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# CSR Impact Assessment Report

## Onsite Oxygen Generation Plant Set Up at Bangalore: Covid Wave #2 Support

Prepared For



**BOSCH**

Invented for life

**BOSCH GLOBAL SOFTWARE TECHNOLOGIES PVT LTD**

Prepared By



**SoulAce**

Path to Sustainability

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# ABBREVIATIONS

<b>CSR</b>	Corporate Social Responsibility
<b>NGO</b>	Non-Governmental Organisation
<b>CEO</b>	Chief Executive Officer
<b>LMO</b>	Liquid Medical Oxygen
<b>BGSW</b>	Bosch Global Software Technologies Private Limited
<b>O2</b>	Oxygen
<b>O2 GEN</b>	Oxygen Generator
<b>LPM</b>	Liter per Minute
<b>AMC</b>	Annual Maintenance Contract
<b>OEM</b>	Original Equipment Manufacturer
<b>BPL</b>	Below Poverty Line

# EXECUTIVE SUMMARY

## Background



### Project activities

- Selection of Hospital for O2 Generator distribution.
- Mobilization facilitated by the Field Analyze team.
- Comprehensive training was provided on O2 generator operation and maintenance.
- Challenges encountered during the purchase process.
- Oxygen Generator gave essential support to patients in need.
- Oxygen resources save numerous lives in ICU wards.
- Categorization of patients based on financial status (Categories A to E).
- Commitment to serving financially disadvantaged patients (Category E).
- Periodic maintenance schedule (daily, monthly, yearly).



### Project year

FY 2021-22



### Beneficiaries

Patients in need of Oxygen supply due to infection from COVID-19 or other medical reasons. Primarily targets the population serviced by BBH in Bangalore, including the marginalized and poor communities.



### NGO Partner

United Way of Bengaluru



### Project Budget

Rs. 1.04 crores/-



### Project location

Baptist Hospital, Bangalore, Karnataka

### SDG Goals



### Key Outcomes and Impacts:

# 17%

reduction in the annual cost for sourcing oxygen, amounting to INR 1,062,150.

# 216%

increase in the number of patients availing oxygen per month.

# 120%

increase in the number of patients availing HFNC per month.



Consistent generation of 372 M3/day of Oxygen on average.



No shortage of oxygen for critical patients from a baseline of 400 M3/day shortage.



A total of 1,35,780 M3 of Oxygen generated per annum.



Total annual concession awarded to patients from poor socio-economic backgrounds to the tune of INR 12,016,353.

**\*Note: The data for the Baseline indicators was collected in the fiscal year 2020-2021, while the data for the Endline indicators was collected in the fiscal year 2022-2023 .**



**Pipes from which oxygen is supplied to patients**



**Power supply for O2 gen**

# OXYGEN GENERATOR ROOM

⊘ AUTHORIZED PERSON ONLY

⊘ NO SMOKING

# OXYGEN GENERATOR ROOM

# CHAPTER 1: INTRODUCTION

## Project Background

The second wave of COVID-19 in India exposed the inherent vulnerabilities of the nation's healthcare system. Cities and towns across the country faced acute shortages of beds, medicines, ambulances, and most critically, oxygen. The dire situation was further worsened by citizens desperately searching for these vital resources to sustain their loved ones.

Bengaluru emerged as one of the epicentres of this crisis. The city's oxygen distribution system became overwhelmed, leading to chaotic scenarios where the government had to ration oxygen supplies to hospitals. This rationing caused distress at medical facilities as healthcare workers and families scrambled for this life-saving resource. Although temporary solutions, such as oxygen concentrators and cylinders, were introduced, they proved inadequate for patients needing high-flow oxygen.

Given the challenges and the looming threat of subsequent COVID-19 waves, there was a pressing need to establish oxygen generation plants, especially in hospitals grappling with large numbers of COVID-19 patients. To address the urgent situation, BGSW focussed its CSR in health, in FY 2020-21, to set up an oxygen generation plant at charitable hospitals in Bangalore. After thoroughly considering potential hospitals, Bangalore Baptist Hospital (BBH) was selected for this initiative. The decision was based on its commitment to healthcare accessibility and affordability, its roster of trained medical professionals, its technical capability, and its charitable nature.

The overarching goal of the program was to enhance the self-sufficiency of the Bangalore Baptist Hospital in medical oxygen supply, ensuring uninterrupted patient care during peak demand and emergencies by establishing a substantial onsite Oxygen Generation Plant and reducing dependence on external supplies.

## About BGSW

Bosch Global Software Technologies Private Limited (BGSW) is a 100% owned subsidiary of Robert Bosch GmbH. It is one of the world's leading global suppliers of technology and services, offering end-to-end Engineering, IT, and Business Solutions.

