

Preventing Infection of Patients and Healthcare Workers Should Be the New Normal in the Era of Novel Coronavirus Epidemics: Reply

In Reply:

We read the letter from our colleagues in Spain with tears in our eyes.¹ When we submitted our editorial² to *ANESTHESIOLOGY* on February 29, 2020, there was much that was not known about this virus. We were uncertain about how dire the shortage of personal protective equipment would be, although we believed there would be a shortage.

We now know that airborne spread is likely during aerosol-generating procedures, and that the shortage of personal protective equipment has been a major problem around the world. Ironically, the equipment we need the most to protect patients and ourselves, ordinary surgical masks, respirator masks (such as N95), eye protection, and hand gel, are very inexpensive to produce, but the world's capacity to manufacture these materials in a short time is limited, and overly centralized.

U.S. healthcare workers have also needed to adapt to shortages of personal protective equipment. Inequalities, at both the facility and individual levels, are impacting disease and outcomes. Facilities with lower resources, such as nursing homes, are having to deal with lack of supplies, lack of staff, and a population of residents at risk for severe disease and higher mortality. American acute-care hospitals are also experiencing these shortages, forcing us to find innovative ways of developing personal protective equipment, such as manufacturing three-dimensional printed respirators and eye protective equipment. Small businesses and individuals

are stepping up to help by repurposing their factories to make masks or by sewing masks in their homes.

All of us must honor our heroic colleagues in Spain and other severely affected places by making sure that we do not rest until we have adequate supplies of personal protective equipment for all healthcare providers. In our opinion, personal protective equipment should be manufactured and stored throughout the world, not simply in a few geographic locations. This would ensure that during times of utmost need, there is a robust reserve and a manufacturing supply chain that does not rely on a single country or even a few countries. This week, the state of California announced that it would spend a billion dollars buying a massive supply of masks and that it would serve as a distribution center for other western states of the United States. This is a good start, but much more needs to be done.

We must not rest until we are sure that in the future we will not have to fight with our bare hands. *Mucha fuerza colegas!*

Competing Interests

Dr. Munoz-Price has an investigator-initiated grant from Cepheid (Sunnyvale, California). Dr. Bowdle declares no competing interests.

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DOI: 10.1097/ALN.0000000000003372

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(Accepted for publication April 21, 2020.)