



# IMPACT ASSESSMENT OF COVID-19 SUPPORT PROJECT ON ICU SET-UP

A Report



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## Abbreviations

<b>CHC</b>	Community Health Centre
<b>CIF</b>	Concern India Foundation
<b>CSR</b>	Corporate Social Responsibility
<b>ER</b>	Emergency Room
<b>HFNC</b>	High Flow Nasal Cannula
<b>HFNO</b>	High Flow Nasal Oxygen Therapy
<b>ICU</b>	Intensive Care Unit
<b>IDI</b>	In-Depth Interview
<b>IPD</b>	In-Patient Department
<b>MCH</b>	Maternal and Child Health
<b>NGO</b>	Non-Government Organization
<b>OPD</b>	Out-Patient Department

## Chapter 1

# INTRODUCTION

### 1.1 HDFC Bank CSR – Parivartan Program

HDFC Bank helps in transforming the lives of millions of Indians through various social initiatives, carried out as part of their CSR initiative named HDFC Parivartan. Parivartan aims to contribute towards economic and social development by empowering its communities and ensuring sustainability. The Parivartan program has been a catalyst in making a difference in people's lives through its interventions in rural development, education, skill development, livelihood enhancement, healthcare and hygiene, and financial literacy. Under Parivartan, social initiatives are delivered through financial support provided to several NGOs for implementing projects across the country, on various thematic areas, prioritized under Parivartan.

### 1.2 COVID Support Project

The second wave of COVID-19 was a severe testing time for the country, particularly when there was a sudden increase in the demand for medical oxygen and existing infrastructure within government and private set-up was insufficient to meet the demand. The immediate result was an acute shortage of ICU beds. Both the government and non-government agencies came forward to manage the crisis and Parivartan made a very significant contribution at that stage by supporting the upgradation of health facilities with the required infrastructure.

HDFC Bank provided assistance through its COVID Support Programme under HDFC Parivartan that focussed on the upgradation of government hospitals and provided infrastructure to expand ICU facilities with beds and other equipment including oxygen cylinders, ventilators, monitors, infusion pumps and other essentials required for the patients during the treatment.

The ICU Set-up Project aimed to provide support for strengthening ICU wards in three states: Madhya Pradesh (Khargone), Odisha (Kendrapada) and Punjab (Ludhiana). Under the implementation process ventilators, para monitors, infusion pumps, defibrillators and ICU Fowler Bed Electronics were provided to the government hospitals.

For this project, HDFC Bank provided funds to **Concern India Foundation** which procured the equipment and supplied the same to all three government hospitals as mentioned above.

### 1.3 About Concern India Foundation (CIF)

Concern India Foundation<sup>1</sup> was set up in 1991 as a registered non-profit, public charitable trust. Concern India Foundation currently has operations in Mumbai, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata and Pune. It has multi-sectoral interventions in 16 states of India in the areas of education, health and community development. In providing support to mitigating disasters such as the outbreak of the COVID-19 pandemic last year, CIF has been engaged in COVID-19 relief work across the country by supporting hospitals, communities and police personnel.

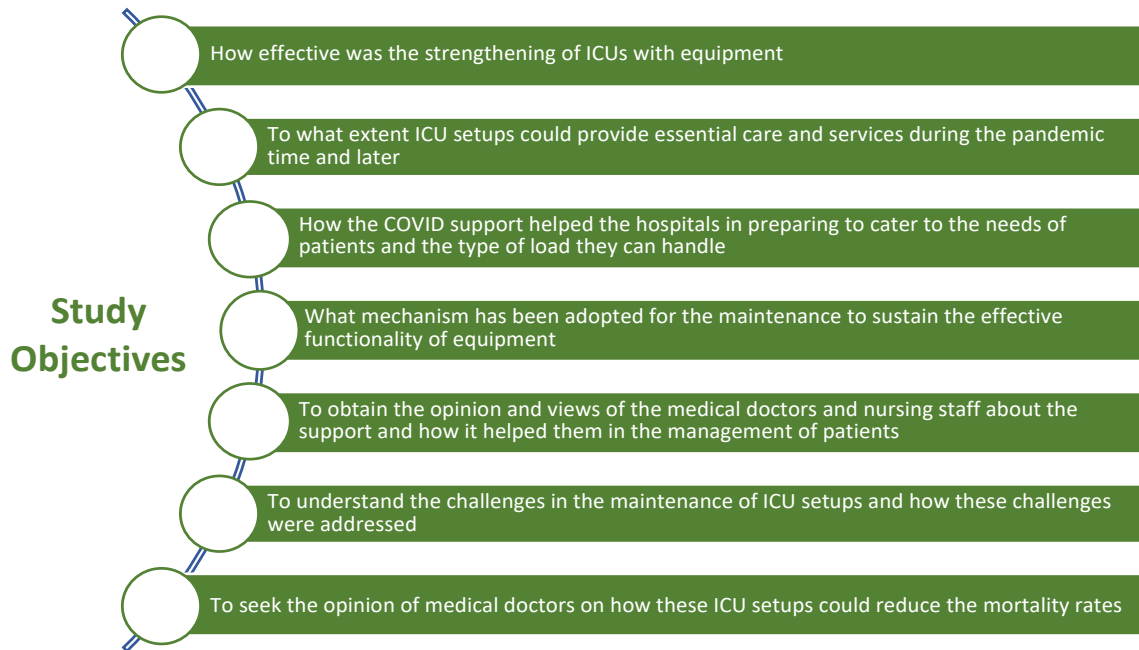
In an attempt to support the health facilities rebuild themselves and be ready for any emergency in the future, CIF worked with support from HDFC Parivartan's initiative to strengthen the healthcare system. Among other equipment and supplies, specific need for ICU setups - consisting of ICU beds, ventilators, para monitors, infusion pumps and defibrillators was identified and three specific healthcare facilities i.e., Kendrapara Odisha; Khargone, Madhya Pradesh and Ludhiana, Punjab were identified for providing the support.

<sup>1</sup> <https://www.concernindiafoundation.org>

### 1.4 Need for the Study

In an attempt to learn about the efficacy of the financial support provided by HDFC Parivartan and also to respond to the CSR mandate, HDFC Bank intended to carry out the impact assessment of the project with the purpose of assessing the extent to which the project was able to help the people approaching hospitals during the second wave of COVID-19. IMPACT PSD Pvt. Ltd. was given the task of conducting the impact assessment and report to HDFC Bank with concrete recommendations for the future.

### 1.5 Specific Objectives of impact assessment



The current report presents the study findings of the impact assessment study.

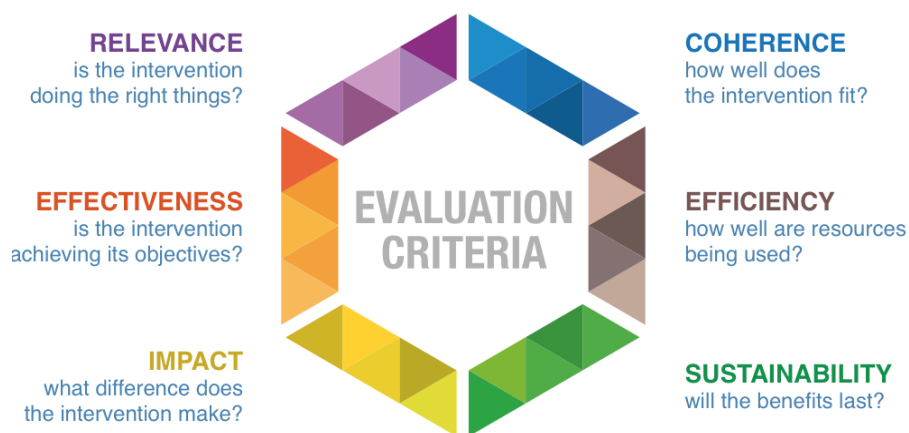
## Chapter 2

# Study Methodology

This chapter gives a comprehensive overview of the methodology adopted for the impact assessment study, including the assessment framework, research methods, sample coverage, survey implementation for data collection, data management, and so on. The following sections have been discussed in detail to provide in-depth information on these components.