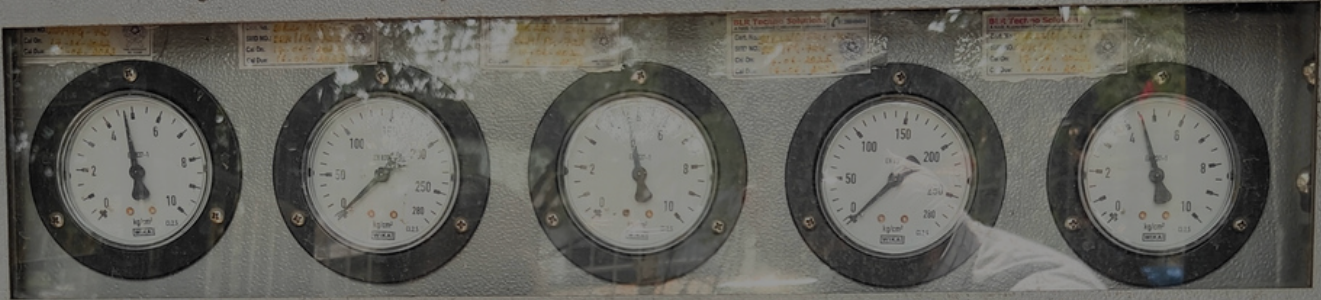
With a global footprint and presence in the US, Europe, Japan, China, and the Asia Pacific region, BGSW is at the forefront of designing, developing, and executing IoT ecosystems through our all-encompassing capability within the 3 aspects of IoT - Sensors, Software, and Services. BGSW is always focused on improving the quality of life of people, providing newer revenue-generating opportunities, and improving operational efficiencies for enterprises through an array of solutions. With a unique ability to offer end-to-end solutions that connect Sensors, Software, and Services, BGSW enables businesses to move from the traditional to digital or improve businesses by introducing a digital element in their products and processes.

At BGSW, CSR is an integral part of our Business Strategy and organizational goal wherein sustainable CSR programs are built around the active participation of our company's team members by fostering meaningful engagement and sustainable development in the areas of education and environment. Associates engage in various CSR activities throughout the year contributing thousands of volunteering hours.

## About the NGO Partner

United Way Bengaluru offers a solution to individuals who have encountered societal problems that have a crippling effect on both society and its people, leaving them wondering how to bring about lasting and visible changes. In recognition of the fact that every city faces a multitude of serious, unique and complex issues ranging from environmental concerns and healthcare to income disparities and education, United Way Bengaluru believes that the key to overcoming these challenges and creating a meaningful impact lies in uniting all stakeholders who share a common interest and purpose. Since its inception in 2008, United Way Bengaluru has operated as a registered not-for-profit organization, adhering to FCRA, 12A and 80G compliance. Its approach involves collaborating with communities, actively listening to their concerns, identifying the problems at hand and empowering individuals to confront these challenges directly. Moreover, United Way Bengaluru goes beyond immediate action by maintaining ongoing connections with the communities to ensure the long-term effectiveness of their efforts in making a global impact.

# AUTOMATED CONTROL PANEL



## 3 Source Fully Automatic Control Panel

LIQUID SUPPLY	LEFT BANK	MAIN SUPPLY	RIGHT BANK	EMERGENCY SUPPLY
IN USE	IN USE	RUNNING	IN USE	IN USE
<b>NORMAL</b>	NORMAL	<b>NORMAL</b>	NORMAL	<b>NORMAL</b>
HIGH	STAND BY		STAND BY	HIGH
LOW	<b>LOW</b>	LOW	<b>LOW</b>	LOW

TEST      MUTE

# OXYGEN



[www.mrengineeringworks.in](http://www.mrengineeringworks.in)



# CHAPTER 2: RESEARCH METHODOLOGY



BGSW commissioned SoulAce to conduct an impact assessment study to evaluate the immediate and enduring impacts of the program implemented under the BGSW/CSR: Rehabilitative Theme to combat the impact assessment study was conducted in the fiscal year 2022-23.

## Use of Mixed Methodology

The impact assessment study of the BGSW-sponsored CSR program incorporates a mixed methodology approach, combining qualitative and quantitative research methods to comprehensively evaluate the program's effectiveness and outcomes. The mixed methodology allows for a more holistic understanding of the plant's impact on various aspects, including healthcare infrastructure, patient care and community well-being.

## Application of Qualitative Techniques

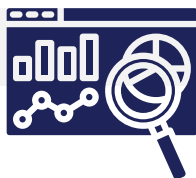
Qualitative methods are used to capture the lived experiences, perceptions and narratives of the stakeholders and BGSW-sponsored CSR program implementers. In-depth interviews and focus group discussions were conducted with individuals from the community, healthcare professionals and NGO staff. Through open-ended questions, participants shared their experiences from program interventions.

## Application of Quantitative Techniques

Quantitative methods are employed to measure the impact of the BGSW-sponsored CSR program using objective data. Quantitative methods such as surveys, data analysis and statistical measures enable the quantification of measurable outcomes, such as oxygen availability, patient outcomes, cost savings and operational efficiency.

