



Impact Assessment of Infrastructure / Facilities created in Educational Institutions, Govt. Hospitals, Rural Villages & Lake by Bharat Electronics Limited (BEL) under Corporate Social Responsibility (CSR)

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We are thankful to our research team, field officers and others for extending full support in completing the project.

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Contents

	Page No.
Executive Summary	4
Chapter 1 Introduction	10
Chapter 2 Project Methodology	14
Chapter 3 Consolidation of Impact Assessment of various Projects	18
Chapter 4 Project-wise Impact Assessment	25
Annexure 1	148
Annexure 2	153

Executive Summary

Bharat Electronics Limited (BEL) is a Navratna Public Sector Undertaking (PSU) established in 1954, under the Ministry of Defence. BEL is a multi-product, multi technology, multi-unit conglomerate with over 350 products and its customers includes the Army, Navy, Air Force, Paramilitary, Coast Guard, Paramilitary Force, Police, State government departments and Consumers of professional electronics products. BEL recognizes its role and responsibility as a corporate entity and constantly endeavors to actively participate in the social and economic development of the communities in which it operates through CSR initiatives. BEL is committed to its stakeholders to conduct CSR activities in an economically, socially and environmentally sustainable manner that is transparent and ethical. BEL has identified five major areas for CSR including Education, Healthcare, Rural Development, Sustainable Development and other areas. During 2021-22, BEL has undertaken 17 projects in four major areas and has achieved the desired outcomes. It is found that ten projects have shown very high impact while five projects have high impact, and two projects have moderate impact. The present study undertakes the following activities:

- To carry out Impact Assessment of Infrastructure / Facilities created in Educational Institutions, Govt. Hospitals, Rural Villages & Lake at various locations in Seven states by Bharat Electronics Limited (BEL) under Corporate Social Responsibility (CSR).
- To examine the utility, effectiveness, sustenance and impact of the CSR intervention in tangible & intangible terms.

The ProjectWise summary and observations are as follows:

Project 1: Installation & Commissioning of 10 MLD Sewage Treatment Plant (STP) at Doddabommasandra Lake, Jalahalli, Bengaluru, Karnataka: The main objective of the project is to rejuvenation of Doddabommasandra Lake, Bengaluru & Ground water recharging with Sewage Treatment Plant (10MLD). The following are the major observations:

- The treated water helped to support the ecological imbalance and helped the growth of aquatic plants and organisms, which in turn improved the overall health of the ecosystem.
- The reduction in untreated sewage entering the lake helped to decrease pollution levels.

Project 2: Providing Ventilators to set up Paediatric ICU in Govt. District & Taluk Hospitals of Yadgiri Aspirational District, Karnataka: The main objective of the project is to provide Ventilators to Paediatric ICU, Govt. District & Taluk Hospitals of Yadgir. The following are the major observations:

- The initiative improved the monitoring and treatment facilities in the Paediatric ICU wards at the medical science college and taluk hospital in Yadgiri district, yet the utilization remained low due to a shortage of doctors, health personnel, and maintenance.



- The medical infrastructure has undoubtedly strengthened the Government Hospitals in preparing for any upcoming health crises and providing appropriate care to pediatric patients.

Project 3: CT Scanner to Govt. District Hospital, Machilipatnam, Krishna District, Andhra Pradesh: The project aimed towards providing CT Scanner to Govt. District Hospital, Machilipatnam. The following are the major observations:

- The CT Scanner is being used by the hospital for all the patients. Daily scanning per day counts to an average of 30.
- The scanner is well maintained and in operational condition and there are no technical glitches from the installation.

Project 4: Mobile Cancer Detection Unit (MCDU) to Kidwai Memorial Institute of Oncology, Bengaluru, Karnataka: The project aimed to support and aid in availability of Cancer detection tests to needy & poor in Karnataka State. The following are the major observations:

- The project created awareness amongst the people about cancer diseases and importance of early detection by timely screening in rural and semi urban region.
- The unit has reached to various places which are far from the city including to Devanagere, Hassan, Bandipur, Tumkur, Kolar, etc.
- The technical staff and the doctors have been very supportive to encourage people / communities to participate in the screening process.

Project 5: Developmental works in adopted village Khubi & Karanjale - Construction of Primary Health Centre, providing sanitation facilities & making available clean drinking water, Pune District, Maharashtra: The main objective of the project is to provide basic facilities like potable water, Primary health facility and sanitation facilities in the village. The following are the major observations.

- The project successfully constructed a Sub-PHC center with all necessary requirements. The project not only provided the medical infrastructure but could also provide RO water plants with permanent shed facilities for the dedicated use of the villagers in Gram panchayat Khubi.

Project 6: Construction of Government Higher Primary School at Channal Village, Mudhol Taluk, Bagalkote District, Karnataka: The project aimed towards Improvement in quality of life of people and students. Assistance to the rural area children for getting better Education, better sanitary facilities and making available clean drinking water. The following are major observations:

- This project enhanced the extracurricular activities and sports activities in addition to the classroom teaching and learning activities.
- This project strengthened the midday meals program by providing permanent kitchen shed and storeroom facilities.

- Each classroom is spacious with proper ventilation, lighting and proper seating arrangement with benches provided by BEL.
- The project enabled the school to set up a smart classroom system in one of their classrooms for the benefit of the students.

Project 7: Providing Medical Equipment to District General Hospital, Community Health Centers and Primary Health Centers of Aspirational District, Yadgiri, Karnataka:

Promoting health care including preventive health care and making available safe drinking water, Eradicating hunger, poverty etc. is the main of the project. The main observation are as follows:

- The project provided RO drinking water facilities at the District Health and Family Welfare Department of Yadgiri district, fatal doppler machines which decreased the travel of pregnant women seeking prenatal care to the neighboring district hospital.
- Defibrillators have enhanced the quality of care for patients experiencing cardiac arrest by restoring their heartbeats, ultimately saving lives during the critical golden hour.
- The medical infrastructure equipment, including ambulances, has bolstered the public health facilities at taluk hospitals and community health centers, enabling better treatment, diagnosis, and emergency transportation for patients in need of urgent care.

Project 8: Establishing Skill Development Centre at Sri Saraswathi Vidyapeetam, R R District, Telangana.

The main aim is to promote introduction of new Course, increase student enrollment, and enhancement of employment opportunities. The following are the observations:

- The project has achieved the aim for which it was initiated. The Centre received praise from student parents. Parents have expressed their satisfaction for providing promising placement opportunities for their children.
- The project is aligned with National Skill Mission to impart training to unemployed youth has also been achieved. 80% of the students from the first batch have secured placements as customer relation executive, telebanking executives, etc.
- The training program emphasized personality development and communication skills enabling students to be ready required skillset.
- The Centre is also collaborating with industry partners in identifying areas of training.
- The project has sustainable infrastructure.

Project 9: Construction of Classrooms, Toilets, furniture and other related works in Government Higher Primary School, Bazar, Karwar Town, Karwar Taluk, Uttara Kannada District, Karnataka.

The aim of the project is to construction of 8 Classrooms, Toilets and supply of furniture and other related work, The main observation:

- The school has been securing the educational infrastructure that increased students' strength.
- There are sufficient classrooms available for teaching and conducting extracurricular activities.



- Improved the facilities for sanitation and drinking water for schoolchildren.
- Enhanced facilities for mid-day meals program
- The school guarantees a high educational standard, in addition to focusing on co-curricular and extracurricular activities.

Project 10: Augmentation of Infrastructure, provision of Equipment & Tools for adopted Govt. ITI, Noida, Ghaziabad district, Uttar Pradesh. Promoting education, including special education and employment enhancing vocation skill is the main objective of the project. The major outcomes of the project are as follows:

- The teaching and practical sessions for students in various courses have significantly enhanced.
- Students experienced improved placement opportunities with attractive salary packages ranging from Rs. 20000 to 40000. Previously, the lowest salary offered was Rs. 12000 and the highest was Rs. 25000.
- It is observed that there is no enrollment of girl's students in mechanical and electronic courses at ITI.

Project 11: Provision of Cold-Chain Equipment viz. Deep Freezer & Walk-in Freezer to Ministry of Health & Family Welfare (MoH&FW), Govt. of Karnataka. The project aimed towards Installation & Commissioning of 97 Deep Freezer and walk-in freezer at various locations in Karnataka. The observations:

- The vaccinations can be stored in the freezer at the desired temperatures.
- During the transports, the ice pack made from the walk-in freezer enables to move the vaccines from storage to the desired locations.
- The project enhanced the cold chain delivery and storage systems in various government health centers in the State.

Project 12: Providing Multi Parameter ICU Monitors to All India Institute of Medical Sciences (AIIMS), Rishikesh. To provide Multipara ICU monitors & high flow Nasal Cannula to combat COVID-19 Pandemic is the main objective. The observations are as follows:

- All the monitors are operating efficiently and are being well-maintained by AIIMs. They all are placed in the ICUs in the hospital.
- The project has demonstrated great success in delivering its intended outcomes, with the sustainability of these results being maintained through the regular maintenance and operation of the multi-parameter ICU monitors by the hospital administration.

Project 13: Provision of Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand. Providing Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand is the main objective of the project. The observations are as follows:

- Oxygen Concentrators were utilized for treating patients in emergency wards.
- The project enhanced the availability of oxygen to everyone.

- It was observed that on average, one ambulance transports 50 patients per month, serving underprivileged individuals.

Project 14: Providing of Medical Equipment's to Govt. Civil Hospital Panchkula, Haryana.

The main objective of project is to provide Ventilators and basic consumables to Govt. Hospital during COVID. The main observation are as follows:

- The project has demonstrated great success in delivering its intended outcomes, with the sustainability of these results being maintained through the regular maintenance and operation of the multi-parameter ICU monitors by the hospital administration.
- Oxygen concentrators make it easy to obtain medical oxygen and reduce the need for oxygen cylinders. Oxygen concentrators are beneficial for patients who have chronic respiratory diseases like COPD or asthma, among others. It helps patients to maintain optimal oxygen levels in their blood.
- The Portable Multi parameter Monitors and Oxygen Concentrators are being used in the critical intensive care units.

Project 15: Provision of Apheresis Machine for Blood Bank at District MMG Hospital, Ghaziabad, Uttar Pradesh.

The main objective of the project is to enable blood collection activities in the rural areas and ensure blood availability to poor & needy public of this region. The observations are as follows:

- The automated apheresis machine is used for platelet extraction and transfuse the same to the patients suffering with dengue. For other extractions, they are using the conventional apheresis machine only.
- There was a time lapse of six months for the hospital to use the apheresis machine to get the approval and kit for the machine. The machine has to use the same make kit to use it.
- The machine is well maintained and in operational condition and there are no technical glitches and found that it is sustainable.

Project 16: Provision of Toilet Block at Doddabommasandra Lake and Operation & Maintenance of Sewage Treatment Plant, Bengaluru.

The project's objective is to promote Health and Sanitation. The observations are as follows:

- On an average 50 to 60 beneficiary stakeholders utilize these toilets daily.
- Sufficient running water is available at the toilet location.
- Toilets and urinals are equipped with the necessary supply of running water.

Project 17: Medical Equipment to Community Health Centre, near Nimmuluru Village, Guduru Mandal, Machilipatnam, Andhra Pradesh.

The main objective of the project is to promote education, including special education and employment enhancing vocation skill. The observations drawn are as follows:

- The upgraded infrastructure has proven to be essential in aiding and continued to aid the community health center in meeting the healthcare demands of the community in the years to come. This is made possible by the inclusion of advanced medical equipment or devices,



which typically sustain for long if regular maintenance is carried out.

- A significant upgrade has been made to the storage facilities for medicines and vaccines, which now include state-of-the-art refrigerator. This enhancement ensures optimal conditions for storage, preserving the effectiveness of these essential medical supplies.
- The medical equipment provided by BEL, Machilipatnam, such as hematology analyzers, baby warmers, oxygen concentrators, suction apparatus, defibrillators, multi-channel monitors, interferential therapy machines, oxygen cylinders, and fetal Doppler machines, empower doctors and health personnel to swiftly address newborn baby, prenatal care, surgical and emergency cases through rapid diagnoses and treatments.

CHAPTER 1

Introduction

Introduction

Bharat Electronics Limited (BEL) is a Navratna Public Sector Undertaking (PSU) established in 1954, under the Ministry of Defence. BEL is a multi-product, multi technology, multi-unit conglomerate with over 350 products and its customers includes the Army, Navy, Air Force, Paramilitary, Coast Guard, Paramilitary Force, Police, State government departments and Consumers of professional electronics products. The Company has nine manufacturing Units spread across eight States of the country. BEL is one of the forerunners among the Defence PSUs in the CSR space. BEL's Corporate Social Responsibility activities encompass holistic community development, institution building and sustainability-related initiatives. These initiatives contribute towards inclusive growth and equitable development in society through capacity building measures, empowerment of the marginalized and underprivileged sections/communities. The major areas in which BEL undertake CSR activities as qualified under Section 135 including improving health infrastructure & preventive healthcare, supporting education & vocational skill development, rural development, and sustainable development of environment.

CSR at BEL¹

BEL recognizes its role and responsibility as a corporate entity and constantly endeavors to actively participate in the social and economic development of the communities in which it operates through CSR initiatives. BEL is committed to its stakeholders to conduct CSR activities in an economically, socially and environmentally sustainable manner that is transparent and ethical. The main objective of BEL towards CSR is.

1. To identify and provide solutions in diverse environments, leveraging technology and address issues in the social, economic and environmental ecosystem that the company operates in
2. To create awareness on CSR within the organization through training / workshops and seminars etc.
3. To contribute to inclusive growth, sustained and equitable development in society through capacity building measures, empowerment of the marginalized and underprivileged sectors / communities.

CSR Areas

BEL has identified five major areas for CSR. The following Figure-1 depicts are these areas of CSR areas:

¹ BEL CSR Policy, order no HO.066/008 dated 31.03.2021 (as amended) through order no HO/066/011 dated 28.03.2023.



Figure-1: Major CSR areas of BEL



The following table details area-wise CSR projects undertaken by BEL for 2021-22:

Area	Number of Projects
Education	3
Environmental Sustainability	1
Healthcare	12
Skill Development	1

The details of the project, objectives, budget allocated, and completion date is depicted below:

Name of the Project	Project Objectives	Budget Amount (in Rs Lakh)	Project Completion Date
Installation & Commissioning of 10 MLD STP at Doddabommasandra Lake, Bengaluru	Rejuvenation of Doddabommasandra Lake, Bengaluru & Ground water recharging with Sewage Treatment Plant (10MLD)	1302.78	22.02.2022
Providing Ventilators to set up Paediatric ICU in Govt. District & Taluk Hospitals of Yadgir Aspirational District, Karnataka	Provision of Ventilators to Paediatric ICU, Govt. District & Taluk Hospitals of Yadgir	271.60	03.02.2022
Mobile Cancer Detection Unit to Kidwai Memorial Institute of Oncology, Bengaluru, Karnataka	To support and aid in availability of Cancer detection tests to needy & poor in Karnataka State	226.48	22.11.2018
Construction of Govt. Primary School at Channal-Village, Mudhol Taluk, Bagalkote district, Karnataka	Improvement in quality of life of people and students. Assistance to the rural area children for getting better Education, better sanitary facilities and making available clean drinking water.	151.11	23.11.2022
Providing Medical equipment to District General Hospital, Taluk General Hospital, Community Health Centres & Primary Health Centres of Aspirational district Yadgir, Karnataka	promoting health care including preventive health care and making available safe drinking water, Eradicating hunger, poverty etc.	137.68	03.05.2022

Name of the Project	Project Objectives	Budget Amount (in Rs Lakh)	Project Completion Date
Construction of Classrooms, Toilets, Furniture and other related works at Govt. Higher Primary School, Bazar, Karwar Town, Karwar Taluk, Uttara Kannada District, Karnataka.	Construction of 8 Classrooms, Toilets and supply of furniture and other related work	132.64	10.04.2021
Provision of Toilet Block at Doddabommasandra Lake and Operation & Maintenance of Sewage Treatment Plant, Bengaluru	Promoting Health and Sanitation.	31.58	15.02.2022
Provision of CT Scanner to Govt. District Hospital, Machilipatnam, Andhra Pradesh	To provide CT Scanner to Govt. District Hospital, Machilipatnam	134.30	16.08.2022
Developmental works in adopted village Khubi & Karanjale - Construction of Primary Health Centre, providing sanitation facilities & making available clean drinking water, Pune District, Maharashtra	To provide basic facilities like potable water, Primary health facility and sanitation facilities in the village	172.50	06.05.2022
Establishing Skill Development Centre at Sri Saraswathi Vidyapeetam, R R District, Telangana	To promote introduction of new Course, increase student enrolment, and enhancement of employment opportunities	120.99	25.08.2022
Augmentation of Infrastructure, provision of Equipment & Tools for adopted Govt. ITI, Noida, Ghaziabad district, Uttar Pradesh	Promoting education, including special education and employment enhancing vocation skill.	109.41	18.08.2020 (Ph I) & 09.01.2021 (Ph II)
Provision of Apheresis Machine for Blood Bank at District MMG Hospital, Ghaziabad, UP.	To enable the blood collection activities in the rural areas and ensuring the blood availability to poor & needy public of this region.	24.49	20.12.2022
Providing Multi Parameter ICU Monitors to All India Institute of Medical Sciences (AIIMS), Rishikesh, Uttarakhand	To provide Multipara ICU monitors & high flow Nasal Cannula to combat COVID -19 Pandemic	91.80	16.04.2021

Name of the Project	Project Objectives	Budget Amount (in Rs Lakh)	Project Completion Date
Providing of Medical Equipment's to Govt. Civil Hospital Panchkula, Haryana	To provide Ventilators and basic consumables to Govt. Hospital during COVID	38.23	16.04.2021
Provision of Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand to address COVID-19 requirements.	To provide Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand	67.68	30.05.2022
Provision of Cold-Chain Equipment viz. Deep Freezer (Small - 97 Nos) & Walk-in Freezer (1 No) for COVID-19 Vaccination Program of Govt. of India.	Installation & Commissioning of 97 Deep Freezer and walk-in freezer at various locations in Karnataka	90.74	31.03.2021

CHAPTER 2

Project Methodology

Scope of the Study

The scope of the study is outlined aligning with the Companies Act, 2013 and DPE's National CSR and Sustainability guidelines. The present study undertakes the following activities:

- To carry out Impact Assessment of Infrastructure / Facilities created in Educational Institutions, Govt. Hospitals, Rural Villages & Lake at various locations in Seven states by Bharat Electronics Limited (BEL) under Corporate Social Responsibility (CSR).
- To examine the utility, effectiveness, sustenance and impact of the CSR intervention in tangible & intangible terms.
- To conduct interactions with beneficiaries and stakeholders including villagers, village head, students, parents, teachers, farmers, patients, doctors, contractors of the project and other key officials of BEL and other administrators.
- Organize focused group discussions with selected stakeholders.
- To study the documentary evidence of projects undertaken

Objectives of the study

The main objective of the impact assessment study is:

- To identify the relevance, effectiveness, efficiency, utility and operation, impact and outcomes of the selected CSR projects by BEL
- To conduct a descriptive study on the impact of the activities undertaken by BEL
- To identify the methods of CSR activities by which stakeholders can benefit.
- To look for opportunities and possibilities for strengthening the existing programs

Research Method

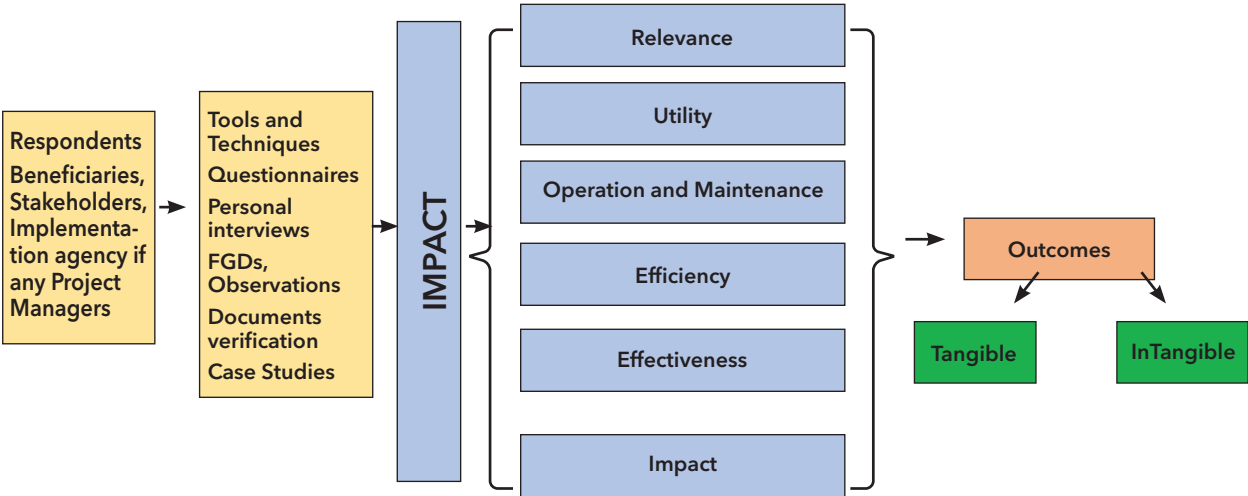
- Interaction with Individuals: Surveys are an important part of any impact assessments and interacting with people and collecting information from them on the ground is extremely important.
- Focus Group Discussions (FGDs) are an effective way to find out common issues like sanitation facilities, availability of drinking water, etc.
- This information would be collected from primary sources, analyzed, and mapped with objectives to understand the project outcomes.
- Stakeholder engagement: There are multiple stakeholders involved in a community project. These include project funding agencies, implementation agencies, local government, leaders, and others. These all stakeholders extend support to make the project sustainable.



Approach

- Teams visited the project sites and interacted with the principals, teachers, stakeholders, including students, parents, and other beneficiaries.
- The teams verified the documents relating to the project in respective BEL units.
- Data has been collected from the beneficiaries by using a questionnaire and focused group discussions. The questions majorly focused on the need and relevance of the project, unity, operations, utility and impact of various projects. Five points Likert scale has been used to measure the impact.

Research Model



(Source: DAC Framework Impact, OECD)

The study uses Impact parameters of OECD-DAC framework for finding the project outcome and impact of each project.






Study Design

The study being descriptive in nature both primary and secondary data has been used for analysis. Primary data is collected by visiting field locations. Both quantitative and qualitative data was collected by inspecting and examining projects undertaken by BEL Units in creating infrastructure / facilities created in Educational Institutions, Govt. Hospitals, Rural Villages & Lake, etc. Besides collecting the requisite information about the projects, the evaluation team also interacted with the beneficiaries to find out the impact of the projects. The impact is measured in terms of these criteria: relevance, utility, operational and maintenance, efficiency, effectiveness, outcomes, and impact.

S. No.	Evaluation Criteria	Discussion for Impact Assessment Study
1	Relevance (Is the intervention doing the right things?)	This parameter discusses the relevance of the project and assesses whether CSR intervention effectively addresses the needs of beneficiary stakeholders.
2	Utility (Are the beneficiary stakeholders utilizing the CSR project facility?)	This parameter discusses the extent of utility (full, partial, / not in use) of the project provided by BEL under its CSR.
3	Operations and Maintenance (Efficiency) (How well are resources are being used?)	This parameter evaluates the functionality and upkeep of the facility established by BEL. It examines how effectively the intervention produces, or is expected to produce, outcomes in a cost-effective and prompt manner. Assessing efficiency encompasses analyzing economic efficiency, operational efficiency, and timeliness.
4	Effectiveness (Is the intervention achieving its objectives?)	Effectiveness is crucial in assessing the success of an intervention in reaching its goals. It offers valuable information on whether the intervention has met its intended outcomes, the methods used to achieve them, the key factors influencing the process, and any unintended consequences. This parameter also evaluates the enhancements in education, healthcare, rural development, and environmental sectors following the implementation of CSR initiatives by BEL.
5	Impact (What difference does the intervention make?)	<p>The degree to which the intervention has resulted in or is anticipated to result in significant positive and significant effects of projects. This criterion focuses on the long-term outcomes of each project in the following areas:</p> <ol style="list-style-type: none"> 1. Education sector: Enhancing the learning environment and quality of education and facilities in government schools, as well as the potential impact on the socio-economic status of families. 2. Healthcare sector: Improving healthcare facilities, medical equipment, state-of-the-art medical testing facilities, and how they enhance the quality of life for the community while reducing the financial burden of medical expenses.

S. No.	Evaluation Criteria	Discussion for Impact Assessment Study
		<p>3. Rural Infrastructure: The impact of rural infrastructure facilities on transforming communities by providing essential education, healthcare, and community infrastructure services.</p> <p>4. Environmental Sustainability sector: Evaluating how the sewerage treatment plant project affects the groundwater table in the lake, leading to the growth of flora and the return of fauna to the area.</p>
6	Sustainability (Will the benefits last?)	The extent to which the net benefits of the intervention continue are likely to continue.
7	Coherence (How well does the intervention fit?)	The compatibility of the intervention with other interventions with national policies.

Impact Matrix

Very Low	Low	Moderate	High	Very High
<50% 	50% - 59% 	60%-69% 	70% -79% 	≥ 80% 

Relevance: 20 marks; Utility: 10 marks; Operation and Maintenance: 10 marks; Efficiency: 10 marks; Effectiveness: 15 marks; Impact: 20 marks; Outcome: 15 marks

The field investigations were conducted by the IPE team from 24.02.2024 to 11.03.2024.

1. Prof S Sreenivasa Murthy, Director and Project Lead
2. Ms Kiranmai J, Head, Center for CSR and CG and Project Coordinator
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The following table depicts project-wise details of interactions held with BEL executives; stakeholders have been provided in Annexure 1

CHAPTER 3

Consolidation of Impact Assessment

BEL has undertaken 17 projects in all its 7 units across the country with focusing on four major CSR areas such as Education, Skill Development, Healthcare and Environmental Sustainability during FYs 2020-21 and 2021-22. BEL has executed 3 projects in the Education sector, one project in Skill Development sector, 12 projects in Healthcare sector and one project in Environmental Sustainability:

Sl. No.	Project Details	Relevance	Utility	Operation & Maintenance	Efficiency	Effective-ness	Out-comes	Impact	Scores
1	Installation & Commissioning of 10 MLD Sewage Treatment Plant (STP) at Doddabommasandra Lake, Jalahalli, Bengaluru, Karnataka	20	9	9	8	14	14	19	93
2	Providing Ventilators to set up Paediatric ICU in Govt. District & Taluk Hospitals of Yadgiri Aspirational District, Karnataka	14	5	7	7	8	9	10	60
3	CT Scanner to Govt. District Hospital, Machilipatnam, Krishna District, Andhra Pradesh	18	8	7	8	13	13	18	85
4	Mobile Cancer Detection Unit (MCDU) to Kidwai Memorial Institute of Oncology, Bengaluru, Karwar	17	7	8	7	13	12	16	80
5	Developmental works in adopted village Khubi & Karanjale - Construction of Primary Health Centre, providing sanitation facilities & making available clean drinking water, Pune District, Maharashtra	17	5	7	9	8	10	14	70
6	Construction of Govt. Primary School at Channal-Village, Mudhol Taluk, Bagalkote district, Karnataka	18	8	8	8	14	14	18	88
7	Providing Medical Equipment's to District General Hospital, Taluk General Hospital, Community Health Centres & Primary Health Centres of Aspirational district Yadgir, Karnataka	17	9	6	6	11	14	17	80

Sl. No.	Project Details	Relevance	Utility	Operation & Maintenance	Efficiency	Effectiveness	Outcomes	Impact	Scores
8	Skill Development Centre at Sri Saraswathi Vidyapeetam, R R district, Telangana	18	8	8	8	13	13	16	84
9	Construction of Classrooms, Toilets, Furniture and other related works at Govt. Higher Primary School, Bazar, Karwar Town, Karwar Taluk, Uttara Kannada District, Karnataka	18	9	9	8	14	15	17	90
10	Augmentation of Infrastructure, provision of Equipment & Tools for adopted Govt. ITI, Noida, Ghaziabad district, Uttar Pradesh	17	9	9	9	13	13	17	87
11	Provision of Cold-Chain Equipment viz. Deep Freezer & Walk-in Freezer to Ministry of Health & Family Welfare (MoH&FW), Govt. of Karnataka.	17	9	8	8	11	9	17	79
12	Providing Multi Parameter ICU Monitors to All India Institute of Medical Sciences (AllMS), Rishikesh, Uttarakhand	19	9	9	9	13	14	18	91
13	Provision of Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand								
	i) Ambulances	17	7	7	7	12	12	16	78
	ii) Oxygen Concentrators	17	9	9	9	12	12	17	85
14	Providing of Medical Equipment to Govt. Civil Hospital, Sector-6, Panchkula, Haryana								
	i) Multi Parameter ICU Monitors	18	9	9	7	12	12	18	85
	ii) Apheresis Machine	18	9	9	7	12	12	18	85
	iii) Oxygen Concentrators	18	9	9	7	12	12	18	85
15	Provision of Apheresis Machine for Blood Bank at District MMG Hospital, Ghaziabad, Uttar Pradesh	12	7	7	7	10	12	12	67
16	Provision of Toilet Block at Doddabommasandra Lake and Operation & Maintenance of Sewage Treatment Plant, Bengaluru	17	5	6	6	10	11	11	66
17	Medical Equipment to Community Health Centre, near Nimmuluru Village, Machilipatnam, Andhra Pradesh	18	8	7	7	12	13	13	78

It is found that ten projects have shown very high impact while five projects have high impact, and two projects have moderate impact. It is also observed that all the projects are sustainable, and outcomes delivered by these projects are both tangible and intangible in nature.

The following are the highlights of project wise outcomes and observations:

Project 1: Installation & Commissioning of 10 MLD Sewage Treatment Plant (STP) at Doddabommasandra Lake, Jalahalli, Bengaluru, Karnataka

- The treated water helped to support the ecological imbalance and helped the growth of aquatic plants and organisms, which in turn improved the overall health of the ecosystem.
- The reduction in untreated sewage entering the lake helped to decrease pollution levels.

Project 2: Providing Ventilators to set up Paediatric ICU in Govt. District & Taluk Hospitals of Yadgiri Aspirational District, Karnataka

- The initiative improved the monitoring and treatment facilities in the Paediatric ICU wards at the medical science college and taluk hospital in Yadgiri district, yet the utilization remained low due to a shortage of doctors, health personnel, and maintenance.
- The medical infrastructure has undoubtedly strengthened the Government Hospitals in preparing for any upcoming health crises and providing appropriate care to pediatric patients.

Project 3: CT Scanner to Govt. District Hospital, Machilipatnam, Krishna District, Andhra Pradesh

- The CT Scanner is being used by the hospital for all the patients. Daily scanning per day counts to an average of 30.
- The scanner is well maintained and in operational condition and there are no technical glitches from the installation.

Project 4: Mobile Cancer Detection Unit (MCDU) to Kidwai Memorial Institute of Oncology, Bengaluru, Karnataka

- The project created awareness amongst the people about cancer diseases and importance of early detection by timely screening in rural and semi urban region.
- The unit has reached to various places which are far from the city including to Devanagere, Hassan, Bandipur, Tumkur, Kolar, etc.
- The technical staff and the doctors have been very supportive to encourage people / communities to participate in the screening process.

Project 5: Developmental works in adopted village Khubi & Karanjale - Construction of Primary Health Centre, providing sanitation facilities & making available clean drinking water, Pune District, Maharashtra

- The project successfully constructed a Sub-PHC center with all necessary requirements. The project not only provided the medical infrastructure but could also provide RO water plants with permanent shed facilities for the dedicated use of the villagers in Gram panchayat Khubi.
- A RO water system to upper primary school in Karanjale village was approved but not installed.



Project 6: Construction of Government Higher Primary School at Channal Village, Mudhol Taluk, Bagalkote District, Karnataka

- This project enhanced the extracurricular activities and sports activities in addition to the classroom teaching and learning activities.
- This project strengthened the midday meals program by providing permanent kitchen shed and storeroom facilities.
- Each classroom is spacious with proper ventilation, lighting and proper seating arrangement with benches provided by BEL.
- The project enabled the school to set up a smart classroom system in one of their classrooms for the benefit of the students.

Project 7: Providing Medical Equipment to District General Hospital, Community Health Centers and Primary Health Centers of Aspirational District, Yadgiri, Karnataka

- The project provided RO drinking water facilities at the District Health and Family Welfare Department of Yadgiri district, fetal doppler machines which decreased the travel of pregnant women seeking prenatal care to the neighboring district hospital.
- Defibrillators have enhanced the quality of care for patients experiencing cardiac arrest by restoring their heartbeats, ultimately saving lives during the critical golden hour.
- The medical infrastructure equipment, including ambulances, has bolstered the public health facilities at taluk hospitals and community health centers, enabling better treatment, diagnosis, and emergency transportation for patients in need of urgent care.

Project 8: Establishing Skill Development Centre at Sri Saraswathi Vidyapeetam, R R District, Telangana

- The project has achieved the aim for which it was initiated. The Centre received praise from student parents. Parents have expressed their satisfaction for providing promising placement opportunities for their children.
- The project is aligned with National Skill Mission to impart training to unemployed youth has also been achieved. 80% of the students from the first batch have secured placements as customer relation executive, telebanking executives, etc.
- The training program emphasized personality development and communication skills enabling students to be ready required skillset.
- The Centre is also collaborating with industry partners in identifying areas of training.
- The project has sustainable infrastructure.

Project 9: Construction of Classrooms, Toilets, furniture and other related works in Government Higher Primary School, Bazar, Karwar Town, Karwar Taluk, Uttara Kannada District, Karnataka

- The school has been securing the educational infrastructure that increased students' strength.



- There are sufficient classrooms available for teaching and conducting extracurricular activities.
- Improved the facilities for sanitation and drinking water for schoolchildren.
- Enhanced facilities for mid-day meals program
- The school guarantees a high educational standard, in addition to focusing on co-curricular and extracurricular activities.

Project 10: Augmentation of Infrastructure, provision of Equipment & Tools for adopted Govt. ITI, Noida, Ghaziabad district, Uttar Pradesh.

- The teaching and practical sessions for students in various courses have significantly enhanced.
- Students experienced improved placement opportunities with attractive salary packages ranging from Rs. 20000 to 40000. Previously, the lowest salary offered was Rs. 12000 and the highest was Rs. 25000.
- It is observed that there is no enrollment of girl's students in mechanical and electronic courses at ITI.

Project 11: Provision of Cold-Chain Equipment viz. Deep Freezer & Walk-in Freezer to Ministry of Health & Family Welfare (MoH&FW), Govt. of Karnataka

- The vaccinations can be stored in the freezer at the desired temperatures.
- During the transports, the ice pack made from the walk-in freezer enables to move the vaccines from storage to the desired locations.
- The project enhanced the cold chain delivery and storage systems in various government health centers in the State.

Project 12: Providing Multi Parameter ICU Monitors to All India Institute of Medical Sciences (AIIMS), Rishikesh.

- All the monitors are operating efficiently and are being well-maintained by AIIMs. They all are placed in the ICUs in the hospital.
- The project has demonstrated great success in delivering its intended outcomes, with the sustainability of these results being maintained through the regular maintenance and operation of the multi-parameter ICU monitors by the hospital administration.

Project 13: Provision of Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand.

- Oxygen Concentrators were utilized for treating patients in emergency wards.
- The project enhanced the availability of oxygen to everyone.
- It was observed that on average, one ambulance transports 50 patients per month, serving underprivileged individuals.



Project 14: Providing of Medical Equipment's to Govt. Civil Hospital Panchkula, Haryana

- The project has demonstrated great success in delivering its intended outcomes, with the sustainability of these results being maintained through the regular maintenance and operation of the multi-parameter ICU monitors by the hospital administration.
- Oxygen concentrators make it easy to obtain medical oxygen and reduce the need for oxygen cylinders. Oxygen concentrators are beneficial for patients who have chronic respiratory diseases like COPD or asthma, among others. It helps patients to maintain optimal oxygen levels in their blood.
- The Portable Multi parameter Monitors and Oxygen Concentrators are being used in the critical intensive care units.

Project 15: Provision of Apheresis Machine for Blood Bank at District MMG Hospital, Ghaziabad, Uttar Pradesh

- The automated apheresis machine is used for platelet extraction and transfuse the same to the patients suffering with dengue. For other extractions, they are using the conventional apheresis machine only.
- There was a time lapse of six months for the hospital to use the apheresis machine to get the approval and kit for the machine. The machine has to use the same make kit to use it.
- The machine is well maintained and in operational condition and there are no technical glitches and found that it is sustainable.

Project 16: Provision of Toilet Block at Doddabommasandra Lake and Operation & Maintenance of Sewage Treatment Plant, Bengaluru

- On an average 50 to 60 beneficiary stakeholders utilize these toilets daily
- Sufficient running water is available at the toilet location.
- Toilets and urinals are equipped with the necessary supply of running water.

Project 17: Medical Equipment to Community Health Centre, near Nimmuluru Village, Guduru Mandal, Machilipatnam, Andhra Pradesh

- The upgraded infrastructure has proven to be essential in aiding and continued to aid the community health centre in meeting the healthcare demands of the community in the years to come. This is made possible by the inclusion of advanced medical equipment or devices, which typically sustain for long if regular maintenance is carried out.
- A significant upgrade has been made to the storage facilities for medicines and vaccines, which now include state-of-the-art refrigerator. This enhancement ensures optimal conditions for storage, preserving the effectiveness of these essential medical supplies.
- The medical equipment provided by BEL, Machilipatnam, such as hematology analyzers, baby warmers, oxygen concentrators, suction apparatus, defibrillators, multi-channel monitors, interferential therapy machines, oxygen cylinders, and fetal Doppler machines, empower doctors and health personnel to swiftly address newborn baby, prenatal care, surgical and emergency cases through rapid diagnoses and treatments.

- This project enhanced the transport facilities for emergency cases and improved the power back facilities with 63 KVA power generators.

Overall Observations

It is observed that all the projects have been fulfilling the desired objectives set by BEL during the project initiation. The following are overall observations of all the projects:

- It is observed that all the projects are sustainable and have been delivering the outcomes as desired.
- It is observed that the initiation of branding is missing on various medical equipment (project 7 and 12)
- It is observed that projects where medical equipment has been provided, majority of the stakeholders and beneficiaries are unaware of BELs contribution in providing the equipment.
- It is observed that in Yadgiri district, the transfer of equipment and change in items have been observed.
- It is evidently found that all the projects have been mapped to SDGs and also the CSR requirements and also had national policy alignment.



