Corporate Social Responsibility

Administration

Dr Kiran Mazumdar-Shaw
Founder and Managing Trustee
Dr John Shaw, Trustee

Biocon Foundation, the CSR arm of Biocon Limited and Syngene International Limited, is guided by the CSR Committees, constituted of members of the Boards of Directors of these two companies. The CSR Committees provide strategic direction, oversight of CSR policy and monitor the execution of the CSR activities of the Foundation.

The members of the Biocon Limited CSR Committee are:

- Ms Mary Hanney, Chairperson
- Dr Vijay Kuchroo
- Professor Ravi Mazumdar

The members of the Syngene International Limited CSR Committee are:

- Dr Bala S. Manian, Chairman
- Dr Vijay Kuchroo
- Mr Suresh Talwar
- Professor Catherine Rosenberg
- Ms Vinita Bali

The Mission Director of Biocon Foundation is Ms Pratima Rao

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Our Vision

To provide socioeconomic inclusion through innovation and sustainable models that deliver scalable solutions.

Our Mission

To support interventions that resolve select primary issues faced in sustainable development. Whilst doing so, we shall conform to statutes and policies and adhere to the principles of responsible business practices.
A Message from the
MANAGING TRUSTEE

“We live in a complex world. Partnership must continue to be at the heart of our strategy.”

António Guterres, UN Secretary-General
Dear Partners in Progress,

The United Nations’ SDG 17 specifically stresses that the need for working together is crucial to the achievement of the 2030 Agenda by stating that ‘a successful sustainable development agenda requires partnerships between governments, the private sector and civil society’. It also emphasises the need to be ‘inclusive and built upon principles and values, and shared goals’.

Over the past twelve months, Biocon Foundation has been guided by the essential need to have the active participation of all stakeholders to achieve the United Nations 2030 Agenda for Sustainable Development. As a first step towards realising these objectives, we have integrated stakeholder mapping into the program design so that it becomes an intrinsic part of our engagement strategy.

Local Communities

In the contemporary world, one that is crisscrossed with communication pathways, open dialogue with diverse stakeholders should be effortless. However, we have discovered that the major beneficiary communities are also the least visible and heard in the strategy development phase. Thus, it became apparent that we had not only to identify, but also to prioritise interventions to foster dialogue and collect program inputs. By strong and continuous engagement with stakeholder communities, we have built programs that offer resilient solutions. This proactive approach has resulted in giving us a more realistic view of the different groups that exist within the community, their diverse needs and concerns, in addition to the practical roles that we as well as they must fulfil so that sustainable outcomes emerge.
Government Agencies

We particularly established partnerships to augment State and National-level programs that the government is committed to. The process started by understanding the underlying causes and needs for the implementation of pertinent policies and programs, and the consequent allocation of resources for maximum impact. We realised that it was important that our existing interventions synergise with and provide valuable support to ongoing government programs. Our partnerships were formalised and committed through legally binding agreements, clearly defining the roles, responsibilities and deliverables of all the partners in the project.

These partnerships have helped us realise the enormous challenges that governance is up against. It has been our earnest endeavour to provide sustainable solutions to these challenges. We appreciate the encouragement and support that we received from the government and local administrative bodies where our programs are located. It was heartening to note the immediate support that was provided by the state governments to facilitate our flood relief efforts in Kodagu and Kerala.

Employees

In the year under review, Biocon Foundation was fortunate to be part of the innovative and enthusiastic employee engagement programs that form an integral part of the work culture of Biocon Ltd and Syngene International Ltd. Programs devised by their employees and executed by them in partnership with the Foundation included
The focus on stakeholder engagement, has significantly enhanced the outcomes of our programs in each sector.

initiatives in Healthcare, Education, Rural Development and Environmental Sustainability. Team members across departments in these companies took up compelling causes to contribute to social good. They leveraged their core managerial and technical competencies to design and execute programs ranging from vocational guidance and career counselling in government schools to the stunning rejuvenation of the 35-acre Hebbagodi Lake. Their use of innovative methods, the high standards of delivery and quality that they set for themselves as well as their strong sense of commitment resulted in programs that can be showcased as successful CSR case studies.

Industry Associations

Biocon Foundation believes that it is imperative to review CSR programs implemented in a given geographical area to avoid duplication of efforts; when two or more CSR initiatives provide services of a similar nature in the same locations, it results in these communities being over-served, while others are neglected. By sharing best practices and reports, we ensured the productive deployment of resources so that more comprehensive services were provided to the communities that we jointly served. This strategy yielded rich dividend; we have greatly benefitted by our active collaboration with organisations such as Confederation of Indian Industry (CII) and Electronics City Industries Association (ELCIA), who provide a common platform to take forward such reviews with other NGOs and CSR organisations for optimal results and maximum value to stakeholders.

Healthcare

In partnership with the Departments of Health and Family Welfare of the governments of Karnataka and Rajasthan, the eLAJ Smart Clinic
team interacts with patients, nurses and medical officers at primary healthcare clinics on a regular basis for a better understanding of healthcare necessities in rural populations and more effective service delivery.

Our flagship tobacco cessation and oral cancer screening program has resulted in the creation of a national Oral Cancer Task Force. The Task Force, consisting of eminent medical experts, have developed oral cancer screening protocols and efficacious tobacco cessation programs which the Foundation actively implements. Noteworthy is the program in partnership with the South Western Railway hospitals.

The Foundation has sought to build cooperative relationships with like-minded organisations to work towards common and shared goals. This has resulted in the bringing together of partners, each with their unique strengths. In this regard, we especially value the support accorded to our healthcare programs by Narayana Hospital, St John’s Medical College & Hospital, KLES Institute of Dental Sciences, Christian Institute of Health Science & Research and Vimalalaya Hospital.

**Education**

To keep in step with the dynamic changes in the education sector, we engage with students and teachers in government schools to conduct diverse activities such as games, radio programs, health education and vocational guidance under an agreement with the department of primary & secondary education in Karnataka. We also partnered with the Department of State Educational Research & Training (DSERT) to design workbooks in Math and supported computer literacy programs so that students develop skills in STEM to be better equipped to face the challenges of a knowledge-based economy.
Environmental Sustainability

In response to the needs of the communities residing in Anekal Taluk of Karnataka, a lake rejuvenation project was undertaken in the previous year under the aegis of the Department of Minor Irrigation and local administrative bodies. The valuable partnership with Wg Cdr (Retd) G B Athri and Biocon’s Central Engineering, Environment, Health & Safety teams culminated in the inauguration of the rejuvenated Hebbagodi Lake on 2nd December 2018 which was dedicated to the people of Hebbagodi.

Rural Development

Infrastructure has been provided to improve the quality of rural life.
We were approached by communities and administrators to improve their local conditions. Driven by the critical need to provide safe drinking water, Reverse Osmosis (RO) water plants were installed. To address the need for recreation in a residential suburb, a garbage dump was transformed into a vibrant children’s park, the only one of its kind in the area.

Acknowledgement

To make our programs sustainable, we will continue to engage with our beneficiaries and stakeholders with the objectives of receiving feedback, fine-tuning program specifications and taking measures to deliver on-going and consistent long-term impact.

This strategy has resulted in new programs and significant outcomes delivered by the Foundation during the year. I take this opportunity to share with you a report of our implementation of this vision and outline the outcomes we have witnessed in the year 2018-19.

I extend my sincere gratitude to all our partners, stakeholders and the communities we engage with. Without exception, they have all admirably risen to the occasion and worked alongside us in our on-going quest for relevant, effective and sustainable human development.

With best wishes,

Kiran Mazumdar-Shaw
Founder & Managing Trustee
Bengaluru, May 30, 2019
Sustainable Development Goals & Biocon Foundation Programs

Sustainable Development Goals are a set of 17 goals set by the UN to transform the world by 2030.

No Poverty
Primary Healthcare
Nutrition
WASH

Education
Art & Culture
Rural Development

No Hunger
Midday Meal
Curbing Malnutrition
Tackling Anaemia

Health & Wellbeing For All
Primary Healthcare
Child Health
Management of NCDs
WASH

Women’s Health

Gender Equality & Women’s Empowerment
Vocational Training
Women’s Safety
Women’s Health
Art & Culture

Sustainable & Inclusive Growth
And Full & Productive Employment
Vocational Training
Science, Technology & Innovation
Women’s Safety

Resilient Industry,
Infrastructure & Innovation
Science, Technology
& Innovation
Vocational Training
Rural Development

WASH
Art & Culture

Reduce Inequality
Women’s Health
Child Health
Geriatric Health
Mental Health

Vocational Training
Art & Culture
Women’s Safety
WASH
Rural Development

Inclusive, Safe,
Resilient And Sustainable
Cities & Human Settlements
Women’s Safety

Sustainable Consumption &
Production Pattern
Lake Rejuvenation

Partnership For Sustainable
Development
Government
Tertiary Hospitals
Research Institutions
Data Sharing
Capacity Building

Peace, Justice & Strong Institutions
Women’s Safety

Water & Sanitation For All
Lake Rejuvenation
WASH

Education For All
Chinnara Ganitha
Aula Paata Wadi
Grants to Institutions
School Infrastructure
WASH
Schedule VII CSR Activities & Biocon Foundation Programs
Schedule VII CSR Activities are Notified Under Section 135 of the Companies Act 2013.