By employing a mixed methodology, this impact assessment study ensures a comprehensive and nuanced evaluation of the Onsite Oxygen Generation Plant Setup, enabling evidence-based decision-making and continuous improvement of the CSR initiative.

## Research Design



- **Name of the project** : Onsite Oxygen Generation Plant Setup at Bangalore: COVID-19 Wave-2 Support
- **Implementing Agency** : United Way of Bengaluru
- **Research Design** : Descriptive Research Design
- **Sampling Technique** : Purposive & Stratified Random Sampling
- **Quantitative Sample Size** : 50
- **Qualitative Outreach** : 10 In-depth interviews and FGDs of stakeholders (Healthcare Practitioners, Bio-Medical Engineer, Maintenance team, and Program team members)

## Study Tools

**Primary data was collected using two types of questionnaires.**

### Questionnaire for Primary Beneficiaries:

Structured questionnaires were developed reviewing the BGSW -sponsored CSR program details for each of the focus areas, and indicators were predefined before conducting the surveys.



### Questionnaire for Secondary Beneficiaries & Stakeholders:

Semi-structured questionnaires were developed for each type of sample of this group. Stakeholders were identified across the focus areas. One-on-one discussions were conducted with beneficiaries to prepare case studies.

## Ethical Considerations

The conduct of this impact evaluation research was underpinned by a steadfast commitment to ethical considerations, ensuring that the study was conducted in an ethical and responsible manner. Paramount among these considerations was the utmost importance placed on the participant's rights and welfare. Each participant was provided with comprehensive information regarding the nature of the research and the extent of their involvement. They were offered the opportunity to provide informed consent to participate in the study and were assured of their right to withdraw at any stage without prejudice.

Throughout the research process, the confidentiality of the participants was rigorously maintained, safeguarding their identities and personal information. The study demonstrated an unwavering commitment to treating all participants with fairness, equity and respect, valuing their perspectives and ensuring their voices were heard. Importantly, no false promises were made to the beneficiaries, and their cultural and economic well-being was never compromised or harmed in any way.



Pressure monitor of O2 gen

# CHAPTER 3: KEY FINDINGS & IMPACT OF THE ONSITE OXYGEN PLANT

## Utilization of the Oxygen Plant

The average monthly data have been calculated against different indicators recorded monthly by the hospitals.

December 21 to March 2023 (16 months records)			
Sl.No.	Indicator	Average Monthly Frequency	Frequency (High/Low)
1	No. of patients benefitted/month	278	Highest: 410 (March, 2022) Lowest: 150 (December, 2022)
2	Oxygen generated by the O2 unit (M3/day Average)	372	Highest: 471 (January, 2022) Lowest: 173 (July, 2022)
3	Oxygen demand met by O2 unit	~40% of the total consumption E.g. 325 M3/day from this Oxygen Generator out of total Consumption of 851 M3/day Average	
4	% Oxygen sourced via O2 unit	94%	Highest: 95.4% (January, 2023) Lowest: 70% (December, 2022)
5	No. of patients on HFNC/month	90	Highest: 105 (February, 2023) Lowest: 58 (July, 2022)
6	No. of patients on ventilator/month	129	Highest: 126 (February, 2023) Lowest: 95 (December, 2022)
Annual patient concessions materialized/month			
7	Outpatients (Rs.)	28,96,090.00	Inclusive of Oxygen concessions
	Inpatients (Rs.)	91,20,263.00	Inclusive of Oxygen concessions

The statistics of the usage of Installed Onsite Oxygen Generation Plant has shown effectiveness to a large extent.

- The annual cost of sourcing Liquid Medical Oxygen (LMO) was around INR 63,95,284 before the intervention.
- Further, the supply of LMO was uncertain due to government rationing, logistical challenges, and the overwhelming demand during the pandemic, which led to scarce and inconsistent availability for hospitals. The average shortage of oxygen per day amounted to 400 M3.

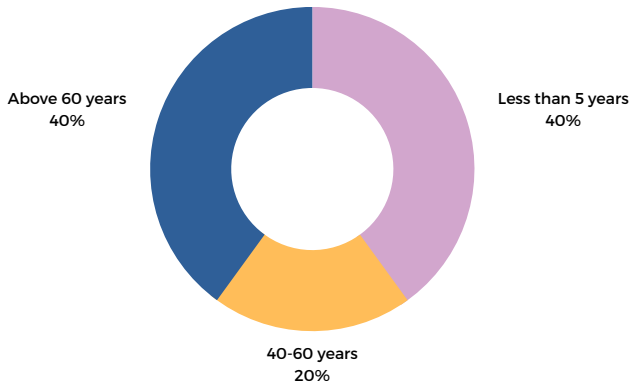
- Total savings from the Oxygen generator amounts to around INR 10,62,150 per annum.
- Approximately 372 cubic meters per day of oxygen is generated by the onsite Oxygen plant, fulfilling around 40% of the total consumption demand.
- On average, 278 patients benefitted from Oxygen support every month between December 21 to March 2023.
- Concessions amounting to INR 1,20,16,353 per annum were materialized, out of which INR 28,96,090 was awarded to outpatients while INR 91,20,263 was given to inpatients.
- The above concessions were inclusive of the concession provided for oxygen supply.
- Emergency outpatients presenting with conditions such as respiratory complications, strokes, traffic-related injuries, cardiac events, and cancer were also administered oxygen support.



