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RESEARCH ARTICLE

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# Hand hygiene during the COVID-19 pandemic among people experiencing homelessness—Atlanta, Georgia, 2020

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## Abstract

People experiencing homelessness are at risk for coronavirus disease 2019 (COVID-19) and may experience barriers to hand hygiene, a primary recommendation for COVID-19 prevention. We conducted in-depth interviews with 51 people experiencing sheltered and unsheltered homelessness in Atlanta, Georgia during May 2020 to August 2020 to (1) describe challenges and opportunities related to hand hygiene and (2) assess hand hygiene communication preferences. The primary hand hygiene barrier reported was limited access to facilities and supplies, which has disproportionately impacted people experiencing unsheltered homelessness. This lack of access has reportedly been exacerbated during COVID-19 by the closure of public facilities and businesses. Increased access to housing and employment were identified as long-term solutions to improving hand hygiene. Overall, participants expressed a preference for access to facilities and supplies over hand hygiene communication materials.

KEYWORDS

COVID-19, handwashing, homeless persons, hygiene, sanitation

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## 1 | INTRODUCTION

On a single night in 2020, around 580,000 people were experiencing homelessness in the United States with about 39% staying in unsheltered locations and 61% staying in sheltered locations (Department of Housing and Urban Development, 2021). In 2020, outbreaks and clusters of coronavirus disease 2019 (COVID-19) among residents and staff have been reported in shelters across the United States (Bartram & Cairncross, 2010; Centers for Disease Control and Prevention, 2020c). Preventing COVID-19 among people experiencing homelessness (PEH) is important for several reasons. Once introduced into a homeless shelter, COVID-19 can spread quickly, placing PEH at increased risk of exposure (Baggett et al., 2020; Rogers et al., 2020; Yoon et al., 2020). Furthermore, PEH might be at increased risk for severe illness from COVID-19 due to the increased prevalence of chronic medical conditions and barriers to accessing healthcare that can lead to delays in seeking care (Aldridge et al., 2018; Baggett et al., 2010; Fryling et al., 2015).

Hand hygiene, which includes both washing hands with soap and water and using alcohol-based hand sanitizer, is part of a layered approach to the prevention of COVID-19 (Centers for Disease Control and Prevention, 2020c; Doung-Ngern et al., 2020). Since the beginning of the pandemic, studies have found that US adults have increased handwashing frequency and use of hand sanitizer, which CDC recommends as a means to prevent COVID-19 (Czeisler et al., 2020; Haston et al., 2020; Nazione et al., 2020). Engaging in hand hygiene behavior at the correct time, using the correct methods, and using appropriate products are all critical steps for hand hygiene to be effective. Soap and water are preferred to alcohol-based hand sanitizer when hands are visibly dirty or greasy (Centers for Disease Control and Prevention, 2020b). Unfortunately, PEH may have difficulty accessing hand hygiene supplies and facilities (Buechler et al., 2020; Capone et al., 2020; Pilon et al., 2019), have competing priorities of need (e.g., food, clothing, shelter) (Murray, 1996), and disproportionately experience substance use disorder and mental illness (Fazel et al., 2014; Leibler et al., 2017), all of which can interfere with adherence to COVID-19 hand hygiene recommendations. Difficulties in accessing hand hygiene supplies and facilities might differ for people living unsheltered compared with people living in a shelter but are not well documented.

The objectives of this study were to describe barriers to and strategies to improve hand hygiene for people experiencing unsheltered and sheltered homelessness in Atlanta, Georgia, examine the impact of the COVID-19 pandemic on hand hygiene practices and assess communication preferences to improve hand hygiene recommendations for PEH.