### 2.1 Assessment Framework

For undertaking the impact assessment studies, we propose to use the following assessment framework which the standard OECD-DAC criteria<sup>2</sup> considered as one of the gold standards in evaluation. This framework recommends adapting this framework, wherever feasible and applicable:



Using this framework, we suggest the following questions/indicators that were adopted to assess each program, using the six parameters stated above. These questions were finalized in a discussion with the HDFC Bank team.

Indicators/Questions	
<b>Relevance</b>	<ul style="list-style-type: none"> <li>What criteria was adopted for identification of most deserving recipient government hospitals for the support</li> </ul>
<b>Coherence</b>	<ul style="list-style-type: none"> <li>Feedback of medical doctors from the government hospitals on timeliness, appropriateness and sufficiency/adequacy of the support received</li> </ul>
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>Number of patients served through the provided infrastructure</li> </ul>
<b>Effectiveness</b>	<ul style="list-style-type: none"> <li>Improvement in the quality of services being made available by the hospitals, that can be attributed to the infrastructure provided</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>Impact of ICU setup support on the management of serious illnesses and hospitals' capacity in providing the required treatment services</li> <li>Cost per patient saved and overall cost benefit analysis of the infrastructure provided</li> </ul>
<b>Sustainability</b>	<ul style="list-style-type: none"> <li>In what ways does this infrastructure supports the service delivery in future</li> <li>Plans in place for maintenance of the infrastructure and equipment provided</li> <li>How the government hospitals plan to use this infrastructure support in future</li> </ul>

<sup>2</sup> <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

These questions were finalized in consultation with the HDFC Bank MEL team prior to the implementation of the impact assessment study.

## 2.2 Target Government Hospitals

The following three government health facilities were covered under the impact assessment study:

Government Hospitals	
<i>Madhya Pradesh</i>	• District Hospital, Khargaon
<i>Odisha</i>	• District Hospital Kendrapada
<i>Punjab</i>	• Lord Mahavir Civil Hospital, Ludhiana

## 2.3 Methodology for the Impact Assessment

A mixed methods approach was adopted for the impact assessment wherein the quantitative survey was undertaken to gather details on equipment and coverage of patients and in-depth interviews were conducted with the target groups to capture their opinion and experience. Additionally, quantitative checklists were used for the observations to assess the availability and functionality of support provided for the ICU Setups.

## 2.4 Target Groups

The following target groups were covered in each hospital:

- Medical Superintendent/Hospital In-charge
- Senior Nursing Staff
- Representatives of Concern India Foundation


























## 2.5 Development of Tools

The study tools were designed considering the type of support under ICU setup that has been provided and the type of stakeholders to be covered as shown below:

- Observation Checklist
- In-depth interview Discussion Guide with Medical Superintendent /In-charge
- In-depth interview Discussion Guide with Nursing Staff
- Datasheet or the patients' coverage

The observation checklist was designed for the physical verification of the ICU setups for the assessment of the type of equipment available, their functionality, availability of infrastructure, etc. Datasheet was designed to collect information on patients supported through the project to assess the reach, time duration, and average number of patients supported with the type of equipment.

## 2.6 Sample Coverage

S.No.	Type	Madhya Pradesh	Odisha	Punjab	Total
1	ICU Setup Checklist				  
2	IDI with medical superintendent				  
3	IDI with Nursing In-charge/Staff				  
4	Datasheet				  
5	IDI with Concern India Foundation				



## 2.7 Team Deployment

For the impact assessment study, physical visits were made by senior researchers to each hospital. All the researchers were highly qualified and experienced in social sector research studies for more than 12-22 years.

## 2.8 Training of Data Collection Team

A 4-hour training was conducted for the team to provide the detailed methodology and orientation on study tools and checklist. A brainstorming session was conducted to finalize the process and points of focus while undertaking the impact assessment. Since the team members were highly educated and experienced, the team successfully completed the orientation on the study.

## 2.9 Study Implementation

- During the initial phase, a plethora of information was obtained from the HDFC Bank team. The information received generated insights towards the COVID support project.
- At the next step, team members from Concern India Foundation were contacted to capture their experience and views in relation to the project as well as the steps adhered to during the phase of implementation. All possible information on procurement, demand synthesis and decision-making actions were noted down.
- Further, Concern India Foundation officials connected the IMPACT team with Doctors For You officials as they were the key players in the procurement as well as supply of the equipment through their ground force. Linkage with the CIF team yielded a lot more information and their views about the usefulness of the intervention as well as their perception of the current status of ICUs at the hospitals.
- Post receiving the information, the discussion guides and checklists were developed. The feedback was provided by the HDFC Bank team.
- The researchers visited the three locations for data collection. The visits were well coordinated with the DFY officials who provided support in terms of introducing researchers to the officials and staff of the hospital and also coordinated in the physical verification of the equipment.
- At all hospitals, one-on-one in-depth interviews were conducted and all minute details were captured.
- We sincerely acknowledge the support received from the CIF team.
- The entire data collected was brought to the IMPACT office for processing and management.

## 2.10 Data Analysis and Report Writing

All the data collected by the researchers were collated and data synthesis and content analysis was undertaken. While analyzing data, efforts were made to link the findings with their reasons, which emerged from the data. Report writing was done exclusively by senior researchers.

## 2.11 Support Received from HDFC Bank and Partners

- Contact details of Partner NGOs
- Coordination during the visits
- Completion report and other documents useful for the study

## 2.12 Challenges Faced

- The officials posted at the time of receipt of support at the hospitals were transferred to other locations and hence required data could not be obtained.
- Data availability was a key issue with all the hospitals as they keep different data in registers in multiple templates.
- At Kendrapada, the hospital installed the ICU setup just a few months earlier as the new building was under construction.

## Chapter 3

# Study Findings

In this chapter, the study results obtained from the impact assessment have been discussed and presented in such a way that readers can relate the outcome of the support provided by the HDFC Bank to contribute as an immediate response to the needs identified during the year 2021. The findings have been presented by the states/hospitals as follows.

### 3.1 Lord Mahavir Civil Hospital, Ludhiana

Lord Mahavir Civil Hospital, Ludhiana (Punjab) (LMCH) is a district-level government hospital with a 400-bed facility, managing different departments where in-patient facilities are available. LMCH caters to a population of around 40 lakhs and provides the local population with a variety of health programmes including preventative, promotive, and curative services. LMCH has a dedicated mother-and-child hospital where more than 5 gynaecologists and anaesthetists are available for specialized care. LMCH also has medical professionals at the hospital with specialities in paediatrics, surgery, skin and VD, ENT, TB & chest diseases, and dental sciences.

LMCH also has a dedicated block for outpatient department (OPD) services for the public for 8 hours each day so that patients can receive consultation and diagnostic services. As per the estimate, the OPD at the LMCH hospitals caters to around 1,200+ patients every day.

