COVID-19 Pandemic: International Variation of Personal Protective Equipment and Infection Prevention and Control Guidelines

To the Editor

We read with great interest the article by Brown et al[1] who worked with a multidisciplinary team to deploy a standardized guideline for airway management of coronavirus disease (COVID)–positive or unknown patients. We applaud their insight in recognizing the difficulty in implementing a guideline amid the rapid emergence of new information and in adapting the guideline to different environments within the hospital, while still prioritizing the safety of health care providers (HCPs) in the presence of personal protective equipment (PPE) shortage. A long and ever-growing list of HCPs have lost their lives amid the coronavirus disease 2019 (COVID-19) pandemic.[2] A large proportion of HCPs acquired the infection at the beginning of the outbreak, probably secondary to the lack of awareness of the pathogen and inadequate PPE.[3] Other aspects of infection control are paramount in preventing nosocomial infection, such as strict screening protocols for hospital staff, visitor restrictions, widely available and highly sensitive testing, good hand hygiene, and clear infection prevention and control (IPC) protocols.[4]

Internationally, there is a wide variation of PPE, ranging from powered air-purifying respirator (PAPR) to separate facemasks, goggles, gown, and gloves. Countries (eg, China, Taiwan, and South Korea), where PAPR or Hazmat suits are available, had previously experienced epidemics, such as severe acute respiratory syndrome coronavirus 2003 (SARS-CoV-1) or Middle East respiratory syndrome-related coronavirus (MERS). One of the most notable advantages of PAPR is its sustainability by being reusable while offering protection for aerosol-generating medical procedures (AGMPs). Shortage of PPE has been experienced in many countries leading to low level or absence of PPE, hence, exposing HCPs to potential infection.[5] Some HCPs are required to don the same PPE for days or to reuse single-use N95 respirators. This prompted the Food and Drug Administration to approve the reusable industrial elastomeric respirators and decontamination systems for N95 masks in a timely fashion amid the pandemic.

Local IPC guidelines vary internationally. They should err on the side of caution though, when robust evidence is unavailable due a short time frame, and with new data continuously emerging. This is particularly relevant with the recognition of asymptomatic transmission of the disease which also translates to higher level of PPE required for AGMPs for asymptomatic patients.[5] As treatment protocols evolve with emerging evidence, treatments like noninvasive ventilation usage change the level of PPE necessary to ensure HCPs protection. Whether HCPs adhere to local IPC guidelines are dependent on the element of the guidelines as highlighted in the recent Cochrane review.[6] HCPs felt unsure as to how to adhere to local guidelines when they were long and ambiguous or did not reflect national or international guidelines.[6] While the likely mode of COVID-19 transmission is droplet and contact, guidelines should be carefully tailored to different subspecialties rather than a "one size fits all" approach. Ideally, representatives from each specialty should be consulted. Transparency regarding resources such as PPE also fosters trusts among HCPs to implement IPC guidelines.[6] These guidelines should not overlook AGMPs (eg, airway manipulation or noninvasive ventilation) and should protect those who work in the hospital "hot zone."[5] Furthermore, they should consider an impossibility to practice the globally recommended social distancing at the hospital or other health care settings (eg, nursing homes) which potentially expose HCPs to droplet and/or short range aerosol spread, while interacting with patients and other staff. This will contribute to further spread of disease to HCPs and patients. Therefore, continuous masking should be implemented. Many Asian countries have taken the lead in this respect.

The rapidly evolving COVID-19 pandemic necessitates constantly changing IPC guidelines. This tends to overwhelm HCPs, and without support from management, compliance may lapse.[6] Education is also paramount because the novelty of the highly contagious disease means a rapid emergence of data and information. Virtual education sessions and simulations outlined by Brown et al[1] are certainly invaluable to keep HCPs informed and up-to-date with the current guidelines.

Within the health care setting, different international practices regarding PPE and guidelines are understandable due to the global difference in disease prevalence, the amount of testing available, the sensitivity of the tests, and resources. Nonetheless, the principles should be the same regarding the basics of infection control with early disease identification by vigilant screening, thorough contact tracing by mandatory record keeping, containment by proper PPE with exploration of sustainable options amid shortages, and strict implementation of clear IPC guidelines which should be designed to protect HCPs in individualized subspecialties or health care settings.

Robust guidelines are particularly important as more countries are moving toward "reopening." With different institutional IPC guidelines for PPE and ventilation strategies, a collaborative international network to establish the rate of nosocomial infection within HCPs could be a valuable resource going forward.

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