CHAPTER 4

Project-wise Impact Assessment

Project 1: Installation & Commissioning of 10 MLD Sewage Treatment Plant (STP) at Doddabommasandra Lake, Jalahalli, Bengaluru, Karnataka

Project Objective	Rejuvenation of Doddabommasandra Lake, Bengaluru & Ground water recharging with Sewage Treatment Plant (10MLD)
Infrastructure / Facilities created by BEL	Sequencing Batch Reactor (SBR) Tank - 2 Nos; Chlorination Tank - 1 No; Collection Tank - 1 No; Filtration - 1 No; Blower room - 1 No; Office Area
Project Cost	Rs. 1302.78 Lakhs
BEL Unit	Bengaluru
Sector	Environmental Sustainability

About the Project

Doddabommasandra Lake, located near Vidyaranyapura in Bangalore Urban, spanning an area of 124.35 acres, this seasonal lake primarily relies on rainfall for replenishment. The average elevation in the surrounding area is 902.56 m. The vicinity of the lake is inhabited by individuals from various socio-economic strata and income groups. The sewage from the local region is released into the lake by polluting the lake while releasing toxic smell in the area. To address this issue, Bharat Electronics Ltd (BEL) set up a 10 MLD (million liters per day) Sewage Treatment Plant to rejuvenate the Doddabommasandra Lake at a cost of Rs 13.5 crore. BEL has taken up this initiative in collaboration with the Karnataka Lake Conservation and Development Authority (KLCDA), Bruhat Bengaluru Mahanagara Palike (BBMP) and the Department of Revenue, Government of Karnataka. The selection of this site is attributed to Bharat Electronics Ltd. (BEL), which is actively engaged in the revitalization of the lake as part of the Vidyaranyapura SmartWard Program. The Doddabommasandra watershed region replenishes the ground water table of Kodigehalli, Vidyaranyapura, Govindayyanapalya, Doddabommasandra and Thindlu areas, covering population of 3 Lakhs.



Need for the Project

The Doddabommasandra Lake is a large lake in Bangalore which was getting dried up as well as choked with pollution. Doddabommasandra Lake is in North Bangalore. It is spread over an area of 50 hectares with a capacity to hold 750 million liters of water. Doddabommasandra Lake is one of the main lakes in the cascading series of Narsipura Lake and Thindlu Lake, which overflow into the Hebbal Lake and finally feed the Dakshina-Pinakini River which flows towards Malur and joins the Kaveri River. Beginning in the late 1990s with a change in the rain pattern and no runoff from Thindlu and Narsipura Lakes into Doddabommasandra Lake, the lake went dry in the year 2002.

Water scarcity became a major problem for the residents of the Doddabommasandra watershed region which includes Vidyaranyapura, Govindayanapalya and Thindlu. Residents and voluntary groups like Friends of Lakes contacted the Bruhat Bengaluru Mahanagara Palike BBMP about the water crisis. The BBMP commissioner requested BEL to rejuvenate the Doddabommasandra Lake. The BEL considered this request for lake rejuvenation positively as this was a first of its kind project and have undertaken the initiative of lake rejuvenation for urban water management under CSR.

Project Initiation

In the initial stages of the project during 2016, the BEL team faced many administrative challenges due to the absence of a framework. A four-party agreement to rejuvenate the Doddabommasandra Lake was signed on August 24, 2017, with the Revenue Department, Government of Karnataka (GOK) as the owner of the land, Bruhat Bengaluru Mahanagara Palike BBMP as the custodian of Doddabommasandra Lake, the Karnataka Lake Conservation and Development Authority (KLCDA) the ultimate authority on lakes in Karnataka. The BEL team undertook the limnology study of Doddabommasandra Lake to ascertain the evaporation and percolation losses and conceptualized taking up sewage mining as a source of water for replenishing the lake after treating the sewage to meet reusable standards.



Various biological processes were examined for the sewage treatment and the BEL team selected Sequential Batch Reactor (SBR²) based wastewater treatment plant considering various aspects such as treatment quality, operational and financial aspects. Accordingly, 10 MLD SBR based sewage treatment technology was proposed to rejuvenate the Doddabommasandra Lake.

² SBR is an advanced to activate sludge treatment technology wherein pollutants are removed biologically in a single reactor along with nitrification, denitrification and biological phosphorous removal taking place concurrently.

The project was initiated on 17th February 2018

The plant has been operational since 30th November 2020

Total Cost of the Project: Rs. 13.5 crore

Total Maximum capacity of sewage treatment plant: 10 million litres per day

Technology: Sequential Batch Reactor Technology

Sequencing Batch Reactor (SBR) Tank - 2 Nos; Chlorination Tank - 1 No; Collection Tank - 1 No.

Filtration - 1 No; Blower room - 1 No; Office Area.

Beneficiary Population: 3 Lakhs

Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, effectiveness, impact, and sustainability. The project's objective is to address the sewage water produced by households and industries in Bangalore, using it to replenish a lake with treated water to revive the ecosystem that has been significantly impacted by pollution and encroachment. The treated sewage water not only enhances the biodiversity of the lake but also establishes a more favorable habitat for aquatic life and birds. Additionally, the initiative seeks to elevate the groundwater levels in the area. Through recharging the groundwater with treated sewage water, BEL and BBMP aimed to restore the diminishing water table and secure a more enduring water source for the neighboring communities.

Relevance: The project holds significance as it caters to the requirements and anticipations of nearby communities through the implementation of a 10 MLD sewage treatment facility. This facility effectively treats both household and industrial sewage water, replenishing the lake with 5 MLD water. Consequently, it enhanced the ecosystem and biodiversity, creating a more conducive environment for aquatic life and birds. Furthermore, this initiative contributed to the improvement of the groundwater table in the designated areas. Notably, there has been a substantial reduction in environmental pollution and encroachments.

Utility: The plant's maximum capacity for sewage water treatment is 10 MLD, with current utilization at 5 MLD.

Operations and Maintenance: SBR involves the degradation of organic matter, nitrification, de-nitrification, and phosphorous removal. To facilitate this process, the required oxygen is supplied through a 'Fine Bubble Diffused Aeration System' with automatic control of oxygen levels in the basin. The entire operation, including the filling of sewage, aeration, sludge recirculation, and decanting, is controlled by SCADA/PLC technology. Online monitoring is integrated to determine the dissolved content and the oxidation reduction potential in the process. Treated water after disinfection and meeting the pollution control board norm is directed over 800 m to the wetland system for further natural treatment before it enters the lakebed. BEL manages the entire operation and maintenance of the plant. BBMP sets the daily capacity of sewage water for treatment plant operation and covers the power utility charges.

Efficiency: The completion of the project was achieved within the designated timeframe and financial constraints. BEL Bangalore effectively assigns plant operators to ensure continuous operation of the plant. The sewage treatment plant has a total capacity of 10 MLD out of which 5 MLD of sewage water is treated daily as per the regulations set by BBMP. The monthly power utility charges for treating 1 MLD of sewage water amounting to Rs. 1.2 Lakhs.

Effectiveness: Revitalization of the Doddabomasandara Lake by BEL has had a ripple effect on the surrounding community. The increased availability of groundwater has improved access to clean water for residents, reducing their reliance on expensive and unsustainable water sources. The return of migratory birds to the area has also boosted ecotourism, bringing in additional revenue for the community. Furthermore, the conservation of the lake ecosystem has helped to protect biodiversity in the region, ensuring that future generations enjoy the natural beauty of the area.

Impact: The revival of the Doddabommasandra lake in Vidyaranyapura has not only had a positive impact on the groundwater table, but it has also transformed the surrounding area into a thriving ecosystem. The increase in water levels in the wells has provided a reliable source of clean drinking water for the local community, reducing their dependence on expensive and unsustainable water sources. The treated wastewater that is now feeding the aquifers has not only improved the quality of the groundwater, but it has also helped to recharge the open wells, ensuring a sustainable supply of water for years to come. This has not only benefited the human population, but it has also had a positive impact on the local flora and fauna. The lake, now functioning as a wetland ecosystem, has become a haven for a wide variety of bird, reptile, and mammal species.

Outcomes: The increased biodiversity has attracted nature enthusiasts and researchers, further highlighting the importance of preserving and restoring natural habitats. Furthermore, the revitalized lake has the potential to generate revenue through fisheries, providing a sustainable source of income for the local community. Additionally, the recreational benefits of the lake, such as fishing, and birdwatching, have made it a popular destination for urban residents looking to escape the hustle and bustle of city life. Overall, the revival of the lake in Vidyaranyapura has not only improved the local environment and provided economic opportunities, but it has also created a valuable resource for the community to enjoy and appreciate for generations to come.

Tangible Benefits	Intangible Benefits
<ul style="list-style-type: none"> Improved ground water table in and around the area of Vidhyaranyapura, Govindayyanapalya and Tindlu and BEL factory area Reduction of sewage load on BWSSB Hebbal treatment plant.	Flood and disease control <ul style="list-style-type: none"> Indirect health advantage as it will prevent water borne diseases associated with water logging and flooding such as typhoid, dysentery, malaria etc. due to water flooding and stagnation of untreated water in the lake.



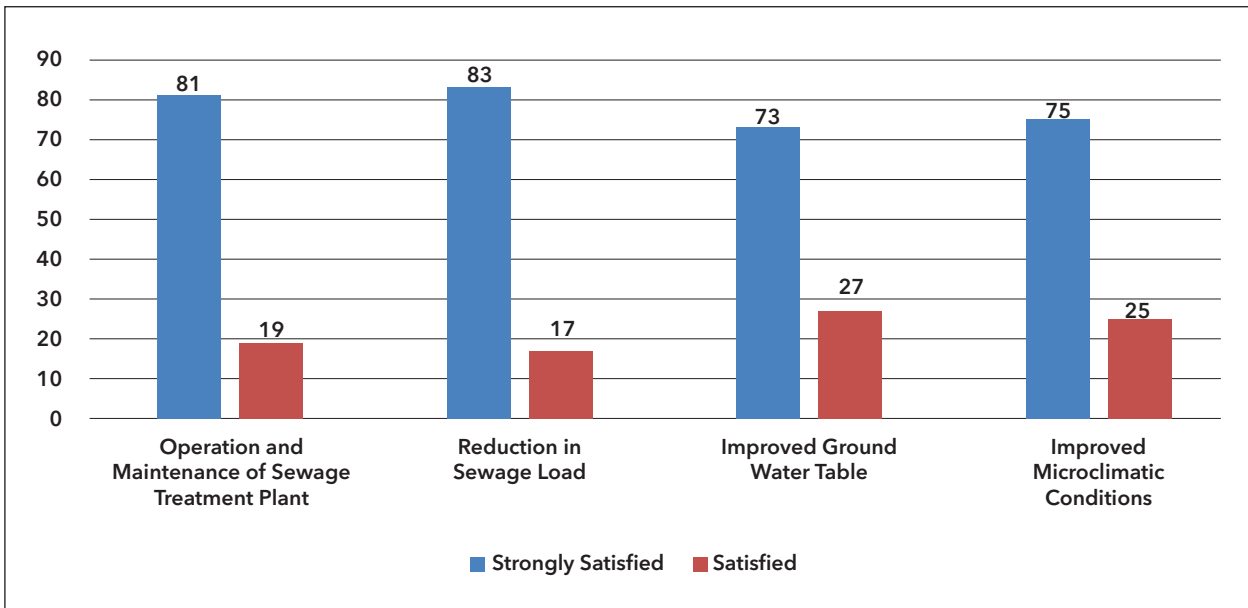
Tangible Benefits	Intangible Benefits
<ul style="list-style-type: none"> The excess water from these areas during the rainy season will be diverted into the Lake preventing flooding and waterlogging in these areas as well as in the downstream areas of Hebbal it is estimated about 30 ML. <p>Social and Recreational benefits</p> <ul style="list-style-type: none"> Fishing activity and other recreational activity like boating etc. Education spot for school children and other academicians Visiting spot for bird watching <p>Population benefited</p> <ul style="list-style-type: none"> About 3 Lakhs population 	<ul style="list-style-type: none"> Recharging of groundwater about 2000 ML at the rate of 5.5MLD <p>Ecological Importance and diversity</p> <ul style="list-style-type: none"> Varieties of birds and other fauna and flora Improved micro climatic condition results in balanced ecological system

Impact Matrix

Impact Parameter	Score
Relevance	20
Utility	9
Operation & Maintenance	9
Efficiency	8
Effectiveness	14
Outcome	14
Impact	19
Total	93

Satisfaction Survey: The primary objective of the satisfaction survey is to collect feedback from different stakeholder groups, such as business professionals, government and private sector employees, homemakers, retired government officials, students, daily wage workers, and senior citizens. The survey aims to evaluate their satisfaction levels with the state of Doddabommasandra Lake before and after the implementation of BEL's project. It specifically examines the variations in groundwater quality, flora and fauna, sewage management, microclimatic conditions, as well as the maintenance and operation of the sewage treatment plant and gauges their overall satisfaction with these aspects. The table depicts the sample.

Stakeholders	Numbers
Businesspersons	20
Ex-BEL executives	6
Retd employees	10
Private employees	25
Households	20
Students	10
Park maintenance staff	9
Total	100



Stakeholder Feedback

Operation and maintenance of sewage treatment plant: 81% of the participants expressed their strong satisfaction with the operation and maintenance of the sewage treatment plant, while the remaining 19% indicated their satisfaction. The respondents praised BEL for their uninterrupted services and their efforts to replenish the treated water in the lake. They strongly urged BBMP to increase the sewage load to raise the water levels for treatment and store more water in the lake. The participants confirmed that BBMP currently sends a load capacity of 4 to 5 million liters, which is below the plant's capacity of 10 MLD.

Reduction in Sewage Load: According to the satisfaction level survey, a significant most respondents (83%) expressed their strong satisfaction with the reduction in sewage load on BWSSB and BBMP after the successful implementation of a 10 MLD sewage treatment plant by BEL. The remaining 17% of the respondents expressed their satisfaction with the outcome. These respondents informed that BBMP and BWSSB now divert 5 MLD sewage water to BEL's treatment plant, resulting in a notable decrease in the amount of sewage that BWSSB needs to handle for treatment or safe disposal in designated areas. The positive impact of BEL's project has significantly contributed to the reduction of environmental pollution.

Improved ground water table: 73% of the participants expressed their strong satisfaction regarding the improved water table at Doddabommasandra Lake and its surrounding areas following the establishment of a 10 MLD sewage treatment plant in the vicinity. Conversely, 27% of the respondents conveyed their satisfaction. The main contributing factor of the project is that it has enhanced the groundwater table.




Improved Microclimatic conditions at Doddabommasandra lake area: In the Doddabommasandra lake area, 75% of the respondents expressed their strong satisfaction with the improved microclimatic conditions. On the other hand, the remaining 25% of respondents revealed their satisfaction with the same. All respondents agreed that the improvement of microclimatic conditions at the lake was due to the presence of a sewage

treatment plant that replenishes the treatment water with the lake. As a result, there has been a decrease in temperatures, an increase in humidity levels, and an improvement in air quality in the surrounding area. The presence of the lake has also attracted a diverse range of wildlife, including birds and fish, creating a more vibrant and varied ecosystem. Furthermore, the project has expanded recreational opportunities around the lake, with the addition of new walking paths, and picnic areas. Overall, the project has had a positive impact on the local environment and community, enhancing the quality of life for both residents and visitors.

Location Administration: The IPE team interacted with two local administration officials who conveyed their strong satisfaction regarding the BEL construction of a 10 MLD sewage treatment plant, as well as the ongoing operation and maintenance of said plant. They further verified a reduction in sewage burden by an average of 5 MLD on BWSSB, thereby enhancing the sewage treatment and disposal process. Additionally, the project played a crucial role in safeguarding the eco-system of Doddabommasandra lake and enhancing the groundwater table in the surrounding area.

Project Coherence: BEL’s project Installation and Commissioning of 10 MLD sewage treatment plant achieved the desired goals of the National Plan for Conservation of Aquatic Eco-Systems (NPCA) by replenishing treated water with the Doddabommasandra Lake in Bangalore city. This project met most of the objectives outlined by this policy.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	<p>This project is in line with Sustainable Development Goal 6 and has successfully accomplished the target 6.3 set under this goal.</p>
	<p>This project is in line with SDG goal 11 and achieved the SDG goal targets of 11.6 and 11.7.</p>
	<p>This project is in line with SDG Goal 13 and achieved the SDG goal target 13.1</p>

Observations

The following are some of the important observations from the project.

- Approximately 300,000 residents residing in Vidyaranya, Govindayanapalya, and Thindlu have been positively impacted by BEL’s 10 MLD sewage treatment plant. This treatment plant replenishes the treated water in the lake, leading to an enhancement in the groundwater tables.
- The project was completed in a timely manner, not only helped in rejuvenating the lake but also played a crucial role in improving the overall water quality in the surrounding areas. The treated water from the sewage treatment plant was of high quality and met all the necessary standards set by the regulatory authorities.

- The ecological imbalances were mitigated due to the implementation of the 10 MLD sewage treatment plant, which enabled the replenishment of treated water into the lake. This led to an increase in the overall water quality of the lake, as well as the restoration of aquatic habitats and biodiversity.
- The treated water also helped to support the growth of aquatic plants and organisms, which in turn improved the overall health of the ecosystem.
- The reduction in untreated sewage entering the lake helped to decrease pollution level.

The implementation of the sewage treatment plant played a crucial role in restoring the ecological balance of the lake and ensuring its long-term sustainability.

Case Study

Case Study 1

Mr Jagadish, Age: 33, trader at HMT Layout, Vidyaranyapura, Bangalore

Mr. Jagadish, a 33-year-old trader, lives in HMT layout of Vidyaranyapura near Doddabommasandra lake. He shared that previous attempts were made to improve the physical infrastructure around the lake to provide various amenities for the community. These attempts included building a 4 km walking track and planting over 1500 trees nearby. However, despite these efforts, the water accumulated during the monsoons in the lake was lost due to percolation and evaporation. This resulted in a rapid depletion of the lake, causing a loss of biodiversity and a socio-ecological imbalance in the area. The community was worried about the deteriorating state of the lake and its negative impact on the environment. To tackle this issue, BEL (Bharat Electronics Limited) initiated the construction of a 10 MLD (Million Liters per Day) sewage treatment plant at Doddabommasandra lake. This sewage plant treats the wastewater from the surrounding areas and ensures its safe discharge. The treated water is mainly returned to the lake for recharge, proving to be an effective method in replenishing the lake's water levels. The lake's recharge not only helped restore its water levels but also positively affected the surrounding areas. The refilling of open wells nearby has been a significant advantage, ensuring a sustainable water supply for the community. Moreover, the increased water levels have improved water availability for individual borewells in the neighboring lake areas. Mr. Jagadish highlighted that the sewage plant's construction and subsequent lake recharge were crucial in addressing water scarcity and ecological imbalance in the region. The efforts by BEL and other stakeholders have not only preserved the lake's biodiversity but also contributed to the community's overall well-being.



Project 2: Providing Ventilators to set up Paediatric ICU in Govt. District & Taluk Hospitals of Yadgir Aspirational District, Karnataka

Project Objective	Provision of Ventilators to Paediatric ICU, Govt. District & Taluk Hospitals of Yadgir
Infrastructure / Facilities created by BEL	25 Nos. of Ventilators for Paediatric ICU
Project Cost	Rs. 271.6 Lakhs
BEL Unit	Bengaluru
Sector	Healthcare

About the Project

The Pediatric Intensive Care Unit, known as the PICU, is a specialized ward dedicated to providing care for critically ill children. The Paediatric Intensive Care Unit (PICU) provides an extensive array of services, encompassing mechanical ventilation for respiratory support, personalized nutritional support, effective pain management to ensure comfort during the recovery process, surgical interventions when deemed necessary, continuous monitoring of vital signs and medical devices, as well as psychosocial support to address the emotional needs of the patients.

Need for the Project

During the COVID-19 second wave, the existing paediatric healthcare facilities proved inadequate to handle the large number of children requiring treatment. The Lancet COVID-19 Commission India Task Force report emphasized the significant impact of epidemics on a country's future. While children experience milder symptoms and lower mortality rates compared to adults, those with underlying health conditions are at a higher risk. As a result, the Central Government has taken a cautious and proactive approach by mandating that hospitals allocate 20% of their beds for pediatric patients. In alignment with this directive, BEL has provided 25 pediatric ICU ventilators in the pediatric ward in Yadgiri Institute of Medical Science College, and Taluk hospitals in Shahapur and Shorapur during the fiscal year 2021-22 with a total cost of Rs 271.60 lakh.

Project Initiation

The project was initiated during January 2022. BEL has provided the following number of paediatric ICU ventilators in these hospitals:

S. No.	Name of the Institution	ICU Ventilators	Date of Installation
1	Yadgiri Institute of Medical Science College	10	22.01.2022
2	Taluk Hospital, Shahapur	08	03.02.2022
3	Taluk Hospital, Shorapur	07	03.02.2022



Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, efficiency, effectiveness, impact and sustainability. The objective of the project is to provide ventilators for Paediatric ICU at Yadgiri Institute of Medical Science College and two taluk hospitals in Shahapur and Shorapur. This initiative aims to enhance emergency healthcare services for children and reinforce the capacity to handle future health emergencies.



Paediatric ICU Ventilator at Yadgiri Institute of Medical Science College, Yadgiri

Relevance: BEL supplied 25 PICU ventilators to support the setup of paediatric ICU ventilators in wards at Yadgiri Institute of Medical Science College, as well as taluk hospitals in Shahapur and Shorapur. This initiative boosted the readiness of government hospitals for the anticipated third wave of COVID-19, with a particular focus on establishing PICU units due to expert forecasts indicating increased susceptibility among children. These endeavors played a crucial role in meeting the healthcare needs of the residents of Yadgiri district. The PICU ventilators catered to the urgent treatment requirements of children.

Utility

Name of the hospital	Total number of paediatric ICU units (beds) set up	Total number of units were available at present	Utility	Beneficiary per month	Remarks
Yadgiri Institute of Medical Science College	10	10	Minimal	Approx 10 children	Nil

Name of the hospital	Total number of paediatric ICU units (beds) set up	Total number of units were available at present	Utility	Beneficiary per month	Remarks
Taluk Hospital, Shahapur	8	4	Minimal	Approx 4 children	4 paediatric ICU ventilators were transferred to KIMS, Hubli as per the management decision taken by the Karnataka government.
Taluk hospital, Shorapur	7	0	Nil	Nil	Total 7 paediatric ICU ventilators were transferred to KIMS, Hubli as per the management decision taken by the Karnataka government.
Total	25	14			11 units were transferred to KIMs, Hubli (annexed).

Operations and Maintenance: Healthcare professionals are responsible for performing routine maintenance and operating procedures on Paediatric ICU ventilators to ensure their optimal functioning. The hospital administration takes necessary steps to provide regular and preventive maintenance services, thereby ensuring the longevity and reliability of these vital PICU ventilators.

Efficiency: The PICU ventilator units provide advanced assistance to the respiratory muscles of children, enhancing gas exchange and minimizing oxygen consumption during the recovery process from severe illnesses. Unfortunately, due to limited medical staff, hospital personnel, and resources in the PICU wards, these hospitals are unable to accommodate all emergency cases. Currently, only children with Acute Respiratory Infections are admitted to these healthcare facilities. The units can provide comprehensive monitoring of children; high flow oxygen therapy; spontaneous breathing test, etc.

Effectiveness: The project objective of achieving 100% utilization of Paediatric ICU ventilators at Yadgiri Institute of medical science college and Shahapur and Shorapur taluk hospitals are not being met due to low patient numbers. Medical science college treats around 10 paediatric emergency patients per month, with most cases being related to Pneumonia, Acute Respiratory Infections (ARI), and other conditions. Similarly, Taluk hospital Shahapur handles around 3 paediatric emergency cases per month. Considering the low patient numbers at taluk hospitals, the Government of Karnataka relocated 4 PICU ventilators from Shahapur taluk hospital and all 7 PICU ventilators from Shorapur taluk hospital to KIMS, Hubli³.

Outcomes: The increase in Paediatric ICU emergency ventilator wards allows for better access to treatment for children with cardiac conditions requiring close monitoring, life-threatening

³ Letter enclosed in Annexure 2

infections, acute respiratory infections, traumatic injuries or burns, post-surgery complications, and neurological emergencies.

Impact: The public healthcare system has been greatly enhanced through the implementation of paediatric ICU wards at Yadgar institute of medical science college and taluk hospitals Shahapur and Shorapur. These wards are established to be prepared for any potential emergencies. However, both the medical science college and taluk hospitals encountered difficulties in providing a range of paediatric emergency services due to a lack of doctors, staff, and resources. Replenishment of doctors and resources are the only solution to ensure optimal results.

Impact Matrix

Impact Parameter	Score
Relevance	14
Utility	5
Operation and Maintenance	7
Efficiency	7
Effectiveness	8
Outcome	9
Impact	10
Total	60

Satisfaction Survey


Parents of Children patients Feedback⁴: The project objective was successfully achieved by the BEL Bangalore unit through the support provided paediatric ICU ventilators in paediatric ICU wards in Yadgiri Institute of Medical Science College and taluk hospitals in Yadgiri district, Karnataka state. The IPE team engaged with 10 parents of children patients and collected feedback on the establishment of PICU wards with the assistance of BEL provided ICU ventilators. All 10 respondents expressed their high level of satisfaction with the establishment of PICU wards at the medical science college and taluk hospitals. However, they noted that due to the lack of doctors and facilities in Yadagiri hospitals, they had to seek treatment at tertiary hospitals in Gulbarga, Raichur, and Sholapur for children facing emergency situations such as severe cardiac problems, traumatic injuries, and neurological emergencies. They also mentioned that Yadagiri Institute of Medical Science College is a newly established institution, and efforts are underway to recruit doctors, health personnel, and acquire resources gradually. Once the medical college is fully operational with all necessary facilities, the project would yield optimal results in utilizing the resources provided by the project. Currently, all respondents expressed their satisfaction with the access to treatments for COPD, Acute Respiratory Infections, food poisoning, and other medical conditions in the PICU wards with the support of BEL ventilators.

Project Coherence: BEL's program has played a key role in supporting the execution of the National Health Policy-2017 by improving paediatric ICU facilities at Yadgiri Medical Science College and Taluk Hospitals in Yadgiri district, Karnataka. This effort has notably bolstered the healthcare infrastructure available for young patients in addressing urgent health issues and illnesses.

⁴ The team was not allowed to meet the children in the wards. Interactions were conducted with selective parents.



Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
 <p>Sustainable Development Goal 3 seeks to ensure health and well-being for all, at every stage of life.</p>	<p>As the aim is to bolster treatment capabilities for children, enabling them to confront any forthcoming health crises such as COVID-19, while also improving the overall healthcare infrastructure for children.</p>

Observations

The following are some of the important observations from the project.

- Improved the monitoring and treatment facilities in the Paediatric ICU wards at the medical science college and taluk hospital in Yadgiri district, yet the utilization remained low due to a shortage of doctors, health personnel, and maintenance.
- This medical infrastructure project undoubtedly strengthens the Government Hospitals in preparing for any upcoming health crises and providing appropriate care to pediatric patients.

Project 3: CT Scanner to Govt. District Hospital, Machilipatnam, Krishna District, Andhra Pradesh

Project Objective	To provide CT Scanner to Govt. District Hospital, Machilipatnam
Infrastructure / Facilities created by BEL	CT Scanner Equipment- (1) No
Project Cost	Rs. 134.30 Lakhs
BEL Unit	Machilipatnam
Sector	Healthcare

About the Project

The Government District Hospital (GDH), Machilipatnam is a first referral level hospital which addresses all the healthcare services in and around Machilipatnam district. The hospital is equipped with more than 200 beds and also has a fully equipped intensive care unit. The hospital is the only major hospital in the district covering around 22 mandal which covers more than 3 Lakhs population. Many poor and needy patients visit the hospital every day for medical treatment. The following are some of the dominant services that are available at the hospital:

Generic Medicine	Cardio and Nuro services
Ophthalmic services	Lab services
CT Scan services	X-Ray services
Maternity services	Radiographer
Ortho services	Gastroenterology services
Pharmacy services	Other services - Arogya Mitra services

Need for the Project

A computerized tomography (CT) scan is used to quickly examine the internal injuries by taking 3-D X-ray images. The computer combines cross-sectional images of bones, blood vessels and soft tissues inside the body. The patient lies on a movable table and will slide through the centre of a gantry. (the ring-shaped part of the scanner) for computer to capture the x-rays and turn the data into detailed images. This process of scan helps visualize images and identify the disease / injury and helps doctors to proceed for further treatment. The hospital had an old CT scan which was non-functional, and the hospital had difficulty in diagnosing the patient's diseases during COVID. The District Medical Officer (DMO), Machilipatnam approached BEL with the requirement of CT scanner machine in FY 2021-22 for the hospital.

Project Initiation

During COVID, many individuals were impacted and required CT scanning for additional diagnosis. The CT scanner which was at the hospital was non-functional and doctors had to refer patients to private diagnostic centers for further investigations which incurred high costs for the patients. Considering the request, BEL provided Siemen's CT scanner in the year FY



2021-22 with a cost of Rs. 1.66 crores.



Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, efficiency, effectiveness, impact and outcomes. The objective of providing the CT scanner to Govt. District Hospital, Machilipatnam, Andhra Pradesh was to provide advance health screening facility during the COVID. Apart from COVID patients the hospital uses the equipment to diagnose patients with other medical conditions which require scanning.

Relevance: The hospital had a CT scanner which was obsolete, so the doctors had to refer the patients to private diagnosis centers which were charging Rs. 1500 to Rs. 6000 per scan. After BEL donated the CT scanner, patients are getting better diagnostic facility at a very minimal cost. The hospital is not charging any money for services while patients are charged to buy the film from the hospital costing Rs 350. This has reduced the financial burden of the patients and their families. The project is relevant and sustainable.

Utility: The equipment is being utilized to diagnose various diseases like cancer, vascular diseases, and visual aids for planning surgeries, radiotherapy, and measurement of bone strength, alternative to some types of exploratory or diagnostic surgery apart from detecting lung infections, etc. The following are the list of parts in the automated CT Scanner which were available at the centre:

- X-ray tube
- Testing Image quality
- Greasing bearings
- Console (control unit)
- Data storage
- Scanning Unit (gantry)
- Image Processor
- Generator



Operations and Maintenance: The scanner needs regular operational maintenance from time

to time. The x-ray tube, testing image quality, greasing bearings, the console, Data storage, the scanning unit, image processor and generator will be maintained daily by the hospital staff while the equipment is under quarterly AMC with Siemen's.

Efficiency: The CT scanner donated by BEL helps in identifying the precise accurate results for various injuries, health diseases and health problems which enables the doctors to treat the patients efficiently.

Effectiveness: With the advanced CT Scanning machine, the overlapping structures are eliminated and gives doctors an overview of the diagnosis and helps in treating the patients with the available facilities at the hospitals or will be referred to other hospitals for better treatments. With the reduced time of the diagnosis the treatment can be provided timely and effectively.

Impact: The objective of the project is to provide proper diagnosis for the patients of Govt. district hospital, Machilipatnam, who require scanning. The utilization of the CT scanner is very high at the given hospital and as the scanner is maintained at regular intervals, which provides sustainable utilization of the equipment. The scanning cost at Govt. District hospital is negligible when compared to private diagnosis centers, which gives high impact of the project as patients incurred less hospital expenditure and encouraged to get diagnoses done on regular intervals.

Outcomes: The advanced CT scanner provided by BEL has provided patients of Govt. District Hospital, Machilipatnam the accurate results in diagnosis the diseases or internal injuries. On average 320 (for in & outpatients) scanning's are being done by using the BEL provided CT scanner. This reduced the cost of the scanning as well as the mental strain among the patients for looking for private diagnosis centers. The following are the statistics of CT scan done in a month given by radiology department (for 2021-22):

IP Patients	OP Patients	Total Cases
186	163	349

Tangible Outcomes	Intangible Outcomes
Identification of diseases and treatment plan for the patient	Reducing the cost of the scanning by improving well-being of patients and depends
Reduction in time	
Improved diagnosis scanning services	Improved footfall in hospital

Impact Matrix

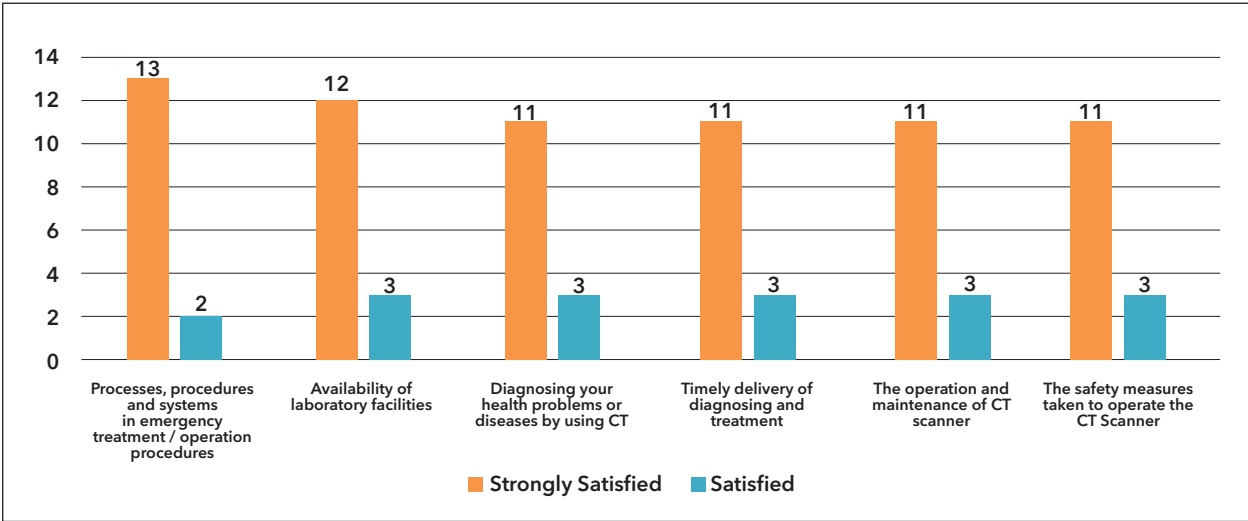
Impact Parameter	Score
Relevance	18
Utility	8
Operation and Maintenance	7
Efficiency	8
Effectiveness	13
Outcome	13
Impact	18
Total	85



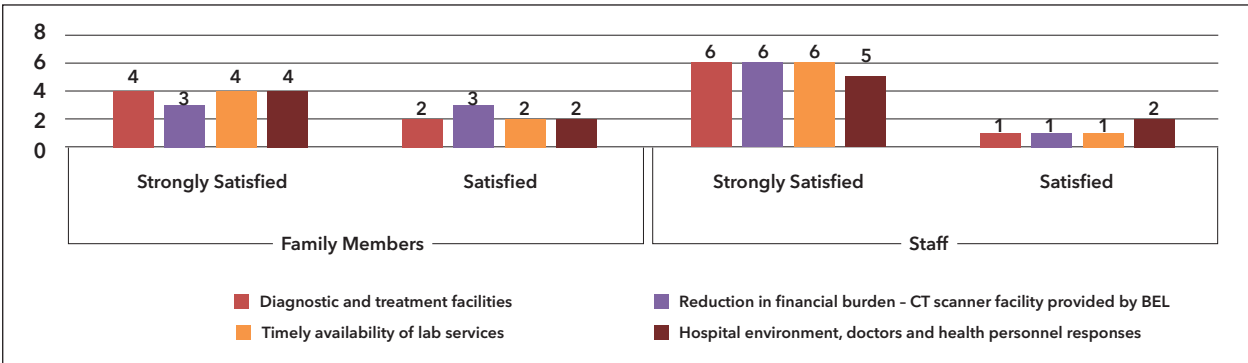
Satisfaction Survey: A satisfaction survey is conducted to study the perception of stakeholders in terms of quality of program, program content, infrastructure facilities, placement opportunities, etc. A questionnaire has been circulated among various stakeholders. The sample comprised of the following composition:

Patience	15
Patience - family members	5
Hospital staff	6

Beneficiary Survey: The following graph depicts that the patients who undergone the CT scanning were strongly satisfied with diagnosis process as they are receiving the x-ray film immediately which reducing the waiting time. They also said that the staff are keeping the equipment clean and taking safety measures before calling the next patient.




Stakeholder Survey: The following graph shows that the family members of the patients were highly satisfied with the services provided at the hospital. They said that the hospital staff were very co-operative and supported them while in the hospital. The hospital staff are strongly satisfied with the CT scanner provided by BEL as they can quickly take the images and serve a greater number of patients in the hospital every day.



Project Coherence

The coherence of the project would enable us to understand the interventions that fit in achieving the project objectives and its alignment in achieving the national goals and the SDGs. The project is also aligned with CSR Schedule VII area (i). The project is compatible with the National Skill mission and its aim is to fill the skill gap. The BEL's CSR initiation to provide CT scanner to Govt. Medical Hospital, Machilipatnam is in coherence with the CSR Schedule VII (i) which is to promote health care. BEL-supplied technology aids in the diagnosis of a variety of illnesses and injuries, facilitating treatment and improving the quality of life.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	The project initiation is in line with the scope of SDG Goal 3. BEL's supplied equipment helps the patients in analyzing the disease or injury and proceeding for the treatment.

Observations

The following are few observations about the project:

- As the Govt. District Hospital is the only one hospital with all the health care facilities, the utilization of CT scanner is high, and the project sustainability is also very high.
- The CT Scanner is being used by the hospital for all the patients.
- The daily scanning per day counts to an average of 30.
- The scanner is well maintained and in operational condition and there are no technical glitches from the installation.
- The scanner is maintained and operated by a certified radiology officer.

Case Study

Mr. David Raj, Patient, Govt. District Hospital, Machilipatnam

Mr. David Raj, who works as a daily labour, thanked BEL for providing the CT scanner who has come for abdomen scan. He claimed that this scanner made it possible for him to receive the diagnosis results fast and to start treatment on schedule. Simultaneously, he mentioned that the hospital only charged for the x-ray film, which decreased the cost by relieving the financial load, given his background in poverty.

Project 4: Mobile Cancer Detection Unit (MCDU) to Kidwai Memorial Institute of Oncology, Bengaluru, Karnataka

Project Objective	To support and aid in availability of Cancer detection tests to needy & poor in Karnataka State
Infrastructure / Facilities created by BEL	Mobile Cancer Detection Unit (Bus) along with basic investigating Equipment like, X-ray machine, auto analyzers, cell counter machine, facilities for FNAC, DG Set
Project Cost	Rs. 226.48 Lakhs
BEL Unit	Bengaluru
Sector	Healthcare

About the Project

Cancer refers to one of a large number of diseases characterized by the development of abnormal cells that divide uncontrollably and have the ability to infiltrate and destroy normal body tissue. The Kidwai Memorial Institute of Oncology was conceptualized by forefathers in the year 1957 as a private trust, its foundation was initially laid in 1963 at the current Parade ground M G Road and subsequently shifted to the present location on Dr.M.H. Marigowda Road. It was taken over by the Government of Karnataka in February 1970. In the year 1973, the Department of Radiation Therapy with OPD block and the Radiodiagnosis wings were established with 50 Inpatient beds. Later the institute was named Kidwai Memorial Institute of Oncology (KMIO). The institute received an autonomous Institution status in 1980, with its first Director Dr Krishna Bhargava, who was instrumental in making KMIO a landmark Institute in the country and world. The hospital has 863 beds in 2023 (Regular Hospital beds: 757 and ICU beds: 106); other than regular hospital wards in 'Dharmashala' providing 407 beds, more are planned to host the growing load of increasing cancer incidence.

Need for the Project

Cancer care being highly complex and multimodal has frequently changing dynamics. A cancer institute is like 10 different Hospitals in one roof catering to a single patient under one roof. KMIO has consistently made efforts to deliver good quality cancer care to the poor and needy.

