

COVID-19 and homelessness: when crises intersect



In this issue of *The Lancet Public Health*, Thomas Roederer and colleagues¹ present the findings of a large-scale serosurvey of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection among people experiencing homelessness and precarious housing in the greater Paris region. More than half of those sampled had SARS-CoV-2 immunoglobulin (Ig)G antibodies, reflecting a substantially higher burden of previous SARS-CoV-2 infection than that seen in the general population. The findings are notable for several reasons.

First, more than two thirds of seropositive individuals (68%, 95% CI 64.2–72.2; 291 of 426) did not report any symptoms during the recall period. Although subject to recall and reporting biases, similar findings have been documented in studies of PCR-confirmed SARS-CoV-2 infection among homeless populations elsewhere.^{2–4} Following a cluster of COVID-19 cases emerging from a large homeless shelter in Boston, our team did universal testing of the 408 remaining shelter guests and found a 36% prevalence of SARS-CoV-2 infection, with 88% of infected individuals reporting no symptoms at the time of diagnosis.² The issue of asymptomatic infection is particularly important in congregate shelter settings because asymptotically infected individuals can unknowingly transmit infection to large numbers of people in a short period of time, and a cornerstone of the US public health approach to mitigating COVID-19 among people experiencing homelessness has included routine symptom screening of shelter guests. In a modelling study of COVID-19 management strategies for people experiencing homelessness, we found that routine symptom screening followed by immediate testing of those with symptoms is a cost-effective approach to reducing COVID-19 infections and related health-care costs in this population.⁵ However, supplementing this with periodic universal PCR testing irrespective of symptoms provides compelling improvements in outcomes at a marginal incremental cost during surges in the pandemic such as the one we are now experiencing.⁵ Additionally, symptom screening is only effective if individuals are not inadvertently incentivised to underreport symptoms because of fears about being barred from shelter entry. We look forward to the results of an ongoing cluster-randomised trial of various surveillance strategies for detecting SARS-CoV-2 infection in homeless shelters in

Canada to clarify the real-world performance of symptom screening with and without supplemental universal PCR testing.⁶ At a minimum, symptom screening should encompass more than fever, cough, and shortness of breath, as this triad appears to have low sensitivity when deployed in homeless settings.^{2,7} The US Centers for Disease Control and Prevention (CDC) now recommends a broader list of potential COVID-19 symptoms when screening in shelters and encampments.

Second, the study by Roederer and colleagues reinforces the negative role of congregate settings and overcrowding on COVID-19 transmission. People who were triaged through congregate gymnasias settings before or during the lockdown had three times higher odds of SARS-CoV-2 seropositivity (adjusted odds ratio [aOR] 3.1, 95% CI 1.2–8.1; $p=0.023$). Furthermore, those reporting higher levels of residential crowding at the time of testing had similarly elevated odds of seropositivity (medium composite indicator: aOR 2.7, 95% CI 1.5–5.1, $p=0.0020$; high composite indicator: aOR 3.4, 1.7–6.9, $p<0.0001$). In the USA, heavily crowded or communal shelter settings appear to augment infection risk.^{3,4,8} Conversely, emerging evidence has shown that unsheltered homeless individuals appear to be at lower risk for SARS-CoV-2 infection than are people residing in shelters.⁷ On the basis of this body of evidence, we concur with the CDC's recommendations to avoid relocating unsheltered homeless individuals into congregate settings unless prevailing circumstances (eg, weather conditions) suggest there could be other important benefits to doing so, and decongesting existing congregate shelters where possible in favour of alternative housing arrangements with private or semi-private bedrooms and bathrooms. Our modelling study found that provision of temporary housing was by far the most effective strategy for mitigating COVID-19 in sheltered homeless populations, although it was also the costliest.⁵