LMCH also has an integrated counselling and testing centre (ICTC) for HIV patients, a blood bank and a radio-diagnosis department. In the medicine department, LMCH has a dedicated 33 beds ICU facility including 9-bedded pediatrics ICU ward. Initially, LMCH had 16 ICU beds for adults and later HDFC Bank provided 5 ICU beds and 3 ventilators for strengthening their ICU setup. LMCH officials also informed that LMCH also received support from other organizations after the second wave of COVID-19.

LMCH has been designated as the Level 3 COVID-19 facility for COVID treatment support by the District Health Administration.

#### 3.1.1 Background

LMCH has been set up in the heart of the district, accessible for people both from rural and urban areas. During the COVID-19 pandemic, LMCH was the nodal facility for providing essential services to COVID-19 patients. A separate ward was developed for the patients ensuring isolation, treatment services and a dedicated ICU ward for treating the critically ill patients requiring oxygen and ventilator support. During the second wave, LMCH faced a sudden flow of in-patient admissions and it managed to provide immediate support but also realized the urgent need to enhance critical care facilities and infrastructure within the existing setup. As the existing ICU capacity of 16 beds was insufficient to cater to the exceptional demand for critical care, a decision to upgrade the facility with support from the HDFC Bank's project was taken.

The specific need was identified by the Concern India Foundation through physical visits and HDFC Bank provided the grant to procure and supply ICU equipment and consumables to the hospital.



### 3.1.2 Process of Seeking Support

To strengthen the ICU set-up at LMCH, CIF received a list of equipment from the health department and then sought financial support from HDFC Bank and supplied the equipment to the LCMH in March 2022.

### 3.1.3 Type of Support

All the equipment and machines were physically verified at medical ICU ward at LM Civil Hospital, Ludhiana. All the equipment and machine were in working condition and were being maintained for the use of patients at the time of assessment. The type of equipment provided to the LMCH are shown in the adjoining box.

EQUIPMENT SUPPLIED
5 ICY Fowler Bed Electronic
5 Ventilator
3 Para monitor
5 Defibrillator
3 Infusion Pump

### 3.1.4 Status of ICU Setup

The support from HDFC Bank received in March 2022 at LMCH and the store in-charge recorded and registered the equipment in the hospital records. All the equipment in the ICUs were made operational and fully functional by April 2022, with an objective of providing specialized care to critical patients. As informed earlier, LMCH has been designated for the COVID-19 patients.

As per the orders of the state government, ICU set-up is exclusively reserved for the COVID related treatment only and not to be used for any other treatments. Therefore, despite the fact that there is no other ICU ward within the hospital, all 33 ICU beds are not being used since August 2022 and secured under lock and key. The hospital authorities formally requested the Civil Surgeon and the Department of Health for permitting LMCH to operate 33-bedded ICU ward for the general patients, but the request was rejected.

With support from the senior nursing staff, the ICU set-up was physically verified and it was found that all the ICU equipment provided by HDFC Bank (5 ICU fowler beds, 3 para monitors, 3 ventilators, 1 defibrillator) was in working condition. Only unused equipment reported by the hospital officials were 5 infused pumps and 1 defibrillator, and were in the store as backup. Out of 5 para monitors, 2 have been sent to CHC Sudhar block. Also, 2 defibrillators were also sent to CHC Sudhar.

Since the ICU is not functional, the ventilators are charged regularly every week so that the equipment remains functional for emergency use.



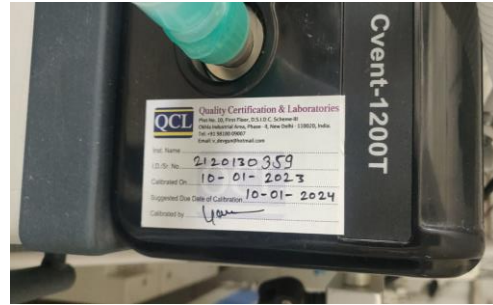
### 3.1.5 Equipment Utilization

Up until June 2021, the ICU facility at the LMCH was being fully utilized and catered to several patients with varied degree of severity. By that time, the HDFC support had not arrived and the facility was using the ventilators and other equipment provided under PM Cares Fund and through other charitable trusts. Since then, no COVID patient has been registered at the facility and therefore these equipment, including the ones supplied under the HDFC grant remain unused.

### 3.1.6 Operations and Maintenance Provisions

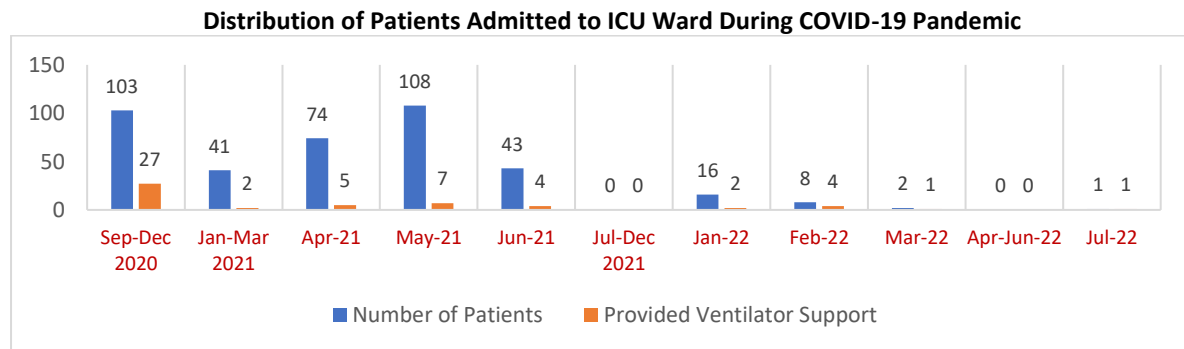
All hospitals have been provided with Operations and Maintenance (O&M) support as a top priority because properly maintained equipment are essential to providing patients with timely care and support that can save their lives.

The Government of Punjab has centrally assigned an O&M Services Provider and all the equipment at all government hospitals in the state are bar coded. In case any repair is needed, the hospital can lodge a complaint using the bar code and the agency will have the responsibility to repair the equipment within 48 hours. During the assessment, it was discovered that the HDFC Bank-supplied equipment were barcoded i.e. these are included within the inventory and hence are eligible for repairs through the central O&M process.



### 3.1.7 Patient Admissions During COVID-19 Phase

An attempt was made to gather the number of patients supported through HDFC Bank support. The following graph portrays the distribution of COVID patients across 2020-2022.



Data obtained from the hospital suggests that from September to December 2020, a total of 103 COVID-19 patients were admitted at the ICU, of which 27 (26%) required ventilator support. Between January to April 2021, the number fluctuated and it again peaked in May 2021, when it was the second wave of COVID-19. Between Apr-Jun 2021 total of 225 COVID-19 patients were admitted of these, 16 patients were kept on ventilators.

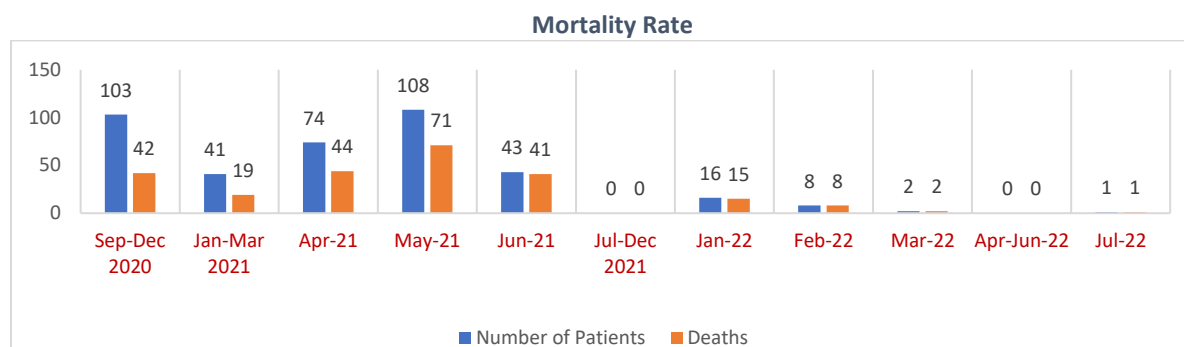
Post-June 2021, the number of patients admitted to ICU significantly declined and after July 2022, the ICU was closed. Therefore, after receiving HDFC support in 2022, there has been no case of COVID where ICU facilities or ventilator support was required.

