

Building and sustaining health care capacity in Bihar: Lessons from COVID-19 response

On May 7, 2021, there were [1,15,066 active cases](#) in Bihar. As the number of COVID-19 cases increased in Bihar and other places in India during the second wave, it became critical to control and prevent the spread of the disease. Efforts had to be time responsive to trace high-risk individuals, data gaps had to be filled and government services required strengthening at the state and district levels.

At the peak of the COVID-19 virus, Bihar was facing many challenges including longer wait times for RT-PCR tests ([≥ 48 hours](#)) due to limited testing capacity, a severe [shortage of oxygen therapy](#) and rising infection rates with the positivity rate reaching [16% in May](#).

The health crisis called for a response where different actors in the ecosystem could come together to solve for it

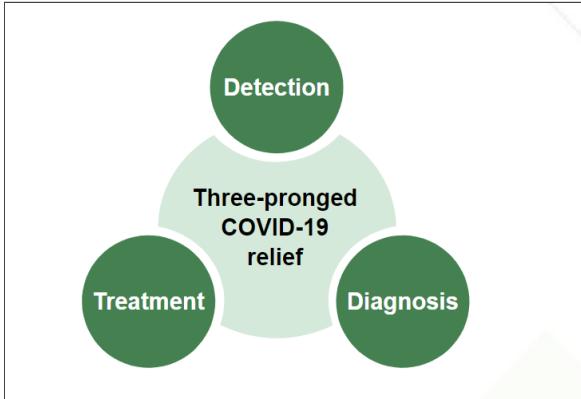
Given the unprecedented nature of the virus, it was also important to build capacity and resilience for any upcoming waves. In response to this, Sattva along with other partners collaborated to support the Government of Bihar to strengthen the public health infrastructure and build resilience to combat COVID-19 with immediate impact

The idea behind this initiative was to build and increase capacity but also to ensure the infrastructure was mobile and could be used with agility to meet the demands whenever there is a surge.

This collaboration was set with some key objectives around which solutions were devised.

Key Objectives		Solutions
01	Strengthen existing health infrastructure in Bihar to improve detection of virus and treatment of patients	Procurement and deployment of testing labs, portable x-ray machines, HFNCs, oxygen concentrators, venturi masks and oxygen flowmeters
02	Deploy need responsive equipment to aid recovery from COVID-19	Improving current resource base to build capacity and resilience for any upcoming health crisis
03	Increase preparedness and build resilience for any upcoming waves	Enabling collection and reporting of data to understand deployment, usage and COVID trends to plan next steps accordingly

11,455 units of equipment were delivered across 37 districts of Bihar over the course of 3 months as part of this initiative.



The deployed solutions were able to strengthen the health ecosystem as a whole.

Capacity was augmented to detect the disease timely using 5 testing labs, diagnose the severity using 75 portable x-ray machines and treat the patients using 300 oxygen concentrators, 75 HFNC devices, 10,000 venturi masks and 1000 flowmeters

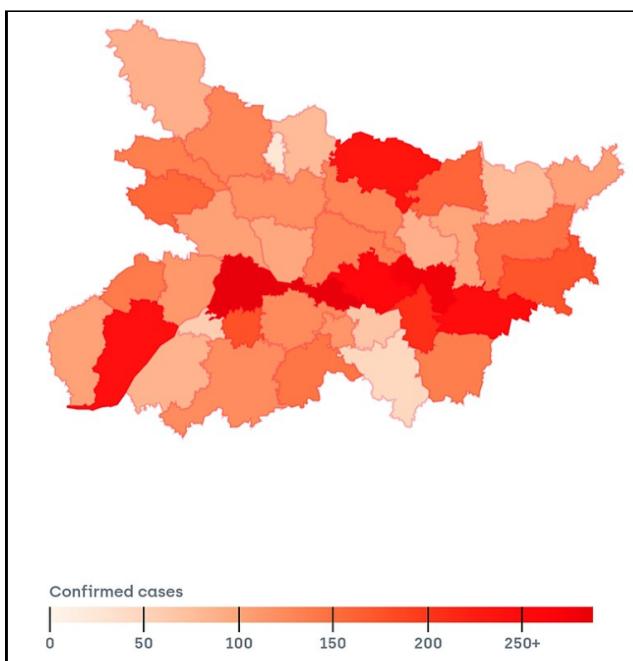
Learnings from the initiative are multi-pronged and would require systemic coordination and willingness to act

- **The need to work closely with the government as well the civil society for implementing COVID relief is necessary.** Both these entities know the best about the requirements and often speak to each other on matters of health. Working with the State Health Society and the Health Department in Bihar gave us an understanding of where the government needs support in increasing the capacity - in terms of geography, type and number of equipment. Working closely with civil society helped in getting a sense of what is lacking in the existing set-up for COVID and what can be made better for them.
- **Enabling the mobility of resources is key to time-sensitive responses.** Equipment that is more mobile and easy to transport such as portable x-ray machines was consciously chosen for this initiative. Resource scarcity is a critical issue in states like Bihar, exacerbated in times of crisis. Avoiding underutilisation by enabling mobility and thus, sharing of resources is likely to be useful.
- **Optimum solutions are not always high-intensity solutions.** The most effective response for a patient might not always be an ICU or to receive support from a ventilator or high flow nasal cannula. As caseloads decreased, we observed that doctors preferred to use low flow cannulas or oxygen cylinders instead of concentrators. As we think about augmenting health infrastructure, it would be important to think of and prepare for different scenarios of need - low, medium and high.

The way forward: what can be done now

While we require high rates of vaccination along with responsible measures such as masking, physical distancing and containment measures to curb transmission, some steps can be taken at the ecosystem level as well.

- **Creating a sustained cadre of healthcare providers.** To operate the equipment in the long term, personnel would have to be trained to understand the equipment and use it beyond COVID for other health problems as well. Human resources have the potential to be either a critical bottleneck or an enabler as capacity cannot be augmented immediately but need some amount of planning. The informal sector could be leveraged for this - to not just train people in health-related facets but also for more administrative tasks in health set-up like keeping records, entering and analysing health data, and reporting it.
- **An allied area of support is dedicated transportation.** When it is not possible to bring care to the patient, it is important to increase the supply of COVID suited transportation to bring patients to care. While COVID patients at the initial stages don't need special arrangements, during lockdowns those without private vehicles are unable to reach care centres and ways of making these health facilities more accessible would be useful.



[Link to map](#)

- **Leveraging data to draw patterns and spot early signs.** Right from demand generation to the monitoring of usage, data-informed the choices of equipment supplied at different points in time for this initiative. [A CPR study](#) showed how the same 45 districts in India accounted for 50% of cases in both the first and second waves. It would be useful to leverage data to understand spatial patterns of the disease. This can help us pre-empt the areas which are more vulnerable to a high caseload, the reasons for high caseload could be geography, or nature of activity or low health capital. Building reserves in these areas and creating contingency plans to bring in resources in case of a surge could be steps we take when we are not facing a crisis.

Collaboration across the ecosystem is the bedrock of the success of this initiative and if we are able to draw meaningful lessons from the pandemic and respond to the problem in times of resource availability, we can be better prepared or even prevent another hard hitting wave of COVID