Lack of knowledge, particularly within the lower socio-economic strata, contributes to the proliferation of this ailment, eventually progressing to an incurable state. Even if the diagnosis is established, the prevailing economic circumstances render it unfeasible for individuals to obtain the necessary diagnosis, let alone treatment. Despite the availability of healthcare in urban areas, women tend to ignore early signs and do not consider cancer screening a priority until it is conveniently provided to them. Therefore, KMIO partnered with BEL to introduce a mobile Oncology Van for spreading awareness and conducting primary tests in various rural and urban locations. BEL has extended their support by providing the van with all the essential amenities for KMIO.

Project Initiation

BEL initiated the Mobile Cancer Detection Unit (Bus) along with basic investigating Equipment like, X-ray machine, auto analyzers, cell counter machine, facilities for FNAC, DG Set, etc. with a cost of Rs 226.48 Lakhs to support and aid in availability of Cancer detection tests to needy and poor in Karnataka State

Impact Analysis

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, effectiveness, impact, and sustainability. The project's objective is to support and aid in availability of Cancer detection tests to needy and poor in Karnataka State by providing Mobile Cancer Detection Unit (Bus) along with basic investigating Equipment like, X-ray machine, auto analyzers, cell counter machine, facilities for FNAC, DG Set, etc.

Relevance: Early detection and diagnosis are pre-requisite for adequate treatment of pre-cancer and early cancers. The aim of early detection and diagnosis is to examine and identify men, women and children who are generally asymptomatic and apparently healthy. The department of Community Oncology (erstwhile Mobile Cancer Education and Detection - MCEdu) has been established at the Kidwai Memorial Institute of Oncology in 1983. The department has been conducting various awareness camps and providing screening and detection services, daily checkup for women and men in the hospital. To make available the services to the remote rural and urban areas a Mobile Cancer Detection Van along with trained personnel has been provided by the hospital. The old van had become obsolete. KMIO approached BEL for a mobile cancer detecting unit. The unit is equipped with basic investigating equipment like X-ray machine, auto analysers, cell counter machine, facilities for FNAC, DG Set, consultation room and washroom. KMIO in collaboration with Voluntary organizations conducts Cancer Education and Detection camps in various places (mostly in rural areas) of Karnataka and also neighbouring states.



Utility: Mobile cancer units serve a crucial role in improving access to cancer screening, diagnosis, and treatment services, especially in underserved or rural areas. The unit has improved access and reached rural, semi urban and urban areas in Karnataka State reaching directly to communities, reducing the need for individuals to travel long distance for screening purposes. The unit is equipped with State of Art gadgets such as Digital X-ray machine, multi probe Ultrasound machine, Blood Analyser, Gynaec examination table, Colposcope, ECG apparatus and Bio Toilet inside the bus. This bus is used for screening people for early detection through camps. The mobile units also offer follow-up care and treatment services, including referrals to specialized healthcare providers or facilities for further evaluation and management. This continuity of care ensures that individuals receive timely and appropriate treatment after a cancer diagnosis.

Operation and Maintenance: The mobile unit and the medical equipment are under the complete maintenance. The KIMO is taking care of the regular maintenance of the unit. The medical equipment’s are under annual maintenance.

Efficiency: Mobile units offer convenient access to cancer screening and diagnostic services, often through scheduled visits to community centres, workplaces, or events. This convenience encourages individuals who might otherwise delay or forgo screening to take proactive steps towards cancer prevention and early detection.

Effectiveness: Early detection is vital for successful cancer treatment. Mobile units often offer screening services enabling early detection of cancerous or precancerous conditions. Detecting cancer in its early stages can significantly improve treatment outcomes and reduce mortality rates. Mobile units deliver cost-effective cancer screening and diagnostic services by utilizing existing infrastructure and resources more efficiently. By reaching a larger number of individuals in a single visit and reducing overhead costs associated with maintaining a fixed healthcare facility, mobile units can provide essential services at a lower cost per patient. Before this project Cancer detection situation in rural areas was not available. People could not detect the disease on time. After the inhiation of the project, it enhanced cancer detection and treatment availability by reducing morbidity rate and extending their life span.

Impact: Mobile units can target specific populations at higher risk of certain types of cancer, such as minorities or individuals with limited access to healthcare. This targeted outreach helps address disparities in cancer incidence and mortality rates among different demographic groups. The mobile unit have increased awareness among community through following means for prevention and early detection of cancer through community outreach programs. The have greater impact on the cancer detection, the hospital conducts various campaigns before reaching the venues through local media, panchayats, ASHA workers, PHCs, NGOs, etc. The following Camp statistics evidently prove that the project has been highlight impactful in conducting the screening and provided referral services to the patients who were suspected with cancer.

Year	No. of Camps Conducted	Total Patients Screened During	Referred Cases
2021-22	110 camps	3250 (approx.)	40
2022-23 (till Nov 2023)	53 camps	1218 (approx.)	37



Outcome: Mobile units can target specific populations at higher risk of certain types of cancer, such as minorities or individuals with limited access to healthcare. This targeted outreach helps address disparities in cancer incidence and mortality rates among different demographic groups. On an average the department conducts 6-8 camps and around 250-300 people are screened in each camp. The specialists from various departments of the Institute take part in the screening activities.

Tangible Outcome	Intangible Outcome
Reducing the need for individuals to travel long distances for care.	Cancer screenings and services directly to communities
Outreach programs educate people in rural and urban areas	The project instilled confidence in cancer patients regarding the accessibility of treatment, ultimately improving survival rates.
	Reducing risk among the people



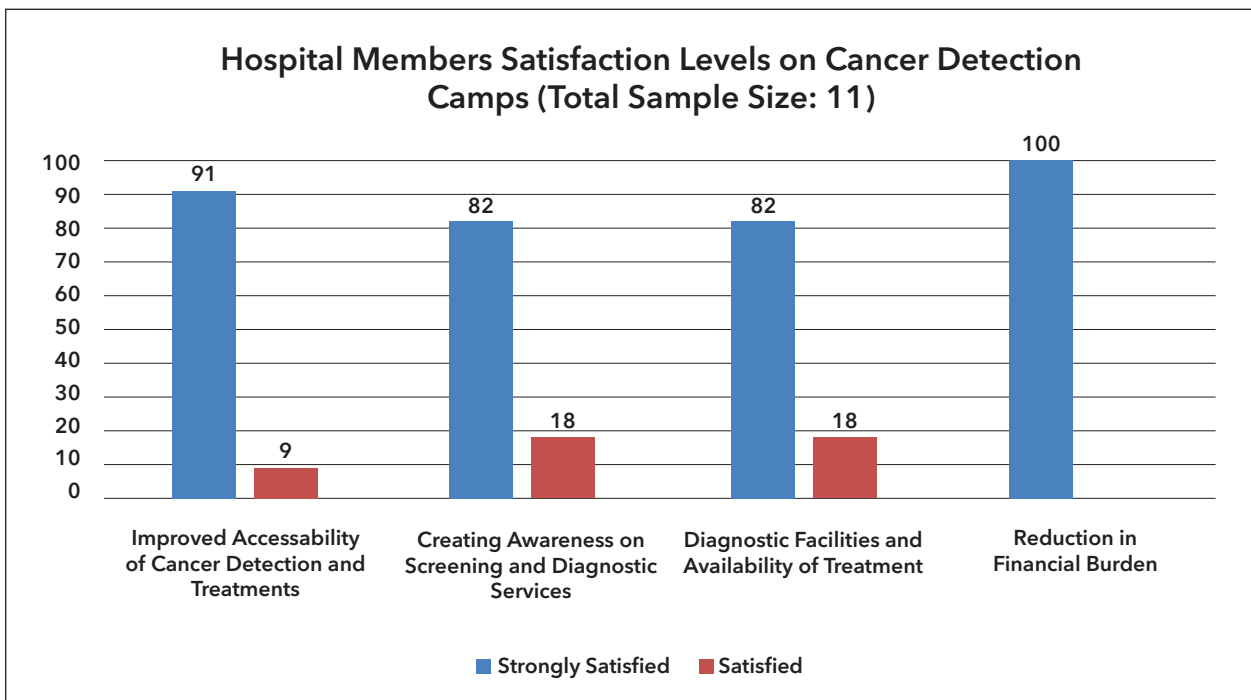
Impact Matrix

Impact Parameter	Score
Relevance	17
Utility	7
Operation and maintenance	8
Efficiency	7
Effectiveness	13
Outcome	12
Impact	16
Total	80



Satisfaction Survey⁵: A satisfaction survey is conducted to study the perception of stakeholders in terms of quality of program, program content, infrastructure facilities, placement opportunities, etc. A questionnaire has been circulated among various stakeholders. The sample comprised of the following composition:

Staff	7
Hospital Director	1
Doctors	2
Driver	1




⁵ Patients survey could not be conducted as the hospital denied disclosing the patient information.

The IPE team engaged with 11 personnel from Kidwai Memorial Institute of Oncology, Bengaluru, who conveyed their strong satisfaction in organizing cancer detection camps with the assistance of BEL-Bangalore. They affirmed that these camps have a significant influence on rural communities by effectively identifying cases of cancer among the rural population.

- Improved accessibility of Cancer detection camps: The Kidwai Memorial Institute of Oncology in Bengaluru organized cancer detection camps in rural villages across different districts of Karnataka. All 11 members of staff shared that rural population from these villages are illiterate and lack awareness about cancer, leading to higher morbidity rates and shorter lifespans. Due to these cancer detection camps, 90% of these staff members reported being highly satisfied.
- Create awareness on Screening and Diagnostic Services: The positive feedback from 82% of respondent staff member highlights the success of initiatives aimed at raising awareness about cancer disease and treatments among rural women and individuals.
- Diagnostic facilities and availability of treatments: In Bengaluru, the Kidwai Memorial Institute of Oncology, in collaboration with BEL-Bangalore, received high praise from 82% of the staff members for its excellent availability of diagnostic facilities and treatments. Furthermore, the remaining 18% of respondent cancer patients also conveyed their satisfaction.
- Reduction in Financial Burden: The project, which offered comprehensive diagnostic and treatment services free of charge or at a nominal fee, has successfully alleviated the financial burden faced by cancer patients.

Project Coherence: The coherence of the project would enable us to understand the interventions that fit in achieving the project objectives and its alignment in achieving the national goals and the SDGs. The project is also aligned with CSR Schedule VII item (i) eradicating hunger, poverty and malnutrition; promoting health care including preventive health care and sanitation including contribution to the 'Swachh Bharat Kosh' setup by the Central Government for the promotion of sanitation and making available safe drinking water.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	<p>The project initiation is in line with the scope of SDG Goal 3. BEL's supplied mobile oncology unit to KMIO enabling them to align SDG 3.</p>

Observations

- Creating awareness amongst the people about cancer diseases and importance of early detection by timely screening
- It is observed that the people in rural and semi urban region have got clear awareness about the disease and importance on early detection.
- The unit has reached to various places which are far from the city including to Devanagere, Hassan, Bandipur, Tumkur, Kolar, etc.

- The technical staff and the doctors have been very supportive to encourage people / communities to participate in the screening process.
- The unit has also been maintained well by the KMIO by undertaking timely and regular maintenance activities.

Case Study

In an interaction with the Director of the hospital, he expressed his gratitude towards BEL for providing the unit with state-of-the-art medical equipment tailored for cancer care, including diagnostic tools such as pap smear test machine, ultrasound machines, basic laboratory facilities for blood tests, and consultation rooms etc., He expressed that through targeted community outreach, the mobile unit maximizes accessibility, early detection, thereby improving cancer care outcomes. This cost-effective approach has significantly improved patient outcomes and narrowed disparities in cancer care, marking a profound shift in healthcare delivery for remote and underserved populations.

Dr. Syed Altaf

Director, Kidwai Memorial Institute (KMI) of Oncology

Project 5: Developmental works in adopted village Khubi & Karanjale - Construction of Primary Health Centre, providing sanitation facilities & making available clean drinking water, Pune District, Maharashtra

Project Objective	To provide basic facilities like potable water, Primary health facility and sanitation facilities in the village
Infrastructure / Facilities created by BEL	<p>Khubi Village Construction of School Toilet, Public Toilet, Overhead Water Tank, RO Water Plant facility with Water distribution pipelines, Construction of Primary Health Centre and furnishing with 4-beds, equipment required for maternity set-up</p> <p>Karanjale Village Construction of Over Head Tank with UG Sump, RO Water Plant facility with Water distribution pipelines and 2 Borewells</p>
Project Cost	Rs. 172.50 Lakhs
BEL Unit	Bengaluru
Sector	Healthcare

About the Project

The BEL-Pune unit has taken the initiative to adopt Khubi and Karanjale remote villages under the Khubi Gram panchayat jurisdiction for the fiscal year 2021-22. Various developmental projects were carried out in the Rural Development sector, with a focus on Education, Healthcare, drinking water, and Sanitation. The CSR expenditure incurred by BEL-Pune unit amounted to Rs. 172.50 Lakhs. The developmental works undertaken in Khubi and Karanjale villages details are given below.

Khubi Village

- The construction of a New Primary Health Centre with 4 beds,
- Construction of School toilets & Installation of a 200-liter per hour RO drinking water machine at Zilla Parishad Government Primary School,
- Construction of a 50000-liter Overhead tank, Installation of borewell motor at the water supply village well, laying of water distribution pipeline system,
- the construction of community toilets for both men and women.

Karanjale Village

- Projects involved the construction of a 50000-liter overhead tank, a 50000 underground sump with borewell motor, digging of two borewells each with a depth of 200 feet, and borewell motor installation at Zilla Parishad Upper Primary school and Karanjale village.

Khireswar	02	01	-	-	01
Total	07	02	01	01	01



Need for the Project

In the village of Khubi, consisting of 150 households, residents relied on hand pumps, borewells, and wells for water access, requiring them to walk distances ranging from 0.5 km to 1 km due to the absence of a sufficient water supply infrastructure. Moreover, only 50 families had access to toilet facilities, while the remaining 100 households practiced open defecation. The sub-PHC center in Khubi under the Gram Panchayat lacked a permanent building for conducting vaccination and healthcare services. As a result, the ANM and Asha workers had to provide these healthcare services at the Gram Panchayat office in Khubi village. Additionally, the government primary school in Khubi village, offering classes I to IV, faced challenges with insufficient sanitation and drinking water facilities.

Similarly, in Karanjale village, the situation was comparable, with the villagers relying on hand pumps, borewells, and pond water to fulfill their daily drinking and household water needs. The government upper primary school in the village also had to depend on a hand pump due to the absence of a school borewell facility.

The inhabitants of Khubi Gram panchayat reached out to government officials from Junnur taluka and Pune district in hopes of resolving the issues affecting their village but, it was unfortunate, that no solutions have been provided. In the financial year 2021-22, the villagers approached BEL-Pune to address the lack of essential services in their Gram Panchayat, including education, healthcare, drinking water, sanitation, roads, electricity, drainage, and other amenities. They appealed for assistance in resolving all the problems faced by the Gram Panchayat. In response to their request, BEL-Pune has taken up two villages for rural development projects focusing on education, healthcare, drinking water, and sanitation. They appealed for assistance in resolving all the problems faced by the Gram Panchayat. BEL-Pune has initiated rural development projects in two villages in response to their request. The company has adopted both villages with a focus on improving education, healthcare, access to clean drinking water, and sanitation facilities.

Project Initiation

In accordance with the request made by the villagers, the BEL-Pune unit has taken the initiative to adopt the Khubi and Karanjale villages. The purpose of this adoption is to implement a range of developmental activities in the fields of Education, Healthcare, Drinking Water, and Sanitation as part of the rural development CSR program. A total sum of Rs. 172.50 Lakhs have been allocated by the BEL-Pune unit to fund these developmental works. Detailed information regarding the project can be found below.

Khubi Village

- Education: BEL has excavated a single borewell, reaching a depth of 200 meters, and has also installed a borewell motor to cater to the school's water needs. Additionally, they have procured a 200 liter per hour RO drinking water system, although its installation is still pending. This initiative has positively impacted on a total of 93 school children, who have benefited from these provisions.

- **Drinking Water:** BEL has successfully completed the construction of a 50,000-liter overhead tank and a 50-liter underground sump, equipped with a pumping motor to pump the water from the underground sump to the overhead tank. Additionally, they have excavated a borewell and established a pipeline system spanning 1 kilometer from the borewell to the overhead tank and underground sumps, ensuring a reliable water supply. Moreover, they have laid a 2-kilometer water pipeline system to efficiently distribute the water to households. Furthermore, BEL-Pune has gone the extra mile by installing an RO water plant and constructing a permanent shed to house the plant.
- **Healthcare:** The BEL-Pune unit constructed the 4 bedded sub-PHC centre at Khubi village. The PHC centre has 5 rooms i.e. 1) Doctor consultation room with patient bed, patient weighing scales and other facilities; 2) Patient waiting hall with 12 number seating facility; 3) Maternity room with one bed facility, one rock and steel almirah (Iron Beeruva) and three chairs and also consist of toilet facility (1 IWC + 1 WC) and washing area; 4) 4 bedded Inpatient ward with one toilet and one urinal; and 5) store room with keeping inverter facility. In addition to these 5 rooms, BEL-Pune unit constructed separate toilet blocks for both men and women. Men Toilet block has 1 urinal, one IWC toilet and wash area; Women toilet block has wash area and one IWC toilet.
- **Drinking Water:** BEL-Pune has built a 50000-liter overhead tank for drinking water, set up a borewell motor at the village well, and established a pipeline system connecting the village water overhead tank located 1.5 km away from the BEL-constructed tank. Additionally, water distribution pipeline systems covering a 3 km stretch across the entire village have been laid, along with the installation of a 1000-liter RO water plant near the water overhead tank and constructed the permanent shed for RO water plant.
- **Sanitation:** The BEL-Pune unit has successfully built two separate toilet blocks for both men and women. Additionally, they have also established a shared hand washing area for the convenience of both genders. The women's toilet block consists of five individual water closets (IWCs), one water closet (WC), while the men's toilet block features the same setup with five IWCs, one WC, and four urinals.

Karanjale Village

- **Education:** BEL has excavated a single borewell, reaching a depth of 200 meters, and has also installed a borewell motor to cater to the school's water needs. Additionally, they have procured a 200 liter per hour RO drinking water system, although its installation is still pending. This initiative has positively impacted on a total of 93 school children, who have benefited from these provisions.
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Impact Assessment

The analysis of the project's overall impact involves examining its relevance, utility, operation and maintenance, effectiveness, impact, and sustainability. The project aims to implement various development activities in education, healthcare, clean water, and sanitation to enhance living standards by adopting two villages. The successful implementation of the project by BEL Pune has resulted in improved amenities for the Sub-PHC center, upgraded drinking water and sanitation facilities in primary schools, enhanced storage water facilities, efficient distribution systems for water pipelines to households, and the provision of community toilets for the residents of Khubi.

Relevance: The project is significant as it addresses the gaps in education, healthcare, drinking water, and sanitation facilities. It is consistent with the Rural Development projects of the State Government of Maharashtra and the Government of India, which aim to improve basic infrastructure like water supply and sanitation in primary schools, borewell installation, construction of water tanks and pipelines, as well as the establishment of healthcare centers and community toilets. These efforts have effectively met the expectations of the residents.

Utility

S. No	Creation of Facility Details	Details	Utility
1	Four bedded PHC center at Khubi village	The sub-PHC centre opens twice a week to offer vaccinations and essential healthcare services to children and patients in need, demonstrating a moderate level of utility	Partial
2	RO drinking water. Toilet construction	RO drinking water and toilet facilities at primary school in Khubi village	Full utility
	RO drinking water system at upper primary school in Karanjale village.	RO water system is yet to be installed	No utility
	Excavation of borewell and provision of bore well motor at upper primary school in Karanjale village	School children are drinking pure drinking water	Full Utility
3	Water provision system for households	Khubi village Installation of the motor pump in Khubi village well, construction of overhead water tank, laying the pipeline system from gram panchayat well to water overhead, and laying the water supply pipeline system from water overhead tank to all Khubi village	Full Utility

S. No	Creation of Facility Details	Details	Utility
		<p>Karanjale village</p> <p>Excavation of borewell and installation of borewell facility, construction of the overhead tank, underground sump, provision of motor, and pump system for pumping water from the underground sump to the overhead tank, laying the pipeline system from the borewell point to the overhead tank, and laying the water pipeline distribution system to households from overhead tank</p>	Full Utility
4	RO drinking water plants at Khubi and Karanjale villages	<p>Khubi: It is observed during the visit that the RO drinking water plant were not functioning due to power supplies in the village. The interactions with stakeholders revealed that the units upon installations was in working condition.</p> <p>Karanjale: The installation of the plant is still pending.</p>	<p>Khubi: Presently not much utility was found. But as the unit were installed, there is an expected utility in future</p> <p>Karanjale: Installation pending</p>
5	Community Toilets at Khubi village	The community toilet blocks were found locked during the IPE team field visit and on enquiry not got proper response from local communities	<p>Presently no utility was found.</p> <p>The infrastructure provided by the project would be sustainable for long as they followed the required specifications during construction with all necessary provisions</p>

Operations and Maintenance: The Gram Panchayat authorities in Khubi village are dedicated to managing and maintaining the drinking water distribution systems and community toilets. They deployed the gram panchayat staff to ensure that water is supplied adequately to households of Khubi and Karanjale villages and encourage the usage of toilets by the residents of Khubi village.

The primary school headmaster and teachers were found committed to maintain the school toilets and RO drinking water system to ensure improved sanitation and access to clean drinking water for the students. Meanwhile, the health department and Gram panchayat have undertaken the responsibility of operating and maintaining the Sub-PHC center to enhance

healthcare services for pregnant and lactating women, children, and individuals of all ages at the sub-PHC center.

Efficiency: The project finished within the timeline and allocated budget. It offered improved resources to villagers and schoolchildren, enabling them to access better healthcare facilities, clean drinking water, and proper sanitation facilities. The project achieved optimal levels of economic and operational efficiency in delivering its outcomes.

Effectiveness: The establishment of a permanent structure for a sub-PHC center in Khubi with 4-bed facility, consultation room, and maternity ward, is a notable accomplishment. It offers a wide range of healthcare services to pregnant and lactating women, individuals of all ages, and maternity services. However, the center is currently facing shortages in healthcare personnel and doctors, limiting its ability to provide comprehensive care. Despite challenges, there has been an increase in patients seeking care, and the improved center ambiance enhancing their experience.

The primary school in Khubi village aimed to improve students' well-being. It also provided an RO drinking water system and constructed toilets for boys and girls. The project aimed to promote hygiene practices and improve children's health. Installation of the motor pump in Khubi village wells, construction of overhead water tank, laying the pipeline system from gram panchayat well to water overhead, and laying the water supply pipeline system from water overhead tank to all Khubi village reinforced water distribution systems in Khubi and Karanjale villages. Villagers were relieved of the burden of fetching water from various sources such as hand pumps, borewells, wells, and ponds. This project not only saved time for the villagers but also had a positive impact on public health, as there was a significant improvement in the consumption of drinking and household water. The implementation of this project has raised awareness among the villagers regarding the significance of practicing good sanitation, maintaining hygienic conditions, and ensuring cleanliness.

Outcomes: This project has enhanced the availability of clean drinking water and toilet facilities in school, community toilets, RO drinking water, construction and providing required facilities in PHC, water distribution systems for households, etc. resulted in improved hygiene and healthcare facilities.

Impact: The project has successfully accomplished its objectives by providing essential sanitation facilities in the form of toilets construction for schools and communities. This has improved hygiene practices and ensured the health and well-being of the villagers. Additionally, the project has installed drinking water facilities equipped with reverse osmosis (RO) systems in schools and villages. This has addressed the issue of clean and safe drinking water, reduced the risk of waterborne diseases, and promoted better health outcomes.

The constructed overhead tanks and underground sumps, along with reliable borewell facilities significantly improved the accessibility of water resources in the area. The installation of water distribution pipelines has facilitated the efficient and equitable distribution of water to the residents, ensuring that everyone has access to this vital resource.

The construction of a new sub - primary health center has increased the capacity of healthcare services but also improved the overall healthcare infrastructure in the region. The new sub-PHC center is expected to provide a wider range of medical services such as preventive, curative, and promotive healthcare, thereby positively impacting the health and well-being of the villagers. These developments in both the villages have brought about a significant transformation in the basic infrastructure facilities while improving the socio-economic conditions of the villagers.

Tangible benefits

- This project strengthened the public healthcare system.
- Better accessibility of RO drinking water and toilet facilities in schools
- Increase in availability of drinking and household water levels thereby improved the water consumption among households.
- Decrease in open defecation in village.

Intangible benefits

- Positive changes and confidence among villagers
- Newfound confidence empowered them to take control of their own development and work towards a better future for themselves and their community.
- Fostered a sense of empowerment and self-reliance among its residents.

Impact Matrix

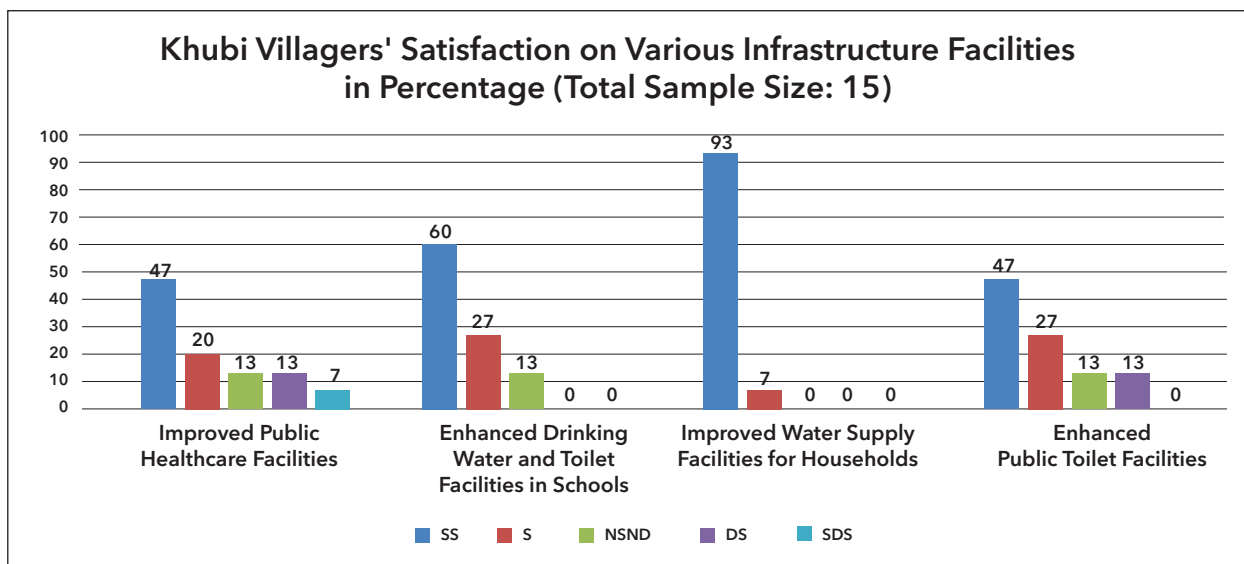
Impact Parameter	Score
Relevance	17
Utility	5
Operation and maintenance	7
Efficiency	9
Effectiveness	8
Outcome	10
Impact	14
Total	70

Satisfaction Survey

A satisfaction survey is conducted to study the perception of stakeholders in terms of the quality of facilities provided by the project. sample comprised of the following composition:

Type of Stakeholder	Sample Size
Villagers	30 number (Sample: Khubi village 15 and Karanjale village: 15)
Local administration officials	02 number
Health department officials	02 number
Students	10 number
Teachers	04 number
Parents	04 number





SS: Strongly Satisfied; **S:** Satisfied; **NSND:** Neither Satisfied nor Dissatisfied; **DS:** Dissatisfied; **SDS:** Strongly Dissatisfied

- Improved public healthcare facilities: 47% of participants indicated their high level of satisfaction with the enhanced public healthcare facilities following the establishment of the sub-PHC center through this initiative. Meanwhile, 20% of respondents expressed satisfaction, 13% of participants had undecided opinion, the same 13% of respondents were dissatisfied and the remaining 7% of participants informed their strong dissatisfaction with the improved public health services offered by this project.
- Enhanced drinking water facilities in government primary school: Most participants, 60%, conveyed their high level of satisfaction with the improved drinking water and toilet facilities provided for male and female students at the government primary school in Khubi village. Meanwhile, 27% of the respondents indicated their satisfaction, and the remaining 13% expressed a less favorable opinion regarding the upgraded drinking water facilities at the school.
- Improved water supply facilities for households: The enhanced water supply facilities for households received a high level of approval, with 93% of participants expressing their strong satisfaction. They shared their belief that this initiative significantly bolstered the water supply system for community households. This was achieved through the installation of motor pumps at the Gram panchayat well, which serves as the primary source of water supply. Additionally, the project involved the construction of an overhead tank and the establishment of a well-structured water supply pipeline system that covers the entire village. As a result, the households now enjoy improved water supply facilities. It is worth noting that the remaining 7% of respondents also expressed their satisfaction with the project.
- Enhanced public toilet facilities: 47% of the survey participants indicated their strong satisfaction with the improved public toilet facilities offered by this initiative. 27% of the individuals surveyed conveyed their satisfaction, while 13% expressed a definitive viewpoint, and the remaining 13% voiced their dissatisfaction with the enhanced public toilet facilities. Many villagers were satisfied with the toilet construction and urged the gram panchayat to open the public toilets 24/7 and assign a caretaker to ensure the facility's upkeep for the community.

Villagers' Satisfaction levels - Karanjale village: To gauge the level of satisfaction regarding the improved water supply to households, the IPE team engaged in communication with 15 villagers. This was achieved through the utilization of questionnaires as part of a satisfaction survey. The enhanced water supply was made possible by the dedicated pipeline systems established by this project. It is noteworthy that all respondents expressed their strong satisfaction with the water supply improvements, which were made possible by the efforts of BEL- Pune Unit. The project did not only provide overhead tanks, underground sumps, and drinking water pipelines, but also excavated two borewells and supplied borewell motors. These additional measures greatly contributed to the improvement of the village's drinking water supply system.

Local administration representatives: IPE team engaged interactions with two local administration representatives from Khubi gram panchayat. These representatives expressed their strong satisfaction with the improved drinking water and toilet facilities in the government school. They also highlighted the positive impact of the 4-bedded sub-PHC on public healthcare facilities. The team successfully improved water supplies to households and ensured the availability of public toilet facilities for the villagers. However, they did mention that the two RO water system sheds installed by BEL-Pune unit in Khubi and Karanjale villages have not been operational due to power supply issues. As a result, they concluded that it is crucial to address this problem promptly.

Health department representatives: The IPE team had a positive interaction with two representatives from the health department who expressed their strong satisfaction with the construction of the Sub-PHC center. The center includes 4 beds for in-patient treatment, a maternity ward, a patient waiting hall, a doctor consultancy room, a storage room, and adequate toilet facilities. Due to a lack of available health personnel, it is not possible to provide in-patient treatment and maternity services to the villagers at present.




Teachers, Parents and Students: The IPE team engaged in discussions with two teachers, a group of five parents, and a total of ten students, all of whom conveyed their strong satisfaction with the school toilets' construction quality and the installation of a 200-liter per hour RO drinking water system for the students.



Project Coherence

The coherence of the project enables us to understand the interventions that fit in achieving the project objectives and its alignment in achieving the national goals and the SDGs. The project is also aligned with CSR Section 135, Schedule VII, item number X, Rural Development projects.

Project Alignment with SDGs (Important SDG goals)

Targets			Project Alignment with SDG Goals
 3 GOOD HEALTH AND WELL-BEING	 6 CLEAN WATER AND SANITATION	 4 QUALITY EDUCATION	This project is in line with SDG goal 3 and achieved some SDG goal 3, 4 and 6 targets.

Observations

The following are some of the important observations from the project.

- The project successfully implemented a Sub-PHC center with four beds, a maternity ward, a patient consultancy room, a patient waiting hall, well-equipped facilities for procuring medicines and medical equipment, an inverter for power backup, and adequate toilet facilities for both men and women.
- The project included RO water plants with permanent shed facilities for the dedicated use of the villagers in Gramp panchayat Khubi. However, due to power issues reported by the villagers, the plants remained non-operational.

Case Study

Shri Vishnu Namdev Suphe, aged 45, is a farmer from Khubi village. He shared that the BEL-Pune unit has taken the initiative to adopt Khubi village and implement several rural development projects in the areas of education, healthcare, drinking water, and sanitation facilities. This project has greatly improved the healthcare services at the sub-PHC center. Previously, due to the absence of a permanent building for the sub-PHC in the village, the health department had to conduct healthcare services for pregnant women, lactating women, children, and villagers at the Gram panchayat office or Anganwadi centers. This inconvenience made it difficult for the health department to provide services in temporary locations, resulting in limited access to healthcare for the villagers. Mr. Suphe also mentioned that the gram panchayat faced challenges in supplying water to individual households due to the absence of dedicated water pipeline systems in both villages. As a result, villagers had to walk 0.5 km to 1 km to fetch water for their daily drinking and household needs. However, this project has made it easier for villagers to access drinking water and household water within their homes. Mr. Suphe also requested the BEL-Pune unit and local administration officials to address the power issues faced in operating the recently installed RO plants by the BEL unit. Furthermore, this project has also improved the drinking water and toilet facilities in government schools, which will have a positive impact on the schoolchildren. Mr. Suphe expressed his gratitude towards the BEL-Unit for adopting his village and implementing various rural development projects.



Project 6: Construction of Government Higher Primary School at Channal Village, Mudhol Taluk, Bagalkote District, Karnataka

Project Objective	Improvement in quality of life of people and students. Assistance to the rural area children for getting better Education, better sanitary facilities and making available clean drinking water.
Infrastructure / Facilities created by BEL	School building with 10 Classrooms; Toilets; Kitchen with Storeroom; Water purifier; Sports equipment; Student desks; Storage units; Tables & Chairs
Project Cost	Rs. 151.11 Lakhs
BEL Unit	Bengaluru
Sector	School Education

About the Project

Government Higher Primary School, located in Channal village in Mudhol taluk of Bagalkote district in Karnataka state, is a primary and higher primary school that offers classes from I to VIII free of charge. Established in 1980, the school is committed to achieving universal foundational literacy and numeracy for all, as emphasized in the National Educational Policy (NEP-2020). As per the NEP-2020, the development of reading, writing, and arithmetic skills at the foundation level will be accomplished in stages by 2025. Primary and higher primary education plays a crucial role in the holistic development of a child’s personality. By instilling healthy attitudes and values, the school aims to nurture students into responsible and exemplary citizens of the future. Before the BEL’s project, the school faced challenges in providing quality education due to inadequate facilities, now the school situation improved after this BEL’s project. Currently, the school has a dedicated team of eight teachers and a student population of 141, comprising 74 boys and 67 girls. Among the students, 59% belong to OBC communities, while 41% are from the SC community.



Socio Economic Status - Student Families

Caste	Total strength (I to VIII)	Percentage
SC	58	41%
OBC	83	59%
Total	141	100%

Need for the Project

The importance of school infrastructure in shaping a student's educational journey and maximizing their potential cannot be undermined. It encompasses modernized classrooms, meticulously maintained outdoor spaces, high-quality furniture, and well-equipped facilities for extracurricular activities. All these aspects work in harmony to establish an ideal learning environment. By providing these essential elements, schools lay the groundwork for the success and growth of their students.

The Government Primary Higher school, Channal previously had 8 classrooms that were in a state of disrepair, making it challenging to conduct classroom activities during the rainy season. Water seeped through cracked walls and roofs, leading to occasional school closures due to the poor condition of the building. Moreover, there were insufficient toilets on the premises, and the existing ones were not functional. Consequently, students resorted to open defecation. Following a visit by BEL officials in response to requests from the community, the project was approved, but faced delays due to the Covid-19 pandemic. Eventually, the construction was completed in FY 2022-23, and the new building was inaugurated on 23.01.2023.

Project Initiation

The project encompassed the development of 8 classrooms dedicated to classroom instruction, one room for staff members, and 1 room intended for library, auditorium, or science laboratory purposes, all furnished with appropriate classroom furniture across the ground and first floors. Additionally, BEL allocated a room for dining and a storeroom for midday meals, equipped with essential facilities. Furthermore, BEL installed four urinals and 3 toilets for boys, along with three toilets for girls. In addition, BEL provided a 100-liter per hour RO drinking water system, sports equipment, and erected a boundary wall. The total cost of the project was Rs. 188 Lakhs. The project was initiated in the fiscal year 2019-20, leading to the unveiling of the school building on 23.1.2023.

Impact Analysis

The impact of the project is assessed by examining its relevance, utility, operation and maintenance, effectiveness, impact, and sustainability. The main goal of the project was to improve the classroom teaching and learning environment for underprivileged students at the Government Higher Primary School in Channal village of Mudhol taluk, Bagalkote district, Karnataka state.

Relevance: This initiative is significant as it aligns with the National new education policy 2020, by establishing an ideal learning setting through the provision of spacious classrooms, libraries, staff room, drinking water, and kitchen shed cum storage room, sports equipment, boundary wall, school furniture, and other amenities. These enhancements aim to foster a conducive



learning environment and cater to the educational and healthcare needs of schoolchildren. Previously, the quality of classroom instruction and school facilities had deteriorated due to the neglected condition of the school building, as well as the absence of essential amenities such as drinking water and sanitation. This project effectively tackled these challenges by constructing a new school building and offering a range of facilities.

Utility: The BEL CSR project encompasses classrooms and additional amenities that ensure optimal functionality for the government's higher primary school in channel village. The school infrastructure facilities provided by BEL are being utilized by a total of 141 schoolchildren, including both boys and girls. The project utility details are given below:

S. No.	Name of the Facility or Infrastructure - Provided by BEL	Description	Extent of Utility (Full / Partial / Not in use)
1	8 classrooms	Eight classrooms are being utilized for classroom teaching and learning environments. School also installed one smart classroom system in one of the classrooms.	Full
2	One staff room	Headmistress and teachers are using this room	Full
3	Library / Science Lab / Other activities	The school is utilizing one of the classrooms as library, science lab and other activities purposes	Full
4	One kitchen shed and One storeroom	Kitchen shed and storeroom are being utilized for preparing mid-day meals	Full
5	Sports equipment	BEL provided various sports equipment to play badminton, volleyball, cricket, chess, carrom and others	Full
6	Classroom furniture	Total 64 benches are being utilized by the school to accommodate schoolchildren in 8 classrooms	Full
7	School furniture	BEL provided chairs, benches, and other furniture for school purposes.	Full
8	Toilets and Urinals	BEL has constructed 3 toilets exclusively for girls, along with 3 toilets and 4 urinals specifically designated for boys. These facilities are currently being utilized by all children in an appropriate manner, ensuring that functional toilets are available for their use.	Full
9	RO Drinking water	BEL installed 100 liter per hour RO drinking water system which could be utilized properly by children.	Full
10	Boundary Wall	The school assets are safeguarded by a boundary wall that BEL has constructed, measuring 330 feet in length and 5 feet in height.	Full

Operations and Maintenance: On an annual basis, the government provides a limited sum of money (around Rs. 30,000 to Rs. 40,000) for the maintenance and operation of the school building and other essential resources. However, these funds fall short of the requirements. As a result, with the assistance of SDMC committee members, schoolteachers, parents, community members, and eminent personalities of Channal village, the school procures additional funds to ensure the continuous improvement and upkeep of the school facilities, striving to deliver an exceptional education to its students.