Biocon Foundation’s Programs Align with the Activities Represented Below.

- Eradicating Hunger & Malnutrition
- Promotion of Health & WASH
- Rural Development
- Promotion of Education
- Promotion of Gender Equality and Women’s Empowerment
- Ensuring Environmental Sustainability
- Protection of Art & Culture
- Funds to Technology Incubators
Thematic Areas of Intervention

- Healthcare
- Education
- Environmental Sustainability
- Rural Development
Vitalising Disease Prevention & Management

Enlightening & Empowering
Resuscitating Natural Resources

Augmenting Essential Rural Resources
HEALTHCARE
Vitalising Disease Prevention & Management
Baseline

In India, a prerequisite for the public health system is to transfer the focus from curative to preventive healthcare and reinvent it so as to measure up to contemporary demands and critical priorities. Confronted with the epidemiological transition, the country needs to support continuum of care for the patients to gradually reduce the burden of burgeoning chronic conditions. This calls for an approach which integrates technology with healthcare delivery at the primary level.

According to research published in the International Journal of Medical Informatics, many developing countries have achieved eminence in the adoption and use of electronic health records such as China (96%), Brazil (92%) and Russia (93%). As India is riding the wave of internet and smart phones, it could be an inflection point in technology adoption to shape an alternate public health system which is efficient, high-quality and cost effective.

Point of care technologies (POCT) have attained relevance owing to their ability to provide rapid diagnostic results in low-resource settings, more so when the disease burden from non-communicable diseases have seen exponential growth in recent times. Enabling primary healthcare clinics with POCT reduces critical diagnosis time and costs incurred.

Strategy

eL AJ-enabled care is an electronic patient record system in a secure network, coupled with easy-to-use, point-of-care and upgraded laboratory-based diagnostics available at the basic unit of healthcare, the Primary Health Centre (PHC).

eL AJ Smart Clinic is designed as a proof of concept to augment the PHCs of the Government and community-based clinics. It harnesses the potential of Information and Communication Technology (ICT)-based tools in order to refine the quality of primary healthcare. The workflow-based eHealth solution, seamlessly integrates three major functional areas of a PHC: Patient Registration, Doctor Consultation and Laboratory Diagnostics.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Karnataka</th>
<th>Rajasthan</th>
<th>Nagaland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>42</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Stroke</td>
<td>57</td>
<td>32</td>
<td>45</td>
</tr>
<tr>
<td>Hypertensive Heart Disease</td>
<td>8</td>
<td>8</td>
<td>6</td>
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</tbody>
</table>

A data-driven approach to primary healthcare delivery is an essential cornerstone of the quality process.
Patient - Doctor Interface at eLAJ Smart Clinic

Registration (EMR) + Vitals

Doctor

Diagnostics

Pharmacy

Test Report

Referral to Secondary / Tertiary Care
A dashboard enables visualisation and analytics of the clinical and administrative data in real-time. The operational details such as new patient registration, consultations and lab observation reports allow the remote tracking of service utilization on a daily basis. The cross-sectional analytical aspects of the dashboard enable comparison of data across multiple variables for clinical improvements and patient-centred outcomes. As vitals are captured at registration, the eLAJ process enables screening of NCDs.
The disease profile provides local data on health conditions and associated risk factors prevalent in the population. The data-driven approach informs public health interventions, improving healthcare delivery. The prompt detection of disease patterns and statistical trends enable practitioners to take felicitous measures for prevention, control and treatment.

The eLAJ platform transforms a PHC into a comprehensive one-point treatment facility with digitized systematic clinical consultation and advanced diagnostic services. Enabled with attributes such as role-based access control, data security and privacy, patient identification, digital archiving and retrieval, devices to record vitals, upgraded medical laboratory, disease surveillance and customized report generation, the health information system enhances the overall clinical performance and patient outcomes.
Interventions & Outcomes

The eighteen health centres in Karnataka, which include fifteen PHCs of the Government of Karnataka (GoK) and three Foundation-run clinics, have been remodelled into eLAJ Smart Clinics, serving a population of more than eight lakhs across five districts in Karnataka - Bengaluru Urban (5), Kolar (2), Tumakuru (2), Chikkaballapur (3), and Bagalkot (3). We have provided Lab Technicians and Data Entry Operators as additional resources to each PHC. Refresher training programs were organised in eHealth and diagnostic technologies to meet the standards. In addition to training the workforce, the provision of lab consumables and annual maintenance contract for repair and upkeep of the equipment (biochemistry and haematology analysers) ameliorates the provision and delivery of screening and laboratory services.

In the year under review, the Rajasthan government approached us to pilot the Integrated Health Management System (iHMS) in the Jaipur Urban PHC which was a fully equipped eLAJ Smart Clinic. The Foundation rose to the occasion and supported the implementation of iHMS with staff who were trained and proficient in the use of digital devices and software. The engagement continued till 31st March 2019 at the eLAJ clinics at Jaipur, Soorwal and Shyampura (Sawai Madhopur) PHCs. All the computers, digital devices, furniture and fixtures were handed over to the government to transition from eLAJ to iHMS.

The program illustrated the successful transition of a proof of concept to a model adopted by the government for large scale implementation.

We were invited to set up the eLAJ Smart Clinic system at Rashtrapathi Bhawan, New Delhi. We responded with alacrity to roll out the eLAJ system with the donation of computers...
and lab devices and trained the personnel in the use of the software. The medical officer placed on record, his appreciation of the efficiency and streamlining of processes as a result of eLAJ.

Partnering with Christian Institute of Health Sciences & Research (CIHSR), an eLAJ Smart Clinic enabled NCD desk was set up at the Medziphema PHC at Dimapur, Nagaland. The desk provides the essential opportunistic screening that is required in a state with high prevalence of stroke, cardiovascular diseases and tobacco consumption.

The capable medical and tech support from Biocon Foundation, facilitates the maintenance and upgradation of eLAJ Smart Clinic components to deliver a consistent and enhanced performance. The regular field visits by our resourceful public health team, renders supportive supervision and mentorship.

The average number of consultations in a GoK PHC was 875 per month during this period.

The detection of high blood pressure and hyperglycaemia were 18% and 20% respectively. This ensued from the opportunistic screening of more than 95% patients in the age group of above 35 years.

The disease surveillance statistics revealed infectious (35.1%), non-communicable (18.3%), and musculoskeletal (12.2%) diseases and pregnancy (17.1%) as the most common conditions among the patients. Gastrointestinal (4.3%), ENT (2.1%), Genitourinary (1.1%) and Emergency and Trauma (2.4%) were among some other conditions presented in the PHCs. All medical cases were managed or referred appropriately.

The clinics electronically recorded about 65,000 fresh registrations and more than 1.67 lakh consultations in 2018-19.
“The provision of biochemistry analyser allows investigations like LFT, RFT leading to better management of infectious diseases. Vitals at the registration makes it easier for me to handle the high NCD and ANC cases.” – Medical Officer, PHC, Chandapura, Bengaluru

“Since eLAJ is operational, the OPD of the PHC has seen an increase of patients; the better lab testing facility is one of the determining reasons. The number of patients reporting for blood sugar and blood pressure tests have gone up.” – Medical Officer, PHC, Jigani, Bengaluru

“Biocon Foundation has made a big impact with eLAJ in the community. We don’t refer patients for blood investigations to the District Hospital anymore. The comprehensive lab service has brought the cost of healthcare down for the poor patients.” – Medical Officer, PHC, Jangamakote, Chikkaballapur

“Before eLAJ, we were not able to perform even basic tests and patients used to travel about 30 km to Srinivasapura for blood investigations. As a result of eLAJ integration with the PHC, patients from more than 50 villages avail our lab services. The regular blood pressure and blood sugar testing and free drugs supply from the Government has led to the reduction of risk factors and better compliance and control among patients.” – Medical Officer, PHC, Lakshmipura, Kolar.
Common Cancers

Baseline

India is facing a major epidemiological transition. According to a report titled “India: Health of the Nation’s States”, the country had 55% of the total disability-adjusted life years (DALYs) from NCDs in 2016, compared to 30% in 1990. During this period, the proportion of all deaths due to NCDs increased from 37.9% to 61.8%.

The top three cancers that affect the Indian population are oral, breast and cervical cancers, and are referred to as common cancers.

According to Globocan 2018, oral cancer accounts for around 30% of all cancers in India. 1,19,992 new cases and 72,616 deaths were reported for oral cancer in India in 2018. Consumption of tobacco is the major risk factor, 42.4% of men, 14.2% of women and 28.6% (266.8 million) of all adults use tobacco in India as per Global Adult Tobacco Survey 2015-16.

Breast and cervical cancers account for around 28% and 17% of all cancers among women in India, as reported by Globocan 2018. Breast cancer is the most common cancer among Indian women, with 162,468 new cases and 87,090 deaths reported in 2018. In the same year, 96,922 new cases and 60,078 deaths were reported for cervical cancer in India, ranked as the second most common form of cancer among women.

