Diseases*, jjab261. 10.1093/infdis/jiab261. [PubMed: 33993309]
- Dotson S, Ciarocco S, & Koh KA (2020). Disaster psychiatry and homelessness: Creating a mental health COVID-19 response. *The Lancet Psychiatry*, 7(12), 1006–1008. 10.1016/S2215-0366(20)30343-6. [PubMed: 32763148]
- Federal Emergency Management Agency (FEMA) (2020). Whole Community. Reports & Data Glossary. Last updated October 6, 2020. Accessed June 27, 2020 from: <https://www.fema.gov/glossary/whole-community>.
- Finnigan R. (2021). Self-reported impacts of the COVID-19 pandemic for people experiencing homelessness in Sacramento, California. *Journal of Social Distress and Homelessness*, 1–9. 10.1080/10530789.2021.1879618. [online ahead of print].
- Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, & Conde RG (2009). Research electronic data capture (REDCap) – a metadata-driven methodology and workflow process for providing

- translational research informatics support. *Journal of Biomedical Informatics*, 42(2), 377–381. 10.1016/j.jbi.2008.08.010. [PubMed: 18929686]
- Harris PA, Taylor R, Minor BL, et al. (2019). REDCap Consortium, the REDCap consortium: Building an international community of software partners. *Journal of Biomedical Informatics*, 95, 10.1016/j.jbi.2019.103208.
- Hsu HE, Ashe EM, Silverstein M, et al. (2020). Race/Ethnicity, Underlying Medical Conditions, Homelessness, and hospitalization status of adult patients with COVID-19 at an Urban Safety-Net Medical Center — Boston, Massachusetts, 2020. *Morbidity and Mortality Weekly Report*, 69, 864–869. 10.15585/mmwr.mm6927a3. [PubMed: 32644981]
- Imbert E, Kinley PM, Scarborough A, et al. (2020). Coronavirus Disease 2019 (COVID-19) outbreak in a San Francisco homeless shelter. *Clinical Infectious Diseases*, 73(2), 324–327. 10.1093/cid/ciaa1071.
- Karb R, Samuels E, Vanjani R, Trimbur C, & Napoli A (2020). Homeless shelter characteristics and prevalence of SARS-CoV-2. *Western Journal of Emergency Medicine*, 21(5), 1048–1053. 10.5811/westjem.2020.7.48725. [PubMed: 32970553]
- Leifheit KM, Chaisson LH, Medina JA, Wahbi R, & Shover CL (2021). Elevated mortality among people experiencing homelessness with COVID-19. medRxiv 2021.03.05.21253019; doi: 10.1101/2021.03.05.21253019.
- Marcus R, Meehan AA, Jeffers A, et al. (2022). Behavioral Health Providers' experience with changes in services for people experiencing homelessness during COVID-19, USA, August–October 2020. *The Journal of Behavioral Health Services & Research*. 10.1007/s11414-022-09800-9. online ahead of print, May 26, 2022.
- Montgomery MP, Meehan AA, Cooper A, Six US, Jurisdictions (2021a). December 2020–August 2021. *Morbidity and Mortality Weekly Report*, 70(48):1676–1678. doi: 10.15585/mmwr.mm7048a4. [PubMed: 34855724]
- Montgomery MP, Carry MG, Garcia-Williams AG, et al. (2021b). Hand hygiene during the COVID-19 pandemic among people experiencing homelessness—Atlanta, Georgia, 2020. *Journal of Community Psychology*, 49(7), 2441–2453. 10.1002/jcop.22583. [PubMed: 33899228]
- National Alliance to End Homelessness (NAEH) (2020). *Racial Inequalities in Homelessness, by the Numbers. Resources: Data and Graphics*. Published June 1, 2020. Accessed June 27, 2022 from: <https://endhomelessness.org/resource/racial-inequalities-homelessness-numbers/>.
- Neto MLR, de Souza RI, Quezado RMM, et al. (2020). When basic supplies are missing, what to do? Specific demands of the local street population in times of coronavirus—a concern of social psychiatry. *Psychiatry research*, 288, 1129–1139. 10.1016/j.psychres.2020.112939.
- Okonkwo NE, Aguwa UT, Jang M, et al. (2020). COVID-19 and the US response: Accelerating health inequities. *BMJ Evidence-Based Medicine*, 26(4), 176–179. 10.1136/bmjebm-2020-111426.
- Roederer T, Mollo B, Vincent C, et al. (2021). Seroprevalence and risk factors of exposure to COVID-19 in homeless people in Paris, France: A cross-sectional study. *The Lancet Public Health*, 6(4), e202–e209. 10.1016/S2468-2667(21)00001-3. [PubMed: 33556328]
- Rogers JH, Link AC, McCulloch D, et al. (2020). Characteristics of COVID-19 in Homeless Shelters: A Community-Based Surveillance Study. *Annals of Internal Medicine*, 174, 42–49. 10.7326/M20-3799. [PubMed: 32931328]
- Tucker JS, D'Amico EJ, Pedersen ER, Garvey R, Rodriguez A, & Klein DJ (2020). Behavioral health and service usage during the COVID-19 pandemic among emerging adults currently or recently experiencing homelessness. *Journal of Adolescent Health*, 67(4), 603–605. 10.1016/j.jadohealth.2020.07.013.
- VERBI. (2019). MAXQDA 2020 (Version 20.0.7). Berlin, Germany: VERBI Software.
- Yoon JC, Montgomery MP, Buff AM, et al. (2020). Coronavirus Disease 2019 (COVID-19) prevalence among people experiencing homelessness and Homelessness Service Staff during Early Community Transmission in Atlanta, Georgia, April–May 2020. *Clinical Infectious Diseases*, ciaa1340. 10.1093/cid/ciaa1340.