Efficiency: The funds allotted for the project have been utilized properly. The school has made good use of all infrastructure facilities (project outputs) to create final outcomes that improved the school's educational standards.

Effectiveness: The project greatly assisted the school administration in delivering a high-quality education and enhancing the facilities for the students. This endeavor played a crucial role in enabling the school management to establish an environment conducive to learning, ensuring the safety and security of the students. Notable features include spacious classrooms with comfortable seating arrangements, which contribute to a better learning environment. Additionally, the project facilitated the installation of a smart classroom system in one of the BEL-project classrooms. Furthermore, the project provided various sports equipment for the students to enjoy. Moreover, it also encompassed the construction of a kitchen and storeroom to support the mid-day meals program in the school. Lastly, the project ensured the availability of drinking water, handwashing stations, and separate toilet facilities for both girls and boys.

Prior to the commencement of this project, the school had a mere 100 students enrolled in grades I to VIII. This low number was primarily attributed to the inadequate number of classrooms and insufficient basic facilities available for the students. However, since the implementation of this project, there has been a remarkable surge in school enrolments, starting from the academic year 2022-23, which has now reached a total of 141 students. The increased number of applicants seeking admission to the school stands as concrete evidence of the elevated standard of education and improved student facilities. Consequently, there has been a noticeable enhancement in the academic performance and overall well-being of the children following the completion of this project.

Project Outcomes

- Spacious Classrooms for students: 08 (Enhanced classroom teaching and learning as well as extra-curricular activities)
- Staff room (Enhanced the permanent seating facilities for teachers)
- Sports equipment for various sports (raised the sports activities in the school)
- Drinking water facilities (Students access to safe RO drinking water facilities)
- Sanitation facilities (School has declared as open defecation free)



- Kitchen shed and storage facilities (Enhanced the facilities for preparation of midday meals)
- Boundary wall (Enhanced the facilities for safety and security for schoolchildren)

Tangible Benefits	Intangible Benefits
Increase in students' strength. Decrease in school dropouts. Sufficient classrooms are available for classroom teaching and extracurricular activities. Improved the facilities for sanitation and drinking water for schoolchildren. Enhanced facilities for mid-day meals program	This project enhanced schoolchildren's positive outlook on education The project fostered a belief in schoolchildren about their future career paths, boosting their self-confidence. Increased the level of privacy for girls to use the toilets.

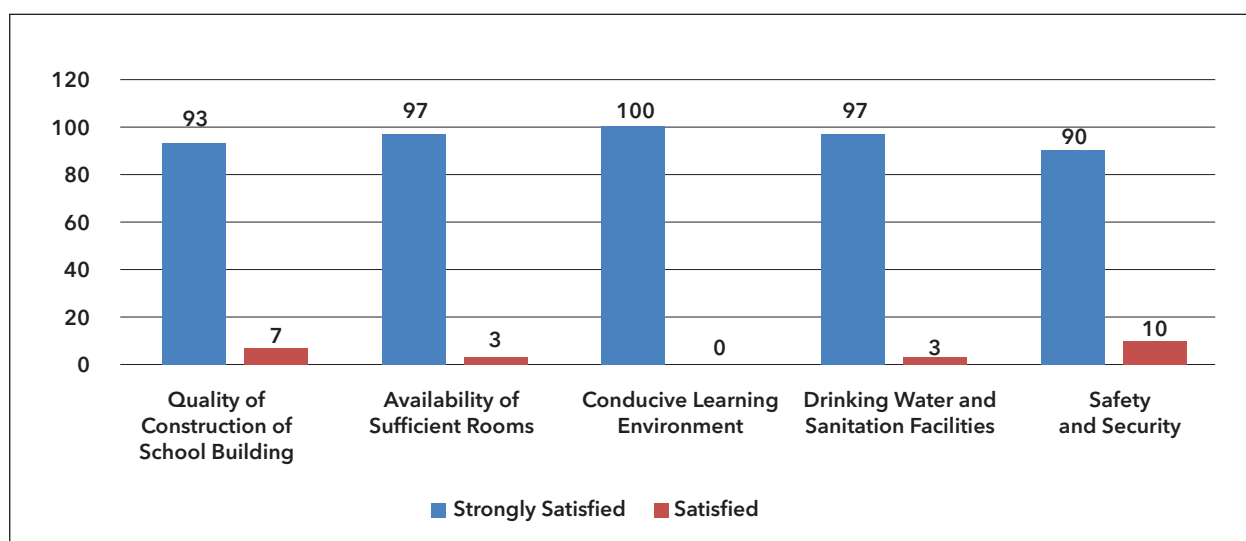
Impact Matrix

Impact Parameter	Score
Relevance	18
Utility	8
Operation and maintenance	8
Efficiency	8
Effectiveness	14
Outcome	14
Impact	18
Total	88

Satisfaction Survey

Student Satisfaction Survey

Filled in Questionnaire Sample Size is 30 (Respondent students were selected from VI, VII and VIII classes with composition of Boys: 21 and Girls: 09)



Quality of Construction of School Building: The quality of construction of the school building by Bharat Electronics Limited, Bangalore has received a high level of satisfaction from 93% of the students who participated in the survey. These students have expressed their strong satisfaction with the spacious classrooms, proper ventilation, adequate lighting, and comfortable seating arrangements provided by BEL. Furthermore, BEL has also taken care of other essential facilities such as RO drinking water, toilets, a boundary wall, a kitchen shed for midday meals, and sports equipment for various games. All these amenities contribute to enhancing the overall teaching and learning environment as well as the student facilities.

Availability of Sufficient Classrooms: The BEL project has significantly improved the learning environment for students, with 97% of respondents expressing strong satisfaction with the availability of sufficient classrooms. Prior to the project, the school only had 8 classrooms which were in old and dilapidated condition, with cracks in the roofs and water seepage during the rainy season. The project has successfully addressed these challenges by providing students with the necessary facilities for an improved teaching and learning experience.

Conducive Learning Environment: The school's conducive learning environment received positive feedback from 100% of the respondents after the successful implementation of BEL's project. This project involved the introduction of spacious classrooms, proper school benches with suitable seating arrangements, fans, and lighting facilities in all classrooms. As a result, there was a significant decrease in student absenteeism attributed to the improved teaching and learning conditions brought about by this project. Furthermore, the school conducts extracurricular activities sessions for students, fostering comprehensive development among the children.

Drinking Water and Sanitation Facilities: The project, which involved providing drinking water and sanitation facilities to children, received strong satisfaction from 97% of respond students. According to the students, BEL ensured the provision of 100 liters per hour of RO drinking water, ensuring safe drinking water for schoolchildren. Additionally, the project included the construction of 4 urinals and 3 toilets for boys, as well as 3 toilets for girls. Handwashing stations with proper taps were also provided by BEL. As a result of these efforts, the school has been declared open defecation free, because of this project provided proper sanitation facilities for schoolchildren. The schoolchildren have embraced best sanitation practices and developed good handwashing habits, which have helped instill excellent cleaning habits among them.

Safety and Security: The results of a survey revealed that 90% of schoolchildren expressed strong satisfaction with the safety and security measures implemented at the school building and its vicinity. However, it was brought to attention that the current 5-foot-high boundary wall, spanning 330 feet, was insufficient in deterring unauthorized individuals from gaining access to the school premises and engaging in disruptive behavior at night. As a result, students have formally requested BEL to raise the height of the boundary wall to 10 feet and to install fencing as additional security measures to safeguard school assets.

Teachers' Feedback: The IPE team engaged with 8 schoolteachers, all of whom strongly expressed satisfaction with the enhancements made to the learning environment, extracurricular activities for students, provision of RO drinking water and sanitation facilities, implementation



of the mid-day meals program, sports activities, and safety measures for schoolchildren through this project. As a result of this initiative, there was a noticeable increase in school attendance, academic achievements, and student enrollment, ultimately leading to an improvement in the overall quality of the teaching and learning environment.



Parents’ feedback: The IPE team engaged with 10 parents and distributed a survey questionnaire to gauge their satisfaction with the school building constructed by BEL. All participants expressed strong satisfaction with the new school building, as well as the cleanliness of the environment, availability of drinking water, and toilet facilities. They confirmed that these amenities have significantly contributed to the improvement of their children’s academic performance and overall health. Previously, these parents had some reservations about sending their children to private schools due to the dilapidated state of the building. However, their attitude has now changed, and they are highly content with the school building provided by BEL. This shift in perception has resulted in an increase in student enrollment over the past two years, as they have concluded.

Education department and local administration officials’ feedback: Upon interactions with three education department and three local administration officials, the IPE team ascertained that they were all highly satisfied with the completion of the new school building at Government Higher Primary School in Channal village of Mudhol taluk in Bagalkote district. Each of them emphasized that this endeavor has cultivated a favorable attitude towards classroom instruction and learning environment, extracurricular activities, mid-day meals program, sports facilities, drinking water and sanitation facilities, safety, and security, all of which have positively impacted the overall growth and health of the students.

Project Coherence

The project included classrooms, a playground, an auditorium, a dining hall, a storage room, restrooms, urinals, a boundary wall, classroom furniture, etc., as outlined in NEP 2020

Project Alignment with SDGs

SDG Goal	Project Alignment with SDG Goals
 	<p>The project accomplished by establishing a range of facilities, including spacious classrooms with ample seating for students, a playground for various sports, an auditorium for extracurricular and school activities, dining, and storeroom facilities for the mid-day meals program, as well as a boundary wall and other safety measures to ensure the security of the children. This initiative successfully accomplished SDG goal 6 through the provision of secure drinking water and the construction of dedicated toilet facilities for students.</p>

Observations

The following are some of the important observations from the project.

- This project enhanced the extracurricular activities and sports activities in addition to the classroom teaching and learning activities.
- This project strengthened the midday meals program by providing permanent kitchen shed and storeroom facilities.

- Each classroom is spacious with proper ventilation, lighting and proper seating arrangement with benches provided by BEL.
- The classroom dimensions are designed to accommodate 40 schoolchildren, ensuring a conducive environment for their educational experience. However, the school has a restricted intake capacity and can only admit up to 30 students.
- BEL supplied a diverse selection of sports equipment and resources for cricket, volleyball, badminton, chess, carrom, and additional sports.
- The project enabled the school to set up a smart classroom system in one of their classrooms for the benefit of the students.

Case Study

Mr. Mallikarjun, Student, VIII Grade

Mr. Mallikarjun, a student in the eighth grade, comes from a family living below the poverty line. His father works as a farmer while his mother is a homemaker. He enrolled in this school when he was in first grade. He informed that the school faced a lack of infrastructure facilities prior to the initiation of BEL's project. There were 8 classrooms in the school, all of which were in a dilapidated state due to being constructed many years ago. The classrooms had visible cracks in the slabs and walls, leading to water seepages during the rainy season, disrupting classroom activities. Additionally, the school struggled with shortages of classroom furniture, drinking water, toilet facilities, sports equipment, and other necessary facilities, which had a negative impact on the academic performance of the students. This situation persisted until the implementation of BEL's project. Bharat Electronics Limited, a socially responsible organization, agreed to construct a new building in the Channal villages after receiving requests from the villagers and other stakeholders. The project significantly improved the government education system by providing spacious classrooms, drinking water and toilet facilities, various sports equipment, a kitchen shed, a storeroom, and a boundary wall. Mr. Mallikarjun expressed his heartfelt gratitude to BEL-Bangalore for providing them with a proper school building.



Project 7: Providing Medical Equipment to District General Hospital, Community Health Centers and Primary Health Centers of Aspirational District, Yadgiri, Karnataka

Project Objective	Promoting health care including preventive health care and making available safe drinking water, Eradicating hunger, poverty etc.
Infrastructure / Facilities created by BEL	Equipment is distributed to different hospitals in Yadgir district. (Binocular Microscope, Suction machine, Medicine chest, Inverter with Tubular Battery, 500mA X-Ray machine, cell counter machine, Hb meter, Fetal Monitor, Hydraulic delivery cot, CBC machine, 2 D color doppler USG scanning machine, delivery cot, Digital weighing machine (Newborn), Laparoscopic sterilization
Project Cost	Rs. 137.68 Lakhs
BEL Unit	BEL Bangalore
Sector	Healthcare

About the Project

The Yadgir district has been acknowledged as one of the aspirational districts by NITI Aayog, the Government of India. This recognition aims to facilitate the implementation of various development initiatives in the Education and Health sectors, as identified by the district authorities. In accordance with this, Niti Aayog has selected Bharat Electronics Limited, a CPSE, to carry out specific development activities using its CSR allocation from the Aspirational districts fund. These activities were chosen based on a Baseline study and a request from the District Magistrate. As a part of this endeavor, Bharat Electronics Limited has supplied two ventilators, one RO water plant, 2 D Color USG scanning machine, two Anesthesia machines, two advanced life support ambulances, four fetal monitor (cardio technography) machines, two defibrillators to the District Hospital and two taluk hospitals of Yadgiri district in Karnataka state.

Need for the Project

It is crucial in the modern era to have efficient and upgraded medical equipment to guarantee the best possible care for patients and improved healthcare results. The progress in medical technology has enabled more precise and accurate diagnosis, treatment, and management of medical conditions. Enhanced medical equipment can improve patient safety by minimizing errors and complications during procedures. The COVID-19 pandemic has marked a significant shift in the Indian public healthcare system. It has highlighted the crucial role of technology in patient treatment and increased the need for such advancements.



The Shahapur Taluk hospital provides healthcare services to a population of 55,000, while the Shorapur Taluk hospital serves 39,000 people. However, both hospitals have only one ambulance facility each, which is insufficient to cover the population. This lack of adequate ambulance services has caused significant difficulties for people trying to access government ambulance facilities. Consequently, the district administration and health department have requested two additional ambulances, one for each taluk hospital, along with transport ventilators to support emergency patients during transportation to healthcare facilities.

Furthermore, the anesthesia machines at District Hospital-Yadgiri and Taluk hospital Shahapur are not in optimal condition. These machines have a crucial role in surgical procedures as they accurately mix anesthetic gases and vapors, assist in patient ventilation, and minimize anesthesia-related risks for both patients and medical staff.

Project Initiation - BEL Initiatives

Based on District administration and health department, Yadgiri district, BEL supplied various medical equipment /devices to district hospital Yadgiri and taluk hospitals of Shahapur and Shorapur.

Project cost: Rs. 137.68 Lakhs

Project initiation and Execution: FY 2021-22

S. No.	Name of the Facility / Medical Equipment or Device Provided by BEL	Total number of units	Medical Equipment where were to be Placed
1	Ambulances - Advanced Life Support	02	Taluk Hospitals Shahapur: 01 Shorapur: 01
2	Ventilators: ResMed Astral 100-APAC1 Transport Ventilators for ambulances	02	Taluk Hospitals Shahapur: 01 Shorapur: 01
3	Portable water purification system with inbuilt water cooler	01	District Health and Family Welfare Office, Yadgiri
4	2 D Doppler USG Scanning Machine	01	Shahapur taluk hospital
5	Anesthesia Machine	02	District Hospital, Yadgiri: 01 Taluk Hospital, Shahapur: 01
6	Fetal Monitor	04	Shahapur taluk hospital: 01 Shorapur taluk hospital: 01 CHC- Hunasagi: 01 CHC- Doranhalli: 01
7	Defibrillators	02	Taluk Hospitals Shahapur: 01 Shorapur: 01

Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, effectiveness, impact, and sustainability. The aim of the project is to improve diagnostic and

treatment capabilities at taluk hospitals and district hospital of Yadgiri district by supplying medical equipment, devices, and other necessary resources. The project successfully achieved its goal by delivering extensive healthcare services with the use of medical equipment or devices and facilities, leading to an increase in the number of patients seeking treatment for various health issues.

Relevance: The project in Yadgiri district, undertaken by BEL as part of its aspirational district assignment by NITI Aayog, Government of India, is highly relevant. BEL has supplied medical equipment and facilities to taluk hospitals and district hospitals to enhance the public health infrastructure in the district. This initiative aligns with the Government of India’s National Health Policy 2017, strengthening public health infrastructure and benefiting marginalized communities by meeting their healthcare needs.

Utility of the Project

The project utility details are given below.

S. No.	Name of the Facility / Medical Equipment or Device Provided by BEL	Total Number of Units	Utility	Beneficiaries per Monthly
1	Ambulances - Advanced Life Support	02	Full Utility	200 patients
2	Ventilators: ResMed Astral 100-APAC1 Transport Ventilators for ambulances	02	Full Utility	200 patients
3	Portable water purification system with inbuilt water cooler	01	Full Utility	District Health and Family Welfare department
4	2 D Doppler USG Scanning Machine	01	Full Utility	20 patients
5	Anesthesia Machines	02	Full Utility	50 patients
6	Fetal Monitors	04	Full Utility	40 pregnant women
7	Defibrillators	02	Full Utility	20 cardiac patients

Operations and Maintenance: Skilled healthcare practitioners utilize medical equipment within the hospital setting to guarantee accurate test outcomes during the diagnostic procedure or to improve patient care or treatment, depending on the specific medical equipment or device. The concerned hospital management carries out regular and preventative maintenance on the equipment to extend their lifespan and attain optimal results. Sufficient funds are allocated by the hospital to cater for the continuous operation and maintenance of the equipment provided by BEL.

Efficiency: This project was completed within a specified budget and allotted time and the district hospitals; taluk hospitals and community health centers offer significantly greater benefits in comparison to the resources invested. The hospital’s skilled staff ensures the timely delivery of diagnostic results and treatment procedures, achieving both cost-effectiveness and operational efficiency.

Effectiveness: The project played a crucial role in supporting the community health centre by enhancing its medical equipment infrastructure. This has resulted in the hospital’s ability to

expand its healthcare diagnostic services and treatments, providing comprehensive care to patients, including prenatal care, specialized attention to cardiac arrest patients and all other patients. Consequently, there has been a notable increase in the number of patients seeking medical assistance in district, taluk hospitals and community health centers.

Outcomes: This initiative has improved the operations of district & taluk hospitals and community health centre by providing a wide variety of medical equipment. Consequently, these centers can now deliver superior diagnostic and treatment services, ultimately enhancing the healthcare services available to the community. The project has also reduced the financial strain on underprivileged communities and enhanced public healthcare facilities in the Yadgiri district.

Impact: The effective execution of this project has resulted in several benefits for beneficiaries who are less fortunate and has had a significant influence on the improvement of public healthcare systems. This program has been essential in enhancing their general health and well-being by giving them access to a variety of healthcare services through supplying of medical equipment or devices. Beneficiary patient dependence on private healthcare systems has significantly decreased, which is one of the project’s main results. This change has helped these people feel more empowered and independent while also lessening the financial strain of paying for their medical bills on private healthcare systems. The refurbished medical facilities and the provision of all-inclusive healthcare services have relieved recipients of the burden of paying astronomical private healthcare expenses, which were frequently unaffordable.

Tangible and Intangible Benefits

- Increase in OPD and IP treatments.
- Improved better monitoring systems for emergency or critical patients.
- Improved the treatment facilities for prenatal care, cardiac care, and various health emergencies.
- The project instilled confidence in patients by offering diagnostic and comprehensive healthcare services for individuals of all ages, addressing a wide range of health issues and diseases.

Impact Matrix

Impact Parameter	Score
Relevance	17
Utility	9
Operation and maintenance	6
Efficiency	6
Effectiveness	11
Outcome	14
Impact	17
Total	80

Satisfaction Survey

The purpose of the satisfaction survey is to gather insights from various stakeholders, such as patient beneficiaries, their relatives, and hospital administration. This survey aims to understand

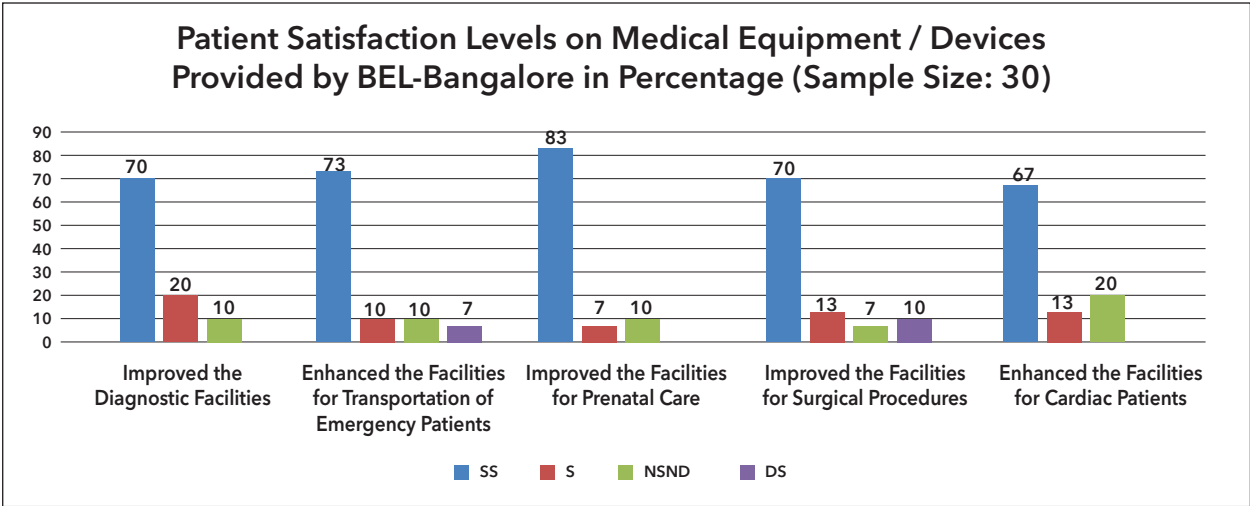


their perception of the diagnostic, treatment, and other facilities following the implementation of medical equipment and other improvements by BEL. These enhancements have notably improved the outpatient department (OPD), inpatient (IP) services, emergency healthcare treatment, and other related services.

Beneficiary patients	30
Beneficiary relatives	04
Hospital Administration	04

Beneficiary patient feedback

The Survey has done in taluk hospitals - Shahapur and Shorapur
 Sample Size: 30 (Total patients: 30; Aged 22 years to 70 years
 Sample location: Taluk hospitals in Shahapur and Shorapur
 Female: 15 patients
 Male: 15 patients



Improved the diagnostic facilities: 70% of patients expressed how satisfied they were with the improved diagnostic capabilities of the 2D Doppler USG Scanning Machines that BEL provided to Taluk Hospital in Shahapur. These devices detect blood flow in vessels using sound waves. By using them during pregnancy, the placenta, uterus, and fetal blood circulation can all be assessed. When this method is applied in high-risk pregnancies when the baby's welfare is a worry, positive results are obtained. Conversely, twenty percent of the patient responders said they were satisfied, and ten percent had an undecided opinion.

Enhanced the facilities for transportation of emergency patients: Regarding improved facilities for emergency patient transportation, 73% of respondents expressed strong satisfaction. All they could corroborate was that two ambulances from BEL-Bangalore were available to these taluk hospitals, which reduced the wait times for emergency patients and saved many lives during golden hour. The small size, 7% of respondents were unhappy with the improved emergency case transportation facilities and asked for the need for additional ambulances to provide better transportation for patients receiving emergency care to get to higher hospitals on time. Of the respondents, 10% expressed satisfaction, and the remaining 10% were unsure about their thoughts.



Improved the facilities for prenatal care: Strong satisfaction with upgraded prenatal care facilities was reported by 83% of respondents. They vehemently assert that pregnant women were previously forced to travel to higher healthcare facilities like Yadgiri, Raichur, or Gulberga for the fetus’s health due to the lack of fetal doppler devices in community health centers and taluk hospitals of Yadgiri district. Pregnant women and their families now face much less financial hardship because to the installation of fetal doppler facilities at community health centers and taluk hospitals. Only 7% of the patients who responded expressed satisfaction, with the remaining 10% expressing indecision.

Improved the facilities for surgical facilities: The improved surgical facilities at district hospital-Yadgiri and taluk hospital shahapur, made possible by the provision of anesthesia machines by BEL, have garnered strong satisfaction from 70% of the respondents. These machines not only enable pain-free procedures for patients but also ensure their safety, thereby aiding surgeons in achieving optimal outcomes. However, 10% of patients expressed dissatisfaction with the availability of anesthesia machines in hospitals, while 7% remained undecided. On the other hand, the remaining 10% of respondents expressed their satisfaction with the same.


Enhanced the facilities for cardiac patients: The availability of defibrillators supplied by BEL to Taluk hospitals, which could improve the facilities for cardiac arrest patients whose doctors are attempting to restore their heart’s rhythm during their cardiac arrest, was strongly satisfied by 67% of respondents. 20% of patients were unsure about their opinion, whereas 13% of respondents were satisfied.

Patient Relatives and Hospital administration staff feedback: The IPE team engaged in discussions with relatives of four patient beneficiaries and 4 members of the hospital administration. A questionnaire was administered to gather their feedback. Their responses indicated a high level of satisfaction with the enhancements made to the diagnostic and treatment facilities for prenatal care, cardiac arrest patients, emergency treatments, as well as the support provided for pregnant women, childcare, and other amenities offered through the BEL project.

Project Coherence

BEL has been instrumental in the effective implementation of the National Health Policy-2017 through its dedicated efforts. Providing a wide range of medical equipment such as defibrillators, anesthesia machines, 2 D Doppler USG Scanning Machine, and fetal monitors, BEL has significantly contributed to the healthcare sector.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	<p>BEL’s initiative was in line with Sustainable Development Goal 3, which focuses on promoting good health and well-being. The project involved the provision of a range of medical equipment and facilities aimed at improving diagnostic and treatment services, ultimately benefiting disadvantaged communities.</p>

Observations

- The RO drinking water facilities at the District Health and Family Welfare Department of Yadgiri district were improved through this project.
- The use of fatal doppler machines has decreased the need for transportation for pregnant women seeking prenatal care, resulting in cost savings for their travel expenses.
- Defibrillators have enhanced the quality of care for patients experiencing cardiac arrest by restoring their heartbeats, ultimately saving lives during the critical golden hour.
- The medical infrastructure equipment, including ambulances, has bolstered the public health facilities at taluk hospitals and community health centres, enabling better treatment, diagnosis, and emergency transportation for patients in need of urgent care.

Case Study

The 56-year-old patient, a hardworking labourer hailing from the bustling town of Shahapur, experienced a sudden and life-threatening cardiac arrest. Recognizing the urgency of the situation, the patient was swiftly transported to the taluk hospital in Shahapur, where a team of dedicated medical professionals awaited his arrival. Upon reaching the hospital, the highly skilled and compassionate hospital staff wasted no time in attending to the patient's critical condition. Equipped with the latest medical technology, they immediately utilized a defibrillator provided by BEL. With precision and expertise, they administered electric shocks to the patient's heart, successfully restoring its rhythm and saving his life. However, recognizing the need for further specialized care, the medical team decided to transfer the patient to the tertiary health center located in Gulberga. This esteemed facility boasts advanced emergency treatment options and state-of-the-art medical facilities, ensuring that patients receive the highest level of care possible.



Project 8: Establishing Skill Development Centre at Sri Saraswathi Vidyapeetam, R R District, Telangana

Project Objective	To promote introduction of new Course, increase student enrollment, and enhancement of employment opportunities
Infrastructure / Facilities created by BEL	BEL has established Skill Development Centre (G+1) and provided tools and equipment for establishing skill laboratory: <ul style="list-style-type: none"> • Civil construction - renovation of existing ground floor & construction of First floor • Providing computers and peripherals, classroom furniture, and trade specific technical tools
Project Cost	Rs. 120.99 Lakhs
BEL Unit	Hyderabad
Sector	Skill Development

About the Project

Sri Saraswathi Vidyapeetam, a well-respected institution recognized for its dedication to social responsibility, is widely praised for delivering top-notch education from nursery to the X class while also imparting moral and cultural values. Affiliated with Vidyabharathi, a voluntary organization in India, the Vidyapeetam has acknowledged the difficulties faced by youth from Gandipet and Rajendra Nagar mandals near its location in securing job opportunities after finishing their higher education, mainly due to insufficient skill sets and soft skills. Sri Saraswathi Vidyapeetam approached BEL for the construction of the skill development Centre in the fiscal year 2020-21.

Need for the Project

Establishing a competent workforce has become crucial in leading India towards sustainable economic growth and progress in its expansion and diverse setting, where the aspirations of a billion people unite. The economy of India is progressing steadily, with much attention given to its demographic dividend. India, with a median age of 28.1 years, is projected to possess the largest workforce worldwide by 2027. Nevertheless, having a youthful population is insufficient to guarantee economic success. The real potential of this demographic dividend lies in providing the younger generation with the necessary skills and filling the skill gap enabling them to become valuable assets to the economy. Government of India's Skill Development Interventions aim at enhancing skills that help bridging this gap, enhancing individuals' employability, and alleviating the strain on the job market. To meet this challenge, the present project titled Skill Development Centre at Sri Saraswathi Vidyapeetam, R R district, Telangana has been initiated with an aim to provide skilled workers to various employers, thereby contributing to the growth of the country's economy.

Project Initiation

BEL approved the construction of the skill development Centre with funding of Rs. 140 Lakhs and provided computer equipment and other necessary facilities. The project was initiated in 2020-21 and the Centre was unveiled on 25.08.2022. BEL Hyderabad Unit completed the construction of the ground and first floors at Sri Saraswathi Vidyapeetam in Bandlaguda Jagir of Gandipet Mandal in Ranga Reddy district. BEL also equipped the Centre with classroom infrastructure, projectors, whiteboards, laptops, computers, peripherals, internet and communication technology devices, and printers, all at a cost of Rs. 140 Lakhs.

Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, efficiency, effectiveness, impact and outcomes. The objective of the construction of skill development Centre at Sri Saraswathi Vidyapeetam under the jurisdiction of BEL Hyderabad unit was to provide a permanent skill development Centre for imparting various skill development training programs to unemployed young individuals, in line with the National Skill Development Policy, to enhance their socio-economic standing and livelihoods, consequently aiding in the economic advancement of the nation. The impact analysis is discussed below:

Relevance: The project is significant as it establishes a skill development Centre for unemployed youth in Gandipet, Rajendranagar mandals, and other nearby areas in Rangareddy District. The main aim of the project is to provide quality skill training programs to these individuals, enabling them to secure placements in different organizations and improve their lives in society. The Centre is providing various skill development initiatives designed to support unemployed youth in the IT & ITEs and electronics skill sectors. The Centre trains individuals with computer skills such as MS Office, email drafting, graphics, spreadsheets, data entry, file storage, and required soft skills for various job roles such as tele-banking executive, customer relationship executive, data entry operator, computer hardware troubleshooting, office executive, and more.

Utility: The project has provided classrooms and required infrastructure in the Centre for conducting skill training on the first floor and also facilitated a dining area on the ground floor with required facilities and furniture. All the resources are currently being fully utilized by the Centre. The details of the floor wise utilities are provided below:

Ground Floor: Constructed area - 204 square meter; Facilities: Kitchen Hall, Dining hall, Storeroom (perishable and non-perishable goods) with facilities and furniture.

First Floor: Constructed area - 204 square meters; Classrooms: 02 number Classroom furniture, Whiteboards, Projectors and CC Cameras Skill labs (computer labs): 02 number (31 Laptops and 11 Computers, Printers, Setting up Network). Washrooms: Men 02 Urinals and 01 Toilet; Women 02 Toilet

Operations and Maintenance: As the facility must be sustained, Sri Saraswathi Vidyapeetam allocated budget for maintaining the skill development Centre. The Centre undertakes regular maintenance of computer labs and classrooms.

Efficiency: To improve efficiency of the Centre is currently partnering with reputed agencies to sponsor skill development programs for unemployed youth aged between 18-25. The skill development Centre has partnered with multiple industries and institutions for conducting training programs, as well as facilitating placements for students in respective sectors. The Centre has appointed a mobilizer who visits communities on a regular basis and promotes the Centre and its activities.

Effectiveness: The Centre has taken a significant step in enhancing the employability of its students by appointing two highly skilled trainers to deliver a comprehensive training program titled Customer Relationship Management Domestic Non-Voice (BPO) Skills. The course aims to equip students with the necessary skills and knowledge in Ms Office. These modules include typing, basic computer application, Ms Office, database handling, etc. Students are trained in troubleshooting computer hardware, installation of computer peripherals such as printers and scanners. Additionally, they learn about network devices and how to handle customer complaints effectively. The training also focuses on teaching students how to respond to customer emails professionally and efficiently. To further enhance the training program, the skill development Centre has partnered with Synchroserve IT Solutions Private Limited, a renowned company that operates skill development Centres nationwide. This partnership ensures that students receive technical support and guidance from industry experts, enhancing the overall quality of the training program.

Impact: The project objectives of the skill development Centre at Sri Saraswathi Vidyapeetam aim to increase the availability of skill development training programs for unemployed young individuals residing in and around Rangareddy district. The Centres created awareness and interest among young individuals in acquiring new skills and meeting the competition in the job market. Based on the demand for skill training programs, the Centre is prompting more programs in future. This project also addressed the issue of sustainable employment opportunities supporting the family and improving livelihood.

The Centre not only equipped youth with skill but also supported them with communication and personality development initiatives. The Centre also provided placement opportunities to the youth in BPOs and other backend operational Centres such as telemarketing. The youth are also encouraged to take up small businesses. The Centre also provides coaching and mentoring services to the youth. The Centre has collaborations with industry making a significant impact on the economic development of the region.

Outcomes: Skill development program outcomes were aligned with the project objectives. The programmes are long-lasting and sustainable because the Sri Saraswathi Vidyapeetam deployed skilled faculty, tied up industry linkage to provide placement opportunities for trained youth and women, and regularly organized various skill development programs batch-wise, all these efforts enabled Vidyapeetam to take up the skill development institute to new heights.





The devices and facilities provided by BEL have significantly improved the practical training among students. Students now have access to the latest technology and equipment, enabling them to gain hands-on experience and develop their skills effectively. This improvement in the quality of practical training sessions has also increased the placement opportunities for students, as they are better prepared to meet the demands of industry.

The social economic status of the students enrolled in the program is as follows:

Sl. No.	SC	ST	BC	General
Total Number	05	02	16	07
Percentage	17%	7%	53%	23%

The table depicts that most of the students who appeared for the program are graduates.

	SSC	Inter	ITI	Degree	B.Tech	PG	Grand Total
Female	-	1	-	20	-	1	22
Male	3	6	1	5	1	-	16



First batch outcomes: The first program in CRM Domestic Non-Voice (BPO) began on July 17, 2023, and concluded on September 25, 2023. Out of 36 students, 34 completed the training, and 25 of them have secured placements in Fintech Solutions Pvt. Ltd, Radiant Appliances Pvt. Ltd, and other organizations as telebanking executives, customer relationship executives, and computer trainers. The monthly salary ranged from Rs 11000 to Rs 14000.

Name of the Company	Location	Designation	No. of Candidates were Placed and Continued	Salary per Month (in Rs)
Fintech Solutions Pvt. Ltd	Vengal Rao Nagar	Tele Banking Executive	12	12000
Radiant appliances Pvt. Ltd	E City, Hyderabad	Customer Relation Executive	8	14000
Others	Bandlaguda	Computer Faculty	5	11000

Tangible Outcomes	Intangible Outcomes
<ul style="list-style-type: none"> • Availability of skill training programs for youth • Supply of skilled manpower to BPO and other service industries • Improved career prospects for unemployed youth • Supported young individuals to improve skill and earn better. 	<ul style="list-style-type: none"> • Increased self-confidence and morale boosted among unemployed youth to lead better lives in society and support their families.

Proposed outcomes: The second batch is in progress with 45 students. The Centre has plans to expand the programs to include job roles in field technician computing and peripherals, cyber security, and data analytics under the Electronics Skill Sector Council and IT & ITES sector skill council. The Centre aims to train 240 young people per year, in groups of 30.

Impact Matrix

Impact Parameter	Score
Relevance	18
Utility	8
Operation and maintenance	8
Efficiency	8
Effectiveness	13
Outcome	13
Impact	16
Total	84

Satisfaction Survey

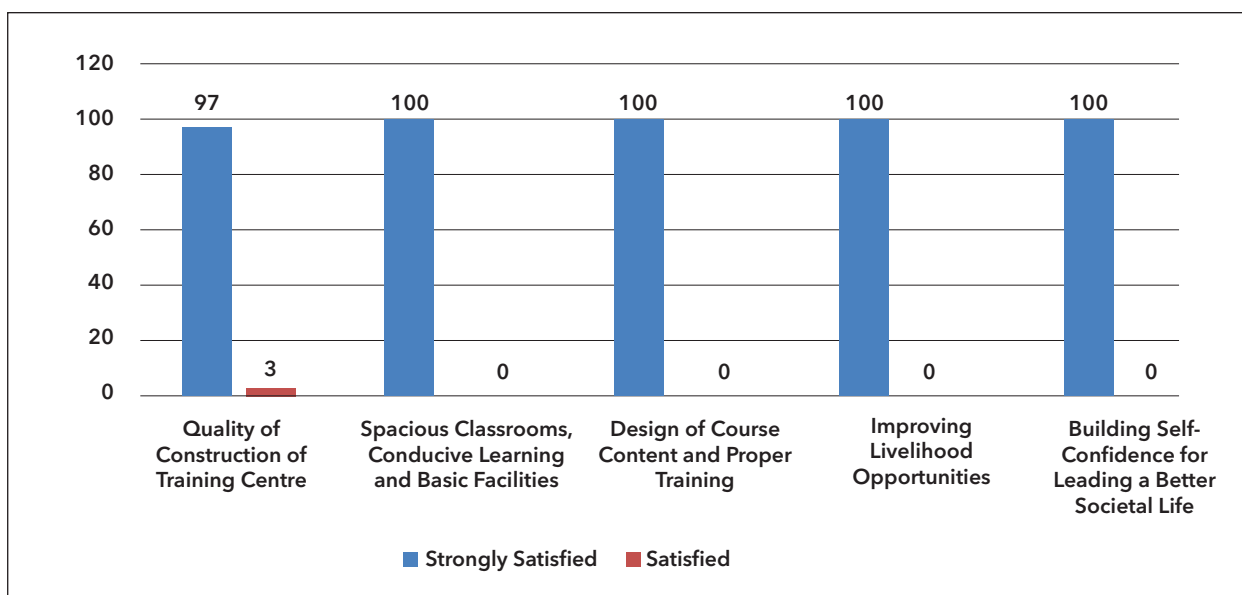
A satisfaction survey is conducted to study the perception of stakeholders in terms of quality of program, program content, infrastructure facilities, placement opportunities, etc. A questionnaire has been circulated among various stakeholders. The sample comprised of the following composition:



Students	30
Staff	4
Parents	4
Others	2

Student Survey

The project garnered an overwhelmingly positive response from students regarding the quality of the building's construction. A remarkable 97% of the trainees expressed strong satisfaction with various parameters that were considered for the survey. This included quality of construction, classroom dimension, course design, placement opportunities, improvement in livelihood and increased self confidence among the youth. The students also appreciated the computer labs' facilities and hands-on learning during the course. These facilities not only foster a conducive learning environment but also come equipped with essential amenities. The trainers and the management of the Centre also expressed the high satisfaction with the quality of construction. They also felt that this would help them to introduce various courses in the days to come. The following chart depicts the details of the student survey.



