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# Max Healthcare â??innovatesâ?• to multiply the capacity of ventilators

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**This innovation could increase the capacity of existing ventilators four-fold**



With health experts warning that several countries do not have enough ventilators for a worst-case scenario, doctors and bio-medical engineers have been trying to figure out how to innovate and modify their medical equipment to serve a large number of patients with limited resources.

A team of Bio-Medical Engineers from Max Healthcare has come up with an innovative solution to cope with the likely high demand for ventilators during the expected surge in COVID-19 patients. This innovation could increase the capacity of existing ventilators four-fold, thus helping serve a large number of patients.

Speaking on this innovation, Yudhvir Singh, Head- Bio Medical Engineering, Max Healthcare, said, “in 2012, I had read about the possibility of using a single ventilator for supporting 4 patients. During this emerging medical crisis, I received a message from the chairman of our organization, asking employees to come up with innovative solutions for treatment and capacity management. Which led me to think if we can modify the ventilators in the hospital to support more than one patient, it would possibly make an immense contribution in the battle against the pandemic. My team and I then designed a simple but ingenious device, which can be safely attached to the ventilators, splitting the airflow into four distinct streams for 4 patients. We even produced this device in-house using the 3D printing facilities at Max Healthcare”.

Since, the country is under a lockdown, it was not possible to get the device fabricated anywhere. But, as the saying, necessity is the mother of innovation, Mr Yudhvir’s team decided to use 3D printing available at Max Hospital Saket to fabricate the device.

They used ABS- Acrylonitrile Butadiene Styrene, a lightweight plastic, which is already approved for use in medical devices. To ensure that the patients on the ventilator are protected from infecting each other, Mr Singh and his team installed the usual HME filters as well as bacterial and viral filters, which were available in the hospital. The critical care experts at Max Healthcare extensively tested the device and determined that it worked very well on all functional and patient safety parameters.

Speaking on this further, Abhay Soi, Chairman, Max Healthcare, said, “In times of a pandemic when critical resources are scarce, this device can play an invaluable role in saving lives. I am grateful to Yudhvir and his entire team to have come up with this innovation in a matter of days. Currently, we have 254 adult ventilators pan Max Hospitals and now we can serve more patients in case of a dire emergency”.

The device is to be used only in case of dire shortage of ventilators.