

## Field Note # 5

# Augmenting COVID Treatment Facilities

*A key element of our integrated healthcare response to the pandemic*

## 1. Context

When COVID-19 knocked at our doors, the intuitive response for preparation was to open quarantine facilities and depend on existing hospitals for treatment. This combined with the lockdown managed to keep 'the curve' under control for some weeks. We did not, however, utilise this lockdown period sufficiently to learn from what was happening across globe and prepare for what was to eventually occur.



Therefore, even before the economy could reopen, public health systems of three big cities – Mumbai, Pune and Delhi – were severely strained. With 'Unlock 1.0' in June, many more of our metropolises such as Bengaluru, Hyderabad and Chennai joined this list. Even today, we hear harrowing stories of lives lost on account of not finding a bed in time for treatment from across the country.

On the other hand, our understanding of SARS-CoV-2 and its implications was also growing. We learned that most people (about 80%) recover from the disease without needing special treatment<sup>1</sup>. Further understanding of our own utilisation pattern revealed that hospitals were being occupied by everyone who tested positive, without assessing their actual need for treatment, thereby denying those who actually needed critical care. While many such people could do with home isolation, others needed only a much lower level of institutional care.

Hence, the need for a different strategy was recognised – create different kinds of facilities for people with different levels and intensity of the illness, and a strategy of triaging patients to these facilities based on their symptoms. This note briefly explains the three kind of facilities and our approach for augmenting and operationalising such facilities in the select-regions of our operation.

## 2. Understanding COVID Treatment Facilities

For effective utilisation of resources for augmentation, it is essential to understand what kind of care is needed for what kind of patients. Based on this, the government has defined three different categories of COVID treatment facilities<sup>2</sup> – a) COVID Care Centres (CCC); b) Dedicated Covid Health Centres (DCHC) and c) Dedicated COVID Hospitals (DCH).

### *COVID Care Centres*

COVID Care Centres (CCCs) are intended to be used for those who are asymptomatic but do not have the ability to self-isolate at home, or for those with mild symptoms. These may also include makeshift facilities or could be hostels/hotels etc. converted into temporary CCCs. They are also mapped to one or more DCHC or DCHs to allow for referrals if needed.

**Resources:** CCCs usually have normal beds or ordinary fowler beds. They need toilets – at least in the ratio of 1:15 and a proper bio-waste management system. Monitoring instruments needed

<sup>1</sup> WHO, Media Statement: Knowing the risks for COVID-19, access [here](#).

<sup>2</sup> <https://www.mohfw.gov.in/pdf/FinalGuidanceonMangaementofCovidcasesversion2.pdf>

include pulse oximeters, thermometers, glucometers and sphygmomanometers. Ideally, oxygen cylinders, oxygen concentrators are kept as standby, in case any patient's condition deteriorates and there is no bed available immediately in more advanced facilities.

**Staffing:** Typically, there will need to be one doctor per shift for every 50 beds and 1 nurse per shift for every 10-15 beds. Other personnel include admin persons and housekeeping staff.

**Treatment:** This is mostly basic and symptomatic – patients are given vitamins, zinc and other medicines as per need.

#### *Dedicated COVID Health Centres*

Dedicated COVID Health Centres (DCHC) are intended to be used for those with moderate symptoms whose oxygen saturation levels have dropped below 94 but can be maintained above 92 with the help of oxygen. These are typically at hospitals or at a separate block at a hospital. They are also mapped to DCHs to allow for referrals if needed.

**Resources:** Basic infrastructure including beds, toilets, bio-waste management and monitoring instruments are similar to that of a CCC. The key difference is that, in addition DCHCs have better oxygen facilities, ideally centrally stored or produced and supplied through pipes. Equipment such as X-Ray, ECG are also usually available in these centres for emergencies.

**Staffing:** Typically, there is one senior doctor per shift and one or two junior doctors for every 50 beds and one nurse per shift for every 3-5 beds, as the level of care needed for patients here is higher. Other personnel include nurse aid, admin persons and housekeeping staff.

**Treatment:** Apart from what is available in CCC, oxygen is the key differentiator in treatment. Depending on difficulty of breathing, specific treatment protocols such as keeping patients in a prone position for a few hours every day could be followed.

