Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Potential drawbacks of SARS-CoV-2 seroprevalence surveys

Sir,

I read with interest the recent meta-analysis of Galanis *et al.* [1] who provided an estimation of the seroprevalence of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) antibodies in healthcare workers. Although seroprevalence surveys can be regarded as important tools for exploring the burden of disease and progression of herd immunity, especially in front-line healthcare staff, there are important drawbacks and limitations that need to be considered when analysing their pooled outcomes.

Reliable evidence has been provided that seroconversion varies widely in patients with SARS-CoV-2 infection, with up to one-third of all asymptomatic subjects failing to mount a detectable humoral response with anti-SARS-CoV-2 immunoglobulin G (IgG) and thus remaining completely underdiagnosed [2]. The progressive, time-dependent decline of anti-SARS-CoV-2 antibodies is another important issue, whereby it could be proven that >50% of anti-SARS-CoV-2 IgG-seropositive subjects may become seronegative as early as 2 months after initial molecular diagnosis [3]. Since the first peak of the SARS-CoV-2 outbreak was reached in most countries during the first months of 2020 [4], it is conceivable that many infected individuals may have lost any detectable humoral response later in the same year. Last but not least, the diagnostic sensitivity of anti-SARS-CoV-2 antibody testing is extremely variable, with consensus-positive interpretation that is often unsatisfactory, and which may hence be associated with a non-negligible risk of obtaining false-negative test results [5].

Together, these three aspects suggest that serologic evidence of previous SARS-CoV-2 infection may often be unreliable, so actual calculated values may provide a consistently underestimated figure of the real spread of SARS-CoV-2 infection within healthcare facilities.

Conflict of interest statement
None declared.

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References

[1] Galanis P, Vraka I, Fragkou D, Bilali A, Kaitelidou D. Seroprevalence of SARS-CoV-2 antibodies and associated factors in health care workers: a systematic review and meta-analysis. J Hosp Infect 2020. https://doi.org/10.1016/j.jhin.2020.11.008.

[2] Cao S, Gan Y, Wang C, Bachmann M, Wei S, Gong J, et al. Post-lockdown SARS-CoV-2 nucleic acid screening in nearly ten million residents of Wuhan, China. Nat Commun 2020;11:5917.

[3] Patel MM, Thornburg NJ, Stubblefield WB, Talbot HK, Coughlin MM, Feldstein LR, et al. Change in antibodies to SARS-CoV-2 over 60 days among health care personnel in Nashville, Tennessee. JAMA 2020;324:1781—2.

[4] Ioannidis JPA. Global perspective of COVID-19 epidemiology for a full-cycle pandemic. Eur J Clin Invest 2020;50:e13423.

[5] Bohn MK, Loh TP, Wang CB, Mueller R, Koch D, Sethi S, et al. IFCC interim guidelines on serological testing of antibodies against SARS-CoV-2. Clin Chem Lab Med 2020;58:2001—8.

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