

VILLAGE VENTILATOR

Pune startup breathes new life into oxygen supply for rural patients

Namita Shibad

■ puneletters@htlive.com

PUNE: An oxygen enrichment unit (OEU) developed by a Pune firm which tapped into a National Chemical Laboratory (NCL) technology here could well meet the demand for oxygen by premature babies born in rural India. It could also help other rural patients suffering from COPD (chronic obstructive pulmonary disease), asthma and other pulmonary ailments.

NCL scientist Ulhas Kharul's hollow fibre membrane technology provides oxygen to patients through a membrane with hair-like fibres made of polymer. At the laboratory scale, this technology could process 0.5 litres of atmospheric air which was inadequate to address the need of patients.

However, the technology was developed further



■ **Dr Sanjay Gaikwad (left) with the oxygen enrichment machine at Sassoon General Hospital on Friday.** RAVINDRA JOSHI/HT PHOTO

through CSIR's (Council for Scientific and Industrial Research) 2014 Scientist Entrepreneurship Scheme. Kharul secured ₹ 44.50 lakh through the Biotechnology Industry Research Assistance Council's (BIRAC) Bio-technology Ignition

■ **Rajendra.** HT

Grant and acquired the technology on licence from NCL. The grant also helped him and his brother Rajendra Kharul, a doctorate in medicinal chemistry, establish his own firm, Genrich Membrane Pvt Ltd.

The central government's Sparsh (Social Innovation Programme for Products: Affordable & Relevant to Soci-

CAN SAVE A LIFE

The oxygen enrichment unit developed by Pune firm Genrich Membrane Pvt Ltd could well meet the demand for oxygen by rural patients suffering pulmonary ailments

etal Health) scheme, brought in another grant of ₹ 50 lakh.

Continuing R&D helped the Kharuls scale up the lab-sized technology to process up to 500 litres per minute of atmospheric air into 35% oxygen. This was acceptable to the markets and the Kharuls filed a patent for this. Since the last nine months, under the CSIR-800 programme, Genrich

launched a project where 13 OEUs were installed in rural Maharashtra, including one at the government-run Sassoon General Hospital in Pune. "I feel it will find even greater use in rural India," said Dr Sanjay Gaikwad who has been using the unit at the chest department at Sassoon.

CONTINUED ON P 5
» **STARTUP SATURDAY P 4**



Village ventilator

Dr Datta Dalal, who runs the Mangalam hospital in Raver, Jalgaon district, said that the OEU was found to be extremely useful for patients of asthma, COPD and smokers, among others. “Patients who need 35% oxygen therapy benefit very well from this. But patients who need to be on ventilator support cannot benefit from this as they need up to 70-80% oxygen,” he said.

“In India 3.5 million babies are born premature. “These babies need oxygen therapy. We aim to help them along with other patients of pulmonary ailments,” said Rajendra, who is the COO of the firm.

The OEU developed by Genrich is easy to use and just has to be plugged into a power source. “We are now trying to make it battery operated so that the dependence on electricity, which is a problem in rural areas, can be tackled,” said Rajendra. The firm is also working on running the machine on power generated from a running motorbike.

Currently the unit costs ₹ 53,000 but once it is scaled up, costs could drop to ₹ 35,000 – ₹ 40,000, Rajendra said. The company plans to tie up with hospitals and established medical device distributors to market the units.

TRAGEDY DUE TO THE OXYGEN SUPPLY SHORTAGE

In August 2017, as many as 72 children died after the oxygen supply was disrupted at the BRD Medical College Hospital, Gorakhpur, due to a disruption in the supply of oxygen cylinders. The country has 62 million people suffering from chronic lung diseases like asthma, COPD and interstitial lung disease. The country tops the world in deaths related to lung diseases.