Third, Roederer and colleagues' study indirectly shows that strategies for addressing COVID-19 in homeless and precariously housed populations must be tailored to the local context because homelessness is not a homogeneous occurrence but rather a variety of differing circumstances for a wide range of people. In this study, the mean age was 39 years, most participants were migrants to France, and emergency shelters were typically

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For more on screening for COVID-19 in homeless shelters see <https://www.cdc.gov/coronavirus/2019-ncov/community/homeless-shelters/screening-clients-respiratory-infection-symptoms.html>

reassigned semi-private hotel rooms. By contrast, in the USA, the adult homeless population is older and aging,⁹ and urban emergency shelters typically feature communal sleeping spaces with a large proportion of chronically homeless guests. The resources and needs of these distinct populations—and the social and public health infrastructure required to address these needs—are likely to differ considerably from place to place. Other important contextual factors include the local political landscape, the availability of shelter decongestion sites, and the accessibility of SARS-CoV-2 tests and vaccines.

Finally, Roederer and colleagues' study and other studies investigating COVID-19 among homeless populations contribute to an ever-growing body of evidence on the adverse health effects associated with homelessness. Comprehensive public health interventions to mitigate the effect of COVID-19 in these settings are both feasible and important,¹⁰ but they ultimately do little to resolve the underlying drivers of adverse health outcomes in homeless populations. Only a commitment to ending homelessness and addressing its upstream contributors can resolve the situation.

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- 1 Roederer T, Mollo B, Vincent C, et al. Seroprevalence and risk factors of exposure to COVID-19 in homeless people in Paris, France: a cross-sectional study. *Lancet Public Health* 2021; published online Feb 5. [https://doi.org/10.1016/S2468-2667\(21\)00001-3](https://doi.org/10.1016/S2468-2667(21)00001-3).
- 2 Baggett TP, Keyes H, Sporn N, Gaeta JM. Prevalence of SARS-CoV-2 Infection in residents of a large homeless shelter in Boston. *JAMA* 2020; **323**: 2191–92.
- 3 Rogers JH, Link AC, McCulloch D, et al. Characteristics of COVID-19 in homeless shelters: a community-based surveillance study. *Ann Intern Med* 2021; **174**: 42–49.
- 4 Karb R, Samuels E, Vanjani R, Trimbur C, Napoli A. Homeless shelter characteristics and prevalence of SARS-CoV-2. *West J Emerg Med* 2020; **21**: 1048–53.
- 5 Baggett TP, Scott JA, Le MH, et al. Clinical outcomes, costs, and cost-effectiveness of strategies for adults experiencing sheltered homelessness during the COVID-19 pandemic. *JAMA Netw Open* 2020; **3**: e2028195.
- 6 O'Shea T, Mbuagbaw L, Mokashi V, et al. Comparison of four COVID-19 screening strategies to facilitate early case identification within the homeless shelter population: a structured summary of a study protocol for a randomised controlled trial. *Trials* 2020; **21**: 941.
- 7 Yoon JC, Montgomery MP, Buff AM, et al. COVID-19 prevalence among people experiencing homelessness and homelessness service staff during early community transmission in Atlanta, Georgia, April–May 2020. *Clin Infect Dis* 2020; published online Sept 8. <https://doi.org/10.1093/cid/ciaa1340>.
- 8 Ghinai I, Davis ES, Mayer S, et al. Risk factors for severe acute respiratory syndrome coronavirus 2 infection in homeless shelters in Chicago, Illinois–March–May, 2020. *Open Forum Infect Dis* 2020; **7**: ofaa477.
- 9 Culhane DP, Metraux S, Byrne T, Stino M, Bainbridge J. The age structure of contemporary homelessness: evidence and implications for public policy. *Anal Soc Issues Public Policy* 2013; **13**: 228–44.
- 10 Baggett TP, Racine MW, Lewis E, et al. Addressing COVID-19 among people experiencing homelessness: description, adaptation, and early findings of a multiagency response in Boston. *Public Health Rep* 2020; **135**: 435–41.