

# Surgical Residents at the Forefront of the COVID-19 Pandemic

## *Perspectives on Redeployment*

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The COVID-19 pandemic has led many of us to re-evaluate our approaches to disaster management, reflect on our experiences, and be reminded of the strong resolve for our work. This article details a resident's perspective on redeployment of surgical residents to the COVID-19 frontline setting, using the example of the COVID-19 intensive care unit. Redeployment during a pandemic brings the unique opportunity to collaborate with colleagues on the frontlines and learn alongside one another about the evolving management of this disease. During this ongoing pandemic, it is incumbent upon us as clinicians to work together in a multidisciplinary manner and reflect on ways this pandemic impacts the delivery of patient care.

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The current COVID-19 pandemic has confronted us with a fierce headwind that has unimaginably changed our daily lives. Although surgical trainees in general, and neurosurgical residents in particular, are not by definition on the frontlines battling the pandemic, over time, more and more physicians are being asked to contribute to the collective efforts to aid frontline workers through “redeployment.” This serves 2 main purposes: firstly, an “all-hands-on-deck” approach aids with the overwhelming patient load, consisting of both COVID-19 and non-COVID-19 patients in tertiary care centers; secondly, additional help is needed to relieve frontline healthcare workers such as emergency and internal medicine physicians, anesthesiologists and intensivists who need refuge from the weeks of dealing with what may be one of the greatest stressors of their careers. Clinicians on the frontlines continue to bear witness to immense suffering, ranging from seeing previously healthy patients rapidly deteriorate and require mechanical ventilation, to be present for patients' final goodbyes to their loved ones over video calls due to policies against hospital visitors.<sup>1</sup>

It is important to consider the role of redeployment of surgical residents and the consequent impact that this can have on training. Firstly, redeployment of residents to COVID-19 intensive care units (ICUs), emergency departments, and wards place additional trainees at a theoretical risk of contracting this disease. However, this should be mitigated with appropriate personal protective equipment (PPE) and training in donning and doffing PPE to minimize exposure. In addition, widespread dissemination of the recently approved vaccines against COVID-19 is anticipated to protect healthcare workers in these settings. Secondly, it can also be argued that redeployment of surgical residents to COVID-19

settings diminishes the overall experience within their respective subspecialties and this can hinder training. Drawing on firsthand experience as a neurosurgery resident tasked with aiding in the workload of colleagues in the COVID-19 ICU, I contend that the collective benefits of redeploying surgical residents to aid in COVID-19 efforts vastly outweigh potential individual consequences.

For the months before working in the COVID-19 ICU, I had been viewing the pandemic through the lens of a neurosurgical resident. The neurosurgery service was receiving referrals from the emergency department for patients in advanced stages of their disease, ranging from hemiparesis to devastating intracranial bleeds, because they were too afraid to seek care earlier. This experience was juxtaposed with now learning from colleagues in ICU and emergency medicine about principles of intensive care and techniques of inserting vascular access lines. I needed to re-learn procedures and concepts in mechanical ventilation and relied on my anesthesia colleagues, with whom I often worked in the operating room, to guide me through these skills. I recall managing a middle-aged gentleman who was recently admitted to the ICU with COVID pneumonia and was experiencing marked respiratory decline. An internal medicine resident proceeded to promptly intubate the patient and I was tasked with inserting a central line, while my anesthesia colleague guided me through the procedure. I was in awe of how effectively this newly assembled team worked together in these roles to help stabilize this patient.

Neurosurgeons are familiar with the complications of having a patient in the prone position for surgery for a prolonged period of time, including ophthalmologic complications, peripheral nerve injuries, and pressure ulcers, among others.<sup>2</sup> Having a patient prone for upwards of 16 hours a day for multiple consecutive days is a well-established maneuver in the intensive care setting to treat patients with acute respiratory distress syndrome (ARDS).<sup>3</sup> Proning was often employed for patients with severe ARDS secondary to COVID-19 pneumonia and was a grim constant reminder of how the COVID-19 respiratory illness can be.

Moreover, as a team, we were collectively learning more about the manifestations of COVID-19. Our understanding of the disease was exponentially evolving in real-time, and this in itself posed important considerations when caring for patients in the absence of high-level evidence-based data. I was surprised to learn about and witness the neuropathologic and neurovascular complications of COVID-19, as cases of COVID-19-associated intracranial hemorrhages, cerebral venous thrombosis and malignant cerebral infarcts were emerging as possible manifestations of the biological impact of this virus on cerebral vasculature.<sup>4</sup>

The importance of physician and resident redeployment to aid in the efforts associated with battling this pandemic cannot be understated. Although it may be perceived as a disadvantage to miss out on time training within one's subspecialty, the lessons learned through this experience transcend prescribed residency curricula. Having the unexpected privilege to work in the ICU during this time, several important lessons were learned from our colleagues on the

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frontlines. Firstly, in a crisis situation, a strong multidisciplinary team-based approach that recognizes the stressors that those around us are experiencing goes a long way. Patient care remains at the forefront when compassion and humanity for our patients and one another form the foundation of our practice. Secondly, trainees and attendings alike can always stand to learn fundamental principles from those around us, particularly when surgical trainees become focused on their respective subspecialties. Finally, this pandemic has given us an opportunity to recalibrate our priorities and further cultivate the strong resolve for our work in the face of adversity. Taken together, this monumental experience can refine our approach to crisis management and contribute to efforts on the frontlines, where possible, through our collective duty as physicians during this historic time.

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