## 2 | METHODS

In-depth interviews were conducted among people experiencing unsheltered and sheltered homelessness in Atlanta, Georgia during May 2020 to August 2020, using the following inclusion criteria: (1) ability to speak and read in English; (2) 18 years of age or older; (3) meets the definition of unsheltered—defined as someone who, on the night preceding the interview was residing in a place that was not meant for human habitation, such as cars, parks, abandoned buildings or on the street—or sheltered—defined as someone who, on the night preceding the interview, was living in a shelter for PEH (e.g., emergency shelter, safe haven, transitional housing). This activity was reviewed by the Centers for Disease Control and Prevention (CDC) and was conducted consistent with applicable federal law and CDC policy.[1]

Purposive convenience sampling was used for this assessment. The goal was to recruit a diverse sample of approximately 20 unsheltered (10 male, 10 female) and 30 sheltered PEH (10 male, 10 female, 10 people living with children) to ensure a variety of experiences and opinions could be obtained, and to allow for stratified analyses by shelter status. More sheltered than unsheltered PEH were recruited so that a portion of the sample would include PEH living with families. Study staff recruited unsheltered participants from public parks and recruited sheltered individuals from one

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

shelter serving men, women, and families in the Atlanta-metro area. For both groups, individuals interested in participating in the interviews were screened for eligibility and to obtain demographic information (e.g., age, gender, race/ethnicity, first time experiencing homelessness, and duration of the current episode of homelessness). For people living with children, the parent or caregiver was interviewed. Before the start of the interview, the purpose of the study was explained, a consent form was read, and participants provided verbal consent to participate. After the completion of the interview, participants were provided with a $25 gift card.

Interviews were conducted in-person by homelessness outreach staff who were provided qualitative interview training. A semistructured interview guide was used to guide the discussions. The interview guide focused on questions about cleaning hands to allow participants the opportunity to discuss a range of methods used for hand hygiene. This included asking about key moments, locations, and ways hands are cleaned in daily life, barriers to cleaning hands, supplies or products used to clean hands, changes in cleaning practices during the COVID-19 pandemic, and hand hygiene-related needs. Interviews lasted between 10 and 30 min. Interviews were audio-recorded, and recordings were transcribed verbatim. Interview transcripts were coded by two researchers using inductive coding. Codes were discussed between the two researchers until agreement was obtained. NVivo qualitative data management software (version 11; QSR International) was used to code and manage interview data. Results from sheltered and unsheltered PEH were compared.

## 3 | RESULTS

We conducted 51 interviews. Participant demographics are presented in Table 1. At the time of the interview, 23 participants were living unsheltered and 28 were living in a shelter. Participants ranged from 25 to 72 years of age, with similar median age for unsheltered (50 years) and sheltered participants (49 years). Among unsheltered participants, 12 identified as male, and 11 identified as female. Among sheltered participants, 14 identified as male, and 14 identified as female. Most participants identified as Black, non-Hispanic (82%). This is similar to the 2019 point-in-time count (a count of sheltered and unsheltered PEH on a single night in January) in Atlanta, where 86% of persons identified as Black and 95% identified as non-Hispanic (Department of Housing and Urban Development, 2019). A higher proportion of participants who were unsheltered reported having experienced previous episodes of homelessness and reported a longer duration of their current episode of homelessness than people living in a shelter.

### 3.1 | Hand hygiene practices

#### 3.1.1 | Locations and water sources

Common locations where hand hygiene was practiced included shelter restrooms and restrooms in public facilities such as parks, churches, gas stations, fast-food restaurants, convenience stores, hospitals, libraries, dog parks, and portable toilets. These facilities also served as primary water sources for participants. Consistent access to a water source could be challenging, as one participant described having water access, "I do, but I don't. I'm homeless, so as soon as I get to a store, I got access to water but, you know, if I'm far away then no" (Unsheltered Female, 31 years). Most participants described that having a water source was related to their proximity and access to public facilities. Those who were sheltered and/or employed were more likely to have access to a consistent water source; "Before I came in the shelter, when I was out in the street, I didn't really have access to, you know, um, running water. Didn't have access to hand sanitizer. Didn't have access to wet wipes" (Sheltered Male 56). This led many unsheltered participants to use whatever they had available to practice hand hygiene; "Well, out here it's really hard cause there's not any running water or soap so most of the times I just have to, like, spit on 'em" (Unsheltered Female, 48 years). Others mentioned alternatives to water sources included bottled water, public water fountains, rainwater, and creek water.

