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Call for improvement in personal protective equipment guidance and research



To the Editor:

There is urgent need for improvements to the current guidance on personal protective equipment (PPE) use for health care workers from the Centers for Disease Control and Prevention.¹ The guidance informs health care professions' curriculum and professional examinations throughout the United States. Standards from other international partners differ, particularly in the doffing sequence.^{2,3} Health care workers are known to inconsistently or inadequately use PPE, even in the face of epidemic diseases, such as severe acute respiratory syndrome and pandemic influenza A (H1N1) virus.^{4,5} One clear and safe standard which moves seamlessly from preventing health care-associated infections to protecting health care workers in the care of patients with highly infectious diseases is needed. An expert consortium should be formed to focus on agreeing to a standard step-by-step process, but also identifying essential safety concepts in the event that a breach, contamination situation, or unexpected clinical event warrants a slight change in process. The standard should include the use of PPE for special circumstances, such as chemotherapy administration,⁶ patient transportation of an isolation patient for ancillary medical services, and visitors of isolation patients.⁷ A specific list of inappropriate behaviors would also be helpful for clinicians, such as wearing isolation gowns for warmth or wearing surgical PPE in the cafeteria or public hospital areas.

The current Centers for Disease Control and Prevention guidance for prevention of health care-associated infections for donning and doffing sequence of PPE present critical concerns for clinicians and health care workers (<http://www.cdc.gov/hai/pdfs/ppe/PPE-Sequence.pdf>). The concerns relate to safe doffing processes used after patient care or other use of PPE. In example 1, the facial PPE (goggles or face shield) is removed before the gown is removed.

In the care of patients with Ebola virus disease, a key principle was to remove all body PPE before removing the facial PPE in the event of aerosolization as the gown is removed, protecting mucous membranes.⁸ Example 2 shows the jumbled removal of gown and gloves together. This method is ripe with opportunities for losing control of the gloves, which are the most contaminated elements of the PPE worn. Good glove-in-glove technique keeping the cuffs of the gown clean is a much safer alternative. Clean cuffs can then be slid over the hands before gown removal to prevent the dirty side of the sleeves from coming into contact with skin.⁹

A clear standard for PPE use is critical to safe and cohesive practices when the infectious risk for an illness is great or the mortality rate for a newly emerging pathogen is high. Current and future health care professionals deserve clear and concise guidance on how best to protect themselves in light of the many infectious threats which will likely emerge in the coming years. More research into clinical actions that generate aerosols and what role PPE plays in prevention is also needed. No health care-associated infection of a health care worker or the patients in their care should be acceptable when the tools are available to protect them if used and used correctly.

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Conflicts of interest: None to report.

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