**Fig. 1.** Flow Chart Depicting Barriers Faced by PEH Attempting to Adhere to COVID-19 Prevention Measures

**Table 1**

Demographics of Behavioral Health Service BHSPs participating in Interviews regarding Impacts of COVID-19 on People Experiencing Homelessness, August – October 2020

Attribute	All BHSPs (n=50)
	<i>n</i> (%)
<b>Gender</b>	
Female	42 (84%)
Male	8 (16%)
<b>Age</b>	
18–34 years	18 (36%)
35–45 years	16 (32%)
46–59 years	11 (22%)
60+years	5 (10%)
<b>Race <sup>a</sup></b>	
American Indian or Alaska Native	4 (8%)
Asian	0 (0%)
Black or African American	10 (20%)
Native Hawaiian or Pacific Islander	0 (0%)
White	37 (74%)
Other	2 (4%)
<b>Ethnicity</b>	
Hispanic or Latino	7 (14%)
Not Hispanic or Latino	40 (80%)
Missing	3 (6%)
<b>Role</b>	
Case Manager	10 (20%)
Social Worker	8 (16%)
Therapist or Counselor	7 (14%)
Nurse or Nurse Practitioner	6 (12%)
Outreach Staff	5 (10%)
General/Unspecified Behavioral Health Professional	5 (10%)
Peer Specialist	3 (6%)
Director, Associate Director, or CEO	2 (4%)
Psychiatrist or Psychologist	1 (2%)
<b>Type of facility or organization <sup>b</sup></b>	
Community health center	32 (64%)
Street outreach team	17 (34%)
Out-patient psychiatric service professional	11 (22%)
Emergency care professional	7 (14%)
Homeless shelter	7 (14%)
Intensive outpatient program	4 (6%)

Attribute	All BHSPs (n=50)
	<i>n</i> (%)
Other <sup>c</sup>	4 (6%)
In-patient psychiatric facility	2 (4%)
<b>Types of services provided<sup>b</sup></b>	
Case management/social service care and referrals	46 (92%)
Outreach and education	43 (86%)
Mental health counseling	40 (80%)
Substance use treatment services	38 (76%)
Primary care	37 (74%)
Evaluations and care planning	34 (68%)
Pharmacotherapies/medication renewal	34 (68%)
Medication for opioid use disorder (e.g., methadone, buprenorphine, vivitrol)	33 (66%)
Rehabilitation or support services (e.g., recovery support groups, AA, NA)	16 (32%)
Other <sup>d</sup>	11 (22%)
<b>Clients served<sup>b,e</sup></b>	
People with a behavioral health related diagnosis	50 (100%)
People experiencing homelessness	49 (98%)
People who use drugs	49 (98%)
People who have experienced or are currently experiencing trauma or violence	48 (96%)
People with serious mental illness that interferes with their ability to perform basic activities of daily living without medication or additional support	44 (88%)

<sup>a</sup>. BHSPs could select multiple races, so *n* may not add up to 50. However, the denominator used is 50 because that is the total number of people who answered this question

<sup>b</sup>. Some BHSPs and programs have multiple types of facilities that provide multiple different services as part of larger care networks, so BHSPs could select more than one type of facility and service provided

<sup>c</sup>. Other types of facilities included: Facilities that specifically provide intensive opioid and other substance use treatment services, dental clinics, and harm reduction facilities

<sup>d</sup>. Other types of services provided included: Dental, optometry, and podiatry services, specialized care for people living with HIV or AIDS, recreational therapy, and any youth-focused services needed for individuals under age 18 (pediatrics)

<sup>e</sup>. BHSPs were asked, “What percent of your clients are experiencing homelessness?” “What percent of your clients use drugs?” etc. BHSPs that listed a percentage greater than 0 were counted as serving that clientele

**Table 2**

## Summary of Key Barriers Faced by PEH to Adhere to COVID-19 Prevention Measures

Type of Barrier	Key Barriers	Recommendations from BHSPs
Structural Barriers	<ul style="list-style-type: none"> <li>Limited or no access to public restrooms or facilities to engage in handwashing or hand hygiene</li> <li>Limited or no access to clean and well-fitting masks</li> <li>No residence or location to quarantine or isolate away from others</li> </ul>	<ul style="list-style-type: none"> <li>Keep one or more public facilities open solely for restroom use</li> <li>Provide hand sanitizer and disposable masks to clients at every encounter</li> <li>Continue to prioritize housing placements and provide hotel/motel quarantine and isolation options</li> </ul>
Behavioral Barriers	<ul style="list-style-type: none"> <li>Substance use and mental illness decrease inhibitions and limit hygiene or handwashing</li> <li>Trauma disorders and active psychosis create physiological responses that make mask wearing difficult</li> <li>When behavioral health services are not provided in isolation facilities, people may leave isolation early to ameliorate symptoms of withdrawal</li> </ul>	<ul style="list-style-type: none"> <li>Remind and educate clients on the importance and need for handwashing and hygiene</li> <li>Keep people connected to behavioral health services so that conditions can be managed appropriately</li> <li>Provide wrap-around services for behavioral health in isolation and quarantine facilities</li> </ul>
Hierarchy of Needs Barriers	<ul style="list-style-type: none"> <li>People prefer to stay in groups for safety when sleeping outdoors, regardless of COVID-19</li> <li>When choosing how to spend money, masks or hand sanitizer are not priority over food</li> </ul>	<ul style="list-style-type: none"> <li>Provide masks and hand sanitizer at every client encounter</li> </ul>