

## Guest Editorial

# Perfusion's Role in Responding to the COVID-19 Pandemic

When a pathogen infects millions and the demand for patient care surges in a matter of months, resources become stretched, people become scared, and society is shaken. In the face of a microscopic infector of millions, it should be our responsibility, as perfusionists and contributors to patient care, to face the coming challenges with preparedness over panic.

Pandemics test the aptitude of medicine and the professionals who comprise it. To meet the demands of the COVID-19 pandemic, it will be to our highest benefit to collaborate with others. To cooperate with our peers is to use an invaluable network of millions of clinicians, each representing a collection of specialists all working toward discovery, progress, and care in remarkable ways. Isolated knowledge alone will not solve this pandemic. On that premise, our most impactful means of responding to the COVID-19 pandemic lie within a continued demonstration and advocacy of communication and collaboration within the surgical and medical community.

To explain, let us explore what the future demands of this major pandemic may be. By their nature, pandemics are unpredictable, and COVID-19 continues to challenge our collective management of unpredictability. However, we can use the patterns we have recently seen in regions already heavily affected by this pandemic to form a better idea of what to expect, as the number of COVID-19 cases continues to increase exponentially. Of interest to our profession, we know that it is respiratory failure that will pose the greatest mortality threat to patients infected by COVID-19, as has been the case with many pandemics in modern history. The need for pulmonary support is going to increase rapidly. For patients with the most severe respiratory symptoms, mechanical ventilation may prove inadequate, thereby necessitating the use of extracorporeal membrane oxygenation (ECMO). For potentially thousands of COVID-19 patients, ECMO may act as their last line of care. As a result, the demand for human resources and equipment related to ECMO may intensify with the perfusion workload likely increasing. Our entire profession may very well be stretched thin.

Department stockrooms could empty. The need for hospital-to-hospital integration and materials management may grow to an extent not yet seen. If this becomes the

case, limited equipment and staff will have to be allocated to where they can best be used. Different professions will need to work together to distribute resources best and, in some cases, to triage patients.

As the COVID-19 pandemic spreads globally, elective cases across all hospitals will need to be postponed or canceled—as many already are. Staff shortages may require training of supplemental technicians, nurses, and other clinicians to manage rising caseloads. With limited resources in high demand, assistance from other institutions and perfusion departments may become the norm. A worldwide effort to allocate care to the regions and areas most affected may have to be implemented. Further complicating care, extended periods of patient isolation to combat disease spread may make treatments more time-consuming. Also, although blood conservation techniques ought to be implemented as much as possible, blood products may be in short supply. Meanwhile, an onrush of used and contaminated medical equipment will need to be swiftly and conscientiously processed, disposed of, or sterilized. Certainly, if the number of COVID-19 patients increases as expected, the entirety of the global healthcare system will be challenged to its core.

As I write this, many of these scenarios are becoming, or already are a reality—especially in those regions most stricken with COVID-19 cases. Within the coming weeks, many clinicians will be thrust into a complicated and stressful endeavor, one far from established routine. Every individual healthcare specialist, perfusionist or not, will be confronted with perhaps the biggest challenges of their career, working excessive overtime within a healthcare system newly and rapidly forced to adapt to a massive viral outbreak. More than ever, we need to coordinate. Despite distance, we are in this together.

Our most essential means of preparation lie in a continual readiness to contribute to and support a collaborative endeavor that will test us all. Protocols or plans for addressing massive increases in patient numbers, though highly important, are of little significance when compared with the profound demand for a combined, system-wide effort that COVID-19 is likely to present. As clinicians, specific initiatives will not be the hallmark of our success in combating this pathogen. Rather, our success will be contingent on an exceptional ability to listen, help, and join forces with our peers in caring for both our patients and each other.

We should then recognize that as perfusionists, we are in a unique position to advocate for enhanced communication

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among clinicians and medical professionals. In a regular workday, we are tasked with incorporating our skill set amid a team of specialists, each playing a critical role in ensuring a successful operation. Alongside nurses, physicians, and other clinicians, we engage in and accomplish a feat only possible when individuals pool their talents and interests. As is the case when overcoming a pandemic, the success of open-heart surgery is a product of cooperation among professionals.

To that end, in preparation for whatever challenges the coming months hold, let us be ready to work with and look to others, sharing our unique perspective of clinical care, all the while being receptive to the insights of our professional colleagues. In the face of a crisis that will test each of us, we should not forget that it is only with an active, integrative effort that our care can persevere. During this time, I urge you all to connect with your professional peers, to find online forums for sharing your pertinent expertise, and to contribute to educational seminars related to the COVID-19 response. Worth mentioning here, the Extracorporeal

Life Support Organization continues to update and provide perfusionists and clinicians with contemporary research and information related to combating COVID-19 via its “ECMO in COVID-19” Web page. In addition, the World Health Organization is actively compiling a database of research and academic discussion related to COVID-19, which is freely accessible to the public. Using these and many other excellent resources, let us lend each other our time and commitment so that we can all be better ready to respond.

As a profession, we should always value and push for collaboration, with the hope that we enhance and transfer this value to the people we work alongside. To do so is to do our part to ensure that this pandemic will be met, not with fear or incompetence but with an unmatched demonstration of the patient care that we, in refined collaboration with all of the global healthcare community, proclaim to advocate.

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