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HDFC Bank support has made some contributions to the already existing ICU facility by adding 5 ICU beds and 3 Ventilators to the existing facility of 28 ICU beds and 18 ventilators.

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The data related to mortality obtained from ICU records for the COVID-19 phase (prior to the hospital receiving HDFC Bank support) suggests alarming rate. All these reported deaths are due to COVID-19 and as informed by the nursing staff, many of them died while on the ventilator. The distribution of patients admitted and died has been presented in the following graph.



It can be seen that mortality during the end of the first wave in Sep-Dec 2020 was about 41% which further increased to 46% in Jan-Mar 2021. Later, the second wave emerged and accounted for 59% mortality in April 2021, 66% in May 2021 and 95% in June 2021, which was extremely high. Once the second wave subsided, there were no admissions in ICU from July to December 2021. The high mortality is primarily because LMCH being a level 3 facility, the majority of the patients it receives are referred from other facilities and are in critical condition.

### 3.1.8 Benefits During COVID Phase

With respect to HDFC Bank support, LMCH did not get the support during the COVID-19 second wave and by the time it received the support, the severity of COVID-19 was over. Thus, there was no direct benefit of the support during the year 2022 to 2023. However, the support for ICU equipment in March 2022 has significantly enhanced the LMCH's capacity to handle critical COVID-19 and other cases. The LMCH has emerged as a facility fully equipped to manage any emergency in future, including COVID-19 waves. The advanced medical equipment provided under HDFC's support will be helpful in effectively managing the emergency cases. LMCH has gained recognition as a hospital with high-quality healthcare services that can manage critical situations.

### 3.1.9 Perception on Impact on Hospital Services

The interaction with medical doctor and senior nurse about the HDFC Bank support for ICU revealed that they are confident of providing quality emergency services in future. The only challenge is to obtain permission from the government to open the ICU ward at the earliest for non-COVID patients. The staff expressed their satisfaction with the support. When further asked, the staff mentioned that the support has given an edge to the ICU as the ventilators provided under HDFC project are of high quality and precision as compared to the other ventilators.

### 3.1.10 Overall Assessment

With the addition of the HDFC-supported equipment, all 5 ICU beds and 3 ventilators are available for treating more patients with intensive care. The equipment provided under the support are of high quality that offers better care. The support is not being used currently and should be addressed. Some of the equipment (2 para monitors and 2 defibrillators) received at the LMCH under the HDFC Bank project were sent to CHC Sudhar so that patients can be provided the benefit of good quality care.

The senior nurse appreciated the support received from HDFC Bank as all the equipment are of high quality and have advanced features. The physical verification confirmed this from equipment's specifications, which were compared to the other similar equipment available in the ICU.

### 3.1.11 Challenges Faced by LMCH

- ◆ LMCH has not been able to provide ICU services to critical patients accessing the emergency department and only provides referrals to other government referral hospitals. LMCH must be given permission to operate the ICU ward on a regular basis and can reserve 5 ICU beds for COVID patients in a separate room/section in the building.
- ◆ The lack of ICU technicians and other staff having training in ICU operations is a limitation.
- ◆ The hospital currently has 49 nursing staff against the sanctioned number of 135 which needs to be filled up soon so that the ICU should have adequate staff members for the smooth functioning of the ICU. Although it is a systemic issue but needs intervention.

### 3.2 District Hospital, Kendrapara (Odisha)

District Hospital (DH), Kendrapara, Odisha, is a government-approved 195-bedded health facility and a request for a sanction for upgrade to 300 beds is pending with the Odisha State government. Currently, the hospital has 195 beds fully operational across different departments where in-patient admission facilities are available. A dedicated Hospital Manager (HM) oversees the District Hospital. The hospital offers a variety of health services including preventative, promotive, and curative services. A good proportion of medical professionals are available in the hospital

with specialities in gynaecology, paediatrics, surgery, and other fields. DH, Kendrapara runs an outpatient department (OPD) for about 6 hours providing consultation and diagnostic services and serves almost 800-1000 patients each day through the OPD. In the medicine department, there is only one ICU with a capacity of 5 beds and no other department offers ICU beds. Patients needing critical care are generally referred to District Hospital, Cuttack or RH, Bhubneswar.



One of the significant developments mentioned by the Hospital Manager was that the District Hospital is recently shifted to a newly constructed large infrastructure setup and has been operational since February 2023. This has been another significant move by the State government supporting for quality patient care services at the district level.



#### 3.2.1 Background

District Hospital, Kendrapara is the only healthcare facility that plays a crucial role in managing the patients accessing the facility from the urban and rural areas of the district and also from the adjoining districts. A large proportion of patients were referred to DH during the COVID-19 pandemic's second wave. DH authorities faced challenges in managing the critical care facilities and infrastructure setup due to the unexpected increase in the number of patients. As per estimates, more than 100 patients who needed critical treatment were brought to the hospital in 2021 on a daily basis.

To meet the enormous demand for critical care, an operational ICU at the facility was required. DH authorities with the assistance of the Department of Health, Odisha Government managed to create makeshift wards immediately. Medical professionals from rural CHCs and other PHCs were brought in on deputation to meet the demand for trained medical personnel. While the COVID-19 wave was over, a strong need for having facilities that are ready for future emergencies was felt and hence this support from from HDFC Bank. .

Extending this support, HDFC Bank approved the vital ICU equipment and support to upgrade the facility for the future. The HDFC bank in collaboration with Concern India Foundation identified the essential requirements and effectively procured and delivered the equipment to the District Hospital.

### 3.2.2 Process of Seeking Support

As mentioned earlier, during the pandemic in 2021, the DH Kendrapara faced a crisis in managing the large number of patients requiring ICU and ventilator support. To meet the increased demand, a temporary ICU set-up was set up with limited equipment. CIF obtained a list of requirements for essential equipment and support and shared it with HDFC Bank which was later approved by the HDFC Bank.

### 3.2.3 Type of Support

All the equipment and machines were physically verified at the medicine ICU ward. All the equipment and machines were in working condition and being used for the patients at the time of assessment. The type of equipment provided to the District Hospital are shown in the adjoining box reflecting the critical need for ICU set-up. These were delivered at the end of March 2022. The list of equipment and other items provided to DH Kendrapara has been annexed.

EQUIPMENT SUPPLIED
5 ICY Fowler Bed Electronic
5 Ventilator
3 Para monitor
5 Defibrillator
3 Infusion Pump



### 3.2.4 Status of ICU Setup

The ICU setup support was received in the month of March 2022 but were not installed as the DH was in the process of being shifted to the new building and the authorities decided to install all the new ICU setups in the newly constructed ICU ward in the new building. DH was shifted to the new building in March 2023 (after a year of receiving support) and then the installation of the machines and equipment in the ICU ward at the medicine department was completed. Some of the equipment are still in the store as reserved and will be used as per the future demand.