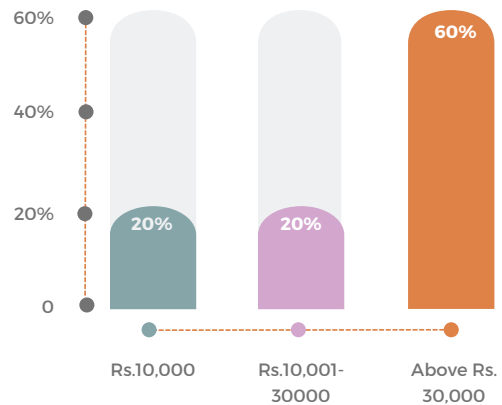
**Oxygen Generator**

## Beneficiary Profile

**Chart 1. Age Profile of the respondents**



**Chart 2. Income Profile of the respondents**



- A majority of the respondents, 40%, benefitting from Oxygen support were either above 60 years or below 5 years of age. Parents of beneficiaries below 5 years of age reported that they availed oxygen support in the pediatric units.
- Around 20% of the people benefitting from oxygen support were between 40-60 years.
- 40% of the beneficiaries hailed from poor socio-economic backgrounds.

Hence, while catering to a broad spectrum of the population, the plant crucially addressed the vital requirements of the most susceptible groups during the pandemic, namely the elderly and young children and people from poor economic backgrounds.



“  
Dr. Carolin Elizabeth George expressed her satisfaction with the recently acquired Oxygen Generator. She confidently stated that the generator has proven to be incredibly useful in their medical facility. With pride in her voice, she informed her team that they have integrated the generator into critical care units such as the ICU, ICCU and other crucial areas. She explained that they were currently using the generator on a shift basis, as they had sufficient oxygen supply at the moment. This strategic approach allowed them to operate the generator at a lower capacity, conserving resources. Dr. Carolin was thrilled about receiving the Oxygen Generator, as it significantly enhanced their ability to provide optimal care to patients in critical conditions.

-Dr. Carolin Elizabeth George, Head of the Community Health Department, Elmwood General Hospital



“ Mr. Kamaraju proudly shared the success story of the hospital's Oxygen Generator. He confidently stated that the machine had been functioning flawlessly since its installation, with minimal issues encountered. Despite the generator producing minimal sound and vibrations, Mr. Kamaraju revealed that the hospital has implemented sound insulation measures to contain the noise within the working zone, ensuring a peaceful environment outside. He further expressed his satisfaction with the seamless changeover between the Liquid Medical Oxygen (LMO) supply and the Oxygen Generator, noting that the transition was so smooth that it was barely noticeable. Mr. Kamaraju's personal happiness and contentment reflected the exceptional performance of the machine, contributing to a reliable and efficient healthcare environment for patients and staff alike.

-Mr. Kamaraju, Maintenance Engineer Head, Elmwood General Hospital

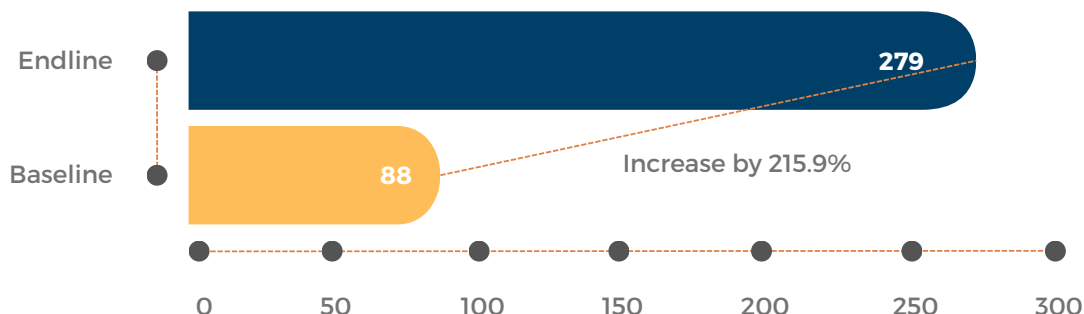
## Analysis of Impact Against Key Performance Indicators



### Increase in Access to Oxygen Support

The supply made by the onsite Oxygen plant increased access to oxygen support for critical patients manifold.

