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# COVID-19 and ophthalmology: An underappreciated occupational hazard

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*Letter to the Editor*—We read the article “COVID-19 and ophthalmology: an underappreciated occupational hazard” by Kuo and O’Brien<sup>1</sup> with great interest. They have described the challenges faced by eye care personnel during this pandemic very well in a systematic manner. We would like to add few of our own experiences.

Personal protective equipment (PPE) has become the gold standard during the COVID-19 pandemic for prevention of infection. Although it has its advantages, many problems may arise in terms of comfort and ease in certain circumstances. Currently, with much of the primary focus on infection prevention, these may often be overlooked. In the long term, these difficulties may hamper the performance of healthcare workers like ophthalmologists, whose work demands high precision. As lockdowns are easing and services are resuming, we present our report from a pilot study we conducted in Nepal among ophthalmologists on this matter. We conducted a small survey among 24 ophthalmologists who had recently (<1 week) returned to work using PPE. They were asked to describe issues related to discomfort or difficulty in performing regular tasks when using PPE. They were also asked to grade on a Likert scale of 1 to 5 (1 least likely to 5 most likely) the issues they considered were most troubling (Table 1).

Returning to work after weeks of furlough only to suddenly and be enshrouded in PPE is a new challenge for many of us. Although it has become a norm, the evidence is already clear that many ophthalmologists and eye care professionals are having difficulties related to PPE use.<sup>2</sup> Although the evidence is concrete on infection prevention with its use,<sup>3</sup> our results suggest that PPE may need to be redesigned and customized to best fit the activity or the demands of

**Table 1.** Problems Related to Discomfort and Difficulty in Performing Regular Examination for Ophthalmologists With Use of Personal Protective Equipment<sup>a</sup>

Problems	Frequency, No. (%)	Problem Scale (Mode values)
Thermal discomfort/sweating	18 (75)	3
Muffled voice (unable to understand)	22 (91.6)	3
Fogging <sup>b</sup>	19 (79.1)	5
Difficulty in using slit lamps	10 (41.6)	4
Difficulty in focusing using face shields	17 (70.8)	5
Unsure of DIY protectives/shields	15 (62.5)	4

<sup>a</sup>Total participants = 24.

<sup>b</sup>14 of the 24 participants were spectacle users; all complained of fogging.

individual workers. Problems like fogging, sweating, and difficulty focusing are unacceptable not only in ophthalmological but many other faculties related to high-precision procedures. With more evidence that COVID-19 is here to stay,<sup>4</sup> these problems will continue to hinder efforts to restart or continue services.

Physical distancing often tops the list and is the most prioritized advise during this pandemic. However, due to the nature of examination, it is practically impossible for eye care professionals to adopt it.<sup>1,5</sup> In addition to PPE, improvised, low-tech, “Do it yourself” (DIY) protective devices are also being widely used.<sup>6</sup> Although this may be an advantage because much of the “design for the greatest ease of use” would have already been already improvised, many such DIY efforts remain unproven in terms of the actual protection they provide. Until tested for its “quantifiable” protection value, physicians may fall into the trap of “pseudo” protection and confidence in their use.

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Collaboration of physicians with the manufacturers, laboratories, and testing facilities are of utmost importance to devise such protective devices. Efforts focused on extensive testing of these materials and designs to make them more protective and comfortable are necessary immediately if we are to continue serving with confidence in this era of “the new normal.”

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## Timing of surgery after recovery from coronavirus disease 2019 (COVID-19) infection

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*To the Editor*—The coronavirus disease 2019 (COVID-19) pandemic has created unprecedented challenges for infection prevention experts, healthcare providers, and hospital administrative personnel. National, state, and local hospital leaders have had to rapidly adapt and update policies based on personal protective equipment and testing constraints. More recently, emerging data on presymptomatic transmission and prolonged viral shedding have created additional challenges.<sup>1–3</sup> As the pandemic continues and states begin to allow easing of nonemergent surgery restrictions, stakeholders are now faced with the task of developing policies for surgeries on recovered COVID-19–positive patients. Based on current data for COVID-19 and prior research on viral respiratory illnesses, we propose a rational surgical policy for such patients.

Most concerns with regard to surgery in recovered COVID-19 positive patients are related to the uncertainty of the postsymptomatic infectious period. Several studies have demonstrated prolonged or intermittent viral shedding in otherwise recovered, asymptomatic patients.<sup>1–3</sup>

Accordingly, the CDC recently extended the time that recovered COVID-19 patients should remain isolated. Specifically, recovered patients should isolate for at least 10 days rather than 7 days after symptom onset and for at least 3 days after recovery.<sup>4</sup> In its update, the CDC noted that replication-competent virus has not been successfully cultured >9 days after onset of illness, but data remains either unpublished or consists of very small cohorts.<sup>3,4</sup> To this point, the CDC has recognized such uncertainty and has allowed

consideration of a more stringent test-based strategy, citing “. . . circumstances under which there is an especially low tolerance for postrecovery SARS-CoV-2 shedding and risk of transmitting infection. In such circumstances, employers and local public health authorities may choose to apply more stringent recommendations, such as a test-based strategy, if feasible, or a requirement for a longer period of isolation after illness resolution.”<sup>5</sup>

Another important concern is risk of postoperative complications in newly recovered COVID-19 patients. In one study, cardiac surgery during influenza season was an independent risk factor for development of ARDS; duration of mechanical ventilation was also significantly longer than in noninfluenza seasons.<sup>6</sup> Another large prospective study demonstrated that acute respiratory infection in the month preceding surgery was an independent risk factor for postoperative pulmonary complications.<sup>7</sup> Finally, airway hyperreactivity following an upper respiratory infection may last 2–6 weeks and can contribute to surgical complications.<sup>8</sup>

A few case reports on outcomes have emerged on patients undergoing elective surgeries with confirmed active COVID-19 infections.<sup>9,10</sup> A recent international multicenter cohort study of 1,128 COVID positive patients undergoing emergent (74%) and elective (26.1%) surgeries noted that pulmonary complications occurred in 51.2% of patients with a 30-day mortality of 38% (82% of all deaths were due to COVID-19 infection).<sup>9</sup> The authors noted that during the COVID-19 outbreak in Wuhan, China, 34 patients who were likely asymptomatic with COVID-19 and undergoing elective procedures developed serious illness postoperatively. Postoperative ICU admissions were 44.1% with 20.5% COVID-related mortality within 4 weeks.<sup>10</sup> The mortality rate was much higher than expected for similar surgeries in patients without COVID-19. It is unclear whether COVID-19 infection

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