Stakeholders' Satisfaction Levels - Education Department, Local Administration, and



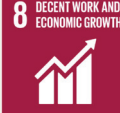

Parents: A focused group discussion was held with three representatives from the educational department, two local administrators from Bandlaguda Jagir municipality and two parents and found that the project was very impactful. It was evident that they were highly satisfied with the skill development programs for unemployed youth at Sri Saraswathi Vidyapeetam, including the course content, training methods, student placement opportunities, and more. This growth has led to improved employability and entrepreneurial prospects, in accordance with the national skill development policy. Consequently, there has been a decline in the community's unemployment rate, while also promoting women's empowerment through these training initiatives.

The parents expressed cent percent satisfaction with the various infrastructure facilities along with basic amenities such as drinking water and sanitation facilities, dining area, computer lab, etc. Parents also expressed their satisfaction with the improved family's socio-economic condition after completing the course by joining the organization. Parents were highly satisfied with the quality of training, hands-on sessions, industry visits, trainee certification, and placement opportunities.

Interaction with four trainers: The trainers at the Skill Development Centres were highly satisfied with the structure of the skill development courses. They reported that 45 students are currently enrolled in training for CRM Domestic Non-Voice (BPO), with the majority being intermediate and graduate students. These students are being taught essential computer application skills like MS Office, data entry, document processing, database management, email communication skills, hardware troubleshooting, customer relationship management, and soft skills. The training program lasts between 45 to 60 days, totaling 440 training hours. The center prioritizes practical sessions, which make up 300 hours of the program. Aligned with the National Skill Development Policy, over 80% of trainees are expected to secure positions in private companies as customer relations executives and telebanking executives after completion of the training program.

Project Coherence: The BEL's Skill Development Centre project at Sri Saraswathi Vidyapeetam is in coherence with the Skill Development Mission policy by offering comprehensive skills training to young individuals. This program caters to technical and non-technical training needs that align with industry standards and demands. Consequently, it opens numerous job prospects for the trained youth.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
   	<p>The project aimed to empower marginalized communities by equipping them with required specific skill-based training, thereby creating sustainable livelihood opportunities.</p>

Observations

The following are some of the important observations from the project.

- The project has achieved the aim for which it was initiated. The Centre received praise from student parents. Parents have expressed their satisfaction for providing promising placement opportunities for their children.
- The project is aligned with National Skill Mission to impart training to unemployed youth has also been achieved. 80% of the students from the first batch have secured placements as customer relation executive, telebanking executives, etc.



- The training program emphasized personality development and communication skills enabling students to be ready required skillset.
- Upon completion of training at Skill Development Centre in Sri Saraswathi Vidyapeetam, all candidates will undergo assessment to certify them in their chosen job role and will be matched with corporate placements based on their competency levels. The assessment process for trainees is methodical, involving the collection and evaluation of performance evidence against the approved National Occupational Standard/Qualification Packs (NOS/QPs) endorsed by the NSDC. Assessment entails gathering evidence of an individual's competence level through a variety of methods including tests, observations, interviews, assignments, and professional discussions.
- The Centre is also collaborating with industry partners in identifying areas of training.
- The project is sustainable as the infrastructure.

Case Study

Mr. Hemanth Kumar, 19, Trainee, Sri Saraswathi Vidyapeetam, Bandlaguda: Mr. Hemanth Kumar, a 19-year-old individual, resides at Kalimandir near Bandlaguda with his mother, who is a single parent. Unfortunately, Hemanth lost his father during his childhood, which led his mother to take up a small private job to support both. Due to challenging family circumstances, Hemanth's education was curtailed after completing his XII standard. Consequently, he had to find local work to contribute to the family's income, earning a meager Rs 4000 per month. Moreover, Hemanth faced difficulties in securing a good job due to his lack of technical and communication skills. However, Hemanth's life took a positive turn when one of his friends informed him about Sri Saraswathi Vidyapeetam's Skill Development Centre. Encouraged by his friend, Hemanth decided to enroll in the Customer Relationship Management Non-Voice (BPO) skill training course offered by the Centre in Bandlaguda, Gandipet mandal. In September 2021, he began his training and successfully completed the program. As a result, Hemanth secured a placement as a Customer Relation Executive at Radiant Appliances in Hyderabad, with a monthly salary of Rs. 14000. He has been working with the company for the past few months while simultaneously pursuing a part-time distance degree course in Hyderabad. This opportunity has provided Hemanth with a better future and the chance to improve his skills and prospects.

Project 9: Construction of Classrooms, Toilets, furniture and other related works in Government Higher Primary School, Bazar, Karwar Town, Karwar Taluk, Uttara Kannada District, Karnataka

Project Objective	Construction of 8 Classrooms, Toilets and supply of furniture and other related work
Infrastructure / Facilities created by BEL	School Education
Project Cost	Rs. 132.69 Lakhs
BEL Unit	Bengaluru
Sector	School Education

About the Project

Primary education plays a crucial role in the holistic development of a child's personality. By instilling healthy attitudes and values, the school prepares students to become responsible citizens in the future. The school provides primary and higher primary education from grades I to VII free of charge. The school has the curriculum set by the Karnataka state government and aims to achieve universal foundational literacy and numeracy for all, as emphasized in the National Educational Policy (NEP) of 2020. The school has a total enrollment of 171 students, with 87 boys and 84 girls. The medium of instruction is bilingual, with both Kannada and English being used.

Socio-Economic Status of Schoolchildren

	Category wise Both Boy and Girl Children				Grand Total
	General	SC	ST	OBC	
Total number	11	17	02	141	171
Percentage	7%	10%	1%	82%	100%

82% of families with schoolchildren are part of OBC communities, whereas 10% of families belong to the schedule caste. Additionally, 7% of families fall under the general category, while a mere 1% of children's families are categorized as ST. It is noteworthy that a significant portion of schoolchildren come from fisher folk and daily wage labour class families.





Need for the Project

The quality of school infrastructure plays a crucial role in shaping a student’s educational journey and maximizing their potential. It encompasses modern classrooms, well-maintained outdoor spaces, quality furniture, and extracurricular activity facilities, all of which contribute to creating an optimal learning environment. By providing these essential elements, schools lay the foundation for students’ success.

The government primary school in Karwar encountered difficulties in classroom teaching before BEL’s. The school faced challenges in securing funds from the government for repairs, maintenance of toilets, and other essential services for the students. To address these challenges, the school, with the assistance of SDMC members and influential individuals, sought support from BEL’s CSR funds. Impressed by the school’s dedication to enhancing education quality, BEL approved the construction of a new classroom building and provided essential furniture. Construction of the school building commenced in July 2019 and was successfully completed by July 2021.

Project Initiation

BEL constructed 3 classrooms, one staff room, kitchen and storeroom on the ground floor, 4 classrooms and one auditorium on the first floor. BEL also provided students desks, tables and chairs. The amount spent on various infrastructure along with the facilities is depicted follows:

<p>School building construction cost: Rs. 125.34 Lakhs</p> <p>School furniture cost: Rs. 7.31 Lakhs</p> <p>Sanctioned the project: FY 2017-18</p> <p>Work execution period: July 2019 to July 2021</p>	<p>Toilet facilities: Boys: 3 urinals & 2 toilets, Girls: 5 toilets</p> <p>Sufficient hand washing facilities.</p> <p>Borewell, water provision for toilets and water overhead tanks</p> <p>Drinking water facilities</p> <p>Playground</p> <p>Boundary wall</p> <p>School furniture: 56 desks for 7 classrooms, other classroom furniture, blackboard, fans, and other facilities.</p>
<p>First Floor: 4 Classrooms; 1 Auditorium</p>	<p>Ground Floor: 3 classrooms; 1 office room; 1 kitchen room; 1 storeroom</p>

Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, effectiveness, impact, and sustainability. The project's objective is to enhance the learning environment by construction of classrooms, providing toilets and supply of furniture and other related work in government primary school in Karwar.

Relevance: This project proved to be significant as it addressed the government higher primary school's requirements in Karwar town by constructing spacious classrooms, toilets, a kitchen hall, a storage room, a boundary wall, and developing a playground, among other facilities. Due to the infrastructure facilities provided by BEL, the overall quality of education and facilities at the school were improved. This resulted in enhanced academic performance among the students. The construction of a new school building instilled trust and confidence in the community toward providing quality school education to needy underprivileged communities.



Utility: The BEL CSR project encompasses classrooms and additional amenities that ensure optimal functionality for the government's higher primary school in Karwar town. The school infrastructure facilities provided by BEL are being utilized by 171 schoolchildren, including both boys and girls. The project utility details are given below.

S. No.	Name of the Facility or Infrastructure - Provided by BEL	Extent of Utility (Full / Partial / Not in use)
1	7 classrooms	Full
2	One staff room	Full
3	One Auditorium	Full
4	One kitchen shed and One storeroom	Full
5	Sports ground	Full
6	Classroom benches	Full
7	School furniture	Full
8	Toilets and Urinals	Full
9	Drinking water and handwashing stations	Full

Operations and Maintenance: Every year, the government provides limited funds (around Rs. 30,000 to Rs. 40,000) for the operation and maintenance of the school building and other facilities. However, these funds are insufficient. Therefore, with the support of SDMC committee members, parents, citizens, and eminent personalities of Karur town, the school secures additional funds to maintain and improve school facilities, striving to offer the best possible education to the students.

Efficiency: The project greatly aided the school administration in delivering a high-quality education and improved facilities to the students. This project played a crucial role in enabling the school management to establish an environment conducive to learning, ensuring the safety and security of the students. Notable features include spacious classrooms with comfortable seating arrangements, which contribute to a better learning environment. Additionally, the project facilitated the installation of a smart classroom system in one of the classrooms as part of the BEL project. Moreover, the project also included the construction of a kitchen and storeroom to support the mid-day meals program in the school. The project ensured availability of drinking water, handwashing stations, and separate toilet facilities for both girls and boys.

Effectiveness: The school registered a significant increase in school enrolments, starting from the academic year 2021-22, which has now reached 181. The rise in the number of applicants for school admissions serves as evidence of the elevated level of education and enhanced student facilities, and as a result, there was an improvement in the academic performance and well-being of the children after this project.

Impact: The project achieved its objective of creating a holistic learning atmosphere for students at government primary higher school in Karur town. The initiative significantly influenced not only teachers, students but also the other stakeholders. The availability of various educational infrastructure like spacious classrooms, student seating arrangements, and modern teaching facilities leading to enhanced student performance in school assessments and other educational environments.

Outcomes: The project had a positive outcome on children’s health and learning patterns. Students are interested in pursuing secondary education. The project not only provided good educational infrastructure but also improved facilities such as safe drinking water, sanitation, mid-day meals, sports, etc. The school was recognized as the second best higher primary school in the country by the NITI Aayog, Government of India.

The following are the tangible and intangible benefits:

Tangible Benefits	Intangible Benefits
<ul style="list-style-type: none"> • Increase in students’ strength. • Decrease in school dropouts. • Sufficient classrooms are available for classroom teaching and extracurricular activities. • Improved the facilities for sanitation and drinking water for schoolchildren. • Enhanced facilities for mid-day meals program 	<ul style="list-style-type: none"> • This project enhanced schoolchildren’s positive outlook on education • The project fostered a belief in schoolchildren about their future career paths, boosting their self-confidence. • Increased the level of privacy for girls to use the toilets.

Impact Matrix

Impact Parameter	Score
Relevance	18
Utility	9
Operation and maintenance	9



Impact Parameter	Score
Efficiency	8
Effectiveness	14
Outcome	15
Impact	17
Total	90

Satisfaction Survey

A satisfaction survey is conducted to study the perception of stakeholders in terms of school infrastructure. A questionnaire has been circulated among various stakeholders including students, teachers and parents. The sample comprised of the following composition:

Students	30 (Boys 10 and Girls 20) Classes III to V
Teachers	10
Parents	6
Educational Department	2

Student Survey

The project obtained a 100 per cent positive response from school students regarding the quality of the building's construction, spacious classrooms, toilet blocks, kitchen and storage facilities. Students were strongly satisfied with the availability of spacious classrooms seating facilities for the learning environment and improved academic concentration. The inclusion of digital classrooms has sparked students' enthusiasm by immersing them in the world of computers. The digital classroom exposure was made possible through the availability of the spacious digital classroom. Students revealed their strong satisfaction with the well-maintained restrooms and washing areas contributing to hygiene standards.

Parents' Satisfaction Levels

10 parents of schoolchildren were interviewed, and they revealed that before this initiative by BEL, parents were hesitant to enroll their children in the school. Due to which the school has registered a decline in enrollment before the 2018-19 academic. After the project initiation, the parents expressed sturdy satisfaction with various aspects of the school's infrastructure, including spacious classrooms, seating arrangements, availability of safe drinking water, well-maintained toilet facilities, sports areas, dining, and storage halls, as well as the auditorium and boundary wall. The parents emphasized that these facilities are essential in enabling the school management to provide high-quality education to their students, resulting in the desired academic outcomes. Some parents informed me that getting admission to the school has been difficult.

Teachers' Satisfaction Levels

Six teachers who took part in the satisfaction level survey expressed their strong satisfaction with the conducive learning environment after the implementation of the project, which led

to a rise in student enrollment and a decrease in student absenteeism. They firmly concurred that because of this initiative, there was a significant surge in demand for school admissions for grades I to V, during the academic year 2023-24. Each class intake was only for 30 students despite this the school received over 100 applications. The teachers also expressed strong satisfaction with the students' academic progress, noting that just two students out of the 171 enrolled exhibited poor academic performance.



Educational Department

Education department officials have acknowledged that the Government higher primary school in Karwar town is delivering quality education. The school has been recognized as the second best higher primary school in the country by the NITI Aayog, Government of India.

Project Coherence (How well does the intervention fit?)

The project included classrooms, a playground, an auditorium, a dining hall, a storage room, restrooms, urinals, a boundary wall, classroom furniture, provision for digital classroom etc., as outlined in NEP 2020.

Project Alignment with SDG Goals

SDG Goal	Project Alignment with SDG Goals
 	<p>The project achieved SDG goal 4 and 6 by ensuring equal access to quality education for all students and provision of secure drinking water and the construction of dedicated toilet facilities for students.</p>

Observations

The following are some of the important observations from the project:

- The school has been securing the educational infrastructure that has been provided by BEL.
- It is observed that there has been an increase in students' strength while the school dropouts have reduced.
- There are sufficient classrooms available for teaching and conducting extracurricular activities.
- Improved the facilities for sanitation and drinking water for schoolchildren.
- Enhanced facilities for mid-day meals program
- The school guarantees a high standard of education, in addition to focusing on co-curricular and extracurricular activities.
- The project is highly sustainable.

Case Studies

Case Study 1 (Student)

Kartik Pujari, a student in the fourth grade, comes from a disadvantaged background. His father earns a living as a daily wage laborer, while his mother manages the household. Kartik enthusiastically shares how Bharat Electronics has played a crucial role in enhancing the educational infrastructure for students like him. These facilities have not only helped them excel academically but also encouraged their participation in extracurricular activities, instilling a sense of confidence within them. Kartik describes his school as a place filled with happiness and positivity, which motivates all students to strive towards academic goals. He takes great pride in being a member of his school community and expresses his heartfelt gratitude to Bharat Electronics Limited for their invaluable contribution in providing the school building and other essential amenities.

Case Study 2 (Teacher)

Ms. Tanseem, a schoolteacher at the Government Higher Primary School, shared that the school, situated in Bazar, is widely recognized as one of the most esteemed government schools in Karur town. This is mainly due to the outstanding infrastructure provided by Bharat Electronics Limited-Bangalore. The modern and well-equipped school building significantly enhances the educational journey of the students, offering them a secure and pleasant atmosphere to actively participate in their learning.



Project 10: Augmentation of Infrastructure, provision of Equipment & Tools for adopted Govt. ITI, Noida, Ghaziabad District, Uttar Pradesh

Project Objective	Promoting education, including special education and employment enhancing vocation skill.
Infrastructure / Facilities created by BEL	Trade specific Technical Tools & Equipment
Project Cost	Rs. 109.41 Lakhs
BEL Unit	Ghaziabad
Sector	Skill Development

About the Project

Government Industrial Training Institute, Noida, established in 1992, is a prestigious and well-known industrial training institute. It offers top-notch technical education to aspiring engineers, adapting to industry needs. The institute provides hands-on engineering programs in disciplines like fitter, electrician, electronics mechanic, mechanic motor vehicle among others. The curriculum is regularly updated to incorporate the latest advancements and industry trends. The institute aims to develop competent engineers who can contribute to industry growth. It focuses on imparting technical knowledge and essential skills like problem-solving, critical thinking, teamwork, and communication. Through lectures, experiments, workshops, and visits, students receive a holistic learning experience. The faculty consists of experienced professionals with industry experience, providing personalized attention and guidance to each student. Currently, the Industrial Training Institute, Noida has a total enrolment of 634 students, with 438 being male and 194 being female. The Industrial Training Institute, Noida employs 21 instructors, one head assistant, 3 senior assistants, 4 workshop attendants, one store attendant, and one driver.

Industrial Training Institute, Noida - Strength

S. No.	Name of the Trade	I Year	II Year	Total
1	Fitter	20	40	60
2	Fitter (DST)	45	-	45
3	Electrician	20	40	60
4	Electrician (DST)	60	-	60
5	Electronics Mechanic	61	48	109
6	Electronics Mechanic (DST)	19	-	19
7	Mechanic Motor Vehicle	21	24	45
8	Wiremen	08	20	28
9	COPA	48	-	48
10	Welder	23	-	23
11	Cosmetology	41	-	41
12	Electroplatter	15	-	15
13	Tech. Power Elect. System	23	24	47
14	Plastic Processing Operator	34	-	34
	Total	438	196	634

Socio-Economic Status

SC		ST		OBC		General (OC)		Total	
Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
143	13	03	02	283	23	136	31	565	69

Need for the Project

With the youngest workforce in the world, India holds a significant demographic advantage that could propel it to become the human resource capital of the world by adequately training its youth and capitalizing on this demographic dividend. Industrial Training Institutes (ITIs) play a crucial role in vocational training across India. Each year, many students enroll in the approximately 15,000 Industrial Training Institutes (ITIs), contributing to the skilled workforce of the nation. Despite efforts to enhance ITIs through initiatives like establishing centers of excellence, STRIVE funding, instituting grading systems, and mandating IMCs, the full transformation of ITIs is yet to be achieved. This is evident as ITIs are still not fully utilized, the quality of training, faculty, and infrastructure does not meet global standards, and a significant portion of trainees lack the necessary skills for employment or entrepreneurship.

Industrial Training Institute, Noida stands out as one of the premier educational institutions in the Noida, offering a range of vocational courses in trades such as. All courses are affiliated with The National Skills Qualifications Framework (NSQF). These courses aim to provide employment opportunities to marginalized communities in both urban and rural areas, while also supplying skilled workers to various industries. Aligned with the National Skill Development Policy of the Government of India, the ITI strives to meet the demands of the industry. However, a lack of laboratory facilities, machinery tools, and smart classrooms has hindered the quality of teaching and practical sessions for students. In response, director, Directorate of Training and Education (DTE) and the principal, Industrial Training Institute, Noida, sought assistance from Bharat Electronics Limited, Ghaziabad, highlighting the deficiencies in teaching facilities and equipment for various ITI trades. This collaboration led to improved resources and opportunities for students, ultimately enhancing their learning experience and employability.

Project Initiation

In response to the request made by the Director, Directorate of Training and Education (DTE), Uttar Pradesh and Principal of Industrial Training Institute, Noida, BEL-Ghaziabad has assessed the deficiencies in different trades pertaining to classroom instruction, practical sessions, and other facilities. Subsequently, BEL Ghaziabad has decided to support the Institute by establishing various classrooms, smart classes, workshops, and providing necessary equipment, tools, instruments, and furniture for trades such as Electrician, Electronics Mechanic, and Fitter. This support was implemented in a phased manner. On 28th February 2017, an agreement was reached between BEL Ghaziabad and the Directorate of Education and Training (DET) Uttar Pradesh. As per the agreement, BEL-Ghaziabad has committed to undertaking the development activities mentioned below.



First Phase: Agreement Date: 28.02.2017; Handed them over on 18.08.2020.

Electronics Mechanic Trade

- Modification in existing workshop and creation of smart classroom from existing classroom.
- Tools, Instruments, Furniture (Total 103 types of items)

Electrician Trade

- Creation of smart classroom from existing classroom
- Tools, Instruments, Furniture (Total 168 types of Items)

Up-gradation of electronics mechanic workshop and smart classes for electronics mechanic and electrician trades were completed as per mentioned in MoU. All tools, Instruments, Furniture for electronics mechanic & electrician trade provided.

Second Phase: Agreement date: 7th March 2018; handed them over on 09.01.2021.

Fitter trade

- Modification in existing workshop and creation of smart classroom from existing classroom
- Tools, Instruments, Furniture (Total 180 types of items)
- Up-gradation of fitter workshop and smart classes for fitter trade were completed as mentioned in MoU. All Tools, Instruments, Furniture, Computer, Projector, Machines (including Centre Lathe, Drilling machines, and Pedestal grinder) were provided as per list.

In addition to the above, the following items were provided to Industrial Training Institute-Noida:

- A DG set of 10 KW.
- Water coolers 150 liters per hour: 2 number

The total cost of the project is Rs. 109.41 Lakhs.



Impact Assessment

The project's impact is studied with respect to its relevance, utility, operation and maintenance, effectiveness, impact, and sustainability. The objective of adopting Industrial Training Institute,

Noida by BEL Ghaziabad unit is to enhance the existing classrooms and workshops by transforming them into smart classrooms, making modifications to the existing workshops, and providing various tools, instruments, furniture, computers, projectors, and machines for the trades of electronics mechanic, electrician, and fitter. The successful implementation of the project by BEL Ghaziabad has resulted in improved classroom teaching, practical training, and subsequently, an increase in student intake and placement. This demonstrates the high quality of teaching facilities at Industrial Training Institute, Noida.

Relevance: The persistent lack of teaching facilities in Industrial Training Institutes, including classrooms and practical sessions, can be attributed to a shortage of machinery, tools, equipment, and instruments. Additionally, the existing old classrooms and workshops, which were constructed many years ago and are in poor condition, further exacerbate these problems. Consequently, these issues have led to a significant decline in student admissions and have resulted in a decline in the quality of teaching and practical sessions. In response to this, BEL-Ghaziabad has identified the problems faced by Industrial Training Institute, Noida, based on the representation and extended support. This project is highly relevant and aligns with the National Skill Development Policy, as it aims to strengthen the three trades of Electronics Mechanic, Electrician, and Fitter by adopting the Industrial Training Institute, Noida through the support of BEL-Ghaziabad.

Utility: The project has successfully refurbished workshops and transformed existing classrooms into smart classrooms. It has also provided essential tools, instruments, and furniture for the trades of electronics mechanic, electrician, and fitter. These resources are intended to be effectively utilized for both classroom teaching and practical sessions. The specific details regarding their utility are outlined below.

S. No.	Creation of facility details	Utility
1	Electronics Mechanic Trade: Renovated workshop Smart classroom Tools, Instruments, Furniture (Total 103 trades of items)	Full Utility
2	Electrician Trade: Smart classroom Tools, Instruments, Furniture (Total 168 types of Items)	Full Utility
3	Fitter Trade: Renovated workshop Smart classroom Tools, Instruments, Furniture (Total 180 types of items)	Full Utility

Operations and Maintenance: The Industrial Training Institute, Noida boasts a team of committed instructors and lab assistants who diligently maintain the tools, equipment, and machinery, ensuring their optimal functionality. Additionally, they carry out regular servicing to guarantee their smooth operation. The Institute management takes great care in properly maintaining smart classrooms and workshops, aiming to provide enhanced facilities for the students.



Efficiency: Through the enhancement of classrooms and workshops, the project effectively provided the necessary resources for training in electronics mechanics, electrician work, and fitting trades. This was achieved by equipping the spaces with various tools, machinery, equipment, furniture, and amenities that were essential for the efficient development of skills in these specialized areas.

Effectiveness: This project has created a favourable learning environment for Industrial Training Institute trainers specializing in electronics mechanic, electrician, and fitter trades. The project has successfully renovated the classrooms and workshops, providing state-of-the-art facilities such as smart classrooms, well-equipped workshops, and all the necessary tools, equipment, furniture, and machinery. These enhancements have greatly improved the quality of instruction and the number of practical sessions available to the trainees, aligning them with industry requirements. Previously, there were shortages in tools, machinery, equipment, and other facilities, which had a negative impact on students' training and practical sessions, resulting in a decline in student enrolment and job placements. However, after the implementation of BEL's project, there has been a significant increase in demand for these three courses, and the number of successful placements has also risen.

Outcomes: Increase in students' strength is witnessed the project outcomes. The outcomes are highly tangible and sustainable. The Industrial Training Institute, Noida conducts regular workshop and awareness activities for the benefit of students and parents with industry collaborations.

Tangible and Intangible benefits

This project supplied skilled manpower to relevant industries.

- Improved career prospects for unemployed youth
- Improved the self-employment opportunities for trainees.
- Increased self-confidence and morale boosted among Industrial Training Institute trainees to lead better lives in the society and support their families.
- Increase in pass and placement percentages compared to earlier.

S. No.	Trade	Students Intake		Increase in Students' Strength
		Batch: 2022-24	Batch: 2023-25	
1	Electronics Mechanic	30	70	133%
2	Electrical	20	59	195%
3	Fitter	20	38	90%

Impact: The project has successfully accomplished its objectives by providing high-quality training and practical sessions to participants through the establishment of modern classrooms and workshops. Furthermore, the project has equipped students with essential tools, machinery, instruments, equipment, and furniture that have significantly improved their academic performance, leading to enhanced job opportunities, and ultimately uplifting the socio-economic status of families. Students are receiving thorough training and hands-on experience in electronics, mechanics, fitting, and electrical trades that are tailored to meet industry demands as part of this project.

Impact Matrix

The project objective was effectively achieved by the BEL Ghaziabad unit, receiving favorable feedback from various stakeholders including trainees, instructors, parents, villagers/citizens, education department officials, and public representatives. This was made possible through the introduction of smart classrooms and workshops, as well as the provision of tools, machinery, instruments, equipment, and furniture at the Industrial Training Institute, Noida enhancing the current facilities.

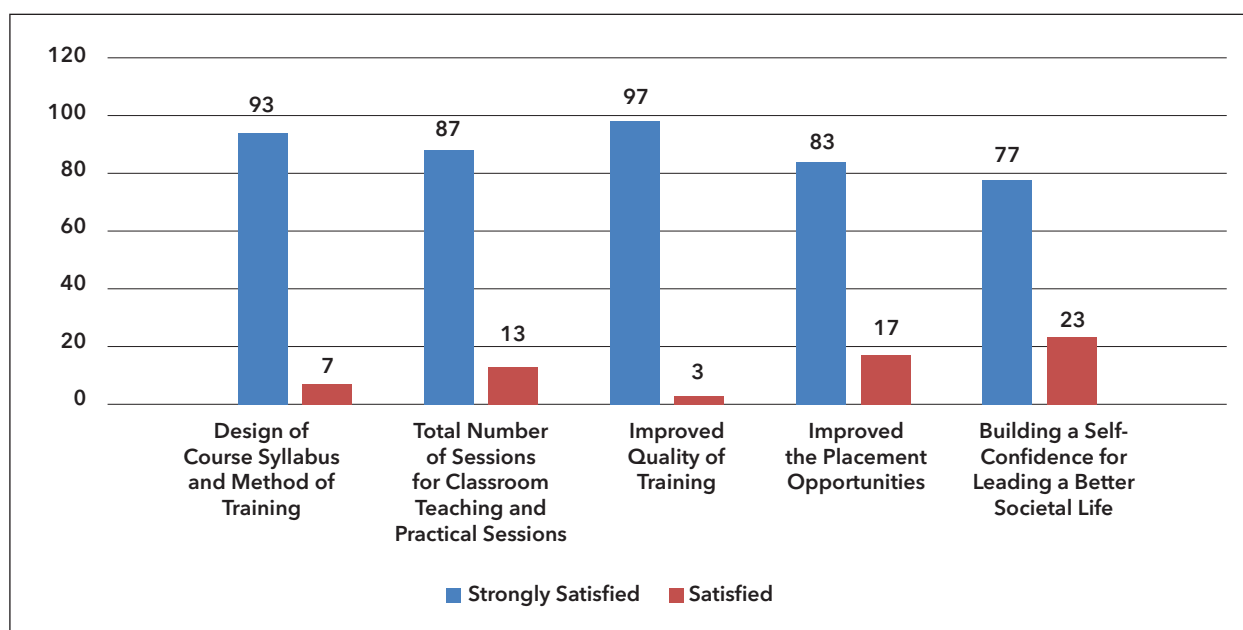
Impact Parameter	Score
Relevance	17
Utility	9
Operation and maintenance	9
Efficiency	9
Effectiveness	13
Outcome	13
Impact	17
Total	87

Satisfaction Survey

A satisfaction survey is conducted to study the perception of stakeholders in terms of quality of training, program content, BEL provided - infrastructure facilities, placement opportunities, etc. A questionnaire has been circulated among various stakeholders. The sample comprised of the following composition:

Students	30
Staff	10
Parents	10
Local representatives	02
Education department representatives	02

Student Survey - Satisfaction Levels



Total Sample Size: 30 (men only), Electronics Mechanic: 10 number, Electrician: 10 number and Fitter trade: 10 number

- Design of course syllabus and method of training: The course syllabus design and training methods were strongly satisfactory to 93% of respondents, meeting their industry-specific needs. The syllabus was well-organized, comprehensive, and tailored to the specific skills and knowledge required in their field. The training methods were engaging, interactive, and effective in helping participants grasp complex concepts and apply them in real-world scenarios. Most respondents felt that the course content was relevant, up-to-date, and practical, providing them with valuable insights and tools to excel in their roles, while 7% of respondents also expressed their satisfaction with the same.
- Total number of sessions for classroom teaching and practical sessions: A significant 87% of the individuals surveyed expressed their strong satisfaction with the extensive number of sessions dedicated to classroom teaching and practical training for their specific trades. The respondents unanimously agreed that the BEL-Ghaziabad unit provided a remarkable selection of 168 items for electrician trade, 103 items for electronics mechanic course, and 180 items for fitter trade. These resources played a pivotal role in enhancing the quality of their training and practical sessions, allowing them to acquire industry-relevant skills and gain practical experience in their respective fields. Conversely, 17% of the respondents expressed satisfaction with the same offerings.
- Improved quality of skill training: The survey results indicated that 97% of the respondents were highly satisfied with the improved training quality. According to the participants, Industrial Training Institute-Noida offered a training curriculum that comprised 70% practical sessions, 30% theoretical content, industry visits, and student soft skills training, all of which contributed to successful placements in relevant industries. On the other hand, 3% of the respondents expressed satisfaction with the training program.
- Improved the placement opportunities: The survey results revealed that a significant number of respondents, amounting to 83%, expressed their strong satisfaction with the improved placement opportunities. They emphasized the significant impact of this project on the Industrial Training Institute courses training and practical sessions for Electronics Mechanic, Fitter, and Electrician trades. Consequently, students have gained valuable hands-on experiences and practical skills that align with industry expectations. Previously, only 5-6 companies offered placements, but now this number has increased to 15, thereby enhancing the placement opportunities in their respective fields. Conversely, 17% of respondents expressed their satisfaction with the current situation.
- Building self-confidence for leading a better life: A significant most 77% of participants indicated their high level of satisfaction in enhancing their self-confidence to lead a more fulfilling societal life. They emphasized that most trainee families fall below the poverty line and have limited socio-economic status. These families' incomes are just enough to cover their daily expenses, but upon completion of the program, there is a notable transformation in the socio-economic status of the trainees' families. Upon securing placements ranging from Rs. 20,000 to 35,000, the trainees are empowered to boost their self-confidence to lead a more prosperous societal life. On the other hand, 23% of respondents expressed their satisfaction with the same.

Training Instructors Response

The IPE team engaged in discussions with the ten training instructors regarding the satisfaction levels concerning the enhanced training facilities and practical sessions for the Fitter, Electrician, and Electronic Mechanic courses. This was made possible through the implementation of smart classrooms, workshops, and the provision of tools, instruments, equipment, and facilities by BEL. All the training instructors unanimously agreed that there have been significant improvements in both classroom teaching and practical sessions. Previously, the lack of adequate facilities hindered their ability to provide proper training and practical classes to ITI trainees, which had a negative impact on student learning outcomes and job placement. The Institute had outdated tools, equipment, and facilities. However, with this project now aligned with the skill development mission, it can provide proper training to students. As a result of the improved facilities, students have better placement opportunities, and there has been an increase in admission intake. The instructors have expressed their sincere gratitude towards BEL-Ghaziabad for embracing the Industrial Training Institute, Noida and ensuring the provision of excellent facilities.

Local representatives and Education department officials: The IPE team engaged in discussions with two local representatives and two officials from the education department regarding BEL-Ghaziabad's project at Industrial Training Institute, Noida. Both the representatives and officials expressed their utmost admiration for BEL's endeavors in enhancing Industrial Training Institute's capabilities in line with the National Skill Development Mission. They acknowledged BEL's contribution in providing skilled manpower to relevant industries, thereby meeting the needs of both the youth and the industry.



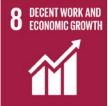

Project Coherence

The coherence of the project would enable us to understand the interventions that fit in achieving the project objectives and its alignment in achieving the national goals and the SDGs. The project is also aligned with CSR Section 135, Schedule VII, item number II i.e. promoting education, including special education and employment enhancing vocation skills, especially among children, women, elderly, and the differently-able and livelihood enhancement projects. The project is compatible with the National Skill mission and its aim in filling the skill gap. The detail mapping of the Skill Development Mission and the project are detailed below:

National Skill Development Mission	Project Coherence
Mission statement: To rapidly scale up skill development efforts in India, by creating an end-to-end, outcome-focused implementation framework, which aligns demands of the employers for a well-trained skilled workforce with aspirations of Indian citizens for sustainable livelihoods	The project aligns with the National Skill Development Mission, as numerous Industrial Training Institutes provide proficient trainees to industries associated with Industrial Training Institute trades. This initiative has fortified the vocational Industrial Training Institute situated in Noida.



Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
<p>Eradicate extreme poverty.</p> 	<p>The project aimed to empower marginalized communities by equipping them with required specific skill-based training, thereby creating sustainable livelihood opportunities.</p>
<p>4.3 Ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university.</p> <p>4.4 Substantially increase the number of youth and adults who have relevant skills.</p> 	<p>This project emphasized on the significance of vocational education and training without gender disparities, including for persons with disabilities, indigenous peoples, and people in vulnerable situations.</p>
<p>8.2 Achieve higher levels of economic productivity through diversification, technological upgrading, and innovation,</p> <p>8.6 By 2020, substantially reduce the proportion of youth not in employment, education, or training.</p> 	<p>Vocational training plays a crucial role in equipping individuals with the necessary skills to join the workforce, ultimately contributing to the reduction of unemployment and underemployment rates. These skills encompass both technical and non-technical components, emphasizing the enhancement of the candidate's value.</p>
<p>10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.</p> 	<p>The project supported in enhancing the household income of trainees by providing high-quality skill development training, ultimately assisting them in securing job placements in industries aligned with their skill set.</p>

Observations

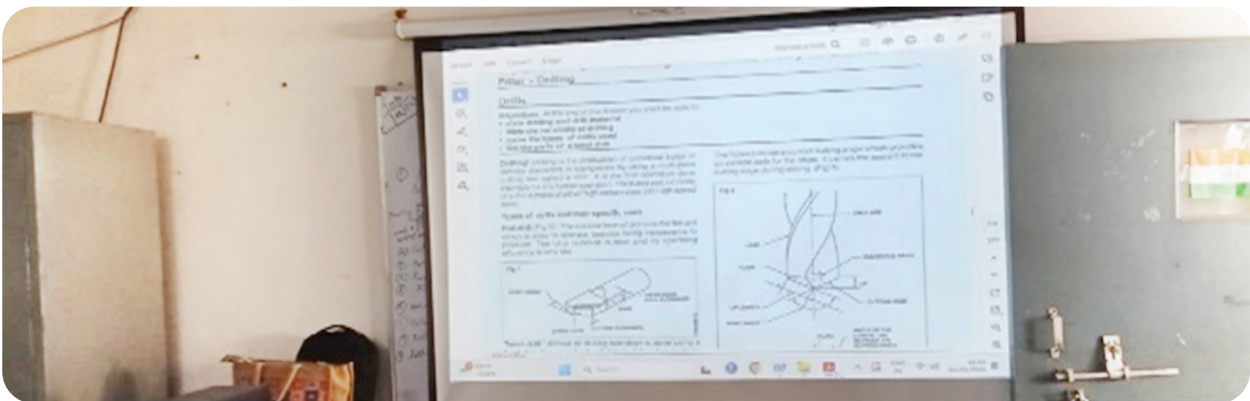
The following are some of the important observations from the project.

- The teaching and practical sessions for fitter, electrician, and electronics mechanic courses were significantly enhanced by this project.
- As a result of BEL's project, trainees experienced improved placement opportunities with attractive salary packages ranging from Rs. 20000 to 40000. Previously, the lowest salary offered was Rs. 12000 and the highest was Rs. 25000.
- According to the Industrial Training Institute-Noida principal and instructors, 80% of trainees secure placements after completing their ITI courses, 5% establish their own businesses, and 15% aspire to pursue higher education.
- It is observed that no enrollment of girls' students in mechanical and electronic courses at Industrial Training Institute, Noida.

Case Study

Mr. Deepak, Trainee

Mr. Deepak, the Trainee, hails from Noida. His father works as a daily wage labourer, while his mother is a homemaker. His brother is currently studying in X class. The family's earnings are just enough to meet their daily needs. Given his financial constraints, Deepak was in dire need of a job, which led him to opt for the two-year fitter trade Industrial Training Institute course. He excels in his studies, and the Industrial Training Institute, Noida has proven to be a blessing for him to enhance his technical skills in the fitter course. He recently expressed his amazement at how BEL has provided smart classrooms and state-of-the-art workshops, along with 180 latest equipment/aids for the fitter trade. This has significantly improved the quality of teaching and students' placement opportunities. Previously, training was conducted using old tools and equipment, with a shortage of raw materials hindering practical work. Thanks to the funding from BEL-Ghaziabad, Industrial Training Institute, Noida now offers top-notch teaching through modern facilities, tools, equipment, machinery, and raw materials. This has resulted in high-quality training, enabling students to secure good placements in reputable companies. He concluded that the institute is immensely grateful to BEL-Ghaziabad and hopes that future trainees will also benefit from such facilities to receive the best training and placement opportunities upon completing their Industrial Training Institute education.