**TABLE 1** Characteristics of 51 people experiencing homelessness and participating in hand hygiene interviews during COVID-19 in Atlanta, Georgia, May to August 2020

| | Unsheltered (*n* = 23) | | Sheltered (*n* = 28) | |
|---|---|---|---|---|
| | *n* | % | *n* | % |
| Age in years, median (range) | 50 (25–75) | | 49 (25–66) | |
| Gender | | | | |
| Men | 12 | 52 | 14 | 50 |
| Women | 11 | 48 | 14 | 50 |
| Race and ethnicity | | | | |
| Black, non-Hispanic | 17 | 74 | 25 | 89 |
| White, non-Hispanic | 3 | 13 | 3 | 11 |
| Native Hawaiian or other Pacific Islander | 1 | 4 | 0 | 0 |
| Hispanic | 1 | 4 | 0 | 0 |
| Other, non-Hispanic | 1 | 4 | 0 | 0 |
| First time experiencing homelessness | | | | |
| Yes | 7 | 30 | 15 | 54 |
| No | 16 | 70 | 12 | 43 |
| Duration of current episode of homelessness (years) | | | | |
| Range | 0.2–33 | | 0.04–18 | |
| Median | 3 | | 0.5 | |
| Interquartile range | 2–6 | | 0.3–1.0 | |

### 3.1.2 | Practices and products used

When asked to describe their current hand hygiene practices and products used, most participants reported using soap and water or hand sanitizer. Participants who were unsheltered were more likely to rely on hand sanitizer, bottled water, and disinfecting wipes as products used for hand hygiene. Other less common products mentioned for hand hygiene included alcohol, shampoo, and lotion. In determining when their hands were clean, most just observed their hands to see if they looked or felt clean. Those with access to paper or cloth towels used them for drying their hands, otherwise, several participants mentioned letting their hands air dry or just wiping their hands dry using their clothes.

### 3.1.3 | Key moments

When asked about key moments when hand hygiene was practiced, most participants mentioned cleaning or sanitizing hands before eating and after using the restroom. Several participants mentioned washing their hands as necessary when they felt dirty. Some participants mentioned that they cleaned their hands when coming indoors from the outside or after touching frequently touched items or surfaces. Those citing a reason for washing their hands in these key moments mentioned that they were concerned over spreading or contracting germs (i.e., getting

sick). Some participants mentioned setting aside times to wash their hands when they knew they would have access to facilities and supplies.

## 3.2 | Hand hygiene barriers

### 3.2.1 | Access to facilities and supplies

Inability to access facilities, mentioned by 48 participants, and lack of supplies, mentioned by 37 participants, were the top barriers to practicing hand hygiene (see Table 2). In the early spring of 2020, city and statewide closures to curb the spread of COVID-19 exacerbated these barriers, limiting many participants' access to public facilities and supplies. Additionally, increased demand triggered price surges and further limited availability of supplies like hand soap, sanitizer, and disinfecting wipes. While these COVID-19 related changes were largely seen as a barrier to hand hygiene, several participants mentioned an increased number of nonprofit organizations and individuals distributing hygiene supplies to unsheltered and sheltered participants as an unintended benefit of COVID-19. Taking advantage of these charitable opportunities was not without challenges;

> So, if you stay here for just an amount of time, even a day, you can somewhere load up on supplies. Um, like here is shampoo, lotion, a razor, toothbrush, and a comb. Now, trying to keep, keep these things and keep a backpack, or keep something to put it in when you're homeless is tough. You know, even, even things that you need on a daily basis. Trying to keep it for any length of time is tough. You got people who will steal it when you fall asleep (Unsheltered Male, 38 years).

A few participants commented on the installation of portable handwashing stations during COVID-19; however, some people had difficulty locating them as time passed.

### 3.2.2 | Financial barriers

Six participants mentioned financial barriers to practicing hand hygiene.

> I find that a lot of restaurants have, you know, they won't let you use their restroom if you're not patronizing their business, but if you have funds, "Hey, I'm buying something, do you mind if I use your restroom?" Well, as long as you're buying something, you know. That's another hard part with homelessness, having somewhere that you can just use the bathroom (Unsheltered Male, 54 years).

Not having money limited the ability to purchase supplies, as well; participants could be denied entry to public restrooms if they did not have money to purchase items or services.

### 3.2.3 | Instability

In addition to financial barriers, five participants mentioned how general instability created barriers to hand hygiene. As explained by one participant, "Being out here, not having a roof over your head and access to water, having a bed, all that. Being out here is really hard to keep your hands clean" (Unsheltered Female, 31 years). Constantly moving around made it difficult, especially for participants who were unsheltered, to store supplies or access a water source.

