

Real-Time Remote Surveillance of Doffing During COVID-19 Pandemic: Enhancing Safety of Health Care Workers

To the Editor

The global epidemiological crisis of coronavirus disease 2019 (COVID-19) hints for strategic inspection, resource management, and responsiveness in infection control. Worldwide a significant number of health care workers (HCWs) have been infected till to date with Asia-Pacific region reporting 35 deaths and over 4000 quarantined cases, as on April 3, 2020.¹ HCWs across the nation are anxious, unsure of personal protective equipment (PPE) availability, and whether it will provide enough protection or not. With alarming COVID-19 case numbers, an overlooked facet of the PPE scarcity is whether HCWs can use it properly without self-contamination. Effective use of PPE by HCWs is an integral part of COVID-19 prevention in the health care setting. World Health Organization recommendations emphasize the importance of appropriate use of PPE, which requires correct and rigorous behavior from health care workers, particularly while doffing.² Hospitals are scrambling to efficiently train a large number of noncritical care staff at short notice through simulation, webinars, and online courses on proper PPE donning and doffing practices. But experience from past infectious outbreak highlights the higher self-contamination rates as high as 46%–90% among HCWs during doffing.^{3,4} Even when HCWs presume that they are trained enough, several factors may contribute to self-contamination during doffing—difficulty differentiating between dirty (outside) and clean (inside) surfaces, poorly fitting PPEs, forceful movements, incorrect doffing sequence, and inconsistent PPE training.⁵

Therefore, an observer should watch the doffing process and alert HCW on any possible breach in safety.

Two-way audio-visual communication system with closed circuit television (CCTV) cameras in the doffing area has the potential to ensure HCW safety from the offsite location through a trained observer, qualified to guide round the clock (Figure).

Observer follows the predefined checklist based on the Centers for Disease Control and Prevention (CDC) guideline for doffing, focusing on the visual screen. He will communicate, visually inspect, protect, and guide HCWs through the protocols of doffing PPE.



Figure. Audio-visual surveillance of doffing process by trained observer from offsite location.

Apart from adherence to the process of donning and doffing, the observer will ensure the disposal of used PPE from the doffing area. Two-way audio-visual communication (with CCTV cameras) in doffing area has the following advantages:

- Limits the risk of direct physical contact of the observer with potentially contaminated PPE of HCW.
- Limits PPE wastage.
- Allays HCW anxiety.
- The low-cost surveillance system.

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DOI: 10.1213/ANE.0000000000004940