All 5 Five para monitors, 5 ICU Fowler beds and 3 ventilators were available and functional in the ICU ward. The unused equipment reported by the hospital officials were the 3 defibrillators and 5 Infusion Pumps which were

in store and reported to be functional. Currently, the ICU set-up is in place and ready for managing critical patients.

### 3.2.5 Equipment Utilization

The assessment team intended to understand the extent of use of the supplied equipment and materials by the service providers and enquired about the usage of the equipment. The DH has 155 beds in all wherein 130 beds are dedicated to the General ward and 25 are reserved for sudden outbreaks such as Dengue, Typhoid, Malaria, or emergencies needing trauma management. As per an estimate, at any given point in time, 80-100 beds remain occupied in the General ward of the DH, Kendrapara.

Currently, ICU is non-operational due to a lack of human resources, particularly an ICU technician and trained nursing staff, although all the equipment like ventilators, monitors and defibrillators provided by HDFC Bank are available and functional. While discussing with the Hospital Manager and nursing staff at the medicine department, it was reported that they have already sent the name of doctors and nurses for training related to ICU operation to the State level health department at Bhubaneswar. To date, the hospital administration has not received any update on the same and the hospital manager and nursing staff are waiting for the approval.

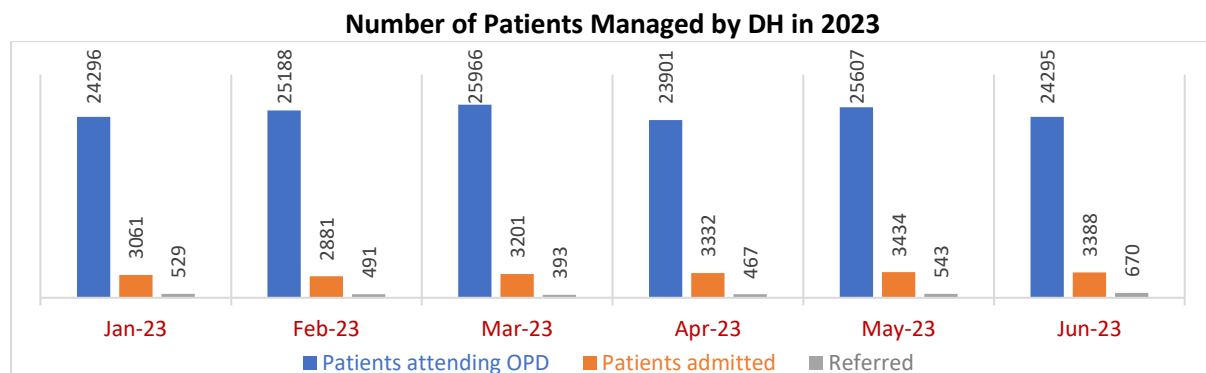
The assessment team is of the opinion that the essential equipment like advanced equipment like ventilators, para monitors, and defibrillators, essential for patient care, are available but currently not being efficiently used in the District Hospital, Kendrapara. On further exploration with staff and HM, it was informed that staff is not trained for ICU functioning and needs to have trained human resources. Hence, all the critically ill patients requiring intensive care and ventilator support are referred to District Hospital, Cuttack and Government Hospital, Bhubaneswar. Subject to the availability of ICU technicians and other trained staff, the hospital is prepared to manage any situation like COVID-19 or its variants in the future effectively.

### 3.2.6 Operations and Maintenance Procedure

The assessment team enquired about the provisions for Operations and Maintenance (O&M) for the advanced equipment, ensuring long-term usability of these equipment. The hospital administration mentioned that as such, there are no provisions for O&M services but HM did mention that they would identify the vendor for services if any repair or replacement is required. For minor repair or replacement, DH can manage funds but for large-scale O&M services, DH would seek funding from the civil surgeon or the Health Department.

### 3.2.7 Patient Admissions and Referrals

During the assessment, the nursing staff were requested to provide data for the last 2 years of patients receiving support through ICU-related equipment. As informed by nursing staff on duty, the department keeps paper-based records and these were not traceable as DH has been recently shifted to a new building. HM, medical doctor and nursing staff on duty expressed their inability to provide data for the last few years. However, the assessment team attempted to obtain data available in the current records at the Medicine ward in the hospital, where ICU has been set up. The following graph shows the number of patients managed by DH.



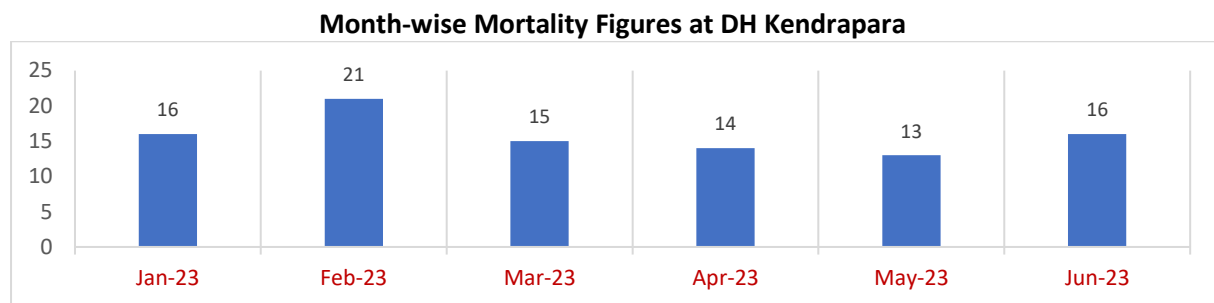


As evident from the graph that DH Kendrapara manages a huge load of patients in OPD in the range of 800-1000 patients every day. On average, 12% to 14% required admissions for the treatment in general ward managing largely cases of surgery, medicine, gynaecology, and orthopedics.

The hospital manager also confirmed that a dedicated functional ICU at DH, Kendrapara is essential as all critical patients needing ICU and ventilator assistance are currently being referred to DH, Cuttack, and Bhubaneswar. No patients with COVID-19 or COVID-related symptoms have been documented in the last 1.5 years but there are enough patients needing critical care, which have to be referred, in the absence of the service at DH.

The assessment team is of the opinion that HDFC Bank's support has contributed to the improvement of patient care services, boosting the hospital's capability and capacity to meet healthcare needs, but only if it is made functional, with the availability of the required human resource.

Further, the nursing staff was asked to share the mortality data and it was reported that on average 15 patients per month expire while undergoing treatment. However, most cases with critical conditions are referred to super speciality hospitals, as per the patient's condition. The following graph shows the mortality case on a monthly basis at District Hospital.



### 3.2.8 Perceived Benefits

During the second wave of COVID-19 from April to June 2021, District Hospital had to set up a special ward for COVID patients in the old building. The officials shared that most of the patients were just given medical care and oxygen assistance. For the few patients needing ventilator support, these ventilators were available through philanthropic organizations and some from PM Cares fund. The mortality was very high which triggered the need for assistance with the ICU setup and associated supplies, to make the hospital future ready for any such emergency.

### 3.2.9 Perception on Impact on Hospital Services

The interaction with Hospital Manager and nursing staff informed that the HDFC Bank support has provided them confidence of treating serious patients at ICU (subject to their training) as they now have an ICU setup at the facility.