**TABLE 2** Hand hygiene barriers and needs reported during qualitative interviews with people experiencing homelessness—Atlanta, Georgia, May to August 2020

| Dimension | Theme | Subtheme | Quote |
|---|---|---|---|
| Hand hygiene barriers | | | |
| | Access to facilities and supplies | | "You have to have money to go into a restaurant and use their bathroom. But even if you go to McDonald's they won't let you use the restroom anymore because of corona. So there's not really any access at all to wash our hands out here. There was a Porta Potti down there, but it didn't have running water or anything. It was quite disgusting" (Unsheltered Female, 48 years) |
| | | | "So, if you stay here for just an amount of time, even a day, you can somewhere load up on supplies. Um, like here is shampoo, lotion, a razor, toothbrush, and a comb. Now, trying to keep, keep these things and keep a backpack, or keep something to put it in when you're homeless is tough. You know, even, even things that you need on a daily basis. Trying to keep it for any length of time is tough. You got people who will steal it when you fall asleep" (Unsheltered Male, 38 years) |
| | Financial barriers | | "I find that a lot of restaurants have, you know, they won't let you use their restroom if you're not patronizing their business, but if you have funds, 'Hey, I'm buying something, do you mind if I use your restroom'? Well, as long as you're buying something, you know. That's another hard part with homelessness, having somewhere that you can just use the bathroom" (Unsheltered Male, 54 years) |
| | Instability | | "Being out here, not having a roof over your head and access to water, having a bed, all that. Being out here is really hard to keep your hands clean" (Unsheltered Female, 31 years) |
| | Need prioritization | | "Homelessness will, remove some of the faculties or normal common practices that you normally do to take care of yourself hygiene wise. Washing your hands, doing that type of thing. And put it on the back burner" (Unsheltered Male, 38 years) |
| | | Safety concerns | "I mean, it's not like the most important thing out here is to clean your hands. The most important thing is not to get shot or beat up" (Unsheltered Female, 54 years) |
| | Mental health and substance use | Mental health | "And mental health issues are a big factor in Georgia; those are the people that are normally not gonna wash their hands because they don't feel like they have to. With mental health people, you try to get them to wash their hands as much as possible. Yeah, you gotta wash their hands for them almost" (Sheltered Female, 38 years) |

**TABLE 2** (Continued)

| Dimension | Theme | Subtheme | Quote |
|---|---|---|---|
| | | Substance use | "When, when you're under the influence or not, you don't care…your hands are the last thing you care about" (Sheltered Female, 39 years) |
| Hand hygiene needs | | | |
| | Connection to supplies and facilities | | "Getting sanitizer, and bottled water, and soup. I mean soap (laughs), every day" (Unsheltered Female, 70 years) |
| | | | "Public sinks. Yeah, that would be phenomenal in, like, multiple places. They're very rare. Yeah. I've seen them more when the pandemic started, but I- they've kinda died down now" (Unsheltered Male, 40 years) |
| | Housing and employment | | "Things that I need so I can get off, get off the streets. A house. A job" (Unsheltered Male, 55 years) |
| | | Financial benefit | "A job. If I got some money, I'd go to buy [supplies]" (Unsheltered Male, 58 years) |
| | | Location to practice hand hygiene | "When you're working, 9 times out of 10 you in a place where they have bathrooms where, you know, you have access to water, soap, so, yeah. Working" (Sheltered Male, 56 years) |
| | | Hand hygiene education | "I used to do food preparation. So, you know, they, they told us when you wash your hands, you say the alphabet and you wash your hands again and say the alphabet and after that you rinse your hands. You can't touch the sink unless you get a paper towel to turn the sink off" (Sheltered Male, 66 years) |

### 3.2.4 | Prioritization

Four participants described that experiencing homelessness changed their priorities. For example, "Homelessness will remove some of the faculties or normal common practices that you normally do to take care of yourself hygiene-wise. Washing your hands, doing that type of thing. And put it on the back burner" (Unsheltered Male, 38 years). Described by another participant, "I mean, it's not like the most important thing out here is to clean your hands. The most important thing is not to get shot or beat up" (Unsheltered Female, 54 years). As explained by these participants who were unsheltered, hand hygiene was not as important as their more immediate needs such as shelter and safety.

