

CASE STUDY

The long road to oxygen sufficiency: the experience of Sai Dhanwantri COVID-19 Hospital in Yavatmal



This case study is a part of a compendium of case studies that capture the unique experience of the National Stock Exchange (NSE) Foundation as it mobilized the efforts of the Centre for Health and Research innovation (CHRI) through Project CAVACH, a respiratory care coordination project.

This case study from Yavatmal district of Maharashtra narrates the challenges faced by a remote hospital set up by a local trust during the oxygen crisis of COVID-19 second wave. It also documents the generous financial support provided by NSE Foundation in strengthening the hospital's oxygen ecosystem and saving many lives.

Yavatmal district and its socially conscious Satchikitsa Prasarak Mandal Trust

Yavatmal district, formerly known as Yeotmal, is a district of the Indian state of Maharashtra. According to the 2011 census, it has a population of 2,772,348 and is also home to various entrenched cultures and tribal communities, including the Gond Raja, Gond Pardhan, Kolam, Aandh, and Banjara. Since the district is situated in a remote area, it lacks potable water, road connectivity, and healthcare services. About 80 per cent of people from Yavatmal district are poor or belong to the lower-middle class and can hardly afford to get treatment from private hospitals. The only health facility available to these communities is a dispensary run by a local trust, the Satchikitsa Prasarak Mandal Trust (SPMT). This dispensary has served 6,00,000 people in the last 65 years of its establishment.

“People from a catchment of 100–150 km come to our dispensary for treatment. Even people from neighbouring districts like Nanded, Amaravati, Wardha, Washim and from the state of Telangana come for treatment to the dispensary.”

Dr. Prakash Nandurkar, Director, SP



Sai Dhanwantri COVID-19 Hospital

COVID-19 in Yavatmal

During the first wave of COVID-19, around 10,000 cases were reported from the district, of which an estimated 316 people lost their lives. While in the second wave, which started in the middle of February 2021, Yavatmal, including Amravati and Akola districts of Maharashtra, reported the highest number of active cases of COVID-19 in the state. In the last 15 months since the onset of the pandemic, reports suggest that approximately 70,000 COVID-19 cases have been reported from Yavatmal district, of which 1700 people succumbed to the infection.

As the COVID-19 cases surged, the Satchikitsa Prasarak Mandal Trust (SPMT) decided to open the doors to its health facility, the Sai Dhanwantri COVID-19 Hospital, to treat the numerous patients suffering from the disease.

“The trust had a building on land area spanning 1,00,000 square feet. As the death toll due to COVID-19 increased in the district, the Trust decided to set up Sai Dhanwantri Hospital in their building, using land area spanning 35,000 square feet.”

Dr. Prakash Nandurkar, Director, SPMT

Response to COVID-19 and the first oxygen plant in Yavatmal

As was happening in other parts of the country, Yavatmal and Sai Dhanwantari Hospital also witnessed a huge influx of patients seeking medical oxygen. As the demand for oxygen skyrocketed, the hospital had to pay a huge amount of money to refill cylinders or buy new ones.

“We struggled to get oxygen cylinders; we got 1 dura cylinder in a lakh rupee. We were paying 2.5 lakh rupees daily to fulfill immediate oxygen requirements. At a point, oxygen cylinders were not available in the region. The hospital was not able to get oxygen from private vendors, even the supply of commercial cylinders was being controlled by the district administration, which prioritized the oxygen supply to the Government hospitals. It was at this point that we decided to establish an oxygen plant in the premises of Sai Dhanwantri hospital to fulfill the demand of oxygen and minimize our dependence on vendors.”

Dr. Prakash Nandurkar, Director, SPMT

Although the hospital decided to install an on-site oxygen generation plant, the vendors were hesitant. The vendor was not convinced that the reported number of cases requiring oxygen in the hospital was high enough for an oxygen generation plant to be installed at the facility. In order to persuade the vendor, hospital officials held a series of meetings and show media reports and other government statistics.

After a lot of persuasion, the trust managed to convince the vendor for an oxygen plant of around 660 LPM (40 Nm³/hr) capacity. The trust did not have enough funds to establish the oxygen plant. They had to take loans from the bank by mortgaging their personal and hospital collateral at an exorbitant loan of Rs. 80 lakh (1 lakh = 100,000) and paid an additional Rs. 20 lakh for installing the medical gas pipeline system and infrastructure for housing the pressure swing adsorption (PSA) oxygen generation plant.

“The trust did not have any money. So, we took personal loan, kept our families’ gold as collaterals and mortgage loan of 30 lakh against the house, 25 lakhs



Components of the PSA plant at Sai Dhanwantri Covid Hospital from mortgaging the plant. That’s how we were able to accumulate funds needed to establish the oxygen plant”.

Dr. Prakash Nandurkar, Director, SPMT

Finally, the hospital managed to set up the oxygen generation plant on the hospital premise and was able to save 102 lives. Abiding by the Government of Maharashtra guidelines on medical service rates, the hospital took around Rs. 20,000–50,000 as treatment charges from the COVID-19 patients. This was way less than the amount charged by the private sector. The financially weaker sections were given special concessions and also provided with food and transport facilities. The Trust also counselled the parents of many patients who were reluctant to seek treatment.

“The hospital now has made available 150 beds with oxygen and is fully equipped to tackle any difficulties that the any future wave of COVID-19 might bring. The sustainability of the oxygen plant is ensured by using oxygen for other diseases (e.g., treatment of congenital heart problems in children)”.

Dr. Prakash Nandurkar, Director, SPMT



Treatment charges at Sai Dhanwantri Covid Hospital as per the guidelines of the Government of Maharashtra

Project CAVACH supported the hospital in repayment of the loan amount

Sai Dhanwantri Covid Hospital, Yavatmal was searching for a donor to help them pay back their loan because the hospital had taken a large loan by mortgaging its collateral. They learned about the NSE Foundation's Project CAVACH, which was aiding in the installation of oxygen generation plants in that area. Representatives from Sai Dhanwantri Hospital approached Project CAVACH for assistance, and the Foundation, in turn, requested CHRI to conduct an assessment of the situation. All loan documents were reviewed and verified by CHRI's finance team. After this Project CAVACH reimbursed the entire loan amount of Satchikitsa Prasarak Mandal Trust (SPMT) to the bank. The CHRI team also ensured that the PSA plant was operational and trained the health workers on how to use it.

"Monitoring visit was done to Yavatmal to ensure that proper quality checks for the PSA plant installation. We checked if the vendor had installed the PSA plant properly. Coordination was also done with the vendor to ensure that the training was also provided on the operations and maintenance of the PSA plant."

Sachin Sathe, Public Health Coordinator, CHRI

With the loan amount dissolved, Sai Dhanwantri Hospital can now focus its energy on providing medical services to the communities in the Yavatmal region, especially the weaker sections of society. The facility will have enough funds to upgrade its infrastructure and provide treatment and medicine to the needy patients.

"Due to the establishment of Oxygen plant, the patients of COVID 19 have benefitted a lot, as they received oxygen supply 24x7 and never faced any shortages. Most of the normal and critical patients were able to recover fully and at low costs and went home satisfied and happy."

A Doctor, the Sai Dhanwantri COVID-19 Hospital

Conclusion

Sai Dhanwantri Covid Hospital showed commitment towards serving society and saving lives, in spite of the huge financial burden. The authorities took the loan to set up a PSA plant so that they could serve patients requiring oxygen during the crisis. The Trust could have gone under severe financial distress had NSE Foundation's Project CAVACH, in collaboration with CHRI, not intervened. It is important to identify charitable facilities that are working under debt to make their functions smooth amid health emergencies such as COVID-19. This will ensure that the supply of oxygen reaches the far-flung corners of the country, which can benefit all. The willingness and timely intervention, as shown by Satchikitsa Prasarak Mandal Trust (SPMT) by building the Sai Dhanwantri COVID-19 Hospital, can have a long-term, positive impact on weaker communities.

About NSE Foundation's Project CAVACH

Project CAVACH is an initiative of the National Stock Exchange (NSE) Foundation, which was implemented by mobilizing the efforts of the Centre for Health and Research innovation (CHRI), an affiliate of PATH. Launched on 15th July 2021, Project CAVACH (COVID-19 and Vaccination Awareness Campaign for Health) aimed at strengthening systems related to the access of oxygen and the supply of other essential equipment in hospitals in remote regions.

NSE Foundation facilitated the establishment of five pressure swing adsorption (PSA) oxygen generation plants with capacities ranging from 250 LPM to 1000 LPM in Jharkhand and Maharashtra, where CHRI was engaged to provide on-ground support in procuring, installing and commissioning of these plants. In addition to this, the project supported the provision of small oxygen delivery equipment to 18 facilities in Rajasthan, Tamil Nadu, Assam, Maharashtra, Delhi, Jammu & Kashmir, and Nagaland.



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Address

15th Floor, Gopal Das Building
New Barakhamba Road, Barakhamba
New Delhi 110001 INDIA

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