### 3.2.10 Overall Assessment

The District Hospital, Kendrapara is better equipped to handle future emergencies with the HDFC Bank's support. The District Hospital now has an ICU set-up that can be made operational with equipped human resource. Currently, DH has HDFC Bank supported 5 ICU beds and further requisition of 30 more ICU beds has already been sent to the Government of Odisha. Since the ICU setup is not currently functional, the DH refers seriously ill patients to other higher-level facilities with ICU infrastructure and technical manpower. The availability of electronic ICU beds, and equipment with advance technology given by HDFC Bank guarantees future readiness for patient management in an emergency situation. The ICU Setup support provided by the HDFC Bank received **7 out of 10** rating (as it has not been used) from the hospital staff.

### 3.2.11 Challenges Faced by District Hospital, Kendrapara

- ◆ Availability of ICU technician, training of staff Nurses and Doctors to operate ICU and ventilators has been identified as a key challenge. If this requirement is managed at DH, it can cater to substantial number of critically ill patients at ICU ward.

### 3.3 District Hospital, Khargone (Madhya Pradesh)

District hospital (DH), Khargone, Madhya Pradesh, is a government approved 300-bedded health facility but currently, the hospital has more than 400 beds fully operational across different departments where in-patient facilities are available. DH offers the general population a variety of health programmes and preventative, promotive, and curative services. More than 100 beds are in the mother and child centre that provides gynaecology and obstetrics services. DH also has a trauma centre. The Senior Medical Officer (SMO) oversees the administration.

DH Khargone offers OPD services to 1000-1200 patients on a daily basis. The DH has two ICUs with a capacity of 12 and 15 beds in the medicine ward. Usually, District Hospital, Indore is the main referral hospital for those who need critical care. The SMO mentioned that currently one 15-bedded ICU is operational with full capacity while another 12 bedded ICU is reserved for emergency.



#### 3.3.1 Background

District Hospital, Khargone is a prime healthcare facility that manages the load of patients who access it from both urban and rural areas. At times, patients from the nearby districts including Khandwa, Burhanpur and Maheshwar also access DH, Khargone for the treatment. During the second wave of COVID-19 pandemic, daily 100+ patients needing critical treatment were brought to the hospital (March-June 2021). Like all government hospitals, DH Khargone had managed the high load of patients through separate quarantine and medical wards, exclusively reserved for the COVID patients. Majority of COVID-19 patients were treated with medicines and other support like oxygen and follow-ups. However, DH had 6-bedded ICU that provided critical care to a few who were in need of intensive care including regular oxygen and ventilator support. DH Khargone shared its need for more ICU beds with advanced equipment to manage the patients and Concern India Foundation received the requirements. The HDFC Bank provided the support to manage this critical need through essential ICU supplies and assistance. The Concern India Foundation was involved in the procurement process and delivery of the equipment.

#### 3.3.2 Process of Seeking Support

Upon receiving the requisite from the DH Khargone, Concern India Foundation obtained a list of requirements for support and shared it with HDFC Bank. The requirement was formally approved by HDFC Bank considering the urgent needs and the potential impact of the ICU setup support. The HDFC-supported ICU equipment were delivered in March 2022.

#### 3.3.3 Type of Support

All the equipment and machines were physically verified during the assessment and were found in working condition. The type of equipment provided to the District Hospital are shown in the adjoining box reflecting the critical need for ICU set-up. A list of equipment and items provided to DH Khargone is annexed to the report.

EQUIPMENT SUPPLIED
5 ICY Fowler Bed Electronic
5 Ventilator
3 Para monitor
5 Defibrillator
3 Infusion Pump



### 3.3.4 Status of ICU Setup

The ICU setup support was received in the month of March 2022. After receiving the support, the installation of the machines and equipment in the ICU ward at medicine departments and the emergency room was completed within a month's time enabling the hospital to provide specialized care to critical patients.

All 5 Five Para Monitors, 5 ICU beds and 3 ventilators were available and functional in the ICU ward. The unused equipment reported by the hospital officials were the 3 defibrillators and 5 Infusion Pumps that are in store and reported to be in working condition.

### 3.3.5 Equipment Utilization

The DH has a total of 25 ICU beds, which includes the 5 ICU beds provided under the HDFC project. These 25 ICU beds are placed in two wards, 12 and 13 in number, respectively. One of the ICU wards with 12 beds is currently in use and the other with 13 beds is functional but not under use, as it is reserved for emergency. The 5 beds provided under the HDFC project are placed in this ICU ward that is currently reserved and therefore locked.

According to the hospital staff, the equipment provided under the HDFC grant are advanced and highly efficient. The staff mentioned that they are trained to use these equipment and are regularly supervising the equipment to keep them operational and ready for use.

The equipment provided under the HDFC grant has helped the District Hospital to strengthen its emergency services. While it may not be under use, currently it has made the DH ready to meet any emergency like COVID-19 wave in future.

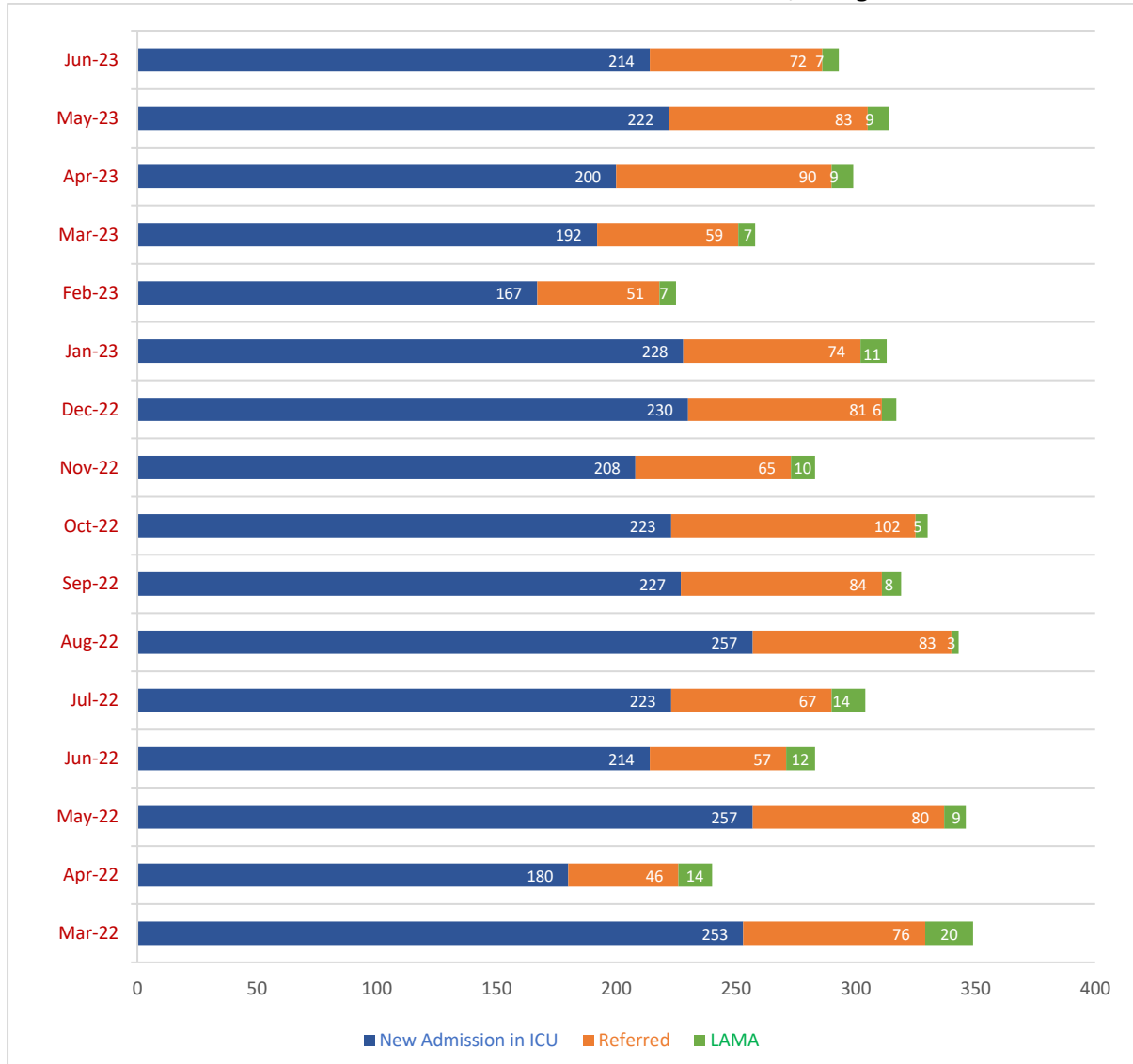
### 3.3.6 Operations and Maintenance Procedure

