

When Air becomes Breath, Respiratory Therapy, an Inimitable Ally to Tackle COVID-19!

“Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.”

Marie Curie

COVID-19, the pandemic caused by the severe acute respiratory syndrome coronavirus 2 virus that began around January 2020 has caused distressing effects on the healthcare and economies globally. The pandemic is still ongoing and is expected to have one of the three outcomes: Herd immunity, where in when about 70% of the population get infected, the rest get shielded,^[1] or a definitive treatment is discovered or an effective vaccine becomes available. At this point of time, it is not clear which one of these or a combination of these will work, but the entire world is watching and waiting to put all this behind and move on.

Every cloud has a silver lining. The pandemic has led to the recognition of the essential contribution of respiratory therapists to the critical care team. Respiratory therapists are in a unique position to help COVID-19 patients in every phase of the disease, including prevention, diagnosis, home health care, triage, management, and follow-up care. They possess the skillset to take nasopharyngeal swabs and participate in the diagnosis and surveillance of the disease. They can assess the patients at home and decide who needs to go to hospital. They can administer, monitor and wean oxygen therapy, including the use of high flow nasal oxygen. Their familiarity with noninvasive ventilation is of major value and averts invasive ventilation in a large number of critical patients. Even in the small group of patients that require invasive ventilation, respiratory therapists can initiate, manage, escalate or wean mechanical ventilation. Prone ventilation has been an important modality used in their management, and the respiratory therapists' experience here is priceless. Further, the occasional patient who needs extracorporeal membrane oxygenation (ECMO) also can use the assistance of a respiratory therapist, a valuable member of the ECMO team. Respiratory therapists can be of great assistance in the follow-up and rehabilitation of these patients, especially when they suffer from post-COVID sequelae.

To provide the best possible care during the pandemic, it is important for the respiratory therapist to have a good understanding of the disease. This special issue has several review articles on each aspect of the disease. While the issue starts with an overview of the disease, how it enters the body, it covers the nonventilatory management, including prone positioning, ventilatory management of those in respiratory failure, and ECMO. COVID-19 is not all about respiratory system. An

article on cardiovascular manifestations of COVID-19 and management details these aspects. COVID-19 has had its toll on the psyche of the patients and personnel caring for them. Articles on post-COVID sequelae are also very informative.

Teaching-learning methods are multitude but the “Panchatantra” model of learning through stories has always been very useful. These lessons are retained much longer and that is why this issue includes the personal experience of two patients, one of them an engineer and the other, a doctor himself. Their narrative certainly gives the “vulnerable human” perspective. The objective of a case-based discussion or a case report is essentially the same.

COVID-19 has been a pandemic of epic proportions that the world was largely unprepared for. It is important to learn lessons from the same for the future. In this direction, the article on how to prepare for the pandemic and how to protect health-care personnel should give an idea of what to do if another such situation strikes again in the future.

In the beginning of the pandemic, it was not clear, which approach was successful, and for quite some time, it was thought to be another presentation of acute respiratory distress syndrome (ARDS). Needless to say unacceptable morbidity and mortality followed the “usual care” of ARDS, namely intubation and ventilation. It was eventually understood that appropriate pharmacotherapy (especially systemic corticosteroids) and appropriate oxygen therapy were the game changers. This approach has thrown open the flood gates for the respiratory therapists.

Interventions such as oxygen delivery methods, high flow nasal cannula, and noninvasive ventilation were a daily grind for the respiratory therapists.

The pandemic is giving India a unique opportunity to make mid-course corrections, and thus transform country's health care delivery system. This brings respiratory therapy into sharp focus. Increasing the training centers and producing more respiratory therapists is the need of the hour.

As the pandemic fades away, it is becoming clear that the deadly virus is leaving behind its baggage (post-COVID sequelae) such as postviral interstitial fibrosis (interstitial lung disease), which again brings respiratory therapists to the fore. This is an entirely unanticipated indication for respiratory therapy. We can see an opportunity for respiratory therapists to design new protocols, novel methods to provide home care, and explore newer technology for home monitoring including the emerging applications such as blue tooth technology, machine learning, and artificial intelligence.

The epidemic has witnessed an increasing number of cases of domestic violence in India, which can be the direct result of the impact on mental health. Loss of daily wages, loss of jobs, and burden of disease and death have thrown the economy into a state of pell-mell. All these have cast a long-lasting trauma to the mental health in the country. Respiratory therapists who among the caregivers probably are the closest to the patients are in an ideal spot to recognize early alterations in the persona of the patients under their care. This can facilitate early intervention by psychiatrists.

Respiratory therapists also have a role in innovation during the pandemic. Methods to reduce aerosol generation are important and an important innovation in this direction is the Felix negative pressure scavenger kit.^[2] The innovator of this vital equipment, Felix Khusid is the Chief of Respiratory Therapy, New York Methodist Hospital and is a celebrated respiratory therapist. He has worked closely with Dr Forrest Bird in the past and has won much recognition. Mr Khusid has had a great innovative streak in him and has many innovations to his credit. The latest is the special scavenger kit for use with vapo-therm equipment in COVID patients. This is a low-cost, easy to use kit, named after its innovator, produces localized negative pressure around the face, sucking out the infectious particles and makes high flow nasal oxygen therapy safer for the healthcare personnel.

At this stage, several vaccines have been made available, and the health-care frontline workers have mostly been inoculated. This undoubtedly will make the practice of respiratory therapy safer, benefitting the patients and care-givers alike. Taking the vaccine does not make it 100% safe. The health care practitioner will most likely be protected from serious and life-threatening illness, but he/she may still be able to transmit it to vulnerable individuals. For that reason, it has been advised that the standard COVID-19 precautions to be continued such as wearing mask and hand-wash. Interestingly, if all personnel adhere to these guidelines, we may see a decline in other nosocomial infections also.

To conclude, the specialty of respiratory therapy has had an opportunity to demonstrate their skills and establish their identity at various levels, be it the hospitals they work in or the state or governmental machinery. They have been much in demand, and it is only natural that they will continue to be sought even after this pandemic is over. Until recently, the profession did not enjoy its due recognition because of the lack of awareness among prospective employers about respiratory therapy. This has been a great opportunity for the respiratory therapists to create a niche for themselves. The performance

of the current respiratory therapy workforce will determine how deep a mark they will make in future medical care. It is an awesome responsibility and a challenge that certainly opens up opportunities for innovation and leadership in patient care delivery.

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