Project 11: Provision of Cold-Chain Equipment viz. Deep Freezer & Walk-in Freezer to Ministry of Health & Family Welfare (MoH&FW), Govt. of Karnataka

Project Objective	Installation & Commissioning of 97 Deep Freezer and walk-in freezer at various locations in Karnataka
Infrastructure / Facilities created by BEL	Deep Freezers - 97 Nos Walk-in-Freezer - 1 No
Project Cost	Rs. 90.74 Lakhs
BEL Unit	Bengaluru
Sector	Healthcare

About the Project

Cold-chain equipment is primarily utilized for the storage, transportation, and handling of temperature-sensitive products such as pharmaceuticals, vaccines, and food items. Various types of cold storage equipment are available, including refrigerators, freezers, refrigerator trucks and containers, laboratory refrigerator equipment, ice packs, cold packs, walk-in refrigerators, and vaccine carrier boxes. In response to the COVID-19 pandemic, BEL supplied the Ministry of Health & Family Welfare (MoH & FW), Government of Karnataka, with a deep freezer and walk-in freezer during the fiscal year 2021-22.

Need for the Project

In response to the COVID-19 crisis, the Government of India launched a vaccination campaign in January 2021 and began administering vaccines in phases based on eligibility starting in May 2021. These vaccines require specific temperature conditions for preservation to ensure their effectiveness. Proper management of the cold chain is vital to maintain the potency of COVID-19 vaccines during distribution, from manufacturing facilities to vaccination sites, to keep them safe and efficient for use. With the growing need for cold chain equipment for vaccine storage and distribution, the Ministry of Health & Family Welfare reached out to corporations for support.

Project Initiation

Under the CSR budget, BEL provided 97 no. deep freezers and one unit of walk-in-freezer to MoH & FW, Govt. of Karnataka. These 97 deep freezers were distributed to various PHCs and community health centers throughout Karnataka. The cold-chain equipment provided by BEL were used to preserve the vaccines at the required temperatures and distribute to different vaccine locations. The freezer has a capacity to store 150 ice packs.



Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, efficiency, effectiveness, impact and outcomes.

Relevance: During COVID-19, vaccine administration was challenge as the vaccines need to be supplied to the desired locations within the preserved temperature without losing its effectiveness. The authorities used the BEL supplied cold-storage equipment for storage and transporting the same to desired destinations. The project was highly relevant.

Utility: The utility of the equipment was high because of the mass requirement of the vaccines which needs to be maintained at the required temperatures. Now the same equipment is also used for storing other vaccinations. The project can be stated as sustainable as the walk-in freezer has a shelf life of 20-25 years and a deep freezer of 12-15 years with low maintenance cost.

Operations and Maintenance: The routine maintenance is under AMCs and is being done on a regular basis.

Efficiency: During the pandemic, the cold-chain equipment provided by BEL helped to preserve the vaccines at the necessary temperatures, ensuring the efficiency of the vaccinations.

Effectiveness: Cold chain equipment played a pivotal role in maintaining the integrity of the vaccine supply chain, facilitating timely and widespread immunization efforts to be carried out effectively.

Impact: COVID-19 vaccines required special end-to-end supply cold chain requirements, from manufacture, transportation to warehouses and to healthcare facilities. Cold chain equipment provided by BEL helped officials to conduct the vaccination process smoothly.

Outcomes: This project helped in storing large quantities of COVID vaccines, assisting concerned government officials in meeting the COVID vaccination goal. Mostly the outcomes

are tangible in nature as the beneficiaries are able to avail the vaccination through the process of cold chain storage facility. The equipment has been very useful for enabling the process.

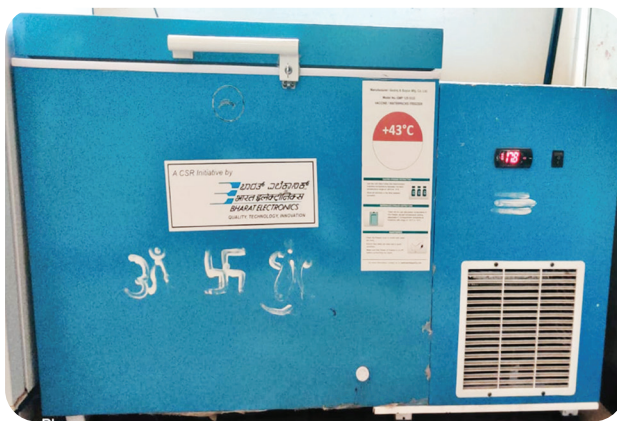
Impact Matrix

Impact Parameter	Score
Relevance	17
Utility	9
Operation and maintenance	8
Efficiency	8
Effectiveness	11
Outcome	9
Impact	17
Total	79

Interactions

The IPE team visited walk-in freezer locations and a few deep freezer's locations. Team has interacted with the following members during the visit:

Sl. No.	Name	Designation
1	Ms. Beena HM	State Vaccine Store Manager (SVSM)
2	Dr. Pushpalatha	Medical Officer
3	Mr. Vasu	Cold Chain Officer
4	Ms. Ambica	Pharmacists
5	Mr. Zillani	Pharmacists




During a discussion with the health center staff, it is evident that the units proved BEL have been helpful during post COVID-19 for storing vaccination. This proves that the project has been effective. The staff expressed high satisfaction with the performance of cold storage equipment as its capable to adjust temperatures according to the specific requirements of different vaccines.

Project Coherence

The initiative has been aligned with the National Health Mission.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	The project initiation is in line with the scope of SDG goal 3. The vaccination was made mandatory during COVID-19 and the project initiation helped local authorities in smoothly storing, transporting and administering the vaccines to the citizens.

Observations

The following were observed during the visit by IPE team:

- The mass vaccinations can be stored in the freezer at the desired temperatures.
- During the transports, the ice pack made from the walk-in freezer enables to move the vaccines from storage to the desired locations.
- In addition to the COVID-19 vaccines, authorities are also storing various vaccinations that need to be kept in cold conditions.
- As the shelf life of both the equipment is more than 10 years, the project is sustainable.

Case Study

She expressed her gratitude to BEL for supplying the cold chain equipment necessary for storing and transporting the vaccines to various vaccine administering sites. She mentioned the upcoming Pulse Polio drive set to take place from March 3rd to 5th, 2024, and highlighted the use of the cold chain equipment provided by BEL to guarantee the effectiveness and safe delivery of the polio vaccines to the different administering locations. Version 1: She conveyed her appreciation to BEL for furnishing the cold chain equipment essential for the storage and transportation of the vaccines to diverse vaccine administering sites. She informed about the forthcoming Pulse Polio drive scheduled from March 3rd to 5th, 2024, and emphasized the utilization of the cold chain equipment provided by BEL to ensure the potency and secure conveyance of the polio vaccines to the various administering locations.

Ms. Ambica

Pharmacist, State Vaccine Store, Bangalore

Project 12: Providing Multi Parameter ICU Monitors to All India Institute of Medical Sciences (AIIMS), Rishikesh

Project Objective	To provide Multipara ICU monitors & high flow Nasal Cannula to combat COVID -19 Pandemic
Infrastructure / Facilities created by BEL	Multi para-ICU Monitors - 30 Nos
Project Cost	Rs. 67.68 Lakhs
BEL Unit	BEL Pachkula
Sector	Healthcare

About the AIIMS - Rishikesh

Set in natural beauty and close to the sacred Ganges, All India Institute of Medical Sciences Rishikesh was strategically located to address regional imbalances in healthcare services, research, and training. It was established under the Pradhan Mantri Swasthya Suraksha Yojna's first phase and supported to be an autonomous body by the All-India Institute of Medical Sciences (Amendment) Bill, 2012. AIIMS Rishikesh now runs numerous medical & allied courses. These activities are mentored by more than 200 faculty members. Along with a growing footfall in routine outpatient clinics, 91 specialized clinics have been added. Similarly, from a 200 bedded inpatient facility in 2013, it now has 960 bed capacity. 24x7x365 Emergency services have now bifurcated into separate Trauma Surgery and Emergency Medicine services. Based on concerned Ministry of Defence, Government of India, BEL-Panchkula provided 30 Multi Parameter ICU Monitors to AIIMS-Rishikesh for better monitoring of COVID-19 infected patients during the second wave of COVID-19. This project strengthened AIIMS-Rishikesh health infrastructure.



Need for the Project

Multi-parameter ICU monitors have played a vital role in the treatment of COVID-19 infected patients during the pandemic. These monitors are specifically designed to monitor the vital signs of patients suffering from critical illness, providing a comprehensive set of information on a single screen to assess the patient's condition. The readings provided by these monitors include heart rate, central venous pressure, non-invasive blood pressure, ECG, SpO₂, PaCO₂, invasive blood pressure, respiration rate, posture, temperature, and fall detection. Additionally, these monitors are equipped with an alarm system that can be set to alert caregivers in case of any changes beyond the predetermined parameters. By utilizing multi-parameter patient monitoring devices, the length of stay in ICUs can be reduced, leading to improved utilization of hospital infrastructure and earlier recognition of changes in the patient's condition. During the challenging period of the second wave of COVID-19, BEL-Panchkula acted in response to the request from the hospital administration and the directives from the ministry of defense to tackle the shortage of Multi Parameter ICU Monitors. In April 2021, they efficiently acquired and delivered 30 monitors to AIIMS-Rishikesh. The utilization of these monitors proved to be of great value in effectively monitoring COVID-19 infected patients.



Project Initiation

BEL procured and supplied 30 Multi Parameter ICU Monitors to AIIMS Rishikesh on 21.04.2021 with a cost of Rs. 91.80 Lakhs. Multipara monitors are advanced medical instruments that enable healthcare providers to continuously observe and document various essential signs of patients. These devices offer instantaneous information on metrics like heart rate, blood pressure, oxygen saturation, respiratory rate, and temperature. By consolidating these parameters, multipara monitors provide a comprehensive patient profile for quick issue detection by medical personnel.

Multipara Monitors comprises of the following:

- Multi-parameter Monitoring
- Real-time Data

- Alarm Systems
- Portable and Versatile
- Data Recording and Analysis

Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, effectiveness, impact, and sustainability. The aim of the project is to supply Multi Parameter ICU Monitors to AIIMS-Rishikesh to enhance patient monitoring capabilities during the COVID-19 crisis and ultimately, to improve patient outcomes.

Relevance: The project holds great importance as it aids the Government of India's efforts to strengthen the public health infrastructure during the COVID-19 pandemic. In this regard, there was a shortage of multi-parameter ICU monitors at AIIMS-Rishikesh, which hindered the effective monitoring of patients' vital health parameters such as heart rate, central venous pressure, non-invasive blood pressure, ECG, SpO₂, PaCO₂, invasive blood pressure, respiration rate, posture, temperature, and fall detection. These monitors are crucial in assisting doctors and healthcare personnel in providing timely support to severely infected COVID-19 patients. Consequently, this project has significantly bolstered the public health infrastructure and played a vital role in the treatment of COVID-19 patients. Currently, these 30 multi-parameter ICU monitors, provided by BEL-Panchkula, are being utilized in the ICU emergency wards of Cardiology and General Medicine departments to enhance patient monitoring and treatment.

Utility: The project utility details are given below

S. No.	Name of the ICU Ward	Total Number of Paediatric ICU units (beds) were set up	Utility	Beneficiary per Month	Treatments
1	Cardiology	15	Full Utility	100	heart problems
2	General Medicine	15	Full Utility	100	acute and chronic diseases including fever, asthma, heart disease, liver problems, hypertension, neurological problems, and other ailments.

Operations and Maintenance: Healthcare professionals are responsible for performing routine maintenance and operating procedures on Multi Parameter ICU monitors to ensure their optimal functioning. The hospital administration takes the necessary steps to provide regular and preventive maintenance services, thereby ensuring the longevity and reliability of these vital Multi Parameter ICU monitors.

Efficiency: The timely procurement and delivery of the Multi Parameter ICU Monitors by BEL-Panchkula played a crucial role in enhancing the healthcare infrastructure at AIIMS-Rishikesh during the peak of the second wave of COVID-19. These monitors enabled healthcare

professionals to closely monitor the vital signs and parameters of critically ill patients or COVID-19 infected patients, allowing for early detection of any deterioration in their condition and prompt intervention. Presently these resources are being utilized in cardiology and general medicine emergency wards. The availability of these monitors did not only improve the quality of care provided to COVID-19 patients at AIIMS-Rishikesh but also helped in optimizing the utilization of resources and manpower. With the ability to monitor multiple parameters simultaneously, healthcare workers were able to efficiently manage the care of multiple patients, thereby increasing the hospital's capacity to treat a larger number of patients effectively.

Effectiveness: The contribution of 30 multi-parameter ICU monitors by BEL-Panchkula to AIIMS-Rishikesh has significantly enhanced the public health infrastructure facilities at the hospital. These monitors have been instrumental in the effective management of COVID-19 patients during the pandemic, from April 2021 until the end of the second wave. The monitors have played a crucial role in enabling doctors and healthcare personnel to closely monitor the vital health parameters of COVID-19 patients. This real-time monitoring has allowed medical professionals to promptly identify any deterioration in a patient's condition and take appropriate actions to ensure their speedy recovery from life-threatening situations. The ability to closely monitor parameters such as heart rate, blood pressure, oxygen saturation, and respiratory rate has been invaluable in providing timely interventions and preventing adverse outcomes.

With the subsiding of the COVID-19 pandemic in June 2021, the hospital authorities made a strategic decision to relocate 15 of the multi-parameter ICU monitors to the cardiac critical care unit (ICU). This move has greatly benefited cardiac patients undergoing treatment in the unit, as the monitors are now being effectively utilized to closely monitor their vital parameters. This has allowed for early detection of any cardiac complications and timely interventions, leading to improved patient outcomes. The remaining 15 monitors were allocated to the ICU General Medicine unit, where they have been utilized for monitoring the vital health parameters of patients with various acute and chronic diseases. These monitors have been particularly useful in monitoring patients with conditions such as fever, asthma, heart disease, liver problems, hypertension, neurological issues, and other ailments. The ability to closely monitor these parameters has facilitated early detection of any deterioration in patients' conditions, enabling timely interventions and improved patient outcomes.

Outcomes: Improved patient monitoring for critical care patients, leading to reduced treatment time and hospital stay, as well as faster patient recovery.

Impact: This initiative has improved the monitoring system for patients, particularly benefiting underprivileged individuals receiving treatment at the hospital. During the second wave of the COVID-19 pandemic, many underprivileged individuals infected with the virus received emergency ICU treatment and were monitored using multi-parameter ICU monitors. These devices significantly aided in their treatment by effectively monitoring their vital health indicators, leading to quicker recovery. Currently, these multi-parameter ICU monitors are assisting underprivileged patients receiving free treatment in the Cardiac and General Medicine ICU wards, providing substantial benefits. Such initiatives play a crucial role in strengthening public healthcare systems, ultimately leading to enhanced public health systems, especially for marginalized communities.



Overall, the enhanced patient monitoring system provided by these multi-parameter ICU monitors has had a significant impact on patient care at AIIMS-Rishikesh. The improved monitoring has resulted in reduced treatment time and hospital stays for patients, ultimately leading to their speedy recovery. Additionally, the ability to monitor a larger number of patients simultaneously has allowed the hospital to provide treatment to a greater number of individuals, thereby increasing access to quality healthcare services.

Tangible and Intangible Benefits

- Increase in number of treatments with project.
- Accurate Diagnoses and Treatment: Multi-parameter monitors offer comprehensive data that aids in accurate diagnoses and the development of tailored treatment plans based on the specific needs of each individual patient.
- Streamlined Workflow: By consolidating vital signs, multi-parameter monitors save valuable time and improve the workflow for healthcare professionals, ensuring a more efficient and streamlined process.
- Cost-Effective Solution: Utilizing a single multi-parameter monitor significantly reduces costs associated with maintenance and staff training, making it a highly cost-effective healthcare solution.
- Enhanced Patient Safety: Continuous monitoring of vital signs using multi-parameter monitors allows for the prompt detection of deteriorating patient conditions, enabling early intervention and preventing adverse events, ultimately enhancing patient safety.

Impact Matrix

Impact Parameter	Score
Relevance	19
Utility	9
Operation and maintenance	9
Efficiency	9
Effectiveness	13
Outcome	14
Impact	18
Total	91

Satisfaction Survey⁶

Hospital Authorities Feedback: The feedback from the hospital authorities regarding the Multi Parameter ICU monitors from the BEL-Panchkula unit was overwhelmingly positive. The authorities emphasized the significant impact that these monitors have had on patient care and outcomes within their facility. The engagement between the BEL-Panchkula unit and the hospital authorities served to reinforce the effectiveness of the monitors in critical care settings. The monitors were found to be reliable and accurate, providing vital information


⁶ Note: At AIIMS-Rishikesh, the IPE team was not permitted to interact with patients IPE and their relatives to obtain feedback on the project, in adherence to the institution's policies.

to healthcare professionals in real time. This allowed for timely interventions and improved decision-making, ultimately leading to better patient outcomes. Overall, the feedback from the hospital authorities highlights the positive impact that the Multi Parameter ICU monitors have had on patient care and outcomes. It underscores the importance of continued support and collaboration between healthcare providers and technology suppliers to further enhance patient care and treatment outcomes. The success of the ICU monitors serves as a shining example of the potential for innovation and collaboration to transform healthcare delivery and improve patient outcomes.

Project Coherence

BEL's program has played a crucial role in assisting the implementation of the National Health Policy-2017 and supporting the Government of India's efforts to combat the spread of COVID-19 and implement effective treatment measures. To accomplish this, BEL has provided 30 multi-parameter ICU monitors to AIIMS-Rishikesh, which has greatly aided in the treatment of COVID-19 patients. These monitors are currently being utilized in the ICU wards of General Medicine and Cardiac departments.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	<p>BEL's pursuit is in accordance with Sustainable Development Goal 3, which advocates for the advancement of health and well-being. This undertaking involved the provision of multi-parameter ICU monitors to establish Covid-19 ICU treatment emergency wards, enabling improved monitoring of essential health parameters and facilitating timely decision-making for patient recovery.</p>

Observations

The following are some of the important observations from the project.

- Currently, there are 15 multi-parameter ICU monitors in use in the ICU cardiac ward, while the remaining 15 units are being utilized in the ICU general ward. All these monitors are operating efficiently and are being well-maintained.
- It was observed that on average, 100 cardiac and 100 general medicine ICU patients benefit from this project each month with this multi-meter ICU monitors, mainly serving underprivileged individuals. This initiative contributes to promoting equity and improving healthcare accessibility.
- The project has demonstrated great success in delivering its intended outcomes, with the sustainability of these results being maintained through the regular maintenance and operation of the multi-parameter ICU monitors by the hospital administration.

Project 13: Provision of Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand

Project Objective	To provide Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand
Infrastructure / Facilities created by BEL	Ambulances: 02 Nos Oxygen Concentrators: 30 Nos
Project Cost	Rs. 67.68 Lakhs
BEL Unit	Kotdwara
Sector	Healthcare

About the Project

Chandramohan Singh Negi Base Hospital Profile: Chandramohan Singh Negi Base Hospital, located in the town of Kotdwara in the Pauri Garhwal district of Uttarakhand, serves as a vital secondary referral unit hospital for the local population. With a total population of 176,000, the hospital plays a crucial role in providing essential healthcare services to the community. The hospital offers a wide range of healthcare services to cater to the diverse needs of the patients. The Outpatient Department (OPD) serves as the primary point of contact for patients seeking medical consultation. The IP department is equipped with state-of-the-art facilities and a dedicated team of healthcare professionals to ensure the best possible care for patients. The hospital has specialized units for general surgery, arthritis treatment, ENT care, ophthalmic care, gynecology, dental services, pathology, and radiology. Emergency care is another crucial service provided by Chandramohan Singh Negi Base Hospital. The hospital has a well-equipped emergency department that operates round the clock to handle medical emergencies. The team of skilled doctors and nurses is trained to provide immediate and life-saving care to patients in critical conditions. The hospital serves a substantial number of patients, with around 1,500 to 2,000 people receiving healthcare services daily. Its renowned quality care has drawn patients not just from the nearby Pauri Garhwal district, but also from the neighboring Chamoli district, located 150 kilometers away and from neighboring Bijnor District of U.P., making it the preferred choice for most individuals seeking medical treatment. Chandramohan Singh Negi Base Hospital is committed to providing accessible and affordable healthcare services to the community it serves. The hospital's dedicated staff, modern infrastructure, and comprehensive range of services make it a reliable healthcare institution in the region.

The hospital has received 30 oxygen concentrators from BEL-Kotdwara unit in response to the directives of the concerned Ministry of Defence, Government of India, to tackle the medical emergency caused by COVID-19. These concentrators would play a crucial role in meeting the oxygen therapy requirements of COVID-infected patients or emergency cases. Additionally, the hospital has formally requested BEL-Kotdwara for the provision of two ambulances to ensure prompt transportation of emergency patients to specialized treatment facilities in tertiary hospitals.



Need for the Project

Medical oxygen was a critical resource in high demand during the national crisis, particularly for treating COVID-19 patients. The supply of medical-grade oxygen was limited as cases surged across the country. In response to the Ministry of Defense's concerns, BEL-Kotdwara stepped in to support the Government's initiatives by supplying 30 medical oxygen concentrators to Shri Chandramohan Singh Negi Base Hospital in Kotdwara, Uttarakhand.

Pauri Garhwal district, situated in Uttarakhand state, is susceptible to severe earthquakes, landslides, floods, epidemics, fire, hailstorm, lightning, and road accidents. The district faces a high level of risk from various hazards, such as earthquakes, landslides, flash floods, avalanches, Dam Burst, and drought. Ambulances play a crucial role in transferring patients to secondary or tertiary hospitals during disasters, road accidents, or health emergencies. Despite having two ambulances, the hospital deemed them inadequate for transporting emergency patients to tertiary hospitals in such situations or for patients with critical medical conditions. As a result, the hospital management sought assistance from BEL-Kotdwara to provide two additional ambulances for transporting patients to higher-level hospitals for advanced treatment.

Project Initiation

Based on directives of concerned Ministry of Defence, Government of India, BEL-Kotdwara supplied 30 oxygen concentrators, each with a capacity of ten litres per minute, to Chandramohan Singh Negi Base Hospital located in Kotdwara.

About Oxygen Concentrator

Oxygen concentrators are medical devices that work by taking in air from the surrounding environment, removing nitrogen and other gases, and delivering purified oxygen to the patient through a nasal cannula or mask. This concentrated oxygen helps to increase the oxygen levels in the patient's blood, which can improve their breathing and overall health. Patients with respiratory conditions such as Asthma, Bronchitis, COPD, Cystic fibrosis, Pneumonia, Respiratory trauma, Sleep apnea, and other respiratory ailments often require supplemental oxygen therapy to help them breathe more easily and effectively.

Oxygen Concentrators Specifications
Capacity: 10 LPM
High oxygen purity 93% ± 3%
Long lifespan more than 18000 hours
3 years warranty
Large LED display
Working system: Continuous flow

Ambulances: Based on the hospital request, BEL-Kotdwara provided two ambulances. These new ambulances, provided by BEL, were equipped with advanced medical equipment, and staffed with highly trained medical professionals. They were designed to navigate the challenging topography of Kotdwara with ease, ensuring that patients could be transported safely and swiftly to tertiary hospitals for specialized care. This expansion has significantly improved the region's emergency response capabilities and increased the chances of saving lives in critical situations.



S. No.	Name of the Item	Total Cost
1	30 Oxygen concentrators	67.68 Lakhs
2	2 Ambulances - Advanced Life Support	



BEL Kotdwara Project

Left: BEL-Kotdwara provided Oxygen Concentrator; Right: Inside of Ambulance

Impact Assessment

Relevance: The project's significance was evident as it bolstered the oxygen medical infrastructure at Chandramohan Singh Negi Base Hospital by supplying 30 medical oxygen concentrators from BEL-Kotdwara. These concentrators were allocated to the hospital to address the repercussions of the COVID-19 pandemic and to prepare for future health emergencies. The aim was to fulfil the treatment requirements for any potential emergency situations, as well as to cater to the current healthcare needs for various diseases or health problems. Furthermore, this endeavor encompassed the provision of two dedicated ambulances to the hospital, exclusively designated for transporting emergency patients who have encountered a disaster or road accident, or any sudden medical or health emergency. As a result, these ambulances facilitate the transfer of these patients to tertiary hospitals for advanced medical treatment.

Utility

S. No.	Name of the Item	Utility	Beneficiaries per Month
1	30 Oxygen Concentrators	Full Utility	300 patients
2	02 Ambulances	Full utility	100 patients

Operations and Maintenance: A dedicated team at the hospital is tasked with the ongoing operation and maintenance of oxygen concentrators to ensure that patients receive the necessary levels of oxygen for their treatment. The oxygen concentrators allocated to the hospitals are designed to last for a period of 10 years. The hospital authorities ensure the regular and preventive maintenance and operation of ambulances to ensure that the vehicles are in proper condition for transporting patients without any breakdowns during transportation.

Efficiency: The project was completed within timelines and budget. The benefits derived from the project are more compared to the BEL-Kotdwara CSR investments in the project.

Effectiveness

i) Oxygen concentrators

BEL-Kotdwara distributed 30 oxygen concentrators to the hospital in preparation for a potential third wave of Covid-19, following the second wave. Fortunately, the third wave did not occur, and the situation returned to normal. However, these concentrators have been effectively utilized for treating various conditions such as Asthma, Bronchitis, COPD, Cystic fibrosis, Pneumonia, Respiratory trauma, and Sleep apnea. The concentrators have proven essential in catering to many patients, successfully achieving the project's objectives and meeting the patients' needs. On average, 300 patients benefit from these oxygen concentrators each month.

Oxygen Concentrators Utilization in various Wards

- Operation theatre
- Male ward
- Female ward
- Paediatric and nebulization ward
- Obstetrics and gynecology

ii) Ambulances

Each Ambulance travels an average of 5000 kilometers per month to transfer patients needing emergency treatment from this hospital to tertiary hospitals such as AIIMS-Rishikesh, or Government Doon Medical College, Dehradun, and other hospitals. Each ambulance transports around 50 patients monthly, and the service is provided free of charge. Private ambulances in Kotdwara city are available as an alternative, with a cost of Rs 20 per kilometer for hiring a BLS ambulance. Patients benefit from a significant cost savings of Rs 100000 (5000 kms X Rs. 20) per month on one ambulance due to the availability of project ambulance.

Outcomes

- The availability of oxygen concentrators significantly enhanced patient treatments by supplying oxygen to 300 patients on average every month by this project.
- The public health system has strengthened due to oxygen concentrators utilization for various kinds of treatments.
- Ambulances are crucial for transporting critically ill patients to tertiary hospitals with advanced emergency care. This endeavor benefits a total of 100 patients per month, ultimately resulting in the saving of their lives.



Impact

i) Oxygen Concentrators

- The tremendous burden of oxygen scarcity in hospitals was lessened by oxygen concentrator systems allowing hospitals to manage and save a significant proportion of moderately to critically sick patients who needed oxygen at a rate of five LPM to maintain saturation oxygen levels of 92-96%.
- Oxygen concentrators saved numerous lives. Low oxygen delivery in the body, or hypoxia, is a dangerous illness that, if ignored, would cause organ damage and even death.
- Beyond the pandemic, oxygen concentrators used in hospitals enhanced healthcare delivery for different patients in many contexts and had long-term advantages.
- The unequal distribution of healthcare amenities between urban and rural areas is a big problem in India. The community living in rural areas would continue to gain much from this project, and it would save them time - which is frequently lifesaving.

ii) Ambulances

With the availability of these ambulances, the barriers to accessing medical care have been significantly reduced. Patients can now receive timely treatment, regardless of their geographical location or financial constraints. This has resulted in a more equitable distribution of healthcare services and has ensured that no one is left behind. The ambulances provided by BEL-Kotdwara to the government hospital in Kotdwara have brought about a revolution in the healthcare system of the region. The ability to swiftly transport patients to specialized medical facilities has saved lives and improved the overall well-being of the community. This initiative has not only enhanced access to critical medical care but has also instilled a sense of security and reassurance among the residents of Kotdwara. The impact of this generous support of BEL-Kotdwara by providing ambulances to the government hospital, Kotdwara will continue to be felt for years to come, as it has laid the foundation for a more efficient and inclusive healthcare system in the region.

Tangible and Intangible benefits

- This project has been instrumental in saving numerous lives.
- By implementing this project, hospitals were able to produce oxygen through oxygen concentrators during times of low supply, thereby ensuring a continuous oxygen flow for critical care patients.
- The implementation of this project has led to significant enhancements in the public health infrastructure at Government Hospital, Kotdwara.
- The project has also improved ambulance services, enabling the transportation of emergency patients to higher tertiary hospitals for advanced treatment.
- Through this project, patients have gained increased self-confidence in the availability of proper treatment at the hospital.

Sustainability

i) Oxygen Concentrators

The project's sustainability is guaranteed by the 10-year shelf life of the oxygen concentrators

provided to the hospital, coupled with the diligent efforts of the dedicated hospital staff to maintain optimal oxygen levels for patients undergoing treatment for a range of health issues or diseases.

ii) Ambulances

The hospital covers the expenses for fuel, maintenance, and driver salary using the general government grant it receives. Since the ambulance is a crucial component of the hospital’s operations, it will be regularly maintained and operated.

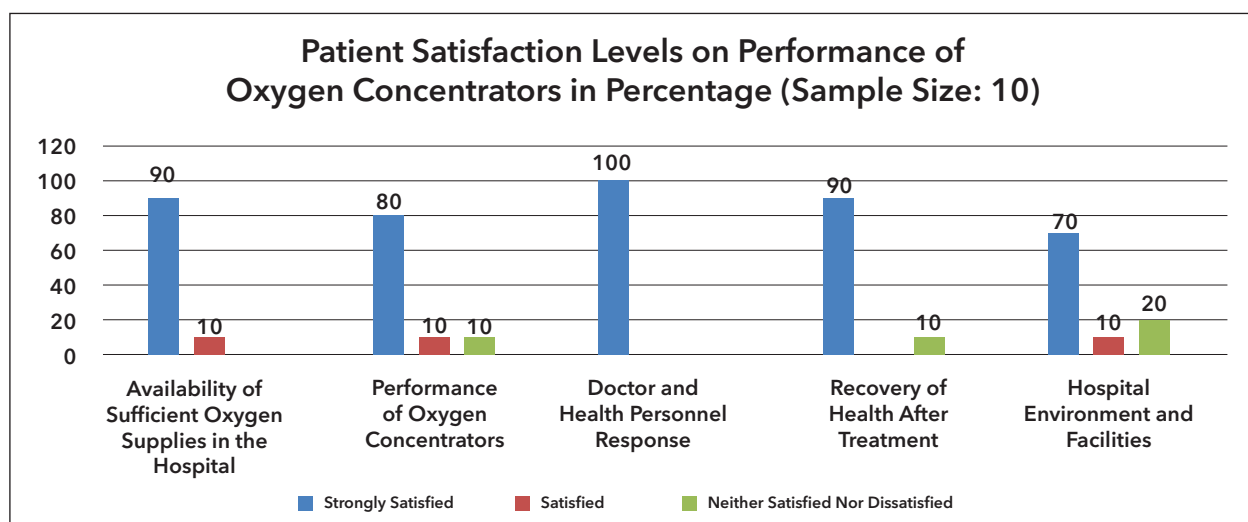
Impact Matrix

Impact Parameter	Ambulances	Oxygen Concentrators
Relevance	17	17
Utility	7	9
Operation and maintenance	7	9
Efficiency	7	9
Effectiveness	12	12
Outcome	12	12
Impact	16	17
Total	78	85

Satisfaction Survey

The administration of the hospital employs oxygen concentrators to administer oxygen therapy to patients who are undergoing treatment for health conditions such as Asthma, Bronchitis, COPD, Cystic fibrosis, Pneumonia, Respiratory trauma, Sleep apnea, and other respiratory ailments and health issues.

Patients Feedback on Oxygen Concentrators: The IPE team engaged with ten patients who received medical treatment and recovered from their health issues at Chandramohan Singh Negi Base Hospital in Kotdwara. The team assessed the satisfaction levels regarding the performance of oxygen concentrators, the treatment process, and the doctors’ responsiveness during the treatment. Most respondents conveyed their high level of satisfaction with the hospital’s use of oxygen concentrators for patients’ oxygen therapy during their treatment.



Availability of sufficient oxygen supplies in the hospital

- A significant portion of the patients, 90% to be exact, conveyed their strong satisfaction with the hospital's provision of ample oxygen for treatment purposes. They believed the experience of dealing with COVID-19 had resulted in enhancements to the hospital's infrastructure, medical devices, and the acquisition of sufficient oxygen levels for patient care. The remaining 10% of patients also shared the same sentiment.
- Performance of Oxygen Concentrators: The results of the survey conducted among patients regarding the performance of oxygen concentrators in delivering adequate oxygen levels during treatment revealed that a significant majority, comprising 80% of the respondents, expressed a strong satisfaction. This overwhelming majority indicates that most patients found the oxygen concentrators to be highly effective in meeting their oxygen needs during their treatment. Furthermore, 10% of the patients reported being satisfied with the performance of the oxygen concentrators. On the other hand, the remaining 10% of patients surveyed remained undecided about their satisfaction with the performance of the oxygen concentrators.
- Doctor and Health Personnel Response: All respond patients (100%), without exception, have expressed their utmost contentment and satisfaction with the exceptional response and care provided by the doctor and the entire healthcare staff. They shared that the level of professionalism, compassion, and expertise exhibited by the medical team has left each patient feeling grateful and reassured throughout their treatment journey.
- Recovery of Health after treatment: 90% of respondent patients expressed their strong satisfaction with recovery from their ailments or health problems after availing themselves of treatment in the hospital and 10% of respondents had undecided opinion on the same.
- Hospital Environment and Facilities: In treating the patients, a significant majority of respondent patients, accounting for 70%, conveyed their strong satisfaction with the hospital environment and facilities. Conversely, 10% of patients expressed their satisfaction, while an equal percentage of respondents remained undecided about their opinion on the matter.

Patient Feedback on Ambulances

The IPE team engaged with ten patients who utilized the ambulance services provided by BEL at Chandramohan Singh Negi Base Hospital. These patients, all falling below the poverty line, provided positive feedback regarding the transfer of emergency cases to more advanced hospitals for life-saving interventions. They expressed high levels of satisfaction with the availability of advanced life support systems during transportation to tertiary hospitals. Furthermore, they were pleased with the prompt arrival of the ambulances, which played a crucial role in saving lives. Additionally, all patients confirmed a decrease in the financial burden associated with transporting emergency cases to tertiary hospitals for treatment.

Hospital Administration Authorities

The IPE team engaged with four hospital administration authorities, all of whom confirmed that BEL-Kotdwara had supplied two ambulances to the Government hospital, Kotdwara. They shared that These ambulances are intended for the transportation of emergency patients to tertiary hospitals where advanced life-saving procedures could be performed. Despite the

hospital already possessing two ambulances earlier, they proved inadequate in meeting the demands of emergency patients who required transfer to higher-level hospitals such as AIIMS, Rishikesh, Government DOOM Medical Science College in Dehradun, or other tertiary care facilities. However, these additional ambulances greatly aided the hospital in saving numerous lives during road accidents, fire accidents, or any other disaster situations by facilitating the transportation of these emergency patients to higher-level hospital centers. This generous donation greatly alleviated the hospital's oxygen supply issues during treatment. The patients were highly satisfied with the enhanced oxygen availability made possible by these concentrators, which effectively increased the oxygen supply beyond the initial 30 units provided by BEL-Kotdwara as concluded by the hospital administrators.


Family members of four patients feedback on Ambulances and Oxygen Concentrators:

The IPE team engaged with the relatives of four patients, all of whom expressed their utmost contentment with the presence of ambulance services at the hospital. These services proved to be crucial in swiftly transferring emergency patients to tertiary hospitals, ultimately leading to the preservation of their lives. The advanced life support provided by these ambulance facilities during transportation played a vital role in this regard. Undoubtedly, these ambulances are indispensable for emergency situations. Furthermore, the family members also expressed their profound satisfaction with the availability of oxygen concentrators at the hospital. They acknowledged the significant assistance these concentrators provided to the hospital administration in treating patients with respiratory issues and other medical conditions.

Project Coherence

BEL's initiative has contributed to the implementation of the National Health Policy-2017 by providing a range of medical devices - Oxygen concentrators as well as essential life-saving ambulances. These provisions have significantly enhanced the health infrastructure at the Government hospital in Kotdwara.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	BEL's initiative was in complete accordance with Sustainable Development Goal 3, which places emphasis on the promotion of good health and well-being. The project involved the provision of a wide array of medical devices, such as oxygen concentrators and ambulances, ultimately benefiting disadvantaged communities by enhancing healthcare facilities.

Observations

- Oxygen Concentrators were utilized for treating patients in emergency wards.
- This project enhanced the availability of oxygen levels.
- Oxygen concentrator systems mitigated the immense burden on hospitals' oxygen supply systems, as most moderately ill patients were treated by these oxygen concentrators.
- Oxygen concentrators make it easy to obtain medical oxygen and reduce the need for oxygen cylinders. Oxygen concentrators are beneficial for patients who have chronic respiratory



diseases like COPD or asthma, among others. It helps patients to maintain optimal oxygen levels in their blood.

- It was observed that on average, one ambulance transports 50 patients per month, mainly serving underprivileged individuals. This initiative contributes to promoting equity and improving healthcare accessibility.

Case Study

The hospital admitted a 56-year-old male patient from Kotdwara who is currently struggling with breathing difficulties caused by COPD, a chronic lung disease. To alleviate his symptoms, doctors have introduced oxygen therapy, a treatment by using BEL-provided oxygen concentrators that help to enhance the amount of oxygen entering his lungs and bloodstream. Despite his condition being stable, he still requires oxygen therapy treatment for a specific period. The patient's positive attitude and gratitude towards the hospital staff and the support provided by BEL-Kotdwara through oxygen concentrators are motivating the medical team to continue their efforts in providing him with the best possible care. They are committed to helping him overcome his breathing difficulties and improve his quality of life.

Project 14: Providing of Medical Equipments to Govt. Civil Hospital Panchkula, Haryana

Project Objective	To provide Ventilators and basic consumables to Govt. Hospital during COVID
Infrastructure / Facilities created by BEL	Portable Multi parameter Monitors, Oxygen Concentrators, Plasma Apheresis machine
Project Cost	Rs. 38.23 Lakhs
BEL Unit	Panchkula
Sector	Healthcare

About the Project

Government Civil hospital is one of the secondary referral units at Panchkula, Chandigarh. This well-known establishment acts as a one-stop for all the medical needs and facilities for the locals and other parts of Panchkula, Chandigarh. People from around 35 villages will visit the hospital for various medical requirements. The hospital has inpatient and outpatient units separately. It is a 300 bedded hospital. The average number of patient's visits the hospital daily is around 5000.