Hospital staff and SMO confirmed during the discussion that the Government of Madhya Pradesh has assigned an external O&M Services Provider agency for all the government hospitals. The agency ensures that the equipment remains functional and if required, the equipment must get timely repairs and replacement supplies. The hospital administration has the contact details and calls for them whenever needed. At the time of assessment, the agency engineers were providing support for the functional ICU set-up at the hospital.

### 3.3.7 Patient Admissions and Referrals

During the assessment, the nursing staff were requested to provide patients' admission data for the last 2 years who were provided support through ICU-related equipment. The data relating to ICU admission, referrals and mortality were provided through their paper-based records from the ICU ward. The following graph shows the number of patients managed and handled by the District Hospital.

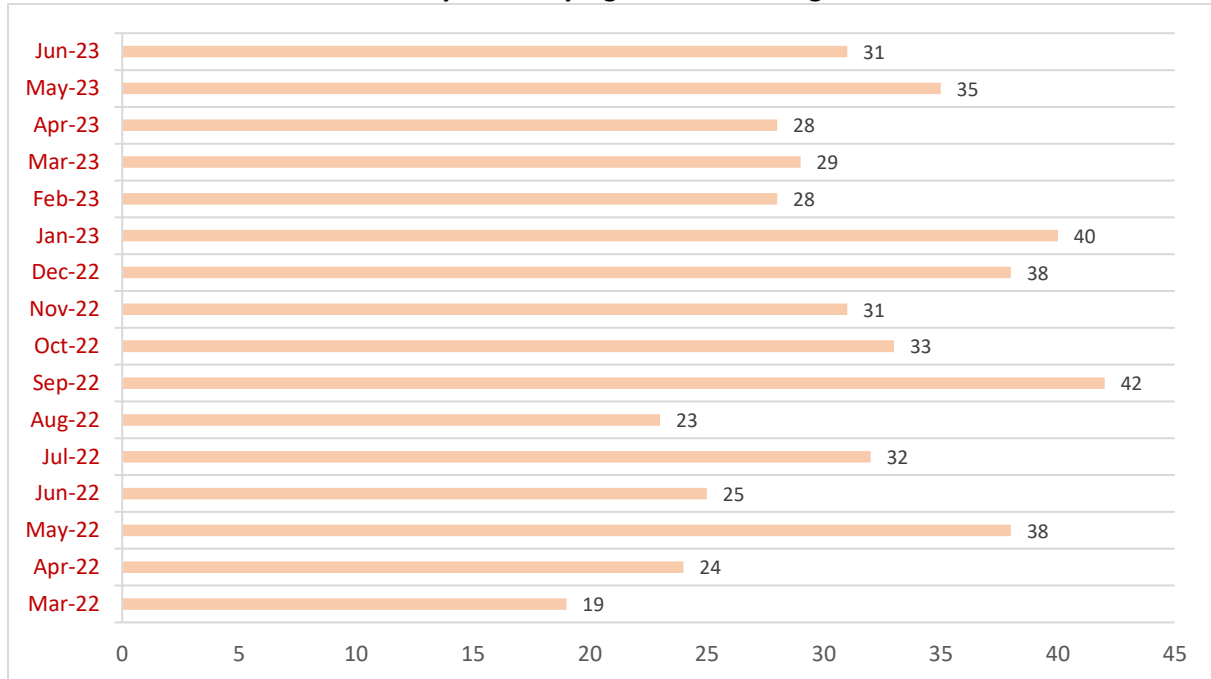
**Number of Patients Admitted to ICU Ward at DH, Khargone**



On average, the district hospital admitted approximately 218 patients per month, in the ICU. Out of these, on average 73 patients were referred to higher or super speciality hospitals and about 9 patients left against medical advice (LAMA). As seen from the graph almost 32% to 48% of the total admitted cases were referred (including LAMA), indicating 68% to 52% were treated at the DH.

The nursing staff also provided the mortality data indicating that on average 31 patients per month lost their lives. The following graph shows the mortality figures by months between 2022-2023.

### Monthly Mortality Figures at DH Khargone



The data shows the mortality figures by months but these are not COVID related deaths. Further analysis shows that mortality proportion ranges between 8% to 19% with an average of 14%.

### 3.3.8 Benefits During COVID Phase

The support was provided to the DH, Khargone after the second wave of COVID-19 in March 2022 and with an aim of preparing and strengthening the hospital to be ready for the possible third wave. Therefore, while this grant helped the DH Kargaon to further strengthen itself for emergency services and future COVID waves (if any), it had no contribution in the second wave of COVID-19, as it had ended by the time equipment under this grant arrived at the hospital.

### 3.3.9 Perception on Impact on Hospital Services

During discussion, SMO and the nursing staff appreciated the HDFC Bank for rendering its support to strengthen their ICU services which has impacted positively. The DH is now an “emergency ready” facility with advanced equipment to manage critical patients at the district level. Now, the staff also feels empowered to manage a large number of patients, with support of the additional ICU setup.

### 3.3.10 Overall Assessment

The District Hospital, Khargone now has an edge and is better equipped to address future emergencies through HDFC Bank’s support. Although the District Hospital has only one operational ICU set-up and another 13 bedded ICU has been kept as a reserve ICU, this gives a confidence to Hospital staff to tackle any emergency situation. The availability of an ICU equipment with advance technology given by HDFC Bank guarantees future readiness for patient management in an emergency situation.

The ICU Setup support provided by the HDFC Bank received 10 out of 10 rating from the hospital staff.

### 3.3.11 Challenges Faced by District Hospital, Kahargone

- ◆ Running two ICUs at District hospital need more human resource, like technicians and trained staff nurses and Doctors. If this requirement is managed at DH, it can cater to a large number of patients
- ◆ District Hospital sometime face challenges in maintaining the equipment due to a tedious process involving long paper work. To ensure uninterrupted care and efficient functioning of the ICU facilities, it is essential to address these concerns promptly.

## Chapter 4

# Assessment on OECD Criteria

This chapter discusses the OECD criteria and presents the status of HDFC Bank support provided to government hospitals.