### 3.2.5 | Mental health and substance use

Three participants (1 sheltered and 2 unsheltered) mentioned that challenges with mental health and substance use were barriers to hand hygiene because hand hygiene was not a priority for those with mental health and substance use challenges.

## 3.3 | Hand hygiene needs

### 3.3.1 | Connection to supplies and facilities

Participants most commonly described connection to supplies and facilities as the most important need to support hand hygiene (42 participants; see Table 2). Specific suggestions participants mentioned included publicly accessible handwashing stations and bathrooms, and programs and places that could help connect them to services and supplies.

### 3.3.2 | Housing and employment

Fourteen participants specifically mentioned needing permanent and affordable housing to support better hand hygiene. Eleven participants stated how getting a job or having employment would better support their hand hygiene needs. Employment would provide wages necessary to purchase supplies needed for hand hygiene. Additionally, several participants mentioned that a place of employment would also provide access to facilities; "When you're working, 9 times out of 10 you in a place where they have bathrooms where, you know, you have access to water, soap, so, yeah. Working" (Sheltered Male, 56 years). Although not common, a few participants mentioned that employment could also be a barrier to hand hygiene, if their schedules or workload made it difficult to have adequate breaks to use facilities. For a few participants, their employment in food or healthcare industries was an educational resource, teaching them proper hand hygiene techniques;

> I used to do food preparation. So, you know, they, they told us when you wash your hands, you say the alphabet and you wash your hands again and say the alphabet and after that you rinse your hands. You can't touch the sink unless you get a paper towel to turn the sink off (Sheltered Male, 66 years).

## 3.4 | Health communication

### 3.4.1 | Existing health communication

Most participants ($n = 40$) had seen some existing information about hand hygiene recently. Twenty-nine participants were familiar with or had seen existing health communication materials recommending they wash their hands for at least 20 s.

### 3.4.2 | Preferences for health communication

In general, many participants were receptive to receiving some form of health communication materials on hand hygiene. However, several participants felt that knowing how to wash their hands was "common sense" and didn't see the need for additional educational materials on hand hygiene. Most participants were more receptive to receiving information on how and where to access supplies such as soap, hand sanitizer, and disinfecting wipes. One participant encouraged the use of more racially diverse materials, commenting that "Most of the materials you see nowadays are directed at white people. You tell me to be honest, you know" (Sheltered Male, 62 years).

Another participant suggested information to specifically target the circumstances and needs of unsheltered and sheltered persons.

#### 3.4.3 | Format preferences

Preferences for how to disseminate hand hygiene receiving information were varied without a discernable consensus for format preferences. Some suggestions made by participants included posting messaging via advertising on and around public transportation, and in shelters. Other suggestions included using electronic messaging, such as emails, text messages, as well as more traditional television and radio commercials. A few participants suggested information in portable formats such as flyers, or pocket guides with simplified information and illustrations.

#### 3.4.4 | Issues with existing health communications

A few sheltered participants expressed concerns regarding existing health communications and guidance specific to social distancing; “The six feet apart thing doesn't really make sense. It's not really good for certain environments… you can't social distance at all. You got to sleep in your mask. Yeah, we're in the bubble” (Sheltered Male, 48 years). Another participant explained how crowding also affected his ability to practice hand hygiene; “People are lined up to wash their hands I don't wanna be there” (Sheltered Male, 60 years). Crowding in shelters made it difficult, if not unrealistic, to follow existing guidance around social distancing and may have deterred some residents from practicing regular hand hygiene if they sought to avoid crowding around shared facilities.

## 4 | DISCUSSION

Adequate hygiene, along with other basic subsistence needs, not only helps to prevent COVID-19 but also impacts overall physical and mental health (Riley et al., 2011, 2012). In qualitative interviews among PEH in Atlanta, Georgia, the primary hand hygiene limitation was accessing facilities and supplies, which for many people we interviewed has been exacerbated during COVID-19 by the closure of public facilities and businesses. Closures disproportionately affected people experiencing unsheltered homelessness, who reported limited access to water sources. People living unsheltered relied more often on sanitizer or wipes, when available, as well as unconventional and potentially hazardous water sources such as dog parks, creek water, or saliva. Even for people staying in homeless shelters, access to facilities is not guaranteed, as some homeless shelters have reported an insufficient number of sinks during COVID-19 (DiGuiseppi et al., 2020; Heimer et al., 2020). Lack of access to hygiene facilities and supplies during COVID-19 closures can increase the risk of other infectious diseases such as vector-borne and enteric diseases as well as skin infections (Hines et al., 2016; Leibler et al., 2017).