Oral cancer accounts for around 30% of all cancers in India. Breast and cervical cancers account for around 28% and 17% of all cancers among women.
Strategy

Oral Cancer

The evidence suggests that direct visual examination of the oral cavity is a cost-effective method for oral cancer screening in resource-constrained settings when compared with conventional methods. The Foundation implemented a mobile phone-based (mHealth) management platform that enables the creation of electronic health records and facilitates targeted screening for oral cancer. The program empowers frontline healthcare providers with mobile phones enabled with a decision-based algorithm for early detection of oral cancer. The platform allows electronic data capture (EDC) and connects remote specialists with rural populations for diagnosis and management. It also creates an opportunity for follow up and referrals. The screening process is evidence-based, as every patient is mapped with a unique patient identity correlated with risk factors such as habit history and clinically-relevant intra-oral images. The functionality to capture high resolution images, audio and text notes along with a digital consent form, permits frontline health workers to convey to remote specialists, patient responses verbatim.

A mobile phone-based (mHealth) management platform enables the creation of electronic health records and facilitates targeted screening.
Breast Cancer

The preventive service for breast cancer includes the use of a palpation technique called clinical breast examination (CBE). A trained clinician observes and palpates the breasts and underarm to detect any irregularities such as symmetry, size, colour, texture, discharge, cyst and lesion. Owing to high prevalence rate and limited coverage of radiology and pathology services in low and middle income countries, CBE is an indispensable tool for detection of breast peculiarities. Women are trained in self breast examination and directed to referral centres for further investigations and treatment if required.

Cervical Cancer

Visual inspection with the application of acetic acid (VIA) is an established method for rapid detection of precancerous lesions of the cervix. The abnormal cell with higher protein content, coagulates with acetic acid to produce white (acetowhite) staining effects. Comparable with the alternate cytological method which is resource intensive, the low-cost VIA approach is effective for population-based interventions in low-resource settings. As VIA delivers instant results and is an easy-to-perform procedure, it is recommended by WHO for middle and low income countries confronted with inadequate infrastructure and skilled manpower. The VIA positive cases are referred for confirmatory diagnosis and further treatment to an identified tertiary centre.
As per the national guidelines, screening of common cancers includes men and women aged 35 years or more and rescreening is carried out at an interval of five years in normal cases. In the high-risk and positive incidences, repeat screening is performed annually, at least three times in succession. Age is not a consideration in high-risk individuals.

The success of a screening program is defined by its coverage and the availability of a trained workforce. Capacity building of frontline healthcare providers is essential for the detection and treatment of low-grade lesions in routine clinical practice. National Institute of Cancer Prevention and Research (NICPR), provides hands-on workshops and online training platforms to empower medical and paramedical professionals and health workers with the necessary screening techniques and knowledge of the use of screening tools and their treatment modalities. Doctors of Biocon Foundation received hands-on training for common cancer screening and completed the certification course offered by NICPR.

The community outreach involves sensitization on cancer and associated risk factors. The Information Education Communication (IEC) activities deliver messages related to lifestyle modifications such as lack of physical activity, obesogenic diets, tobacco use and other environmental factors. The door-to-door cancer awareness campaign about warning signs and symptoms improves self-reporting and availing of screening services.

**Interventions & Outcomes**

**Screening of Sanitation Staff of the City Municipal Corporation**

Known as the “green army”, Pourakarmikas (sanitation staff) bring life to Bengaluru, protecting it from possible environmental and health hazards from the thousands of tons of solid waste produced by the city on a daily basis.

Biocon Foundation recognised the health needs of Pourakarmikas owing to their socioeconomic and behavioural risk factors. We collaborated with the Bruhat Bengaluru Mahanagara Palike (BBMP) to conduct awareness and screening for common cancers, diabetes, hypertension and anaemia in Shankar Mutt ward as a pilot initiative. Upon referral, the sanitation workers avail the necessary facilities and treatment from dispensaries, referral hospitals and empanelled speciality hospitals under Employees’ State Insurance Corporation (ESIC). The ESIC personnel were invited to conduct a session for the patients to inform them of the services that they are entitled to.

<table>
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<tr>
<th>Results of Cancer Screening for Pourakarmikas</th>
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<tr>
<td>Oral cancer screening (n=89)</td>
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<tr>
<td>Prevalence of tobacco usage</td>
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<tr>
<td>Detection of Oral Potentially Malignant</td>
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<tr>
<td>Disorders (OPMDs) in tobacco users</td>
</tr>
<tr>
<td>Cervical cancer screening (n=53)</td>
</tr>
<tr>
<td>VIA positive</td>
</tr>
<tr>
<td>Abnormal Pap result</td>
</tr>
<tr>
<td>Breast cancer screening (n=72)</td>
</tr>
<tr>
<td>Lump detection rate on clinical breast</td>
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<tr>
<td>examination</td>
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</table>
**Oral Cancer Screening at Railway Hospitals**

Biocon Foundation partnered with Indian Railways, the largest employer of the country with more than a million employees, to screen for oral cancer. To start with, the screenings are being carried out for railway employees and their families at South Western Railway hospitals, at Hindupur, Hosur, Dharamapuri, Bengaluru, Channapatna and Tumakuru. Persons identified with OPMD were given free chemo-preventive medication. Follow up and further management will be handled by the respective railway hospitals.

**Training Programs and Workshops**

Medical professionals from the Foundation were invited by various agencies to conduct training programs and workshops to equip frontline healthcare providers with the skills and tools to identify and manage low-grade premalignant lesions, to avert delayed diagnosis of common cancers.

Our team partnered with expert oncologists from premier institutions such as All India Institute of Medical Sciences, Tata Memorial Hospital, Regional Cancer Centres and NCD cells of the states, to conduct workshops for medical professionals at these locations. A hands-on training on common cancer screening techniques was conducted for doctors and nurses of 7 districts in Karnataka, by a specialist from NICPR and doctors of Biocon Foundation.

**Key Meetings**

- Ministry of Health and Family Welfare, New Delhi to dovetail with the existing programs for oral cancer in North Eastern Region (NER)
- Directorate of Health Services, Govt. of Kerala & Cochin Cancer Research Centre to pilot for oral cancer screening in Wayanad and Ernakulum
- National Institute of Cancer Prevention and Research to organise trainings in the screening of common cancers
<table>
<thead>
<tr>
<th>Location</th>
<th>Topic</th>
<th>Partner</th>
<th>Number Trained</th>
</tr>
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<tbody>
<tr>
<td>Lucknow &amp; Varanasi (UP)</td>
<td>Head and neck cancer</td>
<td>National Health Mission (NHM)</td>
<td>80 doctors 72 doctors</td>
</tr>
<tr>
<td>Guwahati (Assam)</td>
<td>Technology for early diagnosis, management and referral of head and neck cancer</td>
<td>NHM &amp; Dr B Borooah Cancer Institute</td>
<td>40 doctors</td>
</tr>
<tr>
<td>Bengaluru (Karnataka)</td>
<td>Training on use of mHealth for early detection and prevention of oral cancer</td>
<td>NCD Cell &amp; KLESIDS</td>
<td>38 NCD coordinators</td>
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<tr>
<td>Bengaluru (Karnataka)</td>
<td>Operational Guidelines for breast and cervical cancer screening for BBMP gynaecologists</td>
<td>BBMP</td>
<td>45 gynaecologists</td>
</tr>
<tr>
<td>Bengaluru (Karnataka)</td>
<td>Hands on training for early detection of oral, breast &amp; cervical cancers</td>
<td>NCD Cell</td>
<td>17 doctors 17 staff nurses</td>
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<tr>
<td>Bengaluru (Karnataka)</td>
<td>Prevention and management of oral cancer</td>
<td>National Tobacco Control Cell</td>
<td>35 dentists</td>
</tr>
<tr>
<td>Kochi (Kerala)</td>
<td>Integration of primary and tertiary cancer care</td>
<td>NCD Cell &amp; Cochin Cancer Research Centre</td>
<td>150 oncologists</td>
</tr>
<tr>
<td>Chandigarh (Punjab)</td>
<td>Head &amp; neck cancer: screening, early detection and access to optimal treatment</td>
<td>Directorate of Health &amp; Family Welfare &amp; Tata Memorial Centre</td>
<td>66 doctors</td>
</tr>
<tr>
<td>Prayagraj (UP)</td>
<td>Importance of early detection and management of oral cancer</td>
<td>NHM, Tata Trusts, Tata Memorial Hospital &amp; Indian Dental Association</td>
<td>70 doctors and health workers</td>
</tr>
</tbody>
</table>
Campaigns and Events

**World Health Day**
7th April 2018, Shantinagar Ward, Bengaluru
- Oral cancer screening and tobacco cessation counselling of Pourakarmikas
- Opportunistic screening for oral cancer at eLaj Smart Clinic
- Awareness session on self-breast examination at BBMP Maternity Hospital

**World No Tobacco Day**
31st May 2018, Electronic City, Bommasandra, Bannerghata, Bengaluru
- “Know Your Tobacco Quotient Drive” for industries
- Fagerström Test for assessment of nicotine dependence
- Screening for oral lesions and counselling for tobacco cessation
- Biocon employee engagement campaign in partnership with KLESIDS