Assessment Results	Score
<p><b>Relevance</b></p> <p>The second wave of COVID-19 in March 2021 had hit very hard and the medical infrastructure of the country faced a lot of challenges across government, private and non-profit sectors. Huge inflow of patients in the medical institutions created shortage of hospital beds, oxygen cylinders, ventilators/HFNCs and other medical supplies that led to difficult situations for medical facilities.</p> <p>The ICU setup project supported by HDFC Bank demonstrated high relevance in addressing the critical healthcare needs emerged during and after the COVID-19 pandemic. The project's criteria for identifying the equipment and machines were well-aligned with the hospital's requirements. By providing essential ICU equipment and infrastructure, the project addressed the hospital's pressing demand for additional ICU beds and critical care resources. The support came at a time when the entire government medical system was gearing to prepare itself to meet other COVID waves (in case they come) or other such emergencies. The project's relevance was evident in its ability to enhance the hospital's capacity to handle the overwhelming patient load in future. Barring some, most of the equipment and supplies provided under the project were those that these hospitals were lacking.</p>	<p>● ● ● ●</p>
<p><b>Coherence</b></p> <p>The project exhibited the coherence in its execution, as evident from the feedback received from the hospital administration, corroborated by the observations during the impact assessment. The support provided by HDFC Bank was well-timed and appropriately tailored to meet the specific needs of the hospital with a mandate to upgrade and prepare themselves for future emergencies. For the integrated patient care, these equipment and materials support were essential the hospitals. The upgraded ICU facilities and equipment could be integrated with the hospital's existing infrastructure, contributing to streamlined patient care processes and reduced waiting times. The coherence of the project demonstrated effective collaboration between HDFC Bank, the government hospitals, and the partner NGO involved in the process.</p>	<p>● ● ● ●</p>
<p><b>Efficiency</b></p> <p>The project demonstrated efficiency in contributing to the emerging needs of the government hospitals, post COVID-19 pandemic, to be ready for any such wave in future. The ICU setup support from HDFC Bank improved the hospital's capacity to cater to the increased number of patients requiring critical care in future. The advanced medical equipment, including patient monitors, ventilators, and ultrasound machines, enhanced patient care delivery and reduced waiting time. The hospital staff appreciated the technologically advanced equipment, resulting in improved patient outcomes. The project's efficient execution facilitated the integration of the upgraded ICU facilities into the hospital's existing operations.</p>	<p>● ● ● ●</p>

Assessment Results	Score
<p><b>Effectiveness</b></p> <p>The project demonstrated limited effectiveness in empowering government hospitals to provide quality healthcare services to patients, in future as in all the three facilities, the equipment are currently not being used. Though not put to use, the support has impacted the hospitals' ability to handle critical cases and deliver specialized care. The hospitals' increased capacity to handle patient inflow, demonstrates project's effectiveness. Currently, hospitals have a limited number of patients who require ICU support but the government hospitals with such an advanced setup are now future ready for facing any critical situation.</p> <p>There is a huge potential for these facilities to be highly effective in future, provided they are supported with the required human resource.</p>	
<p><b>Impact</b></p> <p>The impact assessment revealed a positive impact created by HDFC Bank's ICU setup support to government hospitals to be future ready for emergencies. The upgraded infrastructure played a pivotal role in strengthening the hospitals' response during the COVID-19 pandemic. While there is a lot of potential for impact, the impact will occur only when the equipment are put to regular use by the facilities.</p>	
<p><b>Sustainability</b></p> <p>The project's sustainability was a crucial aspect examined during the impact assessment. In two of the three facilities, there is no definite provision of operations and maintenance. It is not clear whether the warranty cards of critical equipment have been transferred to the respective facility and whether they would be able to invoke the warranty when needed. Many of the equipment (such as ventilators, invertors) if remain unused for long time will lead to battery damage, which would need major investment in replacement and that may not be possible through regular government support.</p>	
<b>OVERALL SCORE</b>	3.5 out of 5

## Chapter 5

# Summary and Conclusion

In conclusion, HDFC Bank's ICU setup support to the Government Hospitals has helped the facilities upgrade themselves for future emergencies. Fortunately for the country, there was no significant third wave of COVID-19; hence, this equipment was not used, but these were available if required. The project was relevant, as the identified facilities lacked the equipment and supplies essential for the care of critically ill patients. The support was provided timely for the hospitals, and its execution was effectively handled by the Concern India team.

The overall efficiency of the project was evident in its ability to contribute to the immediate needs of the hospital. The advanced ICU equipment, including patient monitors, ventilators, and ultrasound machines, significantly improved patient care delivery and reduced waiting time, in at least two of the three target facilities. Despite the challenges related to consumable compatibility, the project's effectiveness was demonstrated through improved patient outcomes and the hospital's increased capacity to handle patient inflow.

The facilities continue to face two critical challenges including underutilization of equipment and supplies provided and operations and maintenance of the equipment. The facilities would need some additional support in addressing these challenges and effectively using the support, in the best interest of the patients.

### Recommendations

- In the future, HDFC Bank should devise an efficient process of conducting a thorough needs assessment of the facility before providing such support. It will prevent useful equipment from being parked in the stores for a long time.
- As evident from the findings, the non-availability of trained staff is severely limiting the use of these equipment. HDFC Bank should consider asking Concern India to coordinate with the manufacturing companies to provide first-hand basic training to the existing staff for the use of these equipment. This will help in improving the utilization of these equipment.
- Concern India should coordinate with the respective facilities to see if the unused equipment can be transferred to other government facilities within the same district or state, where these can be used.
- Concern India should ensure that all warranty-related documents are transferred to the respective facilities and the staff is aware of the process of invoking warranty, whenever required. They should also negotiate with these manufacturing companies to extend the warranty of unused equipment.
- Since many of these equipment are high-value, HDFC can consider investing in getting these insured against damage for at least 3-5 years after the warranty. This will ensure the continued use of these products. In future, this can be a mandatory clause under such grants.



## Annexure 1 – Type of Support Provided to Hospitals

PUNJAB		ODISHA		MADHYA PRADESH	
Lord Mahavir Civil Hospital, Ludhiana		District Hospital, Kendrapada		District Hospital, Khargone	
Equipment and items	Supplied units	Equipment and items	Supplied units	Equipment and items	Supplied units
ICU FOWLER BED ELECTRONIC	5	ICU FOWLER BED ELECTRONIC	5	ICU FOWLER BED ELECTRONIC	5
VENTILATOR (PHILIPS TRILOGY EV 300)	3	VENTILATOR (PHILIPS TRILOGY EV 300)	3	VENTILATOR (PHILIPS TRILOGY EV 300)	3
FIVE PARA MONITOR (CONTEC CMS8000)	5	FIVE PARA MONITOR (CONTEC CMS8000)	5	FIVE PARA MONITOR (CONTEC CMS8000)	5
INFUSION PUMP (HAWKMED)	5	INFUSION PUMP (HAWKMED)	5	INFUSION PUMP (HAWKMED)	5
DEFIBRILLATOR (ZOLL AED PLUS)	3	DEFIBRILLATOR (ZOLL AED PLUS)	3	DEFIBRILLATOR (ZOLL AED PLUS)	3

## List of People Contacted for the Impact Assessment

State	Officials
<b>Lord Mahavir Civil Hospital, Ludhiana</b>	Dr. Mandip Kaur Siddhu, SMO Dr. Harinder Singh Sood, Senior Physician Ms. Tejinder Kaur, Senior Nurse & ICU Staff
<b>District Hospital, Khargone</b>	Dr. A.S. Chauhan, Civil Surgeon Mr. Nilesh Yadav (DHK)
<b>District Hospital, Kendrapara</b>	Ms. Sunita
<b>HDFC Bank CSR</b>	Mr. Abhijit Prabhugate Ms. Swarna Behera Mr. Neeraj Pathak Mr. Vineet Jadhav
<b>Concern India Foundation</b>	Ms. Anna Joy, Director Programs Ms. Pallavi Kakaji, Program Manager

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