Chart 3. No of patients availing oxygen support per month



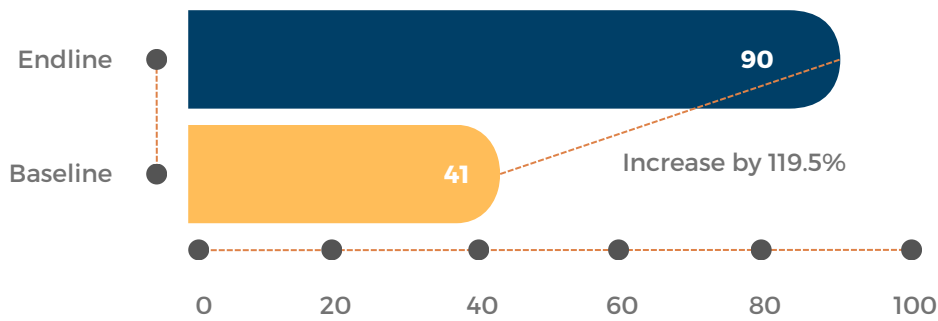
- Compared to the baseline, the total monthly average of patients availing oxygen support surged from 88 to 278, registering a 216% increase in access.
- It was noted that Oxygen shortage before the intervention amounted to around 400 M3/day.



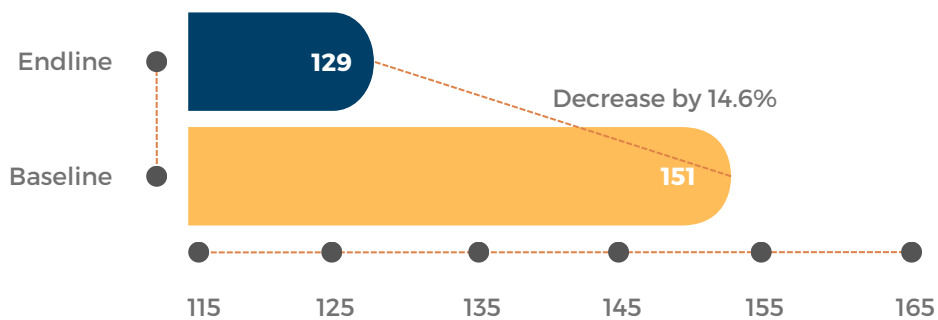
## Diversification of Oxygen Support

The onsite Oxygen facility provided for a range of oxygen demands, catering to diverse patient needs, whether they required High-flow Nasal Cannula (HFNC) or Ventilator support.

**Chart 4. No. of patients on HFNC/month**



**Chart 5. No. of patients on ventilator/month**



- The monthly average of patients benefiting from HFNC saw an increase, rising from a baseline of 41 individuals up to 90 patients during the assessment. The surge was attributed to the hospital's enhanced capability to accommodate the demands of patients suffering from severe respiratory conditions and other illnesses necessitating oxygen assistance.

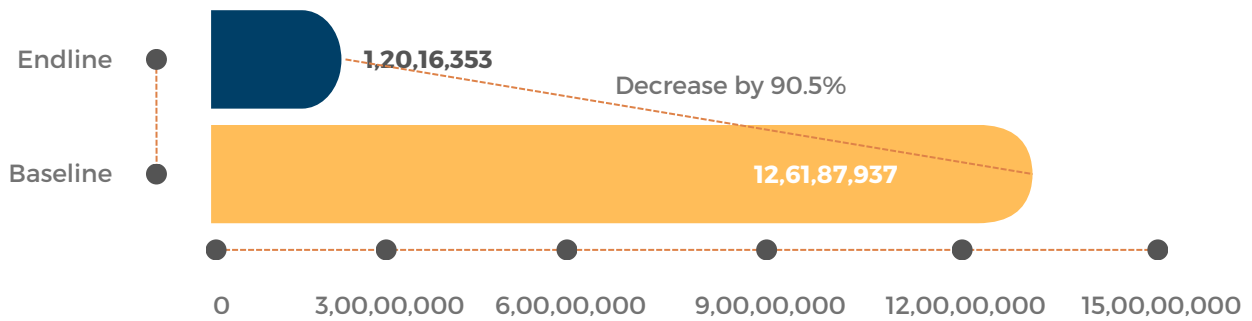
In contrast, the average monthly count of patients requiring ventilator support declined from a baseline of 151 patients to 129 patients. This downtrend was attributed to the considerable reduction in the numbers of critical patients affected by COVID-19 after the second wave.