**Head and Neck Cancer Day**
27th July 2018, Raishtrapati Bhavan, New Delhi
- A talk on “Early Detection and Management of Oral Cancer” by Dr Moni Abraham Kuriakose (Director, Cochin Cancer Research Centre) and Dr Praveen Birur of Biocon Foundation for 150 staff

**Kumbh Mela**
Feb & March 2019, Prayagraj
In association with NHM (UP), Tata Trusts, Tata Memorial Hospital and Indian Dental Association
- Oral cancer mass awareness program through the screening of a video on prevention, early detection and self-examination
- Training of personnel from partner organisations on screening protocol

**Women’s Day**
8th March 2019, Bengaluru
- An awareness session for breast and cervical cancer was conducted at Biocon Park followed by screening for the two cancers for women in the age group 30 years and above.
World Cancer Day
4th February 2019, Bengaluru

An Expert Committee met and presented their recommendations for the forthcoming Indian Head & Neck Cancer Guidelines of the government. The meeting was convened by Dr Kiran Mazumdar-Shaw, Founder & Managing Trustee, Biocon Foundation and Convenor of the independent, multidisciplinary Oral Cancer Task Force. The committee was chaired by Dr G K Rath, Head of the National Cancer Institute, AIIMS, Delhi. Members of the Oral Cancer Task Force, Dr Pankaj Chaturvedi and Dr Kumar Prabhash, prominent oncologists at Tata Memorial Hospital, Mumbai and Dr K Govind Babu, senior oncologist at Kidwai Memorial Institute of Oncology, Bengaluru moderated the deliberations.

<table>
<thead>
<tr>
<th>Screening Site</th>
<th>Total Screened</th>
<th>Positive for OPMDs</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shantinagar ward, Bengaluru</td>
<td>207</td>
<td>39</td>
<td>19%</td>
</tr>
<tr>
<td>Shankarmutt ward, Bengaluru</td>
<td>89</td>
<td>10</td>
<td>11%</td>
</tr>
<tr>
<td>Multiple locations with KLESIDS</td>
<td>823</td>
<td>127</td>
<td>15%</td>
</tr>
<tr>
<td>Multiple locations with Narayana Hospital</td>
<td>475</td>
<td>90</td>
<td>19%</td>
</tr>
<tr>
<td>Prayagraj, UP with Tata Trusts &amp; Indian Dental Association</td>
<td>8,362</td>
<td>284</td>
<td>3%</td>
</tr>
<tr>
<td>South Western Railway Hospitals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Hindupur, Hosur, Dharamapuri, Majestic, Channapatna, Tumakuru, Diesel Loco Shed)</td>
<td>442</td>
<td>53</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>10,398</td>
<td>603</td>
<td>6%</td>
</tr>
</tbody>
</table>
Breast & Cervical Cancer Screening Statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. screened for cervical cancer</td>
<td>140</td>
</tr>
<tr>
<td>Atypical positivity rate</td>
<td>1.5%</td>
</tr>
<tr>
<td>No. screened for breast cancer</td>
<td>164</td>
</tr>
<tr>
<td>Abnormality detection rate</td>
<td>8%</td>
</tr>
</tbody>
</table>

Publications

The oral cancer screen & treat program has resulted in paper publications in collaborations as detailed below.


Partners for Screening, Training & Research

- NCD Cell, Karnataka
- National Institute of Cancer Prevention and Research
- Bruhat Bengaluru Mahanagara Palike
- Indian Railways
- Employees’ State Insurance Corporation
- KLES Institute of Dental Sciences
- St John’s Medical College & Hospital
- Narayana Health
- Mazumdar Shaw Medical Centre
- M S Ramaiah Medical College & Hospital
- Sapthagiri Institute of Medical Sciences & Research Centre
- Christian Institute of Health Science and Research
- Oral Cancer Task Force
- Bangalore Political Action Committee
- Tata Trusts
- Indian Dental Association
- Biocon support functions
- National Health Mission, UP & Assam
- Directorate of Health and Family Welfare, Punjab
- National Tobacco Control Cell, Karnataka
- Cochin Cancer Research Centre
- Dr B Borooah Cancer Institute
- Tata Memorial Centre
- Tata Memorial Hospital
- University of California, Irvine
- University of Arizona, Tucson
- Mazumdar Shaw Center for Translational Research
**Baseline**

The spectre of non-communicable diseases (NCDs) is prodigious and growing. In 2016, the proportion of total disease burden from NCDs in Karnataka was at a staggering 62%, according to a report of ICMR. Diabetes was a leading cause of death in Karnataka with a death rate of 42:1000, significantly higher than the national mean of 23. The death rate for hypertensive heart disease was 09.

The epidemiological transition ratio is defined as the ratio of disability-adjusted life years (DALYs) caused by communicable, maternal, neonatal, and nutritional diseases (CMNNDs) to those caused by NCDs and injuries. The lower ratio of 0.34 manifests the greater contribution of NCDs and injuries to the overall disease burden in Karnataka. While ischemic heart disease inflicts 11% DALYs as a prime cause of death and disability, diabetes and comorbidities represents 3.4% of the total DALYs.

Some of the risk factors that drive the most death and disability in Karnataka are child and maternal malnutrition (10.7%), high blood pressure (10.5%), dietary risks (9.6%), high fasting plasma glucose (8.3%), tobacco use (5.5%), high total cholesterol (5.4%) and alcohol & drug use (4.1%).

Karnataka has an infant mortality rate (IMR) of 27 and under-five mortality rate (U5MR) of 31 (per 1,000 live births), according to NFHS-4 (2015-16). The state also noticed a maternal mortality rate (per 100,000 live births) of 108 during 2014-16, as per Sample Registration System (SRS).

The National Oral Health Survey (2002-2003) reported the prevalence of most common dental disease i.e., dental caries in the range of 50-84.7% among various age groups. The prevalence of periodontal disease was in the range of 57% - 89.6%. The prevalence of edentulism (toothlessness) was observed at 19% in the elderly population in the year 2005, in India, as per WHO.

**Strategy**

The three eLAJ Smart Clinics maintained by the Foundation at Huskur, Hennagara and Austin Town in Bengaluru, ensure equitable access to essential primary healthcare services for all. Furthermore, the organisation aligned the resource with its strategic objective to customise these facilities to furnish specialised diagnostic, curative and counselling services that include, but are not limited to, Maternal & Child Health (MCH), NCDs and comorbidities. The clinics (spokes) are linked to neighbouring tertiary hospitals (hubs). The centres of Austin Town and Huskur serve as a platform for field-based and outreach activities of St John’s Medical College and Hospital (SJMCH) and Vimalalaya Multispecialty Hospital (VMH) respectively. In addition, KLE Society’s Institute of Dental Sciences (KLESIDS) has been roped in to operate dental units at Austin Town and Kalkunte. The medical specialists and counsellors from the partner facilities are actively involved in the provision of care. The community outreach and education is an integral component to reduce morbidity and mortality involving community health workers. Taking the inordinate risk exposure and low access into consideration, the clinic based in Austin Town predominantly serves slum dwellers, while the other clinics serve rural populations.

**Interventions & Outcomes**

**NCD Clinic**

The clinic serves to identify and manage type 2 diabetes and hypertension. The clinic provides lab investigations for diabetic profile, doctor consultation and counselling for lifestyle changes and medication adherence. Long-term individual patient records are maintained for continuum of care.
Our clinics provide specialized diagnostic, curative and counselling services.

Cardiovascular Risk Survey

A qualitative and quantitative population based survey was conducted to assess probable risk of cardiovascular disease in the next five years in two villages of Karnataka.

<table>
<thead>
<tr>
<th>Total consultations</th>
<th>1942</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence rate of overweight &amp; obesity (BMI &gt;25 kg/m²)</td>
<td>71%</td>
</tr>
<tr>
<td>Average blood pressure control rate (BP &lt;140/90 mmHg)</td>
<td>67%</td>
</tr>
<tr>
<td>Average postprandial blood sugar control rate (PPBS &lt;180 mg/dl)</td>
<td>32%</td>
</tr>
</tbody>
</table>

Kachnayakanahalli 5 year CVD Risk in Females (n = 82)

Risk
- <5%
- 5%-10%
- 10%-20%
- 20%-30%
- >30%

Kachnayakanahalli 5 year CVD Risk in Males (n = 52)

Risk
- <5%
- 5%-10%
- 10%-20%
- 20%-30%
- >30%

Mastenahalli 5 year CVD Risk in Males (n = 103)

Risk
- <5%
- 5%-10%
- 10%-20%
- 20%-30%
- >30%

Mastenahalli 5 year CVD Risk in Females (n = 143)

Risk
- <5%
- 5%-10%
- 10%-20%
- 20%-30%
- >30%
Geriatric Clinic

Conducted as a preventive and curative measure to handle elderly health issues, chronic health conditions such as diabetes and cardiovascular diseases are among the most common issues reported for medical intervention.