#### *Dedicated COVID Hospitals*

Dedicated COVID Hospitals (DCH) are hospitals that offer care for those who have severe symptoms or complications due to prior health conditions. These are hospitals with assured oxygen support and ICU facilities including ventilators.

**Resources and staffing:** DCHs have three types of beds to cater to different levels of care – 1) Regular beds, 2) High Dependency Unit (HDU) beds and 3) ICU beds

- Regular beds are like CCCs, without oxygen facilities. They are used for those with mild symptoms who due to other complications and risks may need to be in a hospital.
- HDU beds are those with oxygen facilities. These have been especially useful in treatment of COVID for patients who have hypoxia, a condition where the body is deprived of oxygen. In an HDU facility, the nurse ratio is 1:2 or 1:3 and there are typically 2 senior doctors per shift apart from the junior doctors.
- ICU beds are needed for those patients who have severe symptoms or those with other complications in addition to COVID. A subset of the ICU beds at a hospital, ideally 50% or more, have ventilators. The nurse ratio is 1:1 and the ward is manned by at least 1 intensivist and 1 senior doctor per shift for 10 beds.

Other equipment in the HDU and ICU include multipara monitors, ventilators, syringe pumps, High Flow Nasal Cannulas (HFNCs), defibrillators, ultrasound etc., requiring not just high investment, but also highly skilled personnel.

**Treatment:** This is based on patients' condition, health history and complications and is hence often complex, requiring a high level of medical skill.

### 3. Our approach

Currently, our integrated healthcare response – that includes improving processes for awareness, prevention and screening, quarantine, testing and tracing, treatment and containment – is focussed on regions where we have field operations, or where our partners have a deep on-ground presence. This includes select regions of **Chhattisgarh, Karnataka, Madhya Pradesh, Puducherry, Rajasthan, Telangana, Uttarakhand** and **Jharkhand**. Within this strategy, our efforts are focussed on augmenting overall critical care capacity, that is, creating or improving more DCHCs and DCHs in public or public-spirited hospitals. While this has been largely through supply of equipment, in a few cases, it has meant bringing in doctors and nursing staff as well through our partners. All this, with a focus on ensuring their efficient utilisation.

Few illustrations of such support described below.

#### *COVID Care Centres*

In almost all locations where we work, there are COVID care centres run and operated by the government. These, in addition to private, paid facilities, seems to have created enough capacity for this level of care. Our support to COVID care centres across several locations have hence been mostly limited to improving the conditions in some of the government-run facilities – for example, by providing basic personal sanitary and hygiene kits or cooked meals.

However, with the surge of infections in Bengaluru, as part of our integrated healthcare response, we worked with a partner to open a 55-bedded community COVID care centre in a hostel of the social welfare department at Jigani, Anekal Taluk in Bommanahalli zone. The centre is linked to the local primary health centre (PHC) and a private hospital. The idea is to push for such distributed centres rather than rely on large centralised facilities which often remain underutilised.

#### *Dedicated COVID Health Centres*

Creating intermediary facilities which can treat patients with moderate symptoms has been one of the key focus of our efforts. Illustratively:

- In Bengaluru, we supported Hazrat Bismillah Shah (HBS) hospital to expand their capacity of oxygenated beds through the 48-bedded Varsity Hotel, located nearly 400 metres from the main hospital. This has been in the form of supporting the team of doctors, nurses and operating expenses to manage the oxygenated beds.
- In Chhattisgarh, the government is augmenting intermediary facilities by repurposing part of the Ayurveda Hospital in Raipur as a dedicated COVID health centre. We are supporting this by setting up an oxygen plant at the hospital and as well as providing oxygen concentrators.
- In Jharkhand, we are supporting the government to establish dedicated COVID health centres within community health centres (CHCs). We are providing equipment to add 140 beds spread across 10 such facilities in 4 districts.
- In Uttarakhand, we are equipping one of the CHCs in Nainital district with oxygen facilities and other equipment for better testing and treatment.

While these facilities will help take the load off the tertiary care hospitals across locations, they will also be the highest level of accessible COVID treatment in many rural, remote locations.

### *Dedicated Covid Hospitals*

While augmenting the first two levels of treatment is expected to take burden off tertiary facilities for COVID treatment, there is a need to augment tertiary capacity in several locations.