Need for the Project

During the COVID-19 pandemic, public enterprises played a pivotal role in supporting government efforts to address the crisis. When the government Civil hospital sought assistance, BEL Panchkula swiftly responded to their specific requests for essential medical equipment, including oxygen concentrators, Portable Multi-parameter Monitors, and a Plasma Apheresis machine. Recognizing the urgency of the situation, BEL Panchkula assessed the hospital's needs based on factors such as patient volume and severity of cases. Understanding the life-saving potential of these devices and their importance in alleviating pressure on the healthcare system, BEL Panchkula ensured timely delivery of the equipment to the government Civil hospital. These medical tools proved instrumental in monitoring patients' health parameters, ensuring sufficient oxygen levels, and facilitating plasma therapy for critically ill individuals.

Project Initiation

An oxygen concentrator is used to provide oxygen to people who have breathing-related issues. A concentrator is frequently needed by people whose blood oxygen concentration is below normal to restore oxygen levels. Oxygen concentrators help in collecting the ambient air, filter it, compress it to the necessary density, and then supply the patient with pure medical-grade oxygen via a continuous stream system or pulse-dose delivery system. Additionally, it has sieve beds and unique filters that help remove nitrogen from the air, ensuring that the patient receives pure oxygen.

Multi-parameter monitors are high-level medical equipment used to continuously measure and display vital physiological parameters such as heart rate, blood pressure, temperature, and oxygen saturation in real-time. These monitors help the healthcare professions to view data at a glance and detect any abnormalities in the patient's data.



Apheresis machine is used to collect different blood components like red blood cells, white blood cells, platelets, plasma etc. Among its functions, the automated plasma apheresis machine excels in efficiently separating plasma from the blood, a process crucial for removing harmful substances while preserving other vital blood components. And the collected plasma could be used for recovering plasma therapy, where in providing antibodies to aid in the recovery of other infected individuals.



Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, efficiency, effectiveness, impact and outcomes. The main aim of the project is to support the Government Civil hospital with the advanced machines and improve the standards of the diagnosis.

Relevance: Amidst the surge in critical COVID cases, there emerged a pressing shortage of hospital resources including beds and vital medical equipment such as oxygen cylinders etc., In response to this urgent need, BEL-Panchkula stepped in to assist the Government Civil Hospital by supplying a range of essential medical equipment or devices like oxygen concentrators, ICU ventilators and plasma apheresis machine. This support was instrumental in ensuring that the hospital, which serves approximately 35 surrounding villages, could effectively address the escalating healthcare demands during the pandemic. The project is relevant as the equipment supplied by BEL helped in treating the critical COVID patients effectively.

Utility: BEL-Panchkula provided the following equipment's to the hospital:

- 04 - Portable Multi parameter Monitors,
- 06 - Oxygen Concentrators
- 01- Plasma Apheresis machine

The hospital is utilizing the 04- monitors in paediatric intensive care unit, 06 oxygen concentrators in Intensive care units and 01- apheresis machine.

Operations and Maintenance: The equipment is maintained by the hospital staff on a regular basis.

Efficiency: The monitors proved indispensable in promptly analyzing patients' data in real-time, enabling healthcare personnel to deliver efficient treatment. The apheresis machine, with its reduced extraction time and minimal human intervention, efficiently processed significant blood volumes, ensuring timely and effective patient treatment. Furthermore, the oxygen concentrators played a crucial role in helping patients maintain optimal oxygen levels, mitigating life-threatening risks and enhancing overall patient safety.

Effectiveness: The supplied equipment proved instrumental in enabling hospital staff to effectively treat patients during critical periods, thereby ensuring patient safety. These tools facilitated efficient medical intervention, particularly in times of urgency, contributing significantly to improved patient outcomes. The patient volume saw a rise following the implementation of the apheresis machine project in FY 2020-21, with 665 patients treated. In the subsequent year, 2021-22, the number increased to 792 patients seeking dengue treatment via the apheresis machine.

Outcomes

- This initiative enhanced the treatment capabilities for paediatric patients in the paediatric ICU ward by implementing multi-parameter ICU monitors. These monitors continuously track vital health indicators of children, enabling doctors to promptly administer treatment based on the gathered data. As a result, treatment time and the duration of children's stay have been significantly reduced.
- The availability of oxygen concentrators significantly enhanced patient treatments by supplying oxygen to 50 Inpatients on average every month by this project. The public health system has strengthened due to oxygen concentrators utilization for various kinds of treatments.
- A total of 792 patients underwent dengue treatment with the assistance of an apheresis machine, resulting in recovery from dengue.

Impact: The portable multi-monitoring equipment provided by BEL Panchkula is being used at other emergency units like paediatric, intensive care units etc., to monitor the condition of the critically ill children patients. The apheresis machine is used for platelet separation and used for patients who are suffering from dengue fevers. The impact of the equipment can be stated high as the equipment is fully utilized and provides support in improving the health of the patients.

Multi Parameter ICU Monitors

The multi-parameter ICU monitors provided by BEL-Panchkula have revolutionized the way patient care is delivered at the Government Civil Hospital in Panchkula. These advanced monitoring systems have allowed healthcare providers to closely monitor vital signs, such as heart rate, blood pressure, and oxygen levels, in real-time, enabling them to detect any changes or abnormalities promptly. As a result, medical staff can intervene quickly and effectively, leading to improved outcomes for pediatric patients. The enhanced monitoring capabilities



have also enabled healthcare providers to make more informed decisions about treatment plans, resulting in shorter treatment times and hospital stays for children in need of critical care.

Furthermore, the ability to monitor a larger number of patients simultaneously has increased the hospital's capacity to provide quality healthcare services to a greater number of children patients. This has not only improved access to care for the local community but has also helped alleviate the burden on healthcare providers, allowing them to focus on delivering personalized and timely care to each child patient. Overall, the implementation of these multi-parameter ICU monitors has had a profound impact on children care at Government Civil Hospital in Panchkula, leading to quicker recovery times, improved outcomes, and expanded access to quality healthcare services for pediatric patients in need.

Oxygen Concentrators

- The tremendous burden of oxygen scarcity in hospitals was lessened by oxygen concentrator systems allowing hospitals to manage and save a significant proportion of moderately to critically sick patients who needed oxygen at a rate of five LPM to maintain saturation oxygen levels of 92-96%.
- Oxygen concentrators saved numerous lives. Low oxygen delivery in the body, or hypoxia, is a dangerous illness that, if ignored, would cause organ damage and even death.
- Beyond the pandemic, oxygen concentrators used in hospitals enhanced healthcare delivery for different patients in many contexts and had long-term advantages.
- The unequal distribution of healthcare amenities between urban and rural areas is a big problem in India. The community living in rural areas would continue to gain much from this project, and it would save them time - which is frequently lifesaving.

Plasma Apheresis Machine

The initiative aimed to alleviate the financial strain on patients receiving treatments for dengue and other conditions using an apheresis machine for platelet separation. This innovative approach sought to address the exorbitant costs associated with private hospitals, which typically charge Rs.10000 for this treatment. By implementing this project, the public can save a significant amount of money, making healthcare more accessible and affordable for those in need. The use of an apheresis machine for platelet separation proved to be a game-changer in the treatment of dengue and other conditions. This advanced medical device allowed for the efficient extraction of platelets from the patient's blood, which are crucial for clotting and preventing excessive bleeding. By separating and collecting these platelets, the apheresis machine enabled healthcare professionals to administer targeted treatments, improving patient outcomes and reducing the need for costly interventions.

Prior to the implementation of this initiative, patients seeking treatment for dengue and other conditions faced a daunting financial burden. Private hospitals charged exorbitant fees for the use of an apheresis machine, making it unaffordable for many individuals and families. This created a significant barrier to accessing necessary healthcare, particularly for those from low-income backgrounds.

However, with the introduction of this project, the financial strain on patients was significantly alleviated. By providing access to an apheresis machine at a reduced cost or even free of charge, the initiative aimed to level the playing field and ensure that everyone, regardless of their financial status, could receive the treatment they needed. This not only improved the overall health and well-being of the community but also reduced the economic burden on individuals and families. The impact of this initiative extended beyond just dengue treatment. The apheresis machine's versatility allowed it to be used in various medical conditions, such as certain autoimmune disorders and cancer treatments. By making this technology more accessible, the initiative empowered healthcare providers to offer a wider range of treatments, ultimately improving patient care and outcomes.

Moreover, the implementation of this project had broader implications for the healthcare system. By reducing the financial strain on patients, it helped alleviate the burden on public healthcare facilities, which often struggle to meet the demands of a growing population. With more patients able to afford treatment, the strain on public hospitals and clinics was reduced, allowing them to allocate resources more efficiently and effectively. In conclusion, this initiative aimed to alleviate the financial strain on patients receiving treatments for dengue and other conditions through the use of an apheresis machine for platelet separation.

Tangible and Intangible Benefits

Multi Parameter ICU monitors

- Increase in number of treatments with project.
- Decrease in patient stay.
- Accurate Diagnoses and Treatment: Multi-parameter monitors offer comprehensive data that aids in accurate diagnoses and the development of tailored treatment plans based on the specific needs of each individual patient.
- Streamlined Workflow: By consolidating vital signs, multi-parameter monitors save valuable time and improve the workflow for healthcare professionals, ensuring a more efficient and streamlined process.
- Cost-Effective Solution: Utilizing a single multi-parameter monitor significantly reduces costs associated with maintenance and staff training, making it a highly cost-effective healthcare solution.
- Enhanced Patient Safety: Continuous monitoring of vital signs using multi-parameter monitors allows for the prompt detection of deteriorating patient conditions, enabling early intervention and preventing adverse events, ultimately enhancing patient safety.
- Through this project, patients have gained increased self-confidence in the availability of proper treatment at the hospital.

Oxygen Concentrators

- Increase in availability of sufficient medical oxygen for patient treatments.
- By implementing this project, hospitals were able to produce oxygen through oxygen



concentrators during times of low supply, thereby ensuring a continuous oxygen flow for critical care patients.

- Increase in patient footfall.

Apheresis Machine

- Patients with dengue are recovering quickly.
- Enhanced blood separation facilities for diverse treatments.
- Enhanced platelets and plasma therapies for various health issues.

Impact Matrix

Impact Parameter	Multi Parameter ICU Monitors	Apheresis Machine	Oxygen Concentrators
Relevance	18	18	18
Utility	9	9	9
Operation and maintenance	9	9	9
Efficiency	7	7	7
Effectiveness	12	12	12
Outcome	12	12	12
Impact	18	18	18
Total	85	85	85

Satisfaction Survey

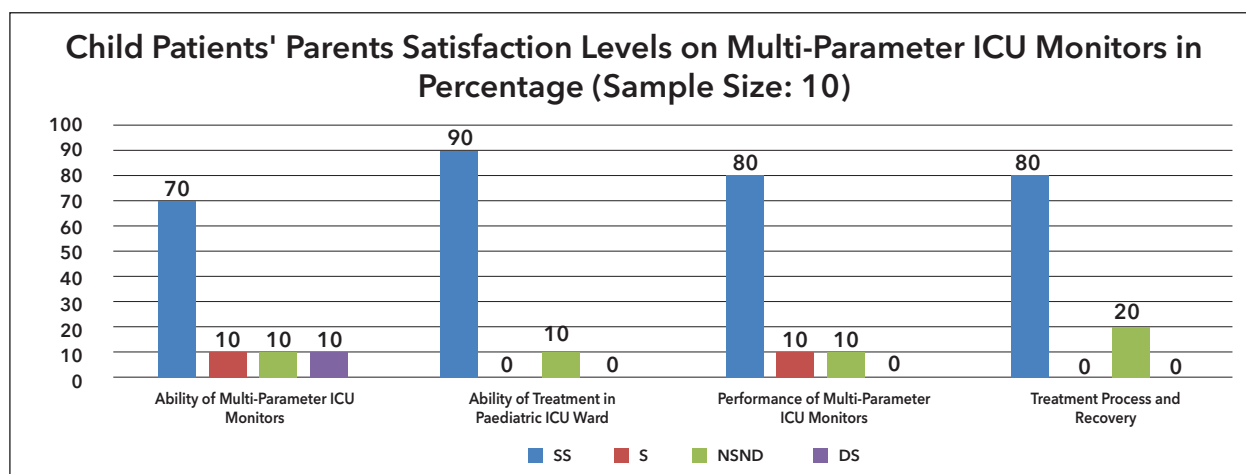
The purpose of the satisfaction survey is to gather insights from various stakeholders, such as patients, their family members, and hospital administration.

Beneficiary patients	20
Children parents (multi parameter ICU monitors) - Paediatric ward	10
Beneficiary relatives	05
Hospital Administration	06

Multi Parameter Monitors Satisfaction level survey (Sample 10 numbers - patient children's parents)

The IPE team interacted with ten parents of pediatric patients who expressed their contentment with the multi-parameter ICU monitors. These monitors have the capability to display vital parameters like heart rate, central venous pressure, non-invasive blood pressure, ECG, SpO2, PaCO2, invasive blood pressure, and temperature all on a single screen. This enables doctors to closely monitor the health condition of pediatric patients and administer appropriate treatment. Most children admitted to this ward are facing issues such as severe pain, respiratory distress, COPD, food poisoning, severe cardiac problems, traumatic injuries, and neurological emergencies. Most parents of these children patients conveyed their strong satisfaction with the availability of treatment in the pediatric ICU wards, the utilization of multi-parameter ICU

monitors for monitoring their children’s health, multi parameter ICU monitor performance and the treatment processes and recovery of their children. The details of the satisfaction level survey are provided below.



SS: Strongly Satisfied; **S:** Satisfied; **NSND:** Neither Satisfied nor Dissatisfied; **DS:** Dissatisfied

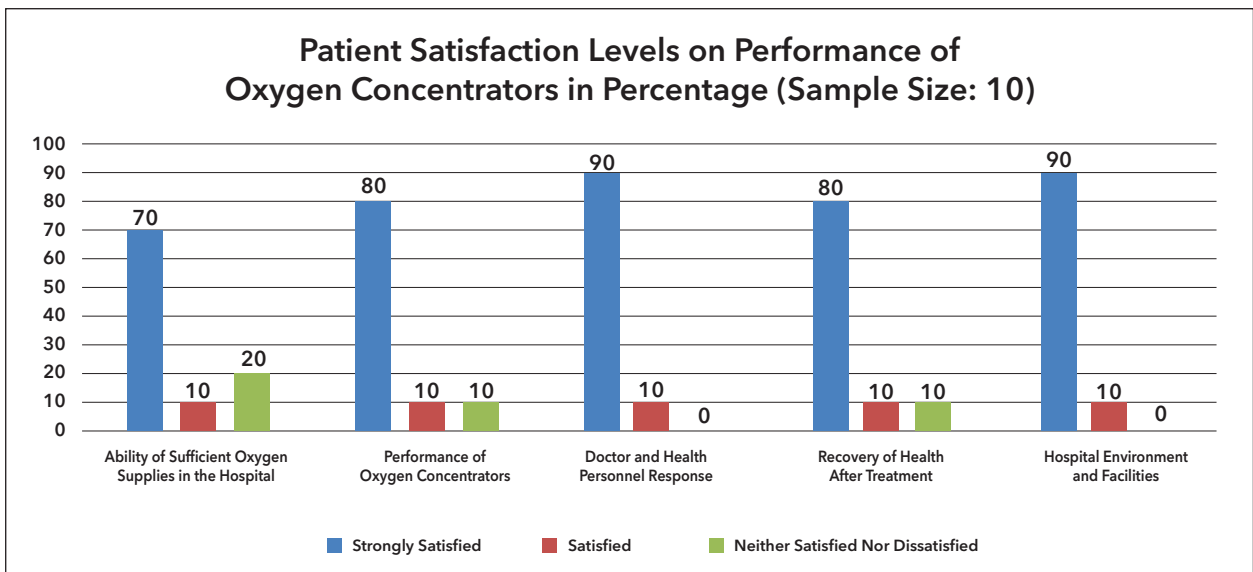
- Availability of multi-parameter ICU monitors: Seventy percent of the respondent parents surveyed expressed strong satisfaction with the availability of the multi-parameter ICU monitors. They firmly believed that the present availability of multi-parameter ICU monitors is adequate for monitoring all pediatric patients in the ICU ward. Meanwhile, 10% of the parents surveyed were satisfied, another 10% were undecided, and the remaining 10% were dissatisfied with the available multi-parameter ICU monitors. They strongly suggested the need for additional multi-parameter ICU monitors for children’s treatment.
- Availability of treatments in Pediatric ICU ward: 90% of respondent parents expressed their strong satisfaction with the availability of treatments for children’s patients and 10% of respondent parents had undecided opinion.
- Multi Parameter ICU monitor’s performance: Overall, the feedback on the multi-parameter ICU monitors has been overwhelmingly positive, with most parents expressing high levels of satisfaction. The convenience of having all essential health information displayed on a single screen has been particularly praised, as it allows doctors to quickly assess a child’s condition and provide appropriate treatment. The alarm system has also been highlighted as a valuable feature, ensuring that medical staff are promptly alerted to any changes in the child’s health parameters. While 80% of parents are highly satisfied with the monitors, 10% expressed satisfaction and the remaining 10% are undecided. It is important to consider the perspectives of all parents to continuously improve and refine the technology to better meet the needs of both patients and medical professionals. The positive feedback received so far is a testament to the effectiveness and utility of these multi-parameter ICU monitors in providing quality care for child patients.
- Treatment Process and Recovery: The treatment process and recovery of children in the ICU pediatric ward at the hospital were highly satisfactory for 80% of respondent parents. These parents expressed their gratitude and appreciation for the exceptional care provided by the medical staff, who went above and beyond to ensure the well-being and comfort of



their children. The parents were actively involved in decision-making and were regularly updated on their child’s condition and progress. The medical staff took the time to explain medical procedures and answer any questions or concerns the parents had, ensuring they felt informed and supported.

b) Oxygen Concentrators - Satisfaction level survey (10 patients)

The IPE team interacted with ten patients who underwent medical treatment and successfully recuperated from their health ailments at the Government Civil hospital in Panchkula. The team evaluated the degree of satisfaction concerning the efficacy of oxygen concentrators, the treatment procedure, and the doctors’ promptness in addressing their concerns during the treatment. Most respondents expressed their utmost satisfaction with the hospital’s utilization of oxygen concentrators for administering oxygen therapy to patients throughout their treatment.



- Availability of sufficient oxygen supplies in the hospital: Exactly 70% of the patients expressed their strong satisfaction with the hospital’s commendable supply of abundant oxygen for the purpose of treatment. They firmly believed that their encounter with Covid-19 had led to notable improvements in the hospital’s infrastructure, medical equipment, and the attainment of adequate oxygen levels for patient care. Additionally, 10% of the patients also conveyed their satisfaction, while the remaining 10% of respondents remained undecided in their opinion.
- Performance of Oxygen Concentrators: The results of the survey conducted among patients regarding the performance of oxygen concentrators in delivering adequate oxygen levels during treatment revealed that a significant majority, comprising 80% of the respondents, expressed a strong satisfaction. This overwhelming majority indicates that most patients found the oxygen concentrators to be highly effective in meeting their oxygen needs during their treatment. Furthermore, 10% of the patients reported being satisfied with the performance of the oxygen concentrators. On the other hand, the remaining 10% of patients surveyed remained undecided about their satisfaction with the performance of the oxygen concentrators.

- **Doctor and Health Personnel Response:** The overwhelming majority of respondents, 90%, conveyed their deep satisfaction with the outstanding response and care given by the doctor and the healthcare team. They emphasized the high level of professionalism, compassion, and expertise displayed by the medical staff, which has instilled a sense of gratitude and reassurance in each patient throughout their treatment process. Conversely, 10% of participants also expressed their satisfaction with the services provided.
- **Recovery of Health after treatment:** 80% of the patients who responded expressed their utmost satisfaction with the improvement of their health conditions after receiving treatment at the hospital. Meanwhile, 10% of the respondents expressed their satisfaction, and the remaining 10% had an undecided opinion regarding the same matter.
- **Hospital Environment and Facilities:** In treating the patients, a significant number of respondent patients, accounting for 90%, conveyed their strong satisfaction with the hospital environment and facilities. Conversely, 10% of patients expressed their satisfaction with the same.

Plasma apheresis machine Satisfaction level survey (Sample: 10 patients): The IPE team conducted a satisfaction level survey by interacting with ten patients who had recently undergone treatments for dengue at Government Civil Hospital in Panchkula. These patients, who had experienced the debilitating effects of dengue, expressed their utmost satisfaction and gratitude for the financial relief they received through platelet transfusion, made possible by the apheresis machine provided by BEL Panchkula. The apheresis machine, a cutting-edge medical device offered by BEL-Panchkula, played a crucial role in the treatment process. It facilitated the separation of platelets from the patients' blood, allowing for targeted transfusions that effectively combated the dengue virus. The patients were particularly impressed with the efficiency and effectiveness of this procedure, as it significantly alleviated their symptoms and expedited their recovery. Not only did the apheresis machine prove to be a game-changer in terms of medical treatment, but it also had a profound impact on the patients' financial well-being. Dengue treatments can often be financially burdensome, especially for individuals from low-income backgrounds. However, the availability of the apheresis machine at Government Civil Hospital, made possible by BEL Panchkula's contribution, ensured that the patients did not have to bear the exorbitant costs associated with traditional treatment methods.

The patients expressed their gratitude towards BEL Panchkula for their generous provision of the apheresis machine, which not only improved their physical health but also alleviated the financial strain they would have otherwise faced. This positive feedback from the patients serves as a testament to the effectiveness and impact of the apheresis machine in the treatment of dengue. Overall, the IPE team's engagement with these ten patients highlighted the significant role played by the apheresis machine provided by BEL Panchkula in the successful treatment and recovery from dengue. The patients' contentment with the treatment procedure and their subsequent relief from the financial burden associated with dengue underscore the importance of continued support and investment in advanced medical technologies like the apheresis machine.

Hospital Administration Satisfaction Level Survey: The IPE team engaged with a hospital administration team consisting of six members who expressed great satisfaction with the




support provided by BEL-Panchkula in enhancing the hospital infrastructure. This support has enabled the hospitals to offer improved treatment facilities to a larger number of patients. The oxygen concentrators supplied by BEL-Panchkula have been instrumental in assisting the hospital authorities in treating various health conditions such as Asthma, Bronchitis, COPD, Cystic fibrosis, Pneumonia, Respiratory trauma, Sleep apnea, and other respiratory ailments. Furthermore, the hospital administration team highlighted the multi-parameter ICU monitors provided by BEL-Panchkula, which are designed to monitor children’s health parameters and display them on a single screen. This feature aids doctors in monitoring the health of pediatric patients in the ICU ward. Additionally, BEL-Kotdwara supplied a plasmapheresis machine to the hospital, which separates red blood cells, white blood cells, platelets, and plasma. This machine can be beneficial in treating anemia using red blood cells, dengue using platelets, and COVID-19 and other health issues using plasma. The hospital administration team expressed their deep appreciation for BEL-Panchkula for providing various equipment to the Government Civil Hospital in Panchkula.

Patient Relatives Satisfaction Level Survey: The IPE team conducted interviews with the relatives of five patients who had utilized the oxygen concentrators, apheresis machine, and multi-parameter ICU monitors provided by the BEL-Panchkula. During these interviews, the family members expressed their contentment and gratitude for the equipment, emphasizing the positive influence it had on the patients’ health and well-being. The family members shared anecdotes about how the oxygen concentrators had facilitated easier and more comfortable breathing for their loved ones, ultimately enhancing their overall quality of life. They also commended the effectiveness of the apheresis machine in treating specific medical conditions and the multi-parameter ICU monitors for delivering real-time monitoring and precise data on the patients’ vital signs. In general, the family members were impressed with the quality and functionality of the equipment provided by the BEL-Panchkula, and they conveyed their gratitude for the team’s dedication in ensuring that their loved ones received optimal care. The favorable feedback from the family members served as a testament to the impact of BEL-Panchkula’s work in improving patient outcomes and enhancing the overall healthcare experience for both patients and their families.

Project Coherence

The BEL’s CSR initiation to provide multi parameter monitors, oxygen concentrators, automated apheresis machine is in line with the National Health Policy 2017, strengthening public health infrastructure facilities in Government Civil Hospital, Panchkula.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	BEL’s initiative was in complete accordance with Sustainable Development Goal 3, which places emphasis on the promotion of good health and well-being. The project involved the provision of a wide array of medical devices or equipment, such as oxygen concentrators, multi parameter ICU monitors and Apheresis machine, ultimately benefiting disadvantaged communities by enhancing healthcare facilities at Government Civil Hospital, Panchkula.

Observations

The following are few observations with regard to the project:

- Mid the COVID-19 pandemic, fifty patients infected with the virus received treatment through plasma therapy using apheresis machine provided by BEL-Panchkula, marking a significant breakthrough in the fight against the deadly virus.
- The project has demonstrated great success in delivering its intended outcomes, with the sustainability of these results being maintained through the regular maintenance and operation of the multi-parameter ICU monitors by the hospital administration.
- Oxygen concentrators make it easy to obtain medical oxygen and reduce the need for oxygen cylinders. Oxygen concentrators are beneficial for patients who have chronic respiratory diseases like COPD or asthma, among others. It helps patients to maintain optimal oxygen levels in their blood.
- The Portable Multi parameter Monitors and Oxygen Concentrators are being used in the critical intensive care units.
- The automated apheresis machine is used for platelet extraction and transfuse the same to the patients suffering with dengue.
- Branding has to be re-initiated as the labels on the equipment have been torn off.

Case Study

The ICU ward at Civil General Hospital in Panchkula, a city in the state of Haryana, India, recently received a 45-year-old patient who was in critical condition. The individual was suffering from acute respiratory distress and severe breathing problems, which required immediate medical attention. Recognizing the urgency of the situation, the hospital's medical team swiftly admitted the patient to the ICU ward for intensive care. To address the patient's critical need for oxygen, the hospital promptly initiated oxygen therapy treatment. They employed state-of-the-art oxygen concentrators provided by BEL-Panchkula, which are medical devices designed to extract and deliver concentrated oxygen to patients. These oxygen concentrators could supply 10 liters per minute (LPM) of oxygen, ensuring that the patient received the necessary levels of oxygen to support their respiratory system. Over the course of the next fifteen days, the patient underwent rigorous treatment and care under the supervision of the hospital's dedicated medical staff. The oxygen concentrators, provided by BEL (Bharat Electronics Limited), a renowned Indian government-owned company, played a crucial role in the patient's recovery journey. These reliable and efficient devices consistently delivered the required amount of oxygen, aiding the patient's respiratory system and alleviating their breathing difficulties.

The patient's condition showed steady improvement due to the collaborative work of the medical team and the utilization of advanced medical equipment. The oxygen therapy treatment, delivered via the oxygen concentrators provided by BEL, demonstrated remarkable efficacy in managing the patient's acute respiratory distress. By ensuring the patient received sufficient oxygen levels, the concentrators significantly contributed to stabilizing their condition and expediting their recovery. After fifteen days of intensive care and treatment, the patient's health significantly improved, and they were successfully cured of their respiratory distress. The diligent efforts of the medical professionals, coupled with the reliable oxygen concentrators, played a pivotal role in this remarkable recovery. The ICU ward at Civil General Hospital in Panchkula celebrated this success as a testament to their commitment to providing exceptional healthcare services and utilizing cutting-edge medical technology to save lives.



Project 15: Provision of Apheresis Machine for Blood Bank at District MMG Hospital, Ghaziabad, Uttar Pradesh

Project Objective	To enable the blood collection activities in the rural areas and ensuring the blood availability to poor & needy public of this region.
Infrastructure / Facilities created by BEL	Apheresis Machine (1 No)
Project Cost	Rs. 24.49 Lakhs
BEL Unit	Ghaziabad
Sector	Healthcare

About the Project

MMG Hospital, Ghaziabad established in 1950, is one amongst the three Govt. hospitals in Ghaziabad district which provides the health care services to the people in and around the district. MMG hospital is a multi-specialist hospital including general medicine, obstetrics and gynecology, general surgery, ophthalmology, dermatology etc., which has the best doctors available round the clock. The hospital has emergency services, outpatient services, inpatient services and also has a blood bank. The tropical disease of the region which most of the people suffer during rainy season is dengue / fevers. The hospital has to maintain blood for emergency services.

Need for the Project

Apheresis machine is used to collect different blood components like red blood cells, white blood cells, platelets, plasma etc., While the conventional apheresis takes about 2 to 5 hours complete the procedure but with the automated apheresis time taken is only about 30 to 45 min with predetermined settings. The hospital was using conventional apheresis therapy for the platelets collection which was a very time-consuming process. Ghaziabad, known for its susceptibility to dengue, experienced a heightened requirement for automated apheresis machines.

Project Initiation

Dengue fever is caused due to the spread of mosquitoes to people. Dengue mostly prevails during tropical or sub-tropical climates. Though dengue fever causes only mild illness, but it can lead the patient to severe illness and sometimes to death. The need to induce platelets to the patients raises when his / her condition deteriorates. With the automated apheresis machine extraction of platelets can be increased in less time and can be induced to the patient's suffering with severe loss of platelets due to dengue fever. As Ghaziabad being one of the dengue prone regions, the District Medical Officer (DMO) and medical superintendent of the hospital sought assistance from BEL, Ghaziabad for providing the automated apheresis machine. In response to their plea, BEL provided an automated apheresis machine to the Blood Bank, District MMG Hospital, Ghaziabad.



Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, efficiency, effectiveness, impact and outcomes. The objective of providing the Apheresis Machine for blood bank at District MMG Hospital, Ghaziabad was to provide advanced health facility for the people around Ghaziabad.

Relevance: The project is significant as the apheresis machine is used to improve the treatment facilities for anemia, dengue patients. With the conventional apheresis, the time taken to extract the blood components is high and can be extracted from only three to four persons per day but with the automated apheresis machine the time is reduced and can produce more platelet count.

Utility: The hospital is utilizing the equipment to extract platelets and induce the same to the patients suffering with dengue fever. As this is one of the second facilities that was created in Ghaziabad district's Govt. hospitals, the machine is used when there is an upsurge in cases of dengue fevers and is sustainable. So far only four people have been diagnosed and used the service as the services were started late in the hospital due to administrative procedures.

Operations and Maintenance: The equipment is maintained by the hospital staff on a regular basis.

Efficiency: The efficiency of the automated apheresis machine streamlines the blood component collection. These machines can process larger volumes of blood more rapidly and consistently, reducing procedure times and minimizing the risk of human error.

Effectiveness: The automated apheresis machine significantly enhances the effectiveness of the blood component collection. These machines are more precise and consistent when compared to the conventional apheresis machine extractions. These machines reduce procedural errors and improve patients' safety. The effectiveness of automated apheresis machines contributes to better patient care, streamlined workflows, and advancements in medical research.

Impact: The automated apheresis machine provided by BEL to the Blood bank at MMG Hospital Ghaziabad, reduces the time of extraction of blood components and minimize the time to treat the patients. This enables the hospital staff to treat more patients simultaneously, thus significantly improving the health of the patients.

Outcomes: With the BEL automated apheresis machine, the hospital can treat a greater number of patients suffering with dengue. The project is sustainable as dengue fever is cyclic epidemic.

Tangible Outcomes	Intangible Outcomes
<ul style="list-style-type: none"> • Extraction of Blood components • Reduction in time for extractions • Improved treatment time 	<ul style="list-style-type: none"> • Reducing the time and cost looking for donors • Improved footfall in hospital • Improvement in patient’s health

Impact Matrix

Impact Parameter	Score
Relevance	12
Utility	7
Operation and maintenance	7
Efficiency	7
Effectiveness	10
Outcome	12
Impact	12
Total	67

Satisfaction Survey

The purpose of the satisfaction survey is to gather insights from various stakeholders, such as patients, their family members, and hospital administration. Interactions were conducted with the staff and the other doctors in the blood bank where the facility was available. The utility of the unit has not been very high.

Beneficiary Patients who got treated	04 ⁷
Hospital Administration	07

Stakeholder Survey

The following graph depicts that the hospital staff are strongly satisfied with the automated apheresis machine provided by BEL as they can extract the blood components quickly and effectively in no time. They said that with the apheresis machine, the patients are benefitted as the treatment time is reduced and improving the condition of patients in short time.

Utility: it is anticipated that the utility would be high as the machine is fully automatic and has been the only one unit in the whole district. In case of dengue and other tropical diseases the machine would serve the high demand. The staff at the hospital are highly satisfied with the facility created by BEL.

- Availability of emergency treatment: Dengue fever can cause plasma leakage and dehydration, leading to shock and organ failure in severe cases. Intravenous fluid replacement therapy is the cornerstone of emergency treatment for dengue. Hospitals are equipped to administer fluids to patients to maintain adequate hydration and stabilize their condition. At

⁷ Hospital could not provide the contact details of the four patients who were treated using the machine.

that time automated apheresis machine would serve the purpose and would help to save time and support in injecting the plasma / platelets back to the patients. The majority of the staff are highly satisfied with the machine.


- Timely delivery: As it is an automatic machine it would help the nursing staff to attend to patients in case of emergency and also provide timely medical assistance. The processing time has been low.
- Responsiveness of patients: The response time of the patients in times of recovery is high as the unit is a one stop solution for providing all medical assistance to dengue patients.

Project Coherence

BEL's CSR initiation to provide automated apheresis machine is in coherence with the CSR Schedule VII (i) which is to promote health care. The BEL-supplied technology aids in extracting the blood components which helps anemic and dengue patients to recover from reduced platelet counts.

The project has achieved its objective enabling the dengue patients to get the platelets on time and save them in critical conditions. The project is in line with the national goals and the SDGs. The project is also aligned with CSR Schedule VII area (i).

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	<p>The project initiation is in line with the scope of SDG goal 3. The BEL's supplied equipment helps the patients to get the blood components on time and helps in covering quickly.</p>

Observations

The following are few observations with regard to the project:

- The automated apheresis machine is used for platelet extraction and transfuse the same to the patients suffering with dengue. For other extractions, they are using the conventional apheresis machine only.
- There was a time lapse of six months for the hospital to use the apheresis machine to get the approval and kit for the machine. The machine has to use the same make kit to use it.
- The machine is well maintained and in operational condition and there are no technical glitches.



Project 16: Provision of Toilet Block at Doddabommasandra Lake and Operation & Maintenance of Sewage Treatment Plant, Bengaluru

Project Objective	Promoting Health and Sanitation
Infrastructure / Facilities created by BEL	Toilet block - 4 WCs & 2 Urinals. O&M of STP
Project Cost	Rs. 31.58 Lakhs
BEL Unit	Bengaluru
Sector	Healthcare

About the Project

BEL constructed public toilets at Doddabommasandra Lake area to provide toilet facilities for public who come to the lake and park areas for their morning and evening walks. Furthermore, BEL has undertaken the responsibility of managing and maintaining a sewage treatment plant with a capacity of 10 MLD at Doddabommasandra Lake area, ensuring the treatment water is replenished in the lake. To cover the costs associated with the construction of public toilets and the ongoing maintenance and operation of the sewage treatment plant, BEL has allocated a total of Rs. 31.58 Lakhs. These funds were utilized during the fiscal years 2020-21 and 2021-22.



Need for the Project

Every day, a considerable number of individuals, comprising both men and women, visit Doddabommasandra Lake and Park area for their regular walks and to enjoy the recreational amenities provided at the park. However, the absence of public toilets in the vicinity of the lake poses a challenge for the public in accessing urinal and toilet facilities while walking in the area. To discourage the practice of open defecation around the park, BEL has constructed toilet blocks for both men and women, as per the request of BBMP and the public. It is imperative to allocate adequate funds to ensure the smooth operation and maintenance of the treatment plant, including salaries for plant operators and other staff, as well as the procurement of various chemicals and materials required for the STP operation. To meet these operational needs, BEL has allocated a portion of CSR funds.

Project Initiation

BEL has dedicated a sum of Rs. 31.58 Lakhs towards the construction of public toilets and the maintenance and operation of a 10 MLD Sewage Treatment Plant at Doddabommasandra Lake. The Sewage Treatment Plant got commissioned by BEL in November 2020. As part of their efforts, BEL has successfully built one toilet and two urinals for men, along with two toilets for women. The CSR funds allocated have been effectively utilized for the regular maintenance and operation of the 10 MLD STP plant. These funds have been utilized to cover various expenses associated with the plant's operation and maintenance, including salaries for plant operators and staff, procurement of chemicals, and other essential facilities. It is important to note that these funds are utilized during the fiscal years 2020-21 and 2021-22.

Impact Assessment

The project's overall impact is evaluated through an analysis of its relevance, utility, operation and maintenance, effectiveness, impact, and sustainability. Its main objective is to cater to the public's needs by providing toilet facilities to support the Swachh Bharat Abhiyan campaign and eliminate open defecation in public areas. Furthermore, this project has also accomplished the goal of operating and maintaining a 10 MLD STP plant of BEL as a part of the developmental aspect of Doddabommasandra lake.

Relevance: The project holds significance as it contributes to the Swachh Bharat Abhiyan by offering public toilets and urinal facilities in park or lake areas for individuals to use during their walking time.

Utility: On average 50 individuals' daily access to urinals and toilet facilities at Doddabommasandra lake. BEL utilized CSR funds for regular operation and maintenance of 10 MLD STP plant during FYs 2020-21 and 2021-22.

Operations and Maintenance: The Regular maintenance and operation of public toilets constructed by BEL at Doddabommasandra Lake area has been entrusted to BBMP. Adequate water supply and hand washing facilities were provided at these public toilets. The toilets are well-maintained.

Efficiency: The implementing agency successfully achieved the project's objective by designing and constructing toilets within the allocated budget. The project was completed within the specified timeframe, showcasing its efficiency. The provision of improved facilities at the toilet location enhances user accessibility, further contributing to its effectiveness.

Effectiveness: The endeavor has successfully provided separate toilet facilities for men and women who frequent Doddabommasandra Lake or Park for leisurely strolls.

Prudent utilization of the facility provided.

On average 50 public are utilizing BEL constructed public toilet facility due to sufficient facilities.

- Running water provision and construction of overhead tank
- Hand wash facilities



- Separate toilets and urinals are available men and women
- Adequate light and ventilation
- Easy access to public
- Cleanliness and proper maintenance

Impact

- This initiative has successfully enhanced the public toilet facilities, eliminated open defecation, and promoted cleanliness at Doddabommasandra lake.
- The project has effectively raised awareness of the significance of maintaining a clean environment, practicing good hygiene, and following proper sanitation measures within the community.
- Through the implementation of this project, the problem of open defecation in the vicinity of Doddabommasandra lake and its surrounding areas has been significantly reduced.

Outcomes: Increase in accessibility of toilet facilities for public at Doddabommasandra lake area.