## Change in Annual Concessions Materialized

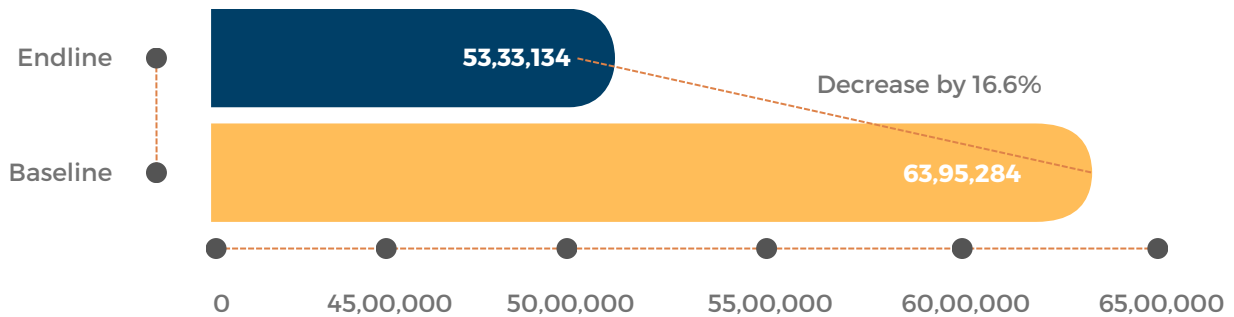
The establishment of the onsite Oxygen plant significantly contributed to the overall concessions given to patients from poor socio-economic strata.

**Chart 6. Annual Patient concessions (in Rs.)**



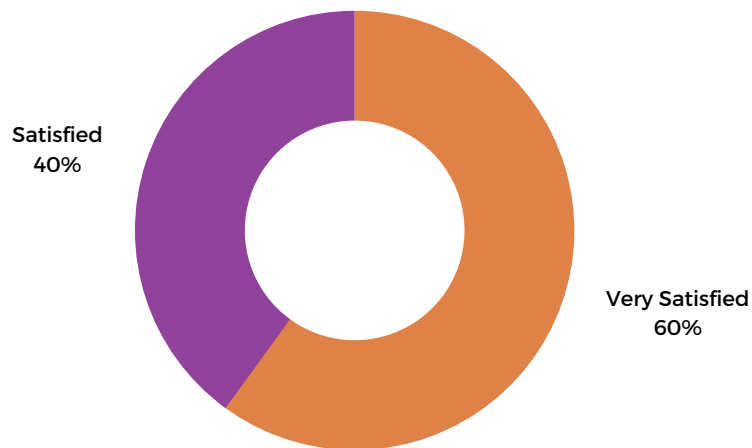
Despite observing a decrease in overall concessions from the baseline, this was reasoned to be a result of the exceptionally high patient numbers in the 2020-21 period when COVID-19 was at its peak, consequently elevating the number of concessions distributed.

**Chart 7. Cost per annum for LMO/ additional oxygen**



The onsite Oxygen generation plant has resulted in a decrease of around 17% in the cost of sourcing oxygen, amounting to an annual savings of INR 1,062,150.

## Chart 8. Satisfaction level of the respondents



It is evident from the data that the majority of the respondents (60%) reported being "Very Satisfied" with their experiences.



Dr. Spurgeon expressed his profound admiration for the Oxygen Generator generously distributed by Bosch Global through the United Way of Bengaluru. He emphasized the timely nature of this assistance, as it arrived during the devastating second wave of COVID-19. Dr. Spurgeon proudly highlighted that the hospital utilized the Oxygen Generator to provide essential oxygen support to all patients in need, regardless of their economic status. In concluding his remarks, he made a heartfelt plea for financial aid to support major surgeries for individuals below the poverty line, underscoring the hospital's commitment to serving the most vulnerable members of society.

**-Dr. Spurgeon, Director CEO, Baptist Hospital**



Mrs. Pankaja highlighted the critical importance of oxygen in the ICU wards. With expertise and passion, she explained the various equipment used to administer oxygen, including Venturi masks, non-breathable masks, Hi-Flow nasal cannulas and regular support systems. She expressed great joy and satisfaction in the fact that these oxygen resources had provided life-saving support to numerous patients, ultimately saving their lives. Mrs. Pankaja's dedication and happiness underscored the vital role of oxygen in ICU care and its significant impact on patient outcomes.

**-Mrs. Pankaja, Nursing Supervisor of the ICU**



# HOSPITAL VISITS

## Assessment of Impact

### Summary of Impact against Key Performance Indicators

Key Performance Indicator	Baseline	Endline	Baseline-Endline	Impact
Oxygen Shortage	400 M3/day	0		Zero shortage
Cost per annum for LMO/additional oxygen	INR 6,395,284	INR 5,333,134	INR 1,062,150	17% reduction from the Baseline
No. of patients availing oxygen support per month	88	278	190	216% increase from Baseline
No. of patients of HFNC/month	41	90	49	120% increase from Baseline
No. of patients on ventilator/month	151	129	-22	15% reduction from Baseline
Annual Patient concessions (in Rs.)	INR 126,187,937	INR 12,016,353	INR -114,171,584	90% reduction from the Baseline

#### BEFORE INTERVENTION

The hospital faced a shortage of oxygen cylinders, resulting in a significant demand for treating underprivileged patients suffering from respiratory illnesses such as Pneumonia, chronic obstructive pulmonary diseases, and COVID-19.

The doctors faced challenges in managing patients with life-threatening emergencies who required oxygen support.

The hospital faced difficulties providing oxygen support to patients undergoing surgical procedures or recovering from anaesthesia administration.

The hospital staff was anxious about the inconsistent supply of oxygen cylinders from the Government.