<table>
<thead>
<tr>
<th>Total consultations</th>
<th>771</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence rate of overweight and obesity (BMI &gt;25 kg/m²)</td>
<td>62%</td>
</tr>
<tr>
<td>Average blood pressure control rate (BP &lt;140/90 mmHg)</td>
<td>69%</td>
</tr>
<tr>
<td>Average postprandial blood sugar control rate (PPBS &lt;180 mg/dl)</td>
<td>35%</td>
</tr>
</tbody>
</table>

Ophthalmology Clinic

Operating concurrently with the NCD clinic, the service attends to the ocular complications caused by diabetes and hypertension. In addition to retinopathy, common conditions such as conjunctivitis, cataracts, glaucoma, low vision and refractive conditions are also managed.

<table>
<thead>
<tr>
<th>Total consultations</th>
<th>273</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic retinopathy</td>
<td>14%</td>
</tr>
<tr>
<td>Hypertensive retinopathy</td>
<td>13%</td>
</tr>
<tr>
<td>Cataract</td>
<td>19%</td>
</tr>
</tbody>
</table>

Podiatric Clinic

A regular foot examination is to extend preventive care for peripheral neuropathy incidental to diabetes so as to curb the risk of ulcer or amputation, leading to disability. Monofilament testing comes in handy for assessment of protective foot sensation. Patients are delivered with daily foot care messages and guidance in self-care. The clinic is conducted once every quarter.

| Patients detected with diabetes | 70% |
| Diabetic patients detected with peripheral neuropathy | 36% |
Mental Health Clinic

The clinic deals with conditions such as stress, anxiety, insomnia, dementia and depression. Mild to moderate depression are the most common disorders reported. The psychosocial counselling assists patients to improve emotional wellness with advice ranging from lifestyle modification to building support systems.

Well Woman Clinic

A range of consultative services for women address the health concerns relevant to sexual and reproductive health, nutrition, diet-related NCDs (diabetes and hypertension), common cancers and others. To instil awareness and behavioural changes in beneficiaries, family planning and lifestyle counselling are integral to the dispensation of care. On the occasion of World Health Day 2018, an educative dialogue on the theme “Women as Champions of Health” was conducted at BBMP Maternity Hospital, Austin Town.

<table>
<thead>
<tr>
<th>Total consultations</th>
<th>436</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>17%</td>
</tr>
<tr>
<td>Severe underweight</td>
<td>7%</td>
</tr>
<tr>
<td>Stunting</td>
<td>15%</td>
</tr>
<tr>
<td>Severe stunting</td>
<td>20%</td>
</tr>
<tr>
<td>Wasting</td>
<td>10%</td>
</tr>
<tr>
<td>Severe wasting</td>
<td>3%</td>
</tr>
</tbody>
</table>

Well Baby Clinic

Paediatric care ensures continued support for a diversity of child illnesses, with a greater emphasis on anaemia and malnutrition among children under-five. Started with a clinic in Austin Town, the year marked the initiation of two more such clinics at Hennagara and Huskur in Bengaluru.

Nutrition education sessions on infant and young child feeding practices with participatory cooking demonstration and growth monitoring were conducted for caregivers in three Anganwadis at Hennagara, Huskur & Austin Town. The awareness also involved a quiz competition for mothers on breastfeeding and a drawing contest for government school students in grades 1 to 7 on the theme of nutrition to encourage healthy-eating habits. In addition, fruit trees were planted at Hennagara Government Higher Primary School.
Dental Clinic

A dental unit, in association with KLE Society’s Institute of Dental Sciences, recognises the need for oral health examination in school children and older people. The most common paediatric dental issues such as dental caries, sensitivity and periodontal diseases are treated upon diagnosis. In addition to dental filling, dentures are available free of charge for the elderly.

<table>
<thead>
<tr>
<th>Location</th>
<th>Patients screened</th>
<th>Patients treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government schools &amp; camps</td>
<td>29,051</td>
<td>6,884</td>
</tr>
<tr>
<td>Austin Town</td>
<td>187</td>
<td>49</td>
</tr>
<tr>
<td>Kalkunte</td>
<td>345</td>
<td>211</td>
</tr>
<tr>
<td>Total</td>
<td>29,583</td>
<td>7,144</td>
</tr>
</tbody>
</table>

35% of the students were underweight and 26% were stunted. Dental caries and white patches on the skin were reported in about 20% of the students. Health and nutrition advice was given to the care givers to address infections and deficiencies.

There is a strong connection between oral health and overall wellness. Our dental clinic addresses awareness about oral hygiene and reduces the financial burden of treatment.

School Health Check-up

Anthropometry (height and weight), general physical examination, oral health check-up and systemic examination (cardiovascular and respiratory system) was conducted for students studying in classes 1 to 7 in a government school at Kodagu. The students were taught the correct technique of brushing teeth, washing hands and the importance of personal hygiene.

- St John’s Medical College & Hospital
- KLES Institute of Dental Sciences
- Vimalalaya Hospital
- Jain Institute of Vascular Sciences
- Anganwadis
- Government health centres
- Government schools
- Bruhat Bengaluru Mahanagara Palike
- Biocon support functions
In Karnataka, less than 77% of schools have provision for drinking water in primary and upper primary schools. While 74.2% of such schools have useable toilets, about 43.6% of these centres for foundational learning had no separate provision of functional girls’ toilets in the state, according to ASER 2018. WHO estimated that 88% of diarrhoeal disease is caused by unsafe water supply, and inadequate sanitation and hygiene. Evidence suggests a strong and positive correlation between access to WASH infrastructure and enrolment, attendance and retention in schools leading to improved learning outcomes. The provision of sanitation facility for girls in school, improves menstrual hygiene and brings down the drop-out rate in high schools.

Strategy

Biocon Foundation takes a demand responsive and community owned plan of action towards universal access to sanitary facilities to rural households, community and schools. The modules of the program deal with allocation of potable drinking water, functional toilets and hand washing facilities in schools, households and communities.

The child and disable friendly sanitation solutions in schools have separate blocks for boys and girls, along with hand washing units. While the Foundation delivers WASH infrastructure, a school-based monitoring system comprising of pupils, parents and teachers see to the regular operations and maintenance. As an essential element of the program, behaviour change communication attends to the adoption of appropriate sanitation and hygiene practices in the family and community, in and through the schools.

The community-based water plants are enabled with water vending based on a smart card system, delivering 20 litres of water at a time. Biocon Foundation is also supporting the local governing bodies in the operation and maintenance of the plants.

The initiative complements the national mission to attain a Swachh Bharat by discouraging the prevailing norm of open defecation and building on the coverage of sanitation in Karnataka. The provision of safe and potable water supplements the National Rural Drinking Water Programme (NRDWP). The WASH program fits well within the spirit of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and the larger endeavour of the Foundation to transform the learning resources, processes, conditions and outcomes of school education.
An assessment of need and deficiency in WASH resources as a first consideration led to the identification of gaps in access of potable water and sanitation units in government schools. The determination of need and allocation of resources were based on the field realities and consultation with stakeholders.

In collaboration with the Bangalore Political Action Committee (BPAC), RO water units have been installed in 15 schools located in Bengaluru South and Anekal during the year under review.

Furthermore, two community RO water plants have been set up at Srirampura and Hebbagodi in Anekal Taluk.

Sanitation complexes have been inaugurated in Mayasandra and Bagalur schools. Each complex has separate toilet blocks for girls and boys, urinals for boys and handwashing facility for all. Providing a safe, inclusive and equitable access to sanitation, the linkage of toilet block with water supply, sewerage system and septic tank also ensures sustainable use.

- School water plants cater to 5,000 students and staff.
- Community water plants cater to a population of 7,000.

The school toilets have been built keeping adolescent girls in mind for a multi-generational impact.
EDUCATION
Enlightening & Empowering
Undoubtedly the Right to Education has given the much needed thrust to school education in India since 2009. According to the latest National Achievement Survey (NAS), the overall performance of students in Karnataka is significantly above the national average in both language and mathematics and the state is also doing well in terms of gross enrolment rate and gender parity in primary and secondary education. However, much still remains unrealised.

In 2015-16, the pupil teacher ratio in primary and upper primary education were 19 and 13 respectively in Karnataka, as against the national average of 23 and 17 as per the NAS. Above 29% children between the ages 6 to 14 years are enrolled in private schools in 2018, according to the 2018 Annual Status of Education Report (ASER). In the same year, 7.8% girls in the age-group of 15 to 16 years were not enrolled in school.

ASER 2018 survey of government schools in Karnataka

Learning assessment of reading among children in Grade 3

- 9.2% cannot recognize alphabets
- 19.8% can read alphabets but not words or higher
- 30.3% can read words but not a Grade 1 level text or higher
- 21.5% can read Grade 1 level text but not Grade 2 level text
- 19.6% children in Grade 5 and 36.1% children in Grade 8 can read Grade 2 level text

Learning assessment of arithmetic among the children in Grade 3

- 4.9% cannot recognize numerals 1 to 9
- 13.9% cannot recognize numerals between 10 to 99
- 54.9% can recognize numbers up to 99 but cannot perform subtraction
- 23.3% can perform subtraction but cannot perform division
- 47.6% children in Grade 5 and 70.1% children in Grade 8 can do division

Survey of school facilities

- 23.3% schools have no access to drinking water
- 29.2% schools have no functional toilet
- 33.5% have no separate girls’ toilet in usable condition
- 58.2% schools have no access to computers
- 31.9% have computers that are unutilised
- 9.9% schools have computers that are utilised

The Foundation is making concerted efforts to raise the access, equity, quality and governance of school education as envisioned in the Draft National Education Policy 2019.
Strategy

The Foundation delivers a multidimensional response to promote quality education with a focus on learning resources, school environs, after-school enrichment programs, health & nutrition and an array of activities to make school life meaningful and enjoyable.

