

KV Reddy develops COVID-19 specific ventilator

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Konda Vishweshwar Reddy, Engineer, Inventor, Entrepreneur and former Member of Parliament has announced a global breakthrough with the development of ICo-Vent Ventilator. The ICo-Vent is an Indian, "rapidly manufacturable COVID-19 specific ventilator" that will address the shortage of ventilators in the world and will speedily make available, lifesaving ventilators for treating the thousands of critically-ill COVID-19 patients who require mechanical ventilation.

Speaking on the successful demonstration and launch of the ICo-Vent, abbreviated for Indian COVID Ventilator, he said, "The successful development of this ventilator is testament to the capabilities of Indian engineering to solve global challenges. An original design that is conceptually new, the components used for manufacture of the ICo-Vent COVID-19 specific ventilator are freely available in most countries including India. The precision of the ventilator does not depend on sophisticated and expensive sensors and regulators. Today, the world needs a million ventilators and with current manufacturers unable to keep up with the supply, we are sure that the ICo-Vent, the first rapidly manufacturable COVID-19 specific ventilator will help to bridge the shortfall. It is the need of the hour and my focus is to ensure this invention benefits humanity."

The unprecedented COVID-19 episode exposed the inadequacies of healthcare systems worldwide. Being a virus that affects the respiratory system resulting in ARDS (Acute Respiratory Distress Syndrome), governments and healthcare systems the world over suddenly found that they needed a lot more ventilators than they had to tackle the COVID situation, but not every ventilator works on COVID-19 positive patients. This led to a global race to design and build ventilators.

However, not all ventilators, Mechanized AMBU bags, CPAP machine, BIPAP machines can work for COVID-19 positive patients in critical care. The UK, Canada and other governments have come out with a set of specifications defining "the minimum clinically accepted criteria for a rapidly manufacturable ventilator to address the COVID-19 situation." The Indian government is also in the process of coming out with a similar set of specifications. The ICo-Vent, meets these specifications. A patent for the technology and function has already been applied for.

The ICo-Vent addresses the shortcoming of the conventional ventilators used in ICUs for critically ill patients. Most of the other ventilators especially those based on mechanized ambu bags provide no clinical benefits for use on COVID-19 patients, on the other hand, they can potentially cause ventilator induced lung injury and also put healthcare professionals under great risk as their operation can lead to the release of a huge viral load into the ICU atmosphere. Many healthcare workers in other countries have succumbed to this viral load.

The ICo-Vent specially designed for COVID-19 and ARDS patients also allows the Intensive Care specialist or the pulmonologist to order a precise volume of air and oxygen at a precise inspiration pressure and a precise expiration pressure considering the compliance or the elasticity of the lung.

Konda Vishweshwar Reddy is an engineer, inventor and innovator, social entrepreneur and a public representative. A former Member of Parliament (2014-19) from the Chevella Constituency of Telangana, he is an alumnus of The Hyderabad Public School, Begumpet and an Electrical Engineer from NJIT, USA. He has served as a former CEO & MD of Wipro HCIT Ltd. & General Electric MSIT (GE). He is currently the Managing Director of Stephan Design & Engineering Ltd. and AVV Turbines Limited.