Participants in this study identified both immediate and long-term solutions to improving hand hygiene. Direct connection to facilities or supplies was identified as an immediate need. One solution that has emerged in several cities across the United States is portable handwashing stations. Lessons learned from these projects include selecting appropriate locations that are easily accessible to PEH, identifying an appropriate level of security, establishing partnerships and community buy-in, and planning for ongoing maintenance to ensure that supplies are refilled (DiGuiseppi et al., 2020; Heimer et al., 2020). Participants in our project frequently cited the closure of public restroom facilities in parks and libraries as an obstacle to hand hygiene. During COVID-19, CDC recommends that public park restrooms remain open and that they maintain functional toilets, clean and disinfected surfaces, and handwashing supplies (Centers for Disease Control and Prevention, 2020a). Lastly, given the

difficulties in storing and traveling with supplies and the potential for theft, it is important to provide supplies at a regular frequency in small sizes that are portable.

Participants identified that access to housing and employment were necessary to long-term improvements in hand hygiene. Several of the barriers to hand hygiene reported by participants, such as general instability, prioritization, access to facilities, water sources, and the ability to store supplies, would be resolved by permanent housing. Like housing, employment could address several barriers including access to supplies and facilities, a water source, and in some cases, education on hand hygiene. It is important for employers to help workers get appropriate bathroom breaks as needed (Centers for Disease Control and Prevention, 2019).

In this study, we also gained information about health communication preferences. Health communication inequalities exist across different race, ethnicity, geographic, and social classes, including among PEH (Viswanath & Ackerson, 2011). Previous studies have illustrated the importance of designing communication messaging specifically for PEH. In Massachusetts, PEH reported difficulties and frustrations in accessing health information and found health information difficult to understand more often than the general population (Power & Hunter, 2001). During a hepatitis A outbreak in Detroit, Michigan, researchers found that improved health communication outreach to PEH could have helped to improve vaccine uptake (Buechler et al., 2020). To understand hand hygiene communication preferences for PEH, we assessed preferences for communication formats and messages. In our interviews, no consensus on communication format (e.g., billboards, text messaging, flyers) emerged, suggesting that a variety of formats might be necessary to reach PEH. Participants expressed greater interest in access to supplies and facilities than in hand hygiene communication materials. Practical messages that focus on how to access facilities and supplies or combining hand hygiene communication messages with portable handwashing stations might be more useful. In Philadelphia, community-based organizations installed informational murals alongside portable hand hygiene stations to increase awareness of COVID-19 prevention messaging for PEH (Ha et al., 2020).

This report is subject to at least four limitations. First, interviews were conducted in a single city, and people living in a shelter were recruited from a single shelter. These views are not representative of all PEH, and this topic may deserve further study. (2) People were classified as living unsheltered or sheltered based on the sleeping location on the preceding night; however, these sleeping arrangements were impermanent and thus groupings based on sleeping arrangement might be biased. (3) Interviews with people experiencing unsheltered homelessness were conducted earlier than interviews with people living in a shelter, which made it difficult to disentangle the effect of shelter status from the timing of local closures. Finally, people with mental illness or substance use disorder might have been less likely to participate or less likely to self-report mental illness or substance use as a contributing challenge due to perceived stigma.

## 5 | CONCLUSIONS

Most participants viewed hand hygiene as common sense and preferred access to supplies over education. Installing portable handwashing stations or providing supplies in small, portable containers on a regular basis are two options for addressing these access barriers. It is important for jurisdictions to review local policies and minimize the impact of public park and building closures on access to hand hygiene as part of a comprehensive COVID-19 community mitigation strategy.

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## CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

## ETHICS STATEMENT

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, for example, 45C.F.R. part 46, 21C.F.R. part 56; 42 U.S.C. §241(d); 5 U.S.C. §552a; 44 U.S.C. §3501 et seq. Participants provided verbal consent to participate.

## PEER REVIEW

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