The emphasis is on creating innovative learning resources and engaging pedagogy through workbooks and workshops for subject experts at the Department of State Educational Research & Training (DSERT). The support extended to a district level science and math fair, encouraged students to study practical aspects of scientific and mathematical concepts and promoted experiential and peer group learning. Computer literacy is given an impetus through equipping schools with computer systems.

In order to improve the school environs, the plan of action redresses the inadequate and unfurnished classrooms, lack of IT infrastructure, unsanitary conditions and the paucity of clean drinking water, all of which impede the learning process.

The after-school enrichment program stimulates the emotional, social and physical growth of underprivileged children. This progressive approach to holistic education also allows them to explore their artistic and creative faculties and hone key life skills in a non-traditional learning environment.

Provision of midday meals and consistent efforts to spread awareness among parents and teachers addressed the health and nutritional deficiencies among children in schools and anganwadis. Dental and health camps were conducted in schools.

Education initiatives are further strengthened with the support of proactive partners. Employee volunteerism at Biocon has led to the development and execution of an innovative career counselling initiative that delivers guidance on vocational education to the pupils of government high schools. The key partnership with Narayana Health’s community radio program, has provided an opportunity for students of government schools to participate in socially relevant discussions on air.

Interventions & Outcomes

Learning Resources

The Foundation partnered with DSERT to ameliorate the contents of existing workbooks. The activities included revising content, translation, proof reading and editing. The compendiums of Mathematics, English & Kannada workbooks draw upon real-life situations to make learning more meaningful. The worksheets have been designed to be inquiry-based, creative, interactive and thought provoking.

The workbooks were made available to pupils in Grades 4 to 9 in all the government schools of Karnataka.
Metric Mela

Support was extended to a unique science & math fair at Tumakuru District which met with overwhelming response. It provided opportunities to develop and demonstrate scientific and mathematical skills. The project-based learning inspired problem-solving, critical-thinking and collaborative skills. The fair stressed on experiential learning activities that engaged students as active participants rather than passive receptors. Furthermore, it brought into focus real-life applications of theories outside the milieu of conventional classroom-based teaching and learning.

Digital Literacy

To unlock the opportunities for digital learning in government schools, refurbished computers were made available to schools in Bengaluru Urban, Udupi and Kolar districts. The steps taken in this direction will enable proficiency in computer and internet skills among pupils.

The VTU National Academy for Skill Development was provided with 40 computer systems, a projector and printer to facilitate vocational courses for marginalised rural populations.

School Building

The construction of Kyalasanahalli Government Lower Primary School, Anekal Taluk provided three classrooms, a storage room and separate toilets for girls and boys.

The school will encourage enrolment of very young children of Kyalasanahalli as they will not have to travel long distances to attend school.
Infrastructure

During the year under review, the Foundation contributed to school infrastructure by way of spacious and ventilated classrooms, computer systems, school toilets, RO potable water units to engender a propitious environment.

Sanitation

In line with the government’s Swachh Vidyalaya Abhyan, toilet blocks were constructed in government schools at Bagalur and Mayasandra. The separate units for girls protect their privacy and promotes menstrual hygiene management. The wall paintings on WASH themes promulgate the sense of practicing water conservation and hygiene.

Public Address System

The installation of an outdoor system has livened up extracurricular and cultural activities at Government Higher Primary School, Hennagara.

Potable Water

In a joint effort with Bangalore Political Action Committee (BPAC), RO water purifiers of 50 or 100 litres/hour capacity (depending on number of students) were installed in government schools of Bangalore South and Anekal taluks to make safe drinking water accessible.

The RO systems in 15 schools supplies potable water for 5000 students and staff.

Sanitation

The toilet blocks have improved the sanitary conditions for more than 5000 students.

Public Address System

The school is now the centre of celebrations of national days for a cluster of ten schools in the area and serves more than 1000 students.

After-school Enrichment

The Aata Paata Wadi, an after-school resource centre located in the premises of the residential Ashrama School in Tithimathi under the Department of Social Welfare, provides a vibrant learning ecosystem for tribal children. Looking beyond academics, the informal education builds proficiency in spoken English, phonics, life skills, art and craft, computer literacy and sports and nurtures the talents of the students. The modules also place a high premium on self-discipline, self-awareness and personal safety. The acquisition of life skills prepare the students to face the adversities that they may encounter in everyday life.
Health & Nutrition

A diverse range of activities in schools and anganwadis were conducted to ensure that a child can enjoy improved standards of health which in turn lead to higher educational achievement.

Midday Meals

The Akshaya Patra Foundation received sponsorship to supply freshly cooked midday meals for children in schools and anganwadis at Jigani, Karnataka and Sangareddy, Telangana respectively, to overcome nutritional aberrations, and raise the cognitive abilities and learning outcomes.

A total of 550 children at government schools in Jigani, Karnataka and 1,775 under-five children and pregnant women at anganwadis in Sangareddy, Telangana receive freshly cooked nutritious meals daily.

About 300 children and caregivers participated in these programs.

Health Clinics

The children of Ashrama School, Tithimathi and anganwadi centres in and around Huskur, Hennagara and Austin Town in Bengaluru received medical and dental health services along with counselling on oral and personal hygiene. Several dental camps were conducted in schools throughout the year.

About 145 students of Ashrama School and 50 children of anganwadis between the ages of 3 to 6 years underwent health check-ups. About 19,000 students underwent dental check-ups out of which about 5,400 were treated.

Foster Healthy Habits

In cooperation with the Department of Education, health awareness activities were conducted in Hennagara School. This included a session on hand hygiene and healthy eating practices. A drawing competition on nutrition was held to make the students more conscious about the nutritive properties of their staple diet. Saplings of fruits and vegetables were planted to promote cultivation of indigenous species and encourage conducive dietary behaviours.

171 tribal children benefit from the Aata Paata Wadi program.
Adolescent Health Program

On account of the success of our adolescent health education program in government schools, DSERT requested that we conduct a workshop for subject experts in Biology and provide Menstrupedia comic books to all government high schools. The book imparts crucial lessons on menstrual hygiene, sexual and reproductive health and nutrition in a story-based format.

9,000 books were distributed to 4,500 high schools in Karnataka.

Vocational Guidance

In association with Human Resource Development (HRD) division of Biocon, employees volunteered their services to provide career guidance to pupils in government schools. Particularly designed for students in Grades 9 and 10, the sessions informed them about the various degree, diploma, industrial training and certificate courses, and competitive examinations available at various stages of the education process. The counselling helped students identify their aptitudes, learning inclinations, personality traits, and strengths, weaknesses, opportunities and challenges (SWOC) to make an informed career choice.

The program was piloted successfully for 500 students of Grades 9 & 10 in government high schools at Hebbagodi, Chandapura, Hennagara and Haragadde by 20 volunteers from Biocon.

Sports Day

A day filled with excitement, fun and games was conducted in association with Syngene Volunteer Action Group (SVAG) for students at Hennagara. The children participated enthusiastically in stiff competitions to claim attractive prizes.

200 children from Grades 4 to 8 participated in fun-filled sports and games conducted by 12 volunteers from SVAG.

Community Radio

The Namma Nadi 90.4 FM, a community radio platform of Narayana Health, invited the Foundation to provide programs on socially relevant issues. We took this opportunity to involve students of government schools and identified themes for discussion on a range of contextual issues such as education and environmental conservation. They were trained in the art of presentation in a studio setting. With just a little guidance,
they were able to showcase original points of discussion and communication skills to the local communities.

Students of two schools participated in the programs.

Events

- Biocon Foundation was felicitated by Department of Primary and Secondary Education, Government of Karnataka and Zilla Panchayat, Bengaluru Urban at a program organised to recognise organisations for their sustained support to government schools over the years.

- A computer system was presented to the Minister for Primary and Secondary Education of Karnataka at the launch of Career Guidance and Counselling Cell as a token of the computer systems that were donated to support the digital literacy and vocational education in the state.

- Department of Primary & Secondary Education, Karnataka
- Department of State Educational Research & Training
- Department of Public Instruction
- Department of Social Welfare, Kodagu
- Department of Women & Child Development
- Support Functions of Biocon & Syngene International
- KLES Institute of Dental Sciences
- Bangalore Political Action Committee
- VTU National Academy for Skill Development
- The Akshaya Patra Foundation
- Narayana Health
Hebbagodi Lake Rejuvenation

Baseline

A report titled “Wetlands: Treasure of Bangalore (Abused, Polluted, Encroached & Vanished)” based on an exploratory survey of 105 lakes conducted in 2013 by Indian Institute of Science (IISc) stated that 98% lakes in the city were encroached due to construction of illegal buildings and catchments used as dumping yards. 38% of the lakes were found to have been surrounded by slums and 82% showed loss of catchment area. The findings also revealed that 90% lakes were polluted due to sustained inflow of untreated sewage and industrial effluents. When Bengaluru experienced a growth of 925% with respect to urbanisation (concretisation or paved surface increase) between 1973 and 2013, the wetlands and green cover declined by 79% and 78% respectively in four decades.

