

## Protecting health-care workers from subclinical coronavirus infection

Health-care workers face an elevated risk of exposure to infectious diseases, including the novel coronavirus (COVID-19) in China. It is imperative to ensure the safety of health-care workers not only to safeguard continuous patient care but also to ensure they do not transmit the virus. COVID-19 can spread via cough or respiratory droplets, contact with bodily fluids, or from contaminated surfaces.<sup>1</sup> According to recent guidelines from the China National Health Commission, pneumonia caused by COVID-19 was included as a Group B infectious disease, which is in the same category as other infectious viruses such as severe acute respiratory syndrome (SARS) and highly pathogenic avian influenza (HPAI). However, current guidelines suggest ensuring protective measures for all health-care workers similar to those indicated for Group A infections—a category reserved for highly infectious pathogens, such as cholera and plague.<sup>3</sup> WHO confirmed 8098 cases and 774 (9.6%) deaths during the SARS outbreak in 2002, of which health-care workers accounted for 1707 (21%) cases.

Recent evidence suggests that even someone who is non-symptomatic can spread COVID-19 with high efficiency, and conventional measures of protection, such as face masks,

provide insufficient protection. A boy aged 10 years who was infected with COVID-19 had no symptoms but had visible changes in lung imaging and blood markers of disease.<sup>1</sup> Another patient undergoing surgery in a hospital in Wuhan infected 14 health-care workers even before fever onset.<sup>3</sup> Additionally, a medical expert, who visited Wuhan to investigate the COVID-19 outbreak, after returning to Beijing, initially exhibited conjunctivitis of the lower left eyelid before the appearance of catarrhal symptoms and fever.<sup>4</sup> The individual tested positive for COVID-19, suggesting its tropism to non-respiratory mucosal surfaces, thus limiting the effectiveness of face masks. A patient who travelled from Shanghai to attend a meeting in Germany was subclinical until on the flight back to China. However, two of this patient's close contacts and another two patients attending the meeting without close contact were found to be infected with COVID-19.<sup>5</sup> This recent case shows that not only can subclinical patients transmit the virus effectively but patients can also shed high amounts of the virus and infect others even after recovery from the acute illness. These findings warrant aggressive measures (such as N95 masks, goggles, and protective gowns) to ensure the safety of health-care workers during this COVID-19 outbreak, as well as future outbreaks, especially in the initial stages where limited information about the transmission and infective potency of the virus is available.

We acknowledge financial support from China Scholarship Council (DC; No.201809112037), Beijing Nova Program (DC; No.Z171100001117012) and Beijing Nova Program Interdisciplinary Cooperation Project (DC; No.Z191100001119021). We declare no competing interests.

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Published Online  
February 13, 2020  
[https://doi.org/10.1016/S2213-2600\(20\)30066-7](https://doi.org/10.1016/S2213-2600(20)30066-7)



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