While a city like Bengaluru has better tertiary facilities than most other places, the large population and high spread of infection has required us to support ramping up such facilities quickly, in order to reduce mortality. Our support has been to add HDU and ICU capacity in public hospitals such as Bowring and Lady Curzon Hospital and Anekal Taluka Hospital as well as private, but public-spirited hospitals like HBS, St. John's Medical College, Baptist Hospital, St. Martha's and Vimalalaya Hospital. Additionally, we have supported teams of doctors, nurses and other skilled staff at HBS, Anekal Taluk Hospital and Charaka Super Speciality (Broadway-Bowring) Hospital.

In smaller locations, we have helped create such capacity within the public hospitals which are functioning as dedicated COVID hospitals for the region. In addition to facilitating better treatment for COVID and reducing mortality, these have long-term usefulness to the public health system in these largely underserved regions. Illustratively:

- In Jharkhand, we are helping create capacity for 30 ICU beds, distributed across Ranchi and Simdega districts
- In Chhattisgarh, we helped increase bed capacity in Dhamtari Christian Hospital at Dhamtari and are working on expanding HDU and ICU bed capacities at the Bhimrao Ambedkar Hospital at Raipur and Government Medical College at Raigarh.
- In North East Karnataka, we are supporting significant expansion of ICU capacity at the District Government Hospitals in Kalaburagi and Yadgir. While Yadgir is one of the most underserved districts in the state, Kalaburagi caters to a large population, including neighbouring districts. We also supported the district hospitals in Ballari and Koppal with equipment such as HFNCs.

### *Other Collaborations*

In addition to such support in our regions of focus, we have also responded to enhancing different levels of COVID treatment facilities significantly in other geographies, based on our access or partners who have reached out to us. Some illustrations of such support/actions:

- Wipro's information technology campus in Hinjewadi, Pune repurposed to a 450-bed intermediary care COVID-19 hospital, that was handed over to the state government. The facility is equipped to treat moderate cases and also has beds to stabilise critical patients before they are moved to a tertiary care facility.
- Daya Rehabilitation Trust to set up a 100-bed COVID-19 care facility at IQRAA International Hospital and Research Centre at Kozhikode, Kerala.
- Pravara Institute of Medical Sciences to establish isolation wards and ICU facility to respond to the COVID-19 pandemic in the rural areas of Ahmednagar, Maharashtra.
- Doctors For You to ramp-up treatment facilities in two government hospitals in Mumbai and another in Thane.

- Strong public-spirited hospitals such as Christian Hospital, Bissam Cuttack and four of its partner hospitals in Rayagada, Odisha; Dhamtari Christian Hospital in Dhamtari, Chhattisgarh; Christian Fellowship Hospital in Rajnandgaon, Chhattisgarh and Makunda Christian Leprosy and General Hospital (MCGLH) in Karimganj, Assam to strengthen implementation of protocols with respect to testing, setting up isolation wards and case management.
- Community-focussed healthcare NGOs like Jan Swasthya Sahyog in Bilaspur, Chhattisgarh; Society for Education, Action and Research in Community Health (SEARCH) in Gadchiroli, Maharashtra; Innovators in Health in Samastipur, Bihar; Humanity Trust in Sundarbans, West Bengal; and Centre for North-East Studies and Policy Research, Assam to bolster their community response with respect to awareness generation, surveillance and linkages with the treatment facilities.

#### 4. Going forward

We will continue to support state governments and public institutions in augmenting their treatment infrastructure to reduce mortality due to COVID-19.

As the pandemic spreads in the rural and more remote regions of the country, we expect an addition of distributed intermediary facilities with oxygen support – i.e. dedicated COVID health centres - to be a need that will increase over the coming months. We also see the need to augment tertiary facilities – i.e. dedicated COVID hospitals – at least in several district hospitals so that the load on tertiary capacity in state capitals and the few big cities in the state is reduced.

The capacity available in the public health system at various levels (blocks, districts, state), the level and rate of spread of the pandemic (and hence the capacity that is forecast to be needed), as well as the ability of the government to ramp-up facilities on their own in reasonable time will be key determinants of our support in each of these regions/states.

These efforts will have to be accompanied by clear communication around COVID treatment protocols and facilities, so that the facilities are appropriately and judiciously used for the right kind of patients. This needs to be part of the proactive awareness building efforts in the frontline, as well as be enabled through platforms such as helplines and field booths which respond to queries. The support for augmenting treatment facilities will hence be tightly integrated with our overall healthcare response in each of these regions.