Strategy

Hebbagodi Lake has a spread of thirty-five acres and a perimeter of over two kilometers. There are five inlets with sewage inflow from nearby residential areas and two storm water inlets joining the lake. The cascading water source has upstream catchments from Shikaripalya, Tirupalya and Veersandra Lakes and excess water flows downstream into Kammassandra Lake. The lake was waning due to sustained flow of untreated sewage and dumping of solid waste and debris.
A feasibility study was conducted to investigate the flora and fauna, hydrogeological conditions, socioeconomic characteristics, topography, meteorology, point and nonpoint sources of pollution, physical components and environmental impact of the pollution on the local community. The parameters assessed include the sources of water, rainfall, water and soil quality, annual runoffs, temperature, water loss, flood discharge and so on. The interpretation of the findings shaped our planning, adoption of suitable remediation techniques and resource allocation for the revival of Hebbagodi Lake. The study resulted in a Detailed Project Report which in turn was sanctioned by the Karnataka Lake Conservation and Development Authority. A natural and eco-friendly method called bioremediation has been adopted along with mechanical aeration and floating wetland treatment.

A multisectoral convergence approach has been espoused to bring in government agencies, residents, activists and elected representatives for successful project delivery. In October 2017, a memorandum of understanding (MoU) was signed between Biocon Foundation and the Government of Karnataka for restoration of Hebbagodi Lake. Wing Commander G B Athri (R) played an instrumental role in shaping the project and ensuring prompt execution. The subject-matter expertise and actions of the teams from Biocon have eminently contributed to the project outcomes.

Namma BioCommmunity, an employee volunteering initiative of Biocon has spearheaded several drives for plantation, cleaning and beautification of the areas around the lake.
**Interventions & Outcomes**

**Initial Measures**

The lake is cleared from the invasive weeds, sludge and garbage accumulated over the years in the lakebed by dredging. The waste weed was composted for use in green cover expansion around the lake. Many bar screens are installed to ensure effective garbage filtering from incoming sewage. Closed underground conduits are laid to address the issues of sewage spill and unbearable stench. A culvert is built to prevent sewage overflow.

**Bund Creation and Fencing**

The lake periphery of 2 km existed with barely 600 m of native bund. Overcoming the challenge of the lake filled to the brim, a new bund was created along the remaining margin of the lake to augment its water holding capacity and create a walkway. We adopted a natural strengthening of the bund with native plant species like Vettiver that prevent soil erosion and help in water purification. Over 67,000 m$^3$ of soil was used to create a massive 1.5 km long bund. The lake perimeter is completely fenced to preserve the environs of the lake. LED street lights are installed to make the area safe and inviting.

**Bio-Enzyme Treatment**

Bioremediation, through the blend of enzymes and specially selected eco-friendly microorganisms rapidly digest the organic waste. This further degrades to the components that are harmless for the environment. An in-house bioreactor was commissioned to produce around 3,000 litres of enzymes per day which is dosed in upstream conduits.
Biological methods were employed to absorb excess nutrients and break down contaminants for improved water quality.

**Mechanical Aeration**

Energy-efficient cascading aerators are implemented to restore the lake by increasing the level of dissolved oxygen in water. Submersible mixers are employed to aid the breakdown of accumulated silt in the lakebed over a period of time to improve the water percolation in the soil.

**Artificial Floating Islands (AFIs)**

The installation of AFIs have allowed select plant species (cleaning agents) to grow hydroponically on the floating rafts fabricated with reused materials and PVC pipes to improve water quality by removal of excess nutrients. Within their vast root zone, pollutant-digesting microbes and bacteria reside and bioremediate wastewater that is laden with pollutants.

Hebbagodi Lake has the largest area (12,000 sq. ft.) of Artificial Floating Island in India, recognized by ‘Limca Book of Records’.

**Greenbelt Development**

Experts were roped in to develop a customised plan for biodiversity augmentation to create a hotspot brimming with plants, insects, birds and aquatic life. Indigenous species consisting of canopy trees, heterogeneous and aromatic plants and medicinal shrubs are used to create a natural perimeter around the lake.

**Public Infrastructure**

Public open space is adequately added around the lake in the form of children’s park and walkways for physical activity, recreation and to generate a sense of belonging in the local residents. RO water facility is installed to cater to the needs of safe drinking water of the local community. A waste segregation yard is constructed for effective solid waste management.
“We are using resources as if we had two planets, not one. There can be no plan B because there is no planet B.”

Ban Ki-moon
Water Quality Improvement

The pH of water is maintained between the appropriate levels of 6.5 and 8.5. The significant reduction of Carbon Oxygen Demand (COD) & Biological Oxygen Demand (BOD) are indicative of the low level of organic pollutants in the water. Dissolved Oxygen (DO) level has increased to above 4 mg/L from nil.

The resuscitation of the 35-acre lake has improved the ecological health of the area.

• Department of Minor Irrigation, Karnataka
• Hebbagodi City Municipal Council
• Wing Commander G B Athri (R)
• Biocon Environment, Health & Safety
• Biocon Central Engineering
• Biocon Administration
Rural Development

Baseline

Skill Building

As per the National Sample Survey 2011-12 (68th round), only 2.2% of workforce had received formal vocational training and 8.6% had non-formal vocational training in India. An extrapolation based on formal skilling data of working age population from NSSO 2011-12 estimated that a meagre 4.69% of the workforce has formal vocational skills, as against 58% in the US, 75% in Germany and 96% in South Korea, according to National Policy on Skill Development and Entrepreneurship 2015. This is the scenario when 62% of India’s population is in the working age group (15-59 years), and more than 54% of the total population is below 25 years of age. The incremental human resource requirement in Karnataka is about 8.48 million across 24 key growth sectors during 2013-22, as per the Ministry of Skill Development and Entrepreneurship. The national policy aims to skill and reskill about 400 million by 2022. To achieve this ambitious target, it is imperative to have deliberate collaborations among various stakeholder groups to support the Skill India campaign of the Government.

Women’s Safety

According to the National Crime Records Bureau (NCRB), the crime against women in Bengaluru is on the rise as the city registered 3,412 cases in 2016 as against 3,109 and 3,100 cases in 2015 and 2014 respectively. The city also experienced 1,333 cases of crime against children in 2016. The NCRB Journal 2018 revealed that around 21% of people in Bengaluru perceive crime to be a serious problem in their areas. In Bengaluru, only 8% of the population does not worry about a female household member being outside home unaccompanied at any time after evening.

School Infrastructure

The State Educational Profile 2013 mapped nine infrastructural facilities, viz. boys’ toilets, girls’ toilets, electricity, playground, ramps, library, compound wall and safe drinking water in state-run schools in Karnataka. Out of the 1,390 such schools in Bengaluru Urban, only 27.84% schools were compliant with the infrastructure requirements for Right to Education and had all the nine facilities in place. Bengaluru Urban was ranked 24th out of 30 districts based on three major aspects of quality education in school: accessibility, infrastructure and trained teachers.

Potable Water

In Bengaluru Rural, 86% households have an improved drinking-water source, i.e., piped water, tube well or borehole, public tap/standpipe, protected dug well, protected spring, rainwater or community RO plant, reported the National Family Health Survey (2015-16). The Ministry of Water Resources aims to provide access of clean drinking water to all by 2024.

Rural Landscape

Bengaluru generates about 3,000 – 3,500 tonnes of solid waste per day, as per the Bruhat Bengaluru Mahanagara Palike. Most of this waste makes its way to landfills located in suburban rural areas. In the Swachh Survekshan of Ministry of Urban Affairs and Housing, Bengaluru fared poorly in urban sanitation and the city slipped to 216th rank in 2018 as against 210th in 2017 of the 485 cities surveyed. A study of Indian Institute of Science reported decline of 78% vegetation in Bengaluru during the four decades (1973-2014). It is crucial to engage all stakeholders including corporates and citizens to improve the landscape.
Strategy

The vertical aims at the development of rural Karnataka covering some of the major spheres like health, education, women welfare and public infrastructure. The Foundation undertakes assessment to identify the pressing needs and priorities in rural areas, and gaps in infrastructural facilities. In a participatory approach, government departments, local authorities and community groups are involved in the decision making. The targeted initiatives for rural women augment safe and secure environments for them in the outskirts and rural parts of Bengaluru. The employment-oriented strategy deals with the provision of reliable resources to enable vocational training for rural youth. The efforts entail active involvement of employees from Biocon and Syngene International.

Interventions & Outcomes

Skill Building

The Foundation supported Visvesveraya Technological University- National Academy for Skill Development (VTU-NASD) to set up a computer lab at Dandeli, Karnataka to augment employability and sustainable livelihoods for rural masses. The skill development centre has introduced certain valuable training courses and programs to reap the demographic dividend and bridge the gap between academics and Industry. At the outset, the centre is focusing on training in various technical fields in accordance with the Industry requirements.