Tangible Benefits	Intangible Benefits
I) Availability of public toilets and urinals for men and women with electrical fixtures and fittings ii) Daily walkers in the park benefit from the convenience of having toilets located nearby.	I) Privacy is prioritized in the design and layout of the public toilets and urinals. ii) The availability of these facilities contributes to the improvement of public health standards

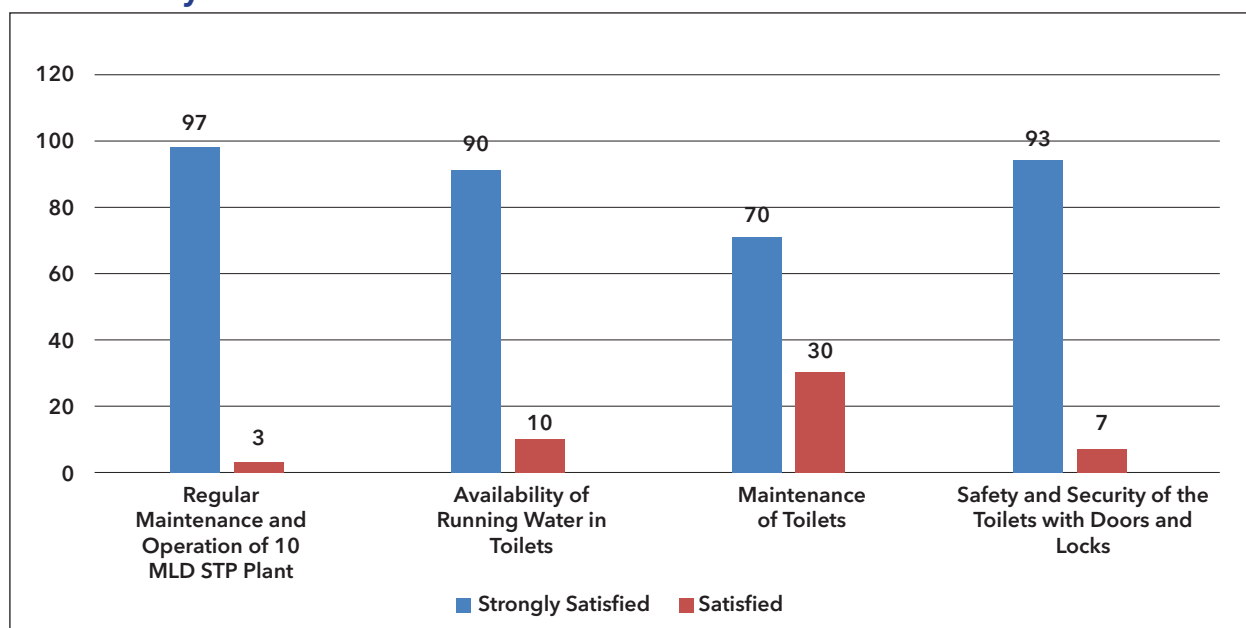
Impact Matrix

Impact Parameter	Score
Relevance	17
Utility	5
Operation and maintenance	6
Efficiency	6
Effectiveness	10
Outcome	11
Impact	11
Total	66

Satisfaction Survey

The primary objective of the satisfaction level survey is to collect feedback from different stakeholder groups (public-various professions like retired employees, students, housewives, business owners, government, and private employees etc.) about project outcomes. The survey aims to evaluate their satisfaction levels with the toilet facilities and regular operation and maintenance of 10 MLD sewage treatment plant provided BEL at Doddabommasandra Lake. Most respondents expressed their strong satisfaction with toilet facilities and regular operation and maintenance of 10 MLD sewage treatment plant. The Sample Size for collecting feedback was 30.

Beneficiary Stakeholder Feedback




- Regular maintenance and operation of STP plant: A significant 97% of the respondents revealed their strong satisfaction regarding the regular maintenance and operation of the STP plant situated at Doddabommasandra lake. In contrast, only 3% of the respondents expressed their satisfaction with the same.
- Availability of Running water in Toilets: 90% of participants expressed strong satisfaction with the presence of running water in toilets, while 10% were satisfied with it.
- Maintenance of toilets: A significant 70% of respondents indicated their strong satisfaction with the maintenance of toilets by BBMP, with the remaining 30% expressing satisfaction with the same.
- Safety and Security of the toilets with doors and locks: The safety and security of the toilets with door and lock received a high level of satisfaction from 93% of the respondents. In contrast, 7% of the respondents expressed their satisfaction with the same aspect.

Project Coherence

This initiative aligns with the Swachh Bharat Abhiyan and aims to transform Doddabommasandra lake into open defecation-free zones by establishing public toilets.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	<p>This project is in line with Sustainable Development Goal 6 and has successfully accomplished the target 6.2 set under this goal.</p>

Observations

The following are some of the important observations from the project:

- On an average 50 to 60 beneficiary stakeholders utilize these toilets
- Sufficient running water is available at the toilet location.
- Toilets and urinals are equipped with the necessary supply of running water.
- The toilets and urinals are all in functional condition and are cleaned regularly.
- The project is sustainable as toilets and urinals were constructed as per the specifications by the work contracting agency.

Case Study

Mr. Preetham, 23, Private Employee, Thindlu

Mr. Preetham, a 23-year-old private employee residing in the Thindlu area, shared that BEL had constructed public toilets in 2021. These facilities have proven to be convenient for him during his daily walks in the park. The BBMP ensures the regular maintenance of the toilets, and there is an ample supply of running water. He expressed his sincere appreciation to BEL for providing these facilities at Doddabommasandra lake area.

Project 17: Medical Equipment to Community Health Centre, near Nimmuluru Village, Guduru Mandal, Machilipatnam, Andhra Pradesh

Project Objective	Promoting education, including special education and employment enhancing vocation skill.
Infrastructure / Facilities created by BEL	Semi auto analyzer (05), Oxygen flow meters (30), CPAP masks (30), BI Pap masks (30), oxygen masks (500), baby warmer (02), oxygen concentrators (05), defibrillator (01), multi para monitors (05), oxygen cylinder-05, ultrasound therapy (01), suction apparatus (02). (Boyles Anesthesia machine(1), Ambulance(1), ECO cardio gram(1), Fetal doppler(2), Operation Theatre lamp(1), S-Chairs(10), long benches(2), Tables(10), Wooden stools(10), Washing machine for OT (Fully automated front load) (1), Beds (25), Mattresses (50), Pillows (50), Bed sheets (400), Pillow covers (400), Patient screens (10)
Project Cost	Rs. 31.58 Lakhs
BEL Unit	Machilipatnam
Sector	Healthcare

About the Project

Community Health Centre, Gudur near Nimmuluru Village is a secondary healthcare facility situated in Krishna district. It serves a population of 53,050 individuals residing in 42 villages. The hospital has six doctors, 24 health personnel staff, and 11 other staff members. The center receives around 130-140 outpatients of all age groups daily seeking treatment for various ailments such as fever, cough, cold, diabetes, hypertension, diarrhea, asthma, eye problems, gynecology issues, skin allergies, dental problems, and long-term diseases. Additionally, the hospital provides vaccination and laboratory services. With a capacity of 30 beds, the facility offers inpatient services for emergency cases, surgeries, deliveries, and child and mother care. On average 10-12 patients utilize these inpatient services daily.

Need for the Project

It is crucial in the modern era to have efficient and upgraded medical equipment to guarantee the best possible medical care for patients and improved healthcare results. The progress in medical technology has enabled more precise and accurate diagnosis, treatment, and management of medical conditions. Enhanced medical equipment can improve patient safety by minimizing errors and complications during procedures. The COVID-19 pandemic has marked a significant shift in the Indian public healthcare system. It has highlighted the crucial role of technology in patient treatment and increased the need for such advancements.

The Gudur Community Health Centre in Krishna district encountered various obstacles in delivering adequate diagnosis and treatment to critical care patients. Consequently, patients had to be referred to the district hospital or private hospitals in Machilipatnam, where the charges or travel costs were exorbitant. The malfunctioning suction apparatus and the absence of multi-channel monitors posed challenges in treating cases like COPD and emergencies, causing inconvenience for doctors and healthcare workers during surgery or emergency treatment.



The hospital encountered challenges in obtaining oxygen supplies because of a lack of oxygen cylinders, the absence of a defibrillator, hematology analyzer for complete blood tests, doppler fetal monitor, cold storage for vaccinations, etc. Considering these deficiencies, the community health centre reached out to BEL, Machilipatnam, seeking their assistance in providing the necessary resources to enhance the center's diagnostic and treatment capabilities for patients in need, particularly during the COVID-19 pandemic.

Project Initiation - BEL Initiatives

Based on the need, BEL provided the following list of items to the community health center:

S. No.	Name of the Facility / Medical Equipment or Device Provided by BEL	Total Number of Units
1	Baby warmer	2
2	Oxygen concentrators	5
3	Suction Apparatus	2
4	Defibrillators	2
5	Multi- channel monitors) (Multiparameter monitors)	5
6	Interferential Therapy machine	2
7	Hematology Analyzer	1
8	Oxygen Cylinder (B-Type)	5
9	Cardiotocography machine (CTG machine) or (Fetal Doppler Machine)	1
10	ECG Machine	1
11	Refrigerator (1 number) - 360 litres	1
12	63 KVA diesel generator	1
13	Basic Life Supporting Ambulance	1

BEL supplied various medical equipment /devices to Community Health Centre located in Gudur during FY 2021-22 costing Rs. 31.84 Lakhs

Total budget allocation: Rs. 38.69 Lakhs

Total spending: Rs. 31.58 Lakhs

Project initiation: FY 2020-21 and medical equipment / devices handed over: May 2021.

Impact Assessment

The project's overall impact is analyzed by studying its relevance, utility, operation & maintenance, effectiveness, impact, and sustainability. The aim of the project is to improve diagnostic and treatment capabilities at the Community Health Center, Gudur by supplying medical equipment, devices, and other necessary resources. The project successfully achieved its goal by delivering extensive healthcare services with the use of medical equipment or devices and facilities, leading to an increase in the number of patients seeking treatment for various health issues.

Relevance: BEL's social agenda is primarily focused on enhancing the welfare of communities, with a specific emphasis on strengthening public healthcare systems in the regions where it

conducts operations across the country. BEL responded to the government of India's call to enhance public healthcare systems and amenities in government hospitals and health centers during the post second wave of Covid-19. The company provided various medical equipment and facilities to the Community Health Centre within its operational region of Machilipatnam during the financial year 2021-22. These medical equipment/devices met the healthcare needs of patients, offering comprehensive diagnostic and treatment services. This initiative aimed to alleviate the financial burden on underprivileged patients residing in nearby 42 villages.

Utility: The Gudur Community Health Centre effectively utilizes a range of medical equipment, devices, and facilities mentioned below to ensure optimal diagnostic and treatment services for patients of all types. The details are given below.

S. No.	Name of the Facility / Medical Equipment or Device Provided by BEL	Extent of Utility (Full / Partial / Not in Use)	Type of Patient Benefitted from this Facility	Total Beneficiaries per Month
1	Baby warmer (2 units)	Full utility	Newborn baby	40 Newborn babies
2	Oxygen concentrators (5 units)	Full utility	All types of patients	80 all ages patients
3	Suction Apparatus (2 units)	Full utility	All ages people	20 patients
4	Defibrillators (2 units)	Full utility	All ages people (Majorly for adults)	5 patients
5	Multi-parameter monitors (5 numbers)	Full utility	All ages	100 patients (all ages)
6	Interferential Therapy machine (2 number)	Full utility	Adults	200 patients
7	Hematology Analyzer (1 number)	Full utility	All ages people	400 patients
8	Oxygen Cylinder (B-Type) - (5 number)	Full utility	-	-
9	Cardiotocography machine (CTG machine) or (Fetal Doppler Machine (1 number)	Full utility	Pregnant women	250 pregnant women
10	ECG machine	Full utility but there was a printing problem recently	Adults	60 patients
11	Refrigerator (1 number)	Full utility	Vaccine storage	-
12	63 KVA diesel generator (1 number)	Full utility	-	-
13	Basic Life Supporting Ambulance (1 number)	Full utility	-	-

The other health infrastructure items provided by BEL such as tables, stools, bedcovers, blankets, etc., were handed over to the District Medical Officer.



Operations and Maintenance: Skilled healthcare professionals operate medical equipment in the hospital to ensure precise test results during the diagnostic process or to enhance patient care depending on the type of medical equipment or device. The hospital administration conducts routine and preventive maintenance on the equipment to prolong their lifespan and achieve optimal outcomes. Adequate funds are allocated by the hospital to cover the ongoing operation and maintenance of the equipment supplied by BEL.

Efficiency: The community health centre offers significantly greater benefits in comparison to the resources invested. The hospital's skilled staff ensures the timely delivery of diagnostic results and treatment procedures, achieving both cost-effectiveness and operational efficiency.

Effectiveness: The project played a crucial role in supporting the community health centre by enhancing its medical equipment infrastructure, power backup systems, and cold storage facilities for medicines and vaccines. This has resulted in the hospital's ability to expand its healthcare diagnostic services and treatments, providing comprehensive care to patients, including newborn baby care, prenatal care, and specialized attention to cardiac arrest patients. Consequently, there has been a notable increase in the number of patients seeking medical assistance at the center. Previously, the daily outpatient department (OPD) cases were 80, and inpatient (IP) cases were 8. However, there has been a significant improvement in OPD cases. Presently they reach 140, and the IP cases can accommodate 12 patients.

Outcomes: By supplying a diverse range of medical equipment, this project has successfully enhanced the processes and procedures of the community health centers. As a result, they are now able to offer better diagnostic and treatment services, thereby improving the overall healthcare provided to the community.

Impact: This project ensured a positive effect on the strengthening of public healthcare systems and an impact on underprivileged beneficiaries to access multiple healthcare services for building their good health. The enhanced medical infrastructure facilities have led to a decrease in the reliance of beneficiary patients on private healthcare systems for accessing a wide range of health services. Consequently, there has been a notable reduction in the financial burden associated with healthcare expenditure for these individuals.

Tangible Benefits	Intangible Benefits
<ul style="list-style-type: none"> • Increase in OPD and IP treatments. • Improved better monitoring systems for emergency or critical patients by multi-channel systems. • Improved the treatment facilities for prenatal care, newborn baby care, cardiac care, and various health emergencies. • Improved the medical oxygen supplies for various treatments. 	<p>The project instilled confidence in patients by offering diagnostic and comprehensive healthcare services for individuals of all ages, addressing a wide range of health issues and diseases</p>



Impact Matrix

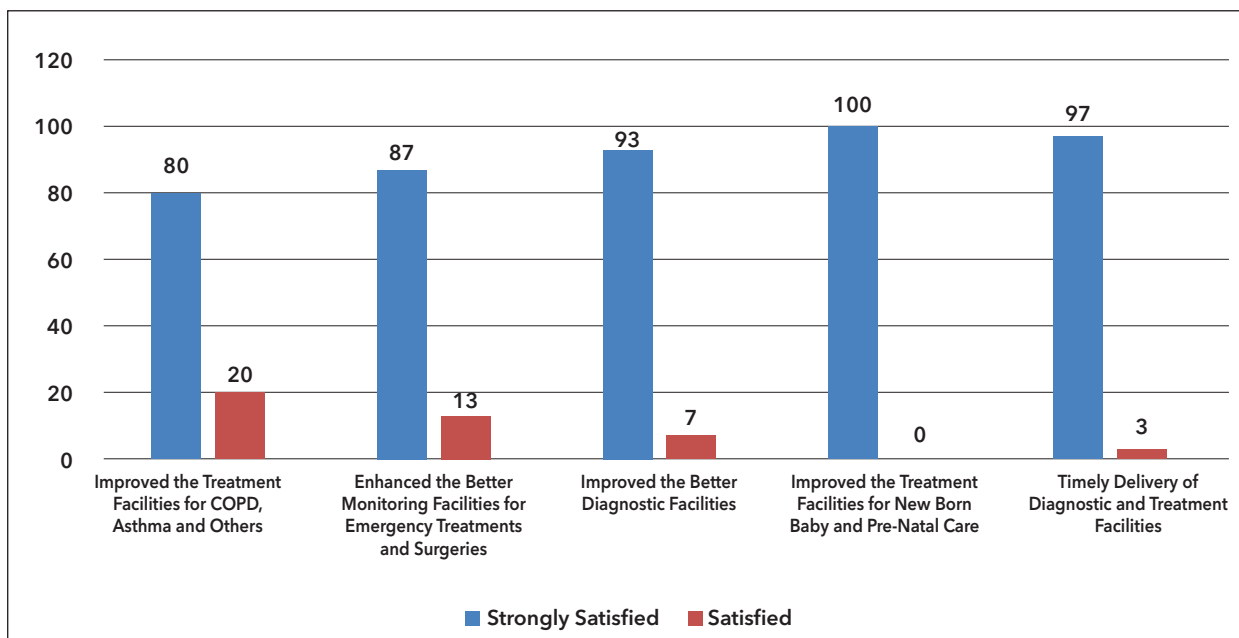
Impact Parameter	Score
Relevance	18
Utility	8
Operation and maintenance	7
Efficiency	7
Effectiveness	12
Outcome	13
Impact	13
Total	78



Satisfaction Survey

The purpose of the satisfaction survey is to gather insights from various stakeholders, such as patient beneficiaries, their relatives, and hospital administration. This survey aims to understand their perception of the diagnostic, treatment, and other facilities following the implementation of medical equipment and other improvements by BEL. These enhancements have notably improved the outpatient department (OPD), inpatient (IP) services, emergency healthcare treatment, and other related services.

Patients	15 (Female: 10 patients; Male: 05 patients) OPD: 12 patients; IP: 3 Patients; Patients age: 22 - 65 years
Patients' relatives	04
Hospital Administration	04



Improved the treatment facilities for COPD, Asthma, and others: Majority of the patients 80%, have expressed their strong satisfaction with the improved treatment facilities offered by BEL. These facilities cater to various medical conditions such as COPD, Asthma, poisoned cases, pregnant deliveries, cardiac problems, and other emergency cases. The utilization of Suction Apparatus, oxygen concentrators, oxygen cylinders and defibrillator have garnered high and positive feedback. Furthermore, 20% of the beneficiaries have also revealed their satisfaction with these treatment provisions.

Enhanced the better monitoring facilities for emergency treatments and surgeries: The survey revealed that 83% of beneficiary patient respondents were highly satisfied with the upgraded monitoring facilities for emergency treatment / deliveries. These five multi-parameter monitoring systems present a comprehensive display of health parameters on a single screen, aiding doctors and medical staff in making informed decisions for patient care. Conversely, 17% of respondent patients reported satisfaction with the same services.

Improved the diagnostic facilities for patients: The provision of a hematology analyzer resulted in a high satisfaction of 93% patients. They agreed that this analyzer enabled comprehensive blood count and evaluation of the patients' overall condition, thereby greatly assisting them in their treatments. Around 7% of the respondents expressed satisfaction with the same facilities.

Improved the newborn baby care and prenatal care facilities: The patients expressed their utmost satisfaction with the enhanced newborn baby care and prenatal care facilities following the provision of baby warmers and Fetal Doppler Machines. They have strongly voiced their opinion that the absence of a fetal doppler machine at the community health center previously compelled pregnant women to travel to the district hospital in Machilipatnam for evaluating the health of the fetus. The introduction of this fetal doppler facility has significantly alleviated the financial burden on pregnant women and their families.


Timely delivery of diagnostic and treatment facilities: After the implementation of this project, the delivery of diagnostic and treatment facilities was carried out in a timely manner, leading to a significant level of satisfaction among the beneficiary patients. A remarkable 97% of these patients expressed their strong contentment with the prompt availability of these essential services. Additionally, it is worth noting that even the remaining 3% of beneficiary patients reported being satisfied with the timely delivery of diagnostic and treatment facilities.

Patient Relatives and Hospital administration staff survey: The IPE team engaged in discussions with 10 relatives of patient beneficiaries and 4 members of the hospital administration. A questionnaire was administered to gather their feedback. Their responses indicated a 100 percent satisfaction with the enhancements made to the diagnostic and treatment facilities for newborn babies, prenatal care, cardiac arrest patients, emergency treatments, as well as the support provided for pregnant women, childcare, and other amenities including beds, mattresses, etc. offered through the BEL project.

Project Coherence

BEL's initiative has contributed to the implementation of the National Health Policy-2017 by providing a range of medical equipment, cold-storage facilities for medicines and vaccines, as well as essential life-saving ambulances and power backup facilities and beds, pillow covers, etc. These provisions have significantly enhanced the health infrastructure at the community Health Center at Gudur.

Project Alignment with SDGs

Targets	Project Alignment with SDG Goals
	BEL's initiative was in line with Sustainable Development Goal 3 focusing on promoting good health and well-being. The project involved the provision of a range of medical equipment and facilities aimed at improving diagnostic and treatment services, ultimately benefiting disadvantaged communities.

Observations

The following are some of the important observations from the project.

- The upgraded infrastructure has proven to be essential in aiding and continued to aid the community health center in meeting the healthcare demands of the community in the years to come. This is made possible by the inclusion of advanced medical equipment or devices, which typically sustain for long if regular maintenance is carried out.

- A significant upgrade has been made to the storage facilities for medicines and vaccines, which now include state-of-the-art refrigerator. This enhancement ensures optimal conditions for storage, preserving the effectiveness of these essential medical supplies.
- The Community Health Centre conducts approximately 60 ECG test examinations every month as a part of the medical evaluations for patients referred by physicians.
- Interferential therapy machines help especially aged people in treating their health problems of joint stiffness, body pain, muscular and circulatory disorders, cumulative trauma disorders, and inflammation, edema and post orthopedic surgeries.
- The hospital utilizes the Hematology Analyzer to diagnose the complete blood counts. Around 400 patients on average monthly utilize the services. This enables them to promptly assess the patients' condition and administer timely treatment.
- The medical equipment provided by BEL, Machilipatnam, such as hematology analyzers, baby warmers, oxygen concentrators, suction apparatus, defibrillators, multi-channel monitors, interferential therapy machines, oxygen cylinders, and fetal Doppler machines, empower doctors and health personnel to swiftly address newborn baby, prenatal care, surgical and emergency cases through rapid diagnoses and treatments.
- Most doctors, nurses, patients and the public opined that hospital environment, equipment, and facilities have improved the efficiency and effectiveness of treatment.
- This project enhanced the transport facilities for emergency cases and improved the power back facilities with 63 KVA power generators.

Case Study

Mrs. CH Vishnu Priya, Devarapalli Village, Pedana Mandal, Krishna district. (Patient)

Mrs. CH Vishnu Priya hails from Devarapalli village in Pedana mandal, located in Krishna district. Recently, she underwent a cesarean delivery at a community health center and gave birth to a baby girl. Following the doctor's recommendation, the newborn was placed in a baby warmer for an hour to regulate her body temperature. The presence of this essential equipment at the community health center eliminated the need for Vishnu Priya to travel to a district hospital or a private facility for the same service. The enhanced healthcare services at the Gudur community health center have alleviated the financial burden on disadvantaged families like Vishnu Priya, who would otherwise have had to seek medical assistance at distant hospitals.



Annexure 1

Project-wise details of interactions held with Stakeholders and BEL Unit Heads

Sl. No.	Project details	Date of Visit	Unit Head	BEL Representative	Stakeholders and Key Personnel
	Installation & Commissioning of 10 MLD Sewage Treatment Plant (STP) at Doddabommasandra Lake, Jalahalli, Bengaluru, Karnataka	28 Feb 2024	Dr Shashi Bhushana H S, DGM (CSR & EED) Smt Sumashri K, DGM (CSR), Corporate Office, Bangalore	Mr Sachin, Senior Environmental Engineer Mr Kailash, Project Engineer	<ul style="list-style-type: none"> • Mr Om Prakash • Mr Senthil • Mr Gopi
	Providing Ventilators to set up Paediatric ICU in Govt. District & Taluk Hospitals of Yadgiri Aspirational District, Karnataka	02 Mar 2024	Dr Shashi Bhushana H S, DGM (CSR & EED)	-	<ul style="list-style-type: none"> • Dr Prabhuling Manakar, DHO, Yadgir district • Dr Rizwana Afreen, District Surgeon • Dr Yellappa, Chief Medical Officer, Taluk Hospital Shahpur • Dr R V Nayak, Chief Medical Officer, Taluk Hospital, Shorapur • Mr Shivakumar Swamy, Superintendent • Mr Mallikarjun, Pharmacy Officer, DHO office, Yadgiri district Stakeholders: Beneficiary Children Parents: 10 number
	CT Scanner to Govt. District Hospital, Machilipatnam, Krishna District, Andhra Pradesh	26 Feb 2024	Sri V S V R Phani Kumar, DGM (HR)	Mr. Ravi Reddy G, BEL Executive	<ul style="list-style-type: none"> • Dr. Anjani Kumar, Radiologist • Mr. K Koteswara Rao, Lab Technician • DHO • 04 Hospital staff • Family members of 04 patients • 15 Patients
	Mobile Cancer Detection Unit (MCDU) to Kidwai Memorial Institute of Oncology, Bengaluru, Karwar	29 Feb 2024	Dr Shashi Bhushana H S, DGM (CSR & EED)	-	<ul style="list-style-type: none"> • Dr. Aftab, Director, KMIO • Dr. Mahatesh, Asst. Surgeon Oncology • Mr. Bheema Reddy, Technician

Sl. No.	Project details	Date of Visit	Unit Head	BEL Representative	Stakeholders and Key Personnel
	Developmental works in adopted village Khubi & Karanjale - Construction of Primary Health Centre, providing sanitation facilities & making available clean drinking water, Pune District, Maharashtra	21 Mar 2024	Shri Arjun Raja T N, DM(HR)	-	<ul style="list-style-type: none"> • Shri Vijay Sitaram Khate, Sarpach, Khubi & Karanjale • Smt Usha Ashok Supe, Ex-Sarpanch, Khubi & Karanjale • 35 villagers • Teachers: 2 • Students: 10 • Parents: 05 • Health department personnel: 02 Local administration of Gram panchayat: 02
	Construction of Govt. Primary School at Chanal-Village, Mudhol Taluk, Bagalkote district, Karnataka	01 Mar 2024	Dr Shashi Bhushana H S, DGM (CSR & EED)	-	<ul style="list-style-type: none"> • Mr Shidalingappa B Godi, Rtd. Sr. Section Officer II, DGQA, BEL • Mr Chandrashekhar L Roogi, Headmaster • Students: 35 • Teachers: 08 • Parents: 10 • Local administration: 03 Education Department: 03
	Providing Medical Equipment's to District General Hospital, Taluk General Hospital, Community Health Centres & Primary Health Centres of Aspirational district Yadgir, Karnataka	02 Mar 2024	Dr Shashi Bhushana H S, DGM (CSR & EED)	-	<ul style="list-style-type: none"> • Dr Prabhuling Manakar, DHO, Yadgir district • Dr Rizwana Afreen, District Surgeon • Dr Yellappa, Chief Medical Officer, Taluk Hospital Shahpur • Dr R V Nayak, Chief Medical Officer, Taluk Hospital, Shorapur • Mr Shivakumar Swamy, Superintendent • Mr Mallikarjun, Pharmacy Officer, DHO office, Yadgiri district. <p>Stakeholders:</p> <ul style="list-style-type: none"> • 25 Patients • District Health Officer and Hospital Administration: 5 numbers 4 Family members of patients

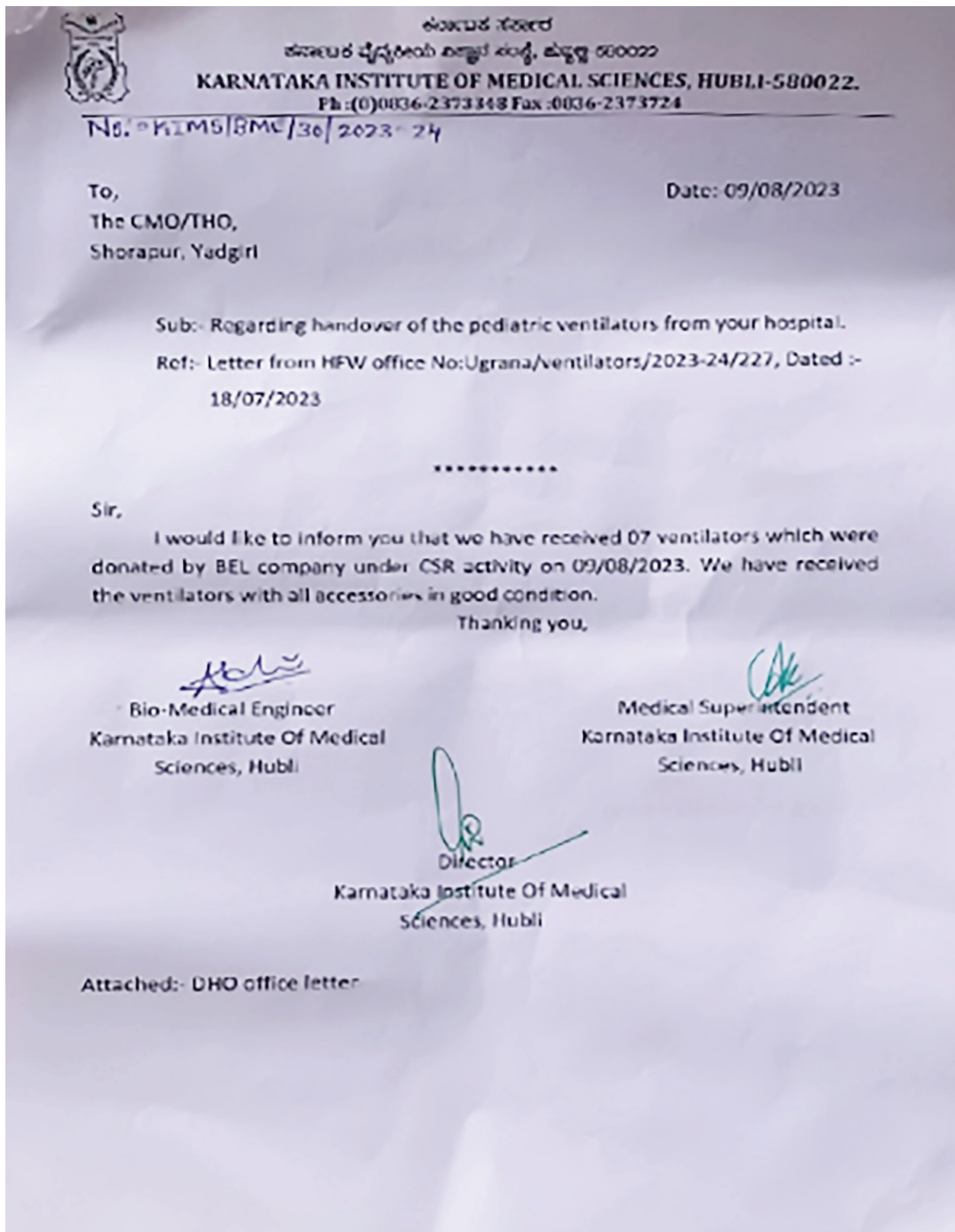
Sl. No.	Project details	Date of Visit	Unit Head	BEL Representative	Stakeholders and Key Personnel
	Skill Development Centre at Sri Saraswathi Vidyapeetam, R R district, Telangana	24 Feb 2024	Shri Santosh Kumar K, Manager HR	-	<ul style="list-style-type: none"> • Shri P Mallaiah, Vice President, Sri Saraswathi Vidyapeetam • Shri Veeresham, in-charge, Skill Development Centre • Shri Krishna Reddy, in-charge, Skill Development Centre Courses • Shri Satish, Trainer-MS office, Skill Development Centre • Shir Aruna, Trainer-soft skills, Skill Development Centre Stakeholders <ul style="list-style-type: none"> • 30 trainees (students) • four trainee parents • 02 education department representatives 05 public representatives
	Construction of Classrooms, Toilets, Furniture and other related works at Govt. Higher Primary School, Bazar, Karwar Town, Karwar Taluk, Uttara Kannada District, Karnataka	29 Feb 2024	Dr Shashi Bhushana H S, DGM (CSR & EED)	-	Key Informant Officers (KIIs) <ul style="list-style-type: none"> • Ms Irine Ranier Rodrigues, Headmistress • Teachers: 6 numbers • Students: 30 • School Development and Monitoring Committee Members: 4 • Parents: 10 • Town citizens: 5 Education department representatives: 4
	Augmentation of Infrastructure, provision of Equipment & Tools for adopted Govt. ITI, Noida, Ghaziabad district, Uttar Pradesh	04 Mar 2024	Shri Venit Pasricha, Manager (CSR)	-	Key Informant Officers (KIIs) <ul style="list-style-type: none"> • Ms. Neeti Mishra, Nodal Principal • Mr. Pankaj Kumar Sharma, Instructors • Mr. Joginder Singh, Instructors • Parents: 4 numbers • Students: 30 • Local Administrations - 02 Education Department - 02

Sl. No.	Project details	Date of Visit	Unit Head	BEL Representative	Stakeholders and Key Personnel
	Provision of Cold-Chain Equipment viz. Deep Freezer & Walk-in Freezer to Ministry of Health & Family Welfare (MoH&FW), Govt. of Karnataka.	01 Mar 2024	Dr Shashi Bhushana H S, DGM (CSR & EED)	-	Key Informant Officers (KIIs) <ul style="list-style-type: none"> Ms Beena HM, State Vaccine store Manager (SVSM) Dr. Pushpalatha, Medical Officer Mr. Vasu, Cold Chain Officer Ms. Ambica, Pharmacists Mr. Zillani, Pharmacists
	Providing Multi Parameter ICU Monitors to All India Institute of Medical Sciences (AIIMS), Rishikesh, Uttarakhand	09 Mar 2024	Smt. Abha S Mathur, DGM (HR)	-	Key Informant Officers (KIIs) <ul style="list-style-type: none"> Prof R B Kalia, medical superintendent Dr Bharat Bhushan Bhardwaj, DMS Dr Yatin Talwar, DMS Mr Sandeep Nautiyal, JAO Mr Tulshi Ram, HA
	Provision of Ambulances (2 Nos) & Oxygen Concentrators (30 Nos) to Govt. Hospital, Kotdwara, Uttarakhand	07 Mar 2024	Sri Anuj Rajan Toppo, Manager (HR)	Mr. Shishupal Singh, BEL Executive Mr. Shivam Kumar, BEL Executive	Key Informant Officers (KIIs) <ul style="list-style-type: none"> Dr. Chandra Mohan Singh Negi Shri Vijayesh Bharadwaj, CMS Stakeholders: <ul style="list-style-type: none"> Patients: 20 Relatives' patients: 04 Hospital Administration: 04
	Providing of Medical Equipment to Govt. Civil Hospital, Sector-6, Panchkula, Haryana	11 Mar 2024	Smt. Abha S Mathur, DGM (HR)	Mr. D K Sachin, Manager CSR Ms. Sandeep Kaur, Manager CSR	Key Informant Officers (KIIs) <ul style="list-style-type: none"> Dr. Ankit Mr. Vipin, District Bio-medical staff Stakeholders: <ul style="list-style-type: none"> Patients: 20 Children Parent: 10 Relative of beneficiaries: 05 Hospital Admin: 06

Sl. No.	Project details	Date of Visit	Unit Head	BEL Representative	Stakeholders and Key Personnel
	Provision of Apheresis Machine for Blood Bank at District MMG Hospital, Ghaziabad, Uttar Pradesh	05 Mar 2024	Shri Venit Pasricha, Manager (CSR)	-	Key Informant Officers (KIIs) <ul style="list-style-type: none"> • Dr. Sandeep Power • Dr. Urvashi Stakeholders: Patients: 15 Hospital Authorities: 04 Beneficiary family: 04
	Provision of Toilet Block at Doddabommasandra Lake and Operation & Maintenance of Sewage Treatment Plant, Bengaluru	28 Feb 2024	Dr Shashi Bhushana H S, DGM (CSR & EED) Smt Sumashri K, DGM (CSR), Corporate Office, Bangalore	Mr Sachin, Senior Environmental Engineer Mr Kailash, Project Engineer	<ul style="list-style-type: none"> • Mr Om Prakash • Mr Senthil • Mr Gopi
	Medical Equipment to Community Health Centre, near Nimmuluru Village, Machilipatnam, Andhra Pradesh	26 Feb 2024	Sri V S V R Phani Kumar, DGM (HR)	Mr. Ravi Reddy G, BEL Executive	<ul style="list-style-type: none"> • Health personnel: 07 • Patients: 20 • Family Members of Patients: 10 Town citizens: 5

Annexure 2

The transfer of 7 paediatric ventilators from Shorapur Taluk Hospital to KIMS, Hubli



About the Centre for Corporate Social Responsibility (CCSR)

The Centre for Corporate Social Responsibility (CCSR) was set up during 2011 to promote training, research, consultancy assignments and document case studies in thrust areas of CSR. The Centre works on the existing body of knowledge, systems, structures, models, and mechanisms associated with different CSR initiatives; it also provides a platform for discussing CSR guidelines and the latest developments in the field. The Institute of Public Enterprise (IPE) has been part of the Department of Public Enterprises (DPE), Government of India initiative on introducing Corporate Social Responsibility (CSR) as an element of the performance matrix in Central Public Sector Enterprises (CPSEs). IPE was invited to attend the meetings of the Working Group on CSR in 2007-08 and 2009-10, and was nominated by DPE as a Member of the Executive Committee on CSR in 2011 to develop, design, and implement courses for CPSEs. Recognizing the importance of the subject and also the realization that there is a dearth of experts in this emerging field, it was decided that IPE could play a major role in research, development, and advocacy of CSR. This idea led to the establishment of the Center for Corporate Social Responsibility in 2011 at IPE.

The main objectives of the center:

- To conduct interdisciplinary and collaborative research and document case studies in thrust areas of CSR dealing with contemporary issues and challenges.
- To integrate the existing body of knowledge, systems, structures, models, and mechanisms associated with different CSR initiatives by interfacing with industry and academia.
- To disseminate information about the latest happenings in the CSR field to the people engaged in policy making, policy analysis, policy research, practitioners, and other stakeholders.

PROJECT LEADER

Prof. S. Sreenivasa Murthy, Director, IPE

PROJECT COORDINATOR

Ms. J. Kiranmai, Head - Centre for CG and CSR, IPE

TEAM MEMBERS

Mr. M. Vaman Reddy, Project Associate, IPE

Ms. B. Deepa, Research Associate, IPE

About Institute of Public Enterprise (IPE)



The Institute of Public Enterprise (IPE) was established in 1964 as an autonomous non-profit society. IPE is a premier AICTE approved management Institute focusing on transforming students into leaders of tomorrow in organizations and society. IPE's key objectives include management education, research, consultancy, and training. In 1995, the Institute launched its first two

year full-time Post Graduate Diploma in Management (PGDM) programme to provide skilled human resources to meet the requirements of industry.

Keeping in view the market demand, the Institute also launched sector specific PGDM programs in the areas of Marketing, Banking Insurance and Financial Services, International Business and Human Resource Management. IPE's engagement with long-term management education has received wide appreciation from the industry, government, and social sector enterprises. The Institute continuously endeavours to update the content and teaching methodology of its courses based on feedback from the end-users, ensuring the quality, relevance, and utility of all its programs and courses.

IPE is consistently ranked among the leading B-Schools in India in most well-known ranking surveys. IPE has also been awarded a premium accreditation label of the SAARC region, 'The South Asian Quality Assurance System' (SAQS). Over the years IPE has won several awards and honours for its academic & research excellence.

IPE has a very successful track record of running MDPs over a long period of time. IPE also has a strong Research and Consultancy division, which provide consulting services and undertakes research projects for various national organizations. The Institute has been recognized as a 'Center of Excellence' by the Indian Council of Social Science Research (ICSSR), Ministry of Education, and Government of India.

The Governance of the Institute is overseen through a Board of Governors composed of eminent policy makers, academicians, and CEOs of public and private sector enterprises.



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(Under the aegis of ICSSR, MoE, GoI)

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