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Aerobiosys Innovations develops emergency use Ventilator

03 April 2020 | News

Called â??Jeevan Lite,â?? this device offers protection to healthcare providers as well as it is Internet of Things-enabled

Indian Institute of Technology Hyderabad Center for Healthcare Entrepreneurship (CfHE) incubated startup Aerobiosys Innovations has developed a low-cost, portable, emergency-use ventilator.

Called ‘Jeevan Lite,’ this device offers protection to healthcare providers as well as it is Internet of Things-enabled and can be operated through a phone app. It can also be battery-operated, enabling its deployment in areas without assured power supply.

The ‘Minimal Viable Product’ with the required functionality of this ventilator has already been developed. Pursuant to device certification, Aerobiosys Innovations aims to produce at least 50 to 70 units per day through collaboration with an Industrial Partner.

Reviewing the progress of this device, Prof. B.S. Murty, Director, IIT Hyderabad, said, “Senior citizens and elderly patients affected by COVID-19 will need ventilators for emergency life support. Aerobiosys has gone one step ahead by providing personal protection to the healthcare providers through IoT-enabled monitoring.”

Jeevan Lite can perform both the invasive and non-invasive ventilation across a comprehensive set of modes and settings. It can be used for pediatric and adult patients and will work on rechargeable lithium-ion Batteries in an uninterrupted manner for five hours without power supply.

Speaking about this project, Prof. Renu John, Faculty Co-Head, Center for Healthcare Entrepreneurship, and Head, Department of Biomedical Engineering, IIT Hyderabad, said, “Jeevan Lite solution from Aerobiosys, unlike other low-cost models, is loaded with features including wireless connectivity and remote monitoring that makes it unique and equipped to meet the demands of a pandemic situation like the COVID-19 infection. I strongly urge the industry partners and the government to come up to hand hold the start-up towards a large scale-up.”

Aerobiosys Innovations plans to provide Jeevan Lite at a price of Rs. 1 lakh (USD $1,315 approx.) which is significantly economical compared with existing products in the market. To cut down the cost and facilitate remote electronic access to the device, Aerobiosys has developed a mobile app that communicates with the unit and seamlessly controls the functional features of the ventilator.

This would provide enough isolation to the patient and protection to healthcare providers and family members. The ventilator can be controlled using the app and provides real-time display of the waveforms. Each breath of the patient is recorded and transmitted to the doctors via a connected App to enable telemedicine support. The device has a provision for attaching an oxygen cylinder and can operate on its own in ambient air.

Aerobiosys Co-founders Rajesh Thangavel and Cyril Antony are confident that the design for manufacturing of their device can be delivered by first week of April 2020.

Cyril Antony said, “Jeevan Lite had all the essential features to treat COVID-19 infected patients as mentioned by the experts in pulmonology and critical care across India and that the startup was collaborating with Hyderabad-based tertiary care hospitals for clinical validation and device certification.”

Rajesh Thangavel added, “We are estimating to serve about 1 lakh people in the first three months. We plan to produce at least 50-70 units of our devices per day.”

For the elderly and the vulnerable population, especially those with co-morbid ‘conditions’ such as heart diseases or Type 2 Diabetes, Covid-19 can be life threatening unless ventilator assistance is provided.

The design and features of Jeevan Lite are in compliance with the requirements mentioned by the Ministry of Health, Director General Life Sciences, Defence Research and Development Organisation (DRDO), Chairman Technical Committee and Indian Council of Medical Research (ICMR).