The Foundation has donated 40 computer systems, a projector and a printer to VTU-NASD which has enabled the training on computer numerical control (CNC) operations and programming for the first two batches of 34 students. In addition, the centre also imparted training in Tourist Guide, BPO, Retail, Domestic Plumbing, Drip Irrigation and others. In years to come, training in Internet of Things (IoT), Mechatronics, Automotive Painting, Welding will be on offer.

Women’s Safety

The Foundation has aided the Women & Child Safety initiative of Hebbagodi Police to install surveillance cameras to enhance the safety and security in the area. The initiative will improve the perception of safety among local residents and women’s engagement in civic life and labour force.

Children’s Park

A garbage dump in the Hebbagodi locality is cleaned and transformed into a children’s park. The park has a lawn and recreational equipment such as see-saw, slides, jungle gym and others. The Foundation is maintaining the park and has deployed security personnel to ensure that the space is safe and public-friendly.
School Infrastructure

A new primary school building in Kyalsanahalli is constructed which includes five rooms, separate toilets for boys and girls and handwashing facility and is ready to be handed over to the Department of Education. The school will function in the new building from the academic year 2019 to provide quality education to children of the village.

The renovation to two toilet blocks in government schools in Kalavaru, Mangaluru taluk, Dakshina Kannada is benefiting about 300 students and school staff.

Anganwadi Infrastructure

The buildings of five anganwadi centres have been renovated in Mangaluru taluk, Dakshina Kannada to provide favourable environment for the children and six anganwadis received RO water purifiers, making available safe and clean drinking water for about 150 children.

Community Water Plants

In the year under review, the Foundation inaugurated two plants at Shrirampura and Hebbagodi in Anekal, Bengaluru which provide safe drinking water to about 2,000 and 5,000 individuals respectively. The plants are equipped with RO, UV and TDS filtration and operate on a smart card-based system.
Namma BioCommunity Initiatives

Biocon employees have a high involvement in the communities around the manufacturing facilities to make the surroundings clean and green. Under the Namma Bio Community initiative, employees contributed their valuable time and energy to improve environmental conditions. A drive was organised to clean the peripheral areas of Tirupalya School from trash and debris. The walls were given a fresh coat of paint and inscribed with motivational slogans and quotes in Kannada. An awareness session was organised for the kids and educational materials were distributed by the volunteers. On World Environment Day, a community green belt plantation was carried out around Yarandahalli Lake and about 250 saplings were planted on the lake periphery. As part of National Road Safety Week, a special awareness drive was organised on ‘Defensive Driving’ for motorists who travel regularly over the routes near Biocon facilities.
Grant-in-Aid

Baseline

Nutrition

The National Family Health Survey-4 (2015-16) reported the prevalence of underweight, stunting, and wasting among under-five at 28.4%, 28% and 18.1% respectively in Telangana and 35.2%, 36.2% and 26.1% respectively in Karnataka. WHO estimates that malnutrition accounts for 54% of child mortality. Evidence suggests a positive correlation between Midday Meal (MDM) program on enrolment, attendance, dropout rate and retention rate in schools, and marginally higher scholastic performance.

Breast cancer awareness

Breast cancer is the most common cause of cancer death in Indian women. Breast cancer accounts for 27.7% of all new cancers cases among women in our country. Awareness and early detection is crucial to curb the morbidity and mortality.

Innovative biotech ecosystem

According to Department of Biotechnology, Government of India, India’s biotech industry holds about 2% of the global market share and ranks third largest in the Asia-Pacific region. India aims to achieve its target of becoming a $100 billion Biotech Industry by 2025, representing 5% market share of global biopharmaceuticals.

Promotion of arts & culture

The performing arts industry in India was estimated at INR 236 billion in 2012 and it was expected to witness a compound annual growth rate of 2.5% to reach INR 275 billion in 2018, according to a report titled ‘Creative arts in India 2016’. With a decline of 6% from 2016, Indian visual arts market was valued at around INR 14.6 billion in 2017, as per ‘The South Asian Art Market Report 2017’. The budget allocation to Arts & Culture remains well under 1% of the total annual budget. Despite India’s rich cultural capital, its potential remains untapped. Therefore, it is crucial to facilitate the creation of an ecosystem for arts & culture to promote economic growth and employment.

Strategy

In an indirect implementation mode, independent partners and projects are identified, assessed and supported to maximise social gains. It involves a pre-grant due diligence for effective and responsible grant making. We seek and review details regarding governance, financial management, programmatic capacity, and systems and processes of the last three years of an organisation to identify potential risks and benefits. If found eligible to receive a grant, a memorandum of understanding cements the relationship and sets the purpose and terms to achieve intended impact. The Foundation also invests intellectual resources in the planning, implementation and evaluation of the results. The performance-based grant system gives emphasis on measuring outcomes and impacts against the pre-determined and mutually agreed indicators, and achieving the stated goals within a set timeframe.

Interventions & Outcomes

In the year under review, the programs that received grants dealt with a range of issues such as health and nutrition, art & culture, and scientific research & training.

Institute of Bioinformatics and Applied Biotechnology (IBAB)

The institute is driven by a vision to be an important catalyst for the growth of the biotech,
bioinformatics and related industries in Karnataka and India. It aims to grow into a world class Bioinformatics and Biotechnology institute through its education, research, and entrepreneurship programs.

Sponsorship of the ‘Biocon Chair’ enables training and research in biological sciences. Dr H.S. Subramanya, Director of IBAB continues to hold the chair which drives research in the area of structural biology and drug discovery to study the relationship between protein function and structure. It promotes design and development of novel drug molecules against specific target proteins.

The Akshaya Patra Foundation (TAPF)

The donation to the school feeding program of TAPF is to enhance enrolment, retention and attendance and improve nutritional levels among children. We sponsored nutritious midday meals for 559 government school children in Jigani, Karnataka, and 1,775 anganwadi children and pregnant women in Sangareddy District, Telangana.

Women’s Cancer Initiative - Tata Memorial Hospital (WCI –TMH)

To curb the alarming rise and suffering associated with breast cancer, the awareness campaign of WCI-TMH received financial assistance. It involved imparting knowledge on signs and symptoms and risk factors, and the promotion of breast self-exam and lifestyle modifications for prevention, early detection and improved survival.

Tata Memorial Hospital (TMH)

Nutrition plays an important role in cancer treatment. It helps a patient deal with the unpleasant side effects of the treatment. The donation to TMH supports nutrition for needy cancer patients undergoing chemotherapy.

India Foundation for the Arts (IFA)

Biocon Foundation funded the IFA which in turn bestowed grants on individuals, groups and organizations for advancement of research, practice and education in the arts and culture in India. The IFA endorsed research projects in Indian arts and history. Kali Kalisu, an education initiative promotes integration of arts with the curriculum and pedagogy in government schools of Karnataka. Theatre performances, film screenings, workshops, exhibitions, open house and research presentations were carried out to draw attention towards literature, and visual and performing arts.

In the aftermath of the devastating floods in Kerala and Kodagu, the Foundation supplied basic medicines as an emergency response for medical exigencies.
Awards & Accolades

**FICCI Corporate Social Responsibility Award**
for Hebbagodi Lake Rejuvenation Presented by
Hon. Minister of Commerce & Industry to Syngene
International Ltd at India Habitat Centre, New Delhi

**The BioContribute Award 2018**
to Biocon Foundation for ‘Successful
Implementation of Oral Cancer
Screening Program’

**Recognition to Biocon Ltd in**
**Limca Book of Records**
for ‘creating India’s largest artificial wetland
measuring 12,000 sq. ft. in the Hebbagodi Lake’

**The Social And Business Enterprise Responsible**
**Award (SABERA) 2018**
for Hebbagodi Lake Rejuvenation to Biocon Ltd
at Nehru Museum, New Delhi

**CSR Project of the Year for Hebbagodi Lake**
**Rejuvenation to Biocon Ltd at**
**India International CSR Conclave & Awards 2018,**
PHD Chamber of Commerce and Industry, New Delhi
Biocon Foundation in the News

Not a drop drained, revived Hebbagodi Lake opens

Bengaluru’s Hebbagodi Lake Has India’s Largest Floating Island

Oral Cancer Task Force Submits its Suggestions

Biocon Foundation’s Cancer Task Force Recommends Guidelines For Cancer Care
Polluted Hebbagodi Lake gets a second chance at life

Once full of weeds, waterbody now has floating wetland, kids’ park

Cancer Day: Hospitals, health dept spread awareness

B’luru lake has India’s largest floating island

Hebbagodi Lake lives again

The Biocon Foundation’s work has gone a long way in the revival of Hebbagodi Lake. To begin with, the foundation conducted a feasibility study in 2016 to identify the ideal remediation technique for the revival. The lake, which was largely covered by weeds and garbage, was dredged to remove garbage, invasive weeds and sludge accumulated over five years.

The uprooted weeds were composted for use in green cover expansion around the lake. A number of trees were also planted.

1.5km bund built, desilting taken up

Largest floating island

Hebbagodi lake has the largest floating island with an area of 12,000 sq ft. It is a raft-like structure made of reed materials and PVC pipes. It supports plants to grow hydroponically in the absence of soil and removes excess nutrients in the lake water. It also maintains the pH level in water.
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