#### AFTER INTERVENTION

The hospital's capacity to treat underprivileged patients with respiratory ailments improved significantly. This resulted in better treatment outcomes and alleviated the burden on the hospital by providing oxygen support to those in need.

The doctors were equipped to administer oxygen therapy to patients in critical need of emergency life support, which reduced fatalities and improved patient outcomes.

The availability of oxygen cylinders significantly improved the hospital's ability to provide timely and essential treatment to patients requiring oxygen support during surgical procedures and while recovering from anaesthesia administration.

The in-house oxygen plant has been a tremendous relief for the hospital staff. It ensures a continuous and reliable oxygen supply, alleviating their previous concerns and allowing them to provide better patient care without interruptions.

## BEFORE INTERVENTION

The patients visiting the Government Hospital were dissatisfied due to the non-availability or insufficient supply of oxygen cylinders during life-threatening emergencies.

## AFTER INTERVENTION

There was a notable increase in patient satisfaction as the hospital ensured the timely availability of oxygen cylinders, which proved life-saving in critical situations. This improvement in services contributed to higher levels of satisfaction among patients.



### **Accessibility and Affordability:**

Due to the support from the BGSW-sponsored CSR program, the Government Hospitals now have the assurance of a steady supply of oxygen cylinders, leading to increased patient confidence in availing hospital services during life-saving emergencies. Following the BGSW-sponsored CSR program intervention, the hospital beds reached maximum capacity as the availability of oxygen supply attracted more patients. This resulted in a significant increase, estimated at 40% - 50%, in the number of financially poor patients accessing Government hospitals compared to before.

Previously, poor patients faced financial challenges as they had to pay for oxygen cylinders. However, with the free supply of oxygen cylinders, affordability improved significantly, making it a viable and cost-effective option compared to seeking treatment at private hospitals, which would have been financially burdensome for them.



### **Usage and maintenance of the oxygen plants:**

The respective Government Hospitals were responsible for the maintenance of the Oxygen Plants.



Mr. Vimal shared insights into the process of selecting patients for financial aid. He explained that patients are categorized based on their financial status, ranging from Category A to E. Category A comprises patients who can afford to pay for their medical expenses, while Category E consists of individuals who are very poor, falling below the poverty line (BPL).

Most importantly, Mr. Vimal emphasized that the categorization is entirely independent of caste, religion, creed, or gender, ensuring equal treatment for all patients. He proudly stated that their institution is committed to serving patients from all categories, especially those in the most financially disadvantaged Category E, regardless of the number of cases they receive. This commitment to inclusive and compassionate care demonstrates their dedication to improving the well-being of the community they serve.

**-Mr. Vimal, Manager of Medical Records and Social Services**



Mr. Mahesh Kumar takes pride in his role and is personally satisfied with the machine's performance. Previously, the hospital struggled with handling the patient load during the peak COVID-19 wave, having only one Oxygen Generator and LMO supply. However, after the installation of the new Oxygen Generator, the demand for oxygen was effectively met, reducing the problem to null. Currently, the generator operates at a reduced capacity due to the lower oxygen requirement, showcasing Mr. Kumar's successful management that ensured smooth patient care.

**-Mr. Mahesh Kumar, Biomedical Engineer Oxygen Generator Setup, Elmwood General Hospital**



Mr. Peter Simonr was tasked with monitoring the Oxygen Generator project and reporting to Bosch. Baptist Hospital was selected as the recipient of the generator due to its significant contributions to the welfare of the underprivileged. The hospital's mobilization was facilitated by a dedicated Field Analyze team. With a capacity of 500 liters per minute (LPM), the machine was installed, and the biomedical team received comprehensive training on its operation and maintenance for long-term performance. However, the NGO encountered challenges during the purchase process, as some parts for the Oxygen Generator were not readily available.

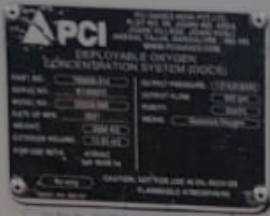
**-Mr. Peter Simonr, Senior Executive, United Way of Bengaluru**



During the FGD, the stakeholders focused on the practical application of the O2 Gen in their day-to-day operations. They highlighted how the O2 Gen played a crucial role in managing the COVID-19 second wave, expressing high satisfaction with its installation and usage in the hospital. However, they raised concerns about the lack of an Annual Maintenance Contract (AMC) and requested Bosch Global to provide coverage for AMC due to the machine's three-year warranty. The challenges faced during reimbursement processes were also discussed. The group elaborated on the seamless transfer of Liquid Medical Oxygen (LMO) and the O2 Gen's usefulness in providing oxygen support. They emphasized that only Original Equipment Manufacturer (OEM) services had been performed on the machine thus far. Since the installation of the new O2 Gen, the refilling time for LMO has been significantly reduced. The O2 Gen consistently produced oxygen at a purity level of 95% to 96%, but if the purity dropped below 93%, it automatically cut off. The average daily O2 consumption was recorded as 372m<sup>3</sup>/day, with an average O2 pressure of 75 PSI. As of June 5, 2023, the total running hours on the machine amounted to 11,882 hours. With a capacity of 500 Liters Per Minute (LPM), the O2 Gen followed a periodic maintenance schedule on a daily, monthly and yearly basis.

**Participants:**

- 1. Dr. Spurgeon – Director, CEO**
- 2. Mrs. Kavitha Josephine – Secretary Administrative Department**
- 3. Mrs. Hannah Sinclair – Administrative Assistant**
- 4. Mr. Sunny Kuruvilla – Associate Director**
- 5. Mr. Peter Simon – NGO Partner**
- 6. Mrs. Praveena – Head, Support Services**
- 7. Sr. Shoba – Assistant Chief Nurse Officer**
- 8. Mr. Kamaraju – Maintenance Engineer (Head)**
- 9. Mr. Mahesh Kumar – Biomedical Engineer**
- 10. Dr. Carolin Elizabeth George – Head, Community Health Department.**



### Bosch Cares COVID-19 Response



## Strengthening of Healthcare Infrastructure

On-site Oxygen Generation  
Plant: Capacity - 720m<sup>3</sup>/day  
Oxygen Support to 83 beds

A CSR initiative by



**BOSCH**

In association with



Implemented by



United Way Bengaluru



**WARNING**

# OECD FRAMEWORK



## RELEVANCE

## RATING



The BGSW-sponsored CSR program holds immense relevance as it addresses the urgent need for a continuous and reliable oxygen supply during the second wave of the COVID-19 pandemic. By establishing a state-of-the-art oxygen generation plant, the project ensures that hospitals and healthcare facilities in Bangalore have a sustainable solution to meet the increased demand for oxygen.

## COHERENCE

## RATING



**SDG 3: Good Health and Well-being** - By ensuring a continuous and reliable supply of oxygen to hospitals and healthcare facilities, the BGSW-sponsored CSR program directly supports the goal of improving health and well-being, particularly during the COVID-19 pandemic.



**SDG 9: Industry, Innovation, and Infrastructure** - The establishment of an onsite oxygen generation plant involves technological innovation and infrastructure development, aligning with the goal of promoting sustainable industrialization and building resilient infrastructure.



**SDG 17: Partnerships for the Goals** - The BGSW-sponsored CSR program fosters partnerships between public and private entities, highlighting the importance of collaboration and cooperation in addressing the challenges posed by the pandemic.



## EFFECTIVENESS

## RATING



The BGSW-sponsored CSR program has shown high effectiveness in addressing the critical need for oxygen during the second wave of the COVID-19 pandemic. By establishing onsite oxygen generation plants, the BGSW-sponsored CSR program has ensured a continuous and reliable oxygen supply to hospitals and healthcare facilities in Bangalore, saving countless lives.

**Index:** 5 Points - Very High ; 4 Points - High ; 3 Points - Moderate ; 2 Points - Low ; 1 Point - Very Low

## EFFICIENCY

RATING 

The BGSW-sponsored CSR program has demonstrated remarkable efficiency in its operations and impact. By establishing a local oxygen generation plant, the program has significantly reduced the time and resources required to procure and transport oxygen from distant locations. This localized approach has streamlined the distribution process and eliminated delays associated with logistics, resulting in a more efficient and reliable supply of oxygen to hospitals and healthcare facilities in Bangalore.

## IMPACT

RATING 

The impact of the BGSW-sponsored CSR program has been profound and far-reaching. By establishing local oxygen generation plants, the program has provided a reliable and sustainable source of oxygen to hospitals and healthcare facilities in Bangalore, effectively mitigating the oxygen shortage crisis during the second wave of the COVID-19 pandemic.

## SUSTAINABILITY

RATING 

The BGSW-sponsored CSR program has demonstrated a robust commitment to sustainability. By establishing local oxygen generation plants, the program has reduced the dependence on external sources of oxygen, which ensures a more reliable supply and minimizes the carbon footprint associated with transporting oxygen from distant locations.

# CHAPTER 4: CONCLUSION

In conclusion, the BGSW-sponsored CSR program has been instrumental in addressing the critical oxygen supply shortage during the second wave of the COVID-19 pandemic. The program has showcased its relevance by directly addressing the immediate needs of the healthcare system and effectively supporting patient care. It has demonstrated effectiveness by ensuring a continuous and reliable supply of oxygen, contributing to the recovery and survival of numerous patients. The program has exhibited efficiency by optimizing resources, reducing logistical challenges and promoting energy efficiency through local oxygen generation. Moreover, it has had a significant impact by saving lives, alleviating the burden on hospitals and providing a sustainable solution for future healthcare emergencies. The sustainability of the BGSW-sponsored CSR program is evident through its environmentally conscious approach, local capacity building and establishment of a self-sustaining model for long-term oxygen supply.

