## SARS-CoV-2 Seroprevalence Data to Guide Local Public Health Interventions

**To the Editor** Bajema et al[1] report jurisdiction-level serologic prevalence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antibodies. Such results, however, have limited value at the local and county levels, as national and jurisdictional seroprevalence data do not specifically address the heterogeneity within each state and county. That distinction is meaningful, as the spread of the coronavirus disease 2019 (COVID-19) pandemic appears to be highly heterogeneous.[2] In fact, the epidemiology of SARS-CoV-2 infection within each area appears to be confined to specific counties that are likely hot spots of localized spread.[3]

A complex set of factors likely contributes to such heterogenous spread of SARS-CoV-2 including, for example, household density and workforce characteristics. Interventions should be targeted to the specific factors and environments that drive infection. Such interventions will inherently be informed by prevalence data, and, for that, estimates at the local level are needed. The methods used by Bajema et al[1] do not provide the granular detail required to give local policy makers the necessary tools to develop targeted interventions. Similar to studies regarding sexually transmitted infections, in which prevalence estimates differ greatly in different populations,[4] local survey data, even household survey data, are important to understand the frequency and distribution of infection.

The US Centers for Disease Control and Prevention should develop, fund, and implement a framework for local SARS-CoV-2 surveillance that includes community-based surveys, local prevalence estimates, and methods to monitor the epidemiology of infection. Given the magnitude of the socioeconomic consequences arising from blanket closures in the wake of the COVID-19 pandemic,[5] such guidance should be provided expeditiously. At local levels, the prevalence of infection may be higher in specific hot spots. In such hot spots, public health interventions may have the greatest effects and relatively less societal harm.

**Lao-Tzu Allan-Blitz, MD**
**Jeffrey D. Klausner, MD, MPH**

**Author Affiliations:** Division of Global Health Equity, Department of Medicine, Brigham and Women's Hospital, Boston, Massachusetts (Allan-Blitz); Department of Medicine, Boston Children's Hospital, Boston, Massachusetts (Allan-Blitz); Division of Disease Prevention, Policy and Global Health, Department of Preventive Medicine, University of Southern California Keck School of Medicine (Klausner).

**Corresponding Authors:** Lao-Tzu Allan-Blitz, MD, Department of Medicine, Brigham and Women's Hospital, 75 Francis St, Boston, MA 02115 (lao.allanblitz@gmail.com); Jeffrey D. Klausner, MD, MPH, Department of Epidemiology, Fielding School of Public Health, Los Angeles, CA 90095 (jdklausner@mednet.ucla.edu).

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## Factors Contributing to Missing COVID-19 Cases During Contact Tracing

**To the Editor** We read with great interest the recently published article by Sachdev and colleagues[1] detailing the outcomes of contact tracing for patients with the novel coronavirus disease 2019 (COVID-19). The goal of contact tracing is to identify and promptly quarantine individuals exposed to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus causing COVID-19, to prevent onward transmission. The authors highlight key limitations of this process in their study, including delays in testing and contact notification, and report secondary cases in only 10% of the exposed population traced. This finding is unexpectedly low and serves to undermine the efficacy of contact tracing, as secondary attack rates are hypothesized to be up to 29% in household contacts[2] and up to 5% in social settings, workplaces, and schools.[3] We believe there are at least 2 important factors that may have contributed to the low secondary case detection rate observed in this study,[1] both of which warrant consideration.

First, the authors[1] report the median time to contact testing after the patient's symptom onset; however, a more useful measure to report would be time to contact testing since the last date of exposure. Optimizing the timing of testing according to days since last exposure is crucial to avoid false-negative results. Often, contacts require retesting at a later point in the incubation period to confirm the absence of infection. The probability of a false-negative result is highest in the 4-day period following exposure—ranging from approximately 100% on day 1 to 67% on day 4—and lowest on day 8 (20%).[4] Testing during windows in which the probability of false negatives is high can lead to artificially lower secondary infection rates.

Second, the authors[1] do not discuss whether symptom monitoring of exposed contacts occurred to detect probable cases. Individuals who meet clinical criteria for COVID-19 and who have an epidemiologic connection (ie, they had close contact to persons with COVID-19 in the 14 days prior) are defined as having probable cases and should be treated, isolated, and interviewed as such.[5] Given the high probability of false-negative results in this context, health departments must also rely on symptom monitoring of exposed contacts to ensure probable cases are promptly identified and managed. Taken together, we believe consideration of proactive symptom monitoring and precise timing of testing of exposed contacts is necessary to fully understand the utility of contact tracing.



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