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## Warnings regarding the potential coronavirus disease 2019 (COVID-19) transmission risk: Vaccination is not enough

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*To the Editor*—Caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), the coronavirus disease 2019 (COVID-19) pandemic has continued to spread around the world, resulting in a global health emergency of inconceivable magnitude.<sup>1,2</sup> Currently, several vaccines, including the Pfizer-BioNTech COVID-19 vaccine and the Moderna COVID-19 vaccine, have been authorized for emergency use to prevent COVID-19.<sup>3</sup> A previous study indicated that the use of a vaccine in combination with measures that reduce contact between susceptible individuals and COVID-19 carriers will significantly decrease the per-day risk of infection as long as at least 50% of people receive it.<sup>4</sup> In this article, these researchers also expressed their concern that potential vaccine defiance and abandoning other protection options may cause even worse results in COVID-19 prevention.<sup>4</sup> In addition, due to the limited supply of COVID-19 vaccine in the United States, Centers for Disease Control and Prevention (CDC) recommends that initial supplies of SARS-CoV-2 vaccine be allocated to healthcare personnel and long-term care facility residents.<sup>5</sup> Considering the accessibility of vaccines in different regions and populations around the world, public health polices including keeping social distance and wearing face masks, are still of great importance, even though an effective vaccine has been introduced.

Furthermore, according to *Morbidity and Mortality Weekly Report* from the CDC,<sup>6</sup> several issues still need to be explored: (1) No data assessing the efficacy of vaccine in prevention of asymptomatic SARS-CoV-2 infection are available; thus, the potential transmission risk of SARS-CoV-2 among asymptomatic

infected individuals cannot be ignored, even after vaccination. (2) Considering the time interval between the invention of the Pfizer-BioNTech SARS-CoV-2 vaccine and its emergency use authorization (EUA), the long-term effects of this vaccine (including adverse and protected effects) are still not entirely clear, and further surveillance is still necessary. (3) It takes ~14 days to obtain protection from infection after the first shot of Pfizer vaccine,<sup>7</sup> and individuals may still be susceptible during the first few days to weeks after vaccination, whereas the general public may not fully understand this and may be less compliant with current nonpharmaceutical interventions (NPIs) immediately after receiving the vaccine.

In conclusion, uncertainties remain in the long-term effect of SARS-CoV-2 vaccines, and accessibility of vaccines is still limited. Strict public health policies aiming to reduce the spread of SARS-CoV-2 are still warranted and should not be ignored.

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## Impact of coronavirus disease 2019 (COVID-19) vaccination program on healthcare worker infections in an academic hospital

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*To the Editor*—The third wave of the coronavirus disease 2019 (COVID-19) pandemic resulted in a significant rise in hospitalizations and healthcare worker (HCW) severe acute respiratory coronavirus virus 2 (SARS-CoV-2) infections. After implementing the SARS-CoV-2 vaccination program, despite rising COVID-19 hospitalizations, we promptly observed a decrease in HCW infections.

Our COVID-19 vaccination HCW program began on December 16, 2020, (Pfizer/BioNTech) and December 28, 2020 (Moderna). The COVID-19 cases were identified by nasal swab PCR testing of clinically symptomatic individuals. Six days after beginning employee immunizations, our HCW COVID-19 infection rate decreased by 25%. After 60% of employees received the 1st vaccine dose, the HCW COVID-19 rate decreased by 50% (Fig. 1). At 14–28 days and >28 days after their first vaccine dose, HCWs were less likely to have COVID-19 than those who did not receive the vaccine (0.15% and 0.00% vs 0.59%,  $P = .0002$  and  $.0004$ , respectively). Concurrently implemented SARS-CoV-2 transmission prevention strategies included the transition from cloth masks to level-3 masks for all employees, mandatory face shields for direct patient care, a restricted visitor policy, and physical space adjustments for improved social distancing.

The Pfizer/BioNTech clinical trial reported a vaccine efficacy of 95% at least 7 days after the second dose and protection as early as 12 days after administration of the first dose.<sup>2</sup> The Moderna vaccine trial observed similar protection prior to the second dose.<sup>3</sup> Our data are consistent with these studies and underscore the prompt benefits of vaccination for the prevention of COVID-19 in the

healthcare system even prior to the completion of the second vaccine dose. Our additional infection control strategies are consistent with CDC recommendations<sup>4</sup> and likely further optimized HCW safety.

We present a bundled infection prevention approach including vaccination for the prompt reduction of COVID-19 infection in HCWs. The impact of COVID-19 vaccination in HCWs was observed even prior to completion of the second dose. Wood *et al*<sup>5</sup> suggest 12 key strategies to promote vaccination, 2 of which are relevant here: increasing observability and countering anecdotal “bad reaction” with “good reaction” vaccine stories.<sup>5</sup> We share our vaccine story to encourage more vaccination-hesitant HCWs to receive immunizations and to receive them earlier. Reaching herd immunity through vaccination is a